

All acronyms used in the responses in Table A-2, can be found here in Table A-1.

Table A-1. Topics and Associated Codes.

Topic	Topic Code	Topic	Topic Code	Topic	Topic Code
Alternative Analysis	ALT	Methods	METH	Resource Concerns	RES
Construction Process	CONS	National Economic Efficiency Analysis	NEE	Safety/Security	SAFE
Consultation	CONS U	Permitting	PRMT	Soils	SOIL
Cultural Resources	CUL	Project Cost	COST	System Design	SYS
Endangered Species Act	ESA	Project Benefits	BNFT	Vegetation/Trees	VEG
Fire	FIRE	Property Rights	RIGHT	Visual	VIS
Fish and Aquatic	FISH	Property Value	PROP	Water	WAT
General	GEN	Public Process	PUB	Wetlands	WETL
Irrigated Acres	IRA	Purpose and Need	PURP	Wildlife	WILD
Maps	MAP	Recreation	REC	Wild and Scenic	WAS

Table A-2. Responses to Comments Received During the Arnold Irrigation District Watershed Plan-EA Public Comment Period.

Comment ID	Topic Code	Comment	Response
1.01	PUB	You have already made up your mind and won't do anything different than what you want. Any comments from the public's opposing this would fall in deaf ears. Shame on you, our eco system and wildlife will suffer!	Public comments were incorporated throughout the Plan-EA as appropriate following NRCS and NEPA guidelines. Please see Section 3 of the Plan-EA for more information regarding how comments during the scoping period were included in the Plan-EA. Please see Section 7 of the Plan-EA for more information regarding public input, coordination, and consultation that occurred during the NEPA process. Please see the responses to public comments, such as Comment ID 12.01, for examples of how public comments were incorporated into the Plan-EA.
2.01	PUB	Trying to find the "Draft Watershed Plan-Environmental Assessment (Draft Plan-EA)" document – the link you provide takes me to a USDA page which then directs me to https://oregonwatershedplans.org/ which in turn directs me back to the USDA page – but nowhere can I find a link that takes me to the document itself. Also: "Comments on the Draft Plan-EA may be submitted during a public comment period starting June 8, 2021 and ending July 8, 2021." --really?	The Draft Plan-EA was available at this website: oregonwatershedplans.org/arnold-id beginning June 8, 2021. The Plan-EA remained available at that website throughout the public comment period and is still available there. The public comment period was also extended to July 23, 2021.
3.01	WAT	My husband and I support the project. We live in Deschutes River Woods and up until this past COVID year, frequently walked or rode our bikes along the canal on a hot summers day. We never experienced adverse reactions previously, but this past year people living on property that backed up to the canal yelled, screamed and threatened us, all the while claiming they owned the property the trail was on. So we don't walk the trail anymore anyway. Good luck with those people who will probably claim the canal is a water feature. Saving water for the irrigation district is just good business and long overdue given the continued drought conditions we have experienced these past several years.	Thank you for your comment.
4.01	WAT	Bravo! Gratitude! Piping the canal is soooo important for water conservation always, but especially as our population increases and long term droughts are common here, I applaud your decision to make this move for everyone in the community and for the ecological communities within and adjacent to the Deschutes.	Thank you for your comment.

Comment ID	Topic Code	Comment	Response
		For those wanting to keep their personal water feature out their back step...too bad for them. They need to look beyond and acknowledge the greater good! Stick to your guns and thank you!!	
5.01	GEN	The J.L Ward Company is looking forward to the piping project and would like to be actively involved. Thank you.	Thank you for your comment.
6.01	GEN	I definitely support the infrastructure modernization plan. Frankly, such a plan is long over due. The drought we are facing this summer will certainly not be the last or the worst one we contend with as the impacts of climate change continue to worsen. Having open irrigation is just plain stupid in a desert, so the proposed closed irrigation system is a far better alternative. People are not going to stop moving to Central Oregon any time soon, and we need to have a plan to support both our growing communities and our local agriculture. This infrastructure modernization plan is a good start!	Thank you for your comment.
7.01	ALT	I would like to suggest that given the present and probable future drought conditions, we/ you should be looking at rapid choices that can help you and the river sooner rather than later as far as saving water is concerned. Piping is helpful but very costly and slow vs helping end users with smaller projects which is both quicker and cheaper. Using some of the money and education to help farmers become more efficient would be much more reasonable and also more rapid. Thank you, sincerely [NAME]	The District and NRCS agree that water conservation through piping district infrastructure is one of various potential water management tools. Upgrading on-farm infrastructure was considered as an alternative. Please see Appendix D.2 and Section 5.2 of the Plan-EA for discussion of the alternatives that were considered.
8.01	PROP	With regard to the piping of the canal, there are many concerns that homeowners have that I do not believe are being treated seriously by those intent on its demise as it currently exists. There is no doubt in my mind that property values will be negatively effected. After all, the canal was one of the things that made this neighborhood and properties here so attractive. But to my mind, that may not even be the most important issue.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Additional language regarding the effects on property value has been added to Sections 4.4 and 6.4 of the Plan-EA.
8.02	VIS	On my street, the canal is a focal point of the neighborhood. It is home to a variety of wildlife and waterfowl. It is a safe place for families to walk together without the worry of traffic. Pets can safely be exercised. Neighbors get to know each other when they greet one another over the fence. That connection forms a bond that will suffer with the passing of the canal.	Please see Section 6.7 of the Plan-EA for discussion of the effects of the project on visual resources and BMPs that would be implemented to minimize effects. See Section 4 of the Plan-EA for discussion of ecosystem services.
8.03	SAFE	I've heard that one argument in favor of piping the canal is that it presents a risk to small children. I am not aware of any drowning this canal. I would wager that streets present a more real threat.	See Section 4.3 in the Plan-EA for a discussion of the public safety risks that exist within AID. Improving public safety is only one of the purposes of the proposed project. See Section 2 of the Plan-EA for full discussion of the purpose and need of the project.

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8.04	WILD	In addition to property value and neighborhood bonding there is, of course, the environmental effects including the destruction of wildlife habitat and the old growth trees that will be undoubtedly lost.	Additional language regarding the effects on property value has been added to Sections 4.4 and 6.4 of the Plan-EA. See Sections 6.6 and 6.11 for information about the effects on vegetation and wildlife.
8.05	ALT	I know that the loss of water is a concern but are there not other alternatives to reduce the water loss that would be amendable to both homeowners and those parties in favor of piping.	Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered.
8.06	GEN	It is our sincere wish that the homeowners concerns are valued and considered before a final decision is made. We should have a say in this matter. We provide that land for this canal. Our names are on the property titles. That should give us a seat at the table.	Please see the response to Comment ID 1.01 regarding public input during the NEPA process. The proposed project would be installed pursuant to the District's right-of-way and easements.
9.01	GEN	I have been a resident of Bend since 1990. In addition I have been a expert whitewater rafter/kayaker and have a strong relationship with the river since 1972. I believe the preservation of the river, trees and wildlife is very important as well. I have seen to damage from the canals and have researched the efficacy. Piping is not a good idea.	Thank you for your comment. Please see Sections 6.6.2 and 6.8.2.2 of the Plan-EA regarding the project's effects on trees and surface water. See Section 6.11 of the Plan-EA regarding the project's effects on wildlife.
9.02	VEG	The destruction of trees and loss of wildlife would be devastating.	Please see Section 6.6 of the Plan-EA for a description of the approach to manage vegetation and minimize tree removal. Section 6.11 of the Plan-EA describes the effects on wildlife.
9.03	WAT	Water that is piped will have a grave effect on the aquifer and affecting the clean river water.	Please see the response to Comment ID 433.38.
9.04	ALT	Using the precious taxpayer dollars would be a waste when there are better methods. The shotgun reaction to the drought would only cause more damage and more money in the long run. There is evidence showing the problems and better solutions available. History shows many, many examples of shotgun approach failures. Please be mindful of the long term effects of this decision.	Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered. See Section 6 of the Plan-EA for information about the effects of the project on a variety of resources.
9.05	GEN	Our community, including nurses, doctors, lawyers, parents, children, teachers etc. use the waterway paths for spiritual enlightenment for over a hundreds of years. These religious walks have been influential in making peace in the homes and in the workplaces and should stay that way for many years to come. This is so essential for us humans. I am advocating a more measured approach to preserving our rivers that include all stakeholders contributing. The park's department overwaters and flood vast lawns along the riverfront, commercial properties water adjacent streets, landowners are forced to water knapp weeds and desert shrubs in order to preserve water rights. We can do much more.	Please see the response to Comment ID 1.01 regarding the public process. Please see updated language in Section 6.8.2.4 of the Plan-EA regarding the project's effects on cultural values of the water in the canal.
9.06	GEN	I am not completely against all piping. I think there are many areas that can be piped without the destruction of important carbon processing tree canopy, loss of wildlife habitat. Wells going dry,	Please see the following sections of the Plan-EA regarding the project's effects on carbon (the NEE in

Comment ID	Topic Code	Comment	Response
		property value depreciation etc. and preserve our water. Again, please be mindful of the long term effects of this decision and seek scientific solutions that work.	Appendix D.1), wildlife (Section 6.11.2), water (Section 6.8.2), and wells (Section 6.8.2.3). Please see the response to Comment ID 218.13 regarding the effects on property value.
10.01	GEN	I have many concerns about this piping project. My biggest concern is I don't believe the public is well informed of the negative impacts with piping the canal. There will be small benefits like a small amount of conserving water and eventually being pressurized. Also the small benefit to the river. But the water loss from the open waterways goes to the river and should not be considered as a loss. There are many negatives to piping.	Please see the response to Comment ID 1.01 regarding the public process. Please see the NEE in Appendix D.1 for further discussion of benefits and costs associated with the proposed project.
10.02	NEE	One thing is the cost. The benefit is so much lower than the cost. If taxpayers understood this they would be upset.	Please see updated benefits and costs of the project in Section 8.9 of the Plan-EA and in Appendix D.1.
10.03	WAT	In addition, I know from my brothers in the well drilling business that people don't realize that the canals have been feeding our aquifers for over a 100 years. That's something historical also. A bunch of wells are going to dry up! And with the population growth that will put even more stress on the water availability. We've got to realize that in the 19th century we build reservoirs like Crane Prairie and Wickiup to store water. We have not done anything to conserve or store water for many years. What about addressing the poor irrigation systems that the farmers are using. Talk about evaporation! Also how about adjusting water use regulations. The aquifer is the perfect place to efficiently and cleanly store water for future generations. Putting water back in the river sounds good but realistically magazines claim some of the best fishing in the northwest is the Deschutes river. And water conservation actually has to be thought of as not letting as much water go back to the ocean to be salted. A true waste of water is the columbia river dumping millions of gallons a second back to the ocean. Adding a little more water for the fish will not nearly have the impact as conserving water for human consumption. The Deschutes river is nice enough now. Fish problems are occurring due to our dams and warm water coming out of them as well as global warming. We need fresh water from wells. Many people have talked about the Cascadia effect. I know Redmond is expanding their wells to help if something bad happens. Our aquifer is essential to our safety and security for all of central Oregon. Some of the problems that are presently happening besides wells are killing the trees that grow along the canals.	Please see the response to Comment ID 433.38 related to groundwater effects. Please see Section 2 of Plan-EA for the purpose and need of the project.
10.04	VEG	Everybody talks about planting trees and reversing global warming. The canal water supports a vast forest of trees and plants that seep into the ground is not a waste. The only real "wasted" water is a tiny bit of natural evaporation which goes into the atmosphere and back to the earth. If you Google Earth Central Oregon you will see green veins going throughout the countryside where there are trees and plants. If you end the canal water to trees then homeowners will need to water the trees more from city water and pay more money. How is this helpful? Myself, others and wildlife have grown dependent on the open canals for 100 years. Its funny how if these were natural creeks they would be considered	Please see updates in Section 6.6.2 of the Plan-EA regarding effects on trees, tree removal during construction, and irrigation of trees.

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		<p>riparian areas and definitely be off limits to any piping. But because they are man made they still have all the same qualities as riparian areas. Ducks, beaver, deer, song birds, spotted frogs, hawks, bald eagles-the list goes on. Unfortunately we have already lost thousands of trees due to piping. I know this because I am a certified arborist with a tree service company and called out all the time for dying trees on peoples property where the canals have been piped.</p>	
10.05	PROP	<p>Then of course there is the aesthetic value that brings up the property values and the overall livability of Central Oregon. I know, I'm a native Bendite I remember being a young child as well as many of my adult years, I love boing around the canals. Its like open space that adults and children need. They have been in our community for over a 100 years. But you can't get open space like that in a man made park. I addition, only a few people have canals going through their property is not considered a large public problem. These righ of ways for canals were given under the pretense that they would be open and not piped and put underground. I don't think its right that these easements allow for piping without homeowners consideration. Where does it say they can change it to pipe? The waterway is a big part of our property value. Our property was purchased and valued because of the water. We will financially suffer greatly when out property is devalued. I don't think this is legal without our consent. There are plenty of open canals that could be piped without harming our properties. You know where those are. We all do. Thanks you for your time in reading this letter. I hope some of these thoughts will bee given some consideration.</p>	<p>The District would install the proposed project pursuant to their easements and rights-of-way. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.</p>
11.01	PROP	<p>My name is [NAME]. Im a retired plumber and I live in Deschutes River Woods on the Arnold Irrigation Canal. I have lived here for 20 years and purchased my property with a hefty waterway value price tag. Myself and others have concerns about pipping the canal due to loss of our property values of about \$30,000 to each property owner. Then you factor in the loss of trees from pipping and the property value decreases even more. These trees are somewhere around 100 years old.</p>	<p>Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see updated language in Section 6.6.2 of the Plan-EA regarding effects on trees.</p>
11.02	WILD	<p>Furthermore, by pipping the canal there will be the precious loss of wildlife habitat to deer, beaver, birds, ducks and geese. We even have bald eagles nesting nearby and they are protected under multiple federal laws and regulations. Myself and others have witnessed them hunting on our canal waterways. Specifically, on our property.</p>	<p>See Section 6.11 for information about the effects on wildlife, including BMPs and guidelines that would be followed to ensure minimal disturbances to bald or golden eagles. See Section 4.11.2 for discussion of existing bald eagle nesting sites.</p>
11.03	ALT	<p>As a retired plumber I understand about the loss of water. And there is no guarantee that the pipping will not leak. I ought to know. Seams do leak and with earth shifts they will separate sooner than you think. Therefore, spending more money, time and damage to our properties to dig up and repair. The pipping of canals is just too much money and a complete waste of taxpayers money. There are companies in Bend, OR that make this product called BTL liners, geomembrane systems. I have seen it installed and it last 40-50+ years. The canals only are open about 6 months of the year. When they are empty, liners are very easy to check, repair and more cost effective. As a plumber I know this also. For the amount of time</p>	<p>Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.</p>

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		the canal is open and the cost of pipping, repairs and property damaged and devalued it just doesn't pencil out. More discussion, bids and options need to be seriously considered. It's a waste of our taxpayer dollars! And that chaps my hide! If you really want to save water, produce electricity and save lives, you may as well pipe and cover the whole damn river downtown Bend from Bill Healy bridge to Newport Ave.	
12.01	WAS	We are very concerned about the potential piping of the one mile of flume as discussed in the Watershed Plan. Questions I have are: How is it possible to install a pipe in a wild and scenic corridor? We are proud of the beautiful corridor we live on and everyone who lives along this one mile of flume follows strict guidelines for visibility of every structure.	Based on comments received during the public comment period and additional analyses performed during and following that period, the District and NRCS have removed the flume from the proposed action and Preferred Alternative. The new proposed action would include piping 11.9 miles of the Main Canal. For more information describing the Piping Alternative, please see updated language in Sections 5.3.2 and 8.2 of the Plan-EA. See Section 6 of the Plan-EA for updated language regarding the effects of the Piping Alternative on a variety of resources now that the flume has been removed from the proposed action. Following removal of the flume from the proposed action, consultation and follow-up with state and federal agencies, as appropriate, has occurred.
12.02	SYS	Has anyone evaluated the flume for evaporation as an entity alone? Is it possible to retain this one mile stretch of flume before the flume turns into the canal, and pipe the other 11.2 miles that do not run along the wild and scenic corridor?	Please see the response to Comment ID 12.01.
12.03	PUB	I am unable to attend the virtual meeting this Wednesday due to a mandatory work meeting, will it be recorded?	The public meeting on June 23, 2021, was recorded, and can be found at oregonwatershedplans.org/arnold-id . A response was provided at the time.
13.01	ALT	Please leave the canal unsleeved.	Thank you for your comment.
13.02	WILD	We love watching the wildlife, and I think it's important for the wildlife for drinking and waterfowl for swimming.	Thank you for your comment. Please see Section 6.11 of the Plan-EA for discussion of the effects on wildlife.
14.01	SYS	I can see the need to pipe the canal out in the open fields where the sun beats down and evaporates the water. I am curious as to why there is a need to pipe the small area in the residential that is covered by trees and home to many animals.	The District has identified a need to modernize the Main Canal to improve water conservation in District-owned infrastructure, improve water supply

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			management and delivery reliability to District patrons, and improve public safety. The Main Canal experiences the greatest water loss, primarily through seepage, of all District infrastructure. See Section 2 of the Plan-EA for discussion of the purpose and need of the project. See Appendix E.4 of the Plan-EA for water loss information.
14.02	PROP	Also, I would like to know what compensation is in place for market value loss on property. Some people don't use the canal as a water feature, but some do.	Please see the response to Comment ID 218.13.
15.01	PUB	<p>I am writing in response to your plan to cover over the canal that runs through my yard.</p> <p>I feel you have already decided on your decision to cover it over. Now, with a stroke of your pen, you will be taking away everything we have worked so hard for these past 21 years of living here. Our sole purpose for purchasing this property was the canal. We built our home, and have invested a large amount of money landscaping our yard around the water view. We are unable to travel, so we have enjoyed spending our spring and summers on our deck..now with one stroke of your pen, you will not only be taking away the value of our home and property, you will also be leaving us with an unsightly view, with no compensation for our financial loss. We will not even be able to change the mess you will be leaving behind with fencing, as that is a cost we could not afford.</p> <p>I understand the water cycle; water seeps and evaporates as it has done for hundreds of years. We have always had droughts and changes in weather, yet water continues to flow and return with time, now you want to change our environment and our wildlife's use by replacing it all with an ugly pipe running through the back of our yard!</p> <p>What is the use of attending a virtual meeting when you already know what your plan is..you know that there is nothing we could say that is going to make a difference in your decision. I HATE what you are doing, if you had any consideration for what we are losing, you would line the canal instead of digging it up and replacing it with unsightly piping! If you would do that, we would still be able to enjoy our property, as well as maintain the value of our home, and our wildlife would still have the benefit of enjoying access to the water.</p> <p>Tell me, would it even matter if we attended this meeting? Is it going to change anything? Have you not already decided to change everything we have enjoyed for all these many years? Is it not in your plan to take away all we have worked for?</p>	Please see the response to Comment ID 1.01. See Section 5.2 in the Plan-EA for more information about canal lining. See Section 8.3 in the Plan-EA for more information regarding reseeding and contouring post-construction.

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		<p>All I feel right now is helpless...beaurocrates as usual will do as they please...none of you really care about what you are doing to us...so tell me, do we really have a voice?</p> <p>We would like to know, [NAME]~</p>	
16.01	WAT	<p>Letter of Support – Arnold Irrigation District Infrastructure Modernization Project To Whom It May Concern: I would like to extend a letter of support for the Arnold Irrigation District Modernization Project to install 13.2 miles of buried pipe in the district-owned Main Canal. This critical infrastructure project will improve the water supply management and delivery reliability to District-owned canals and laterals. For Central Oregon farmers, extremely dry conditions means that there will be a higher demand for water. This crucial project will reduce seepage loss and provide better-managed water diversions for agricultural use. Additionally, this project will enhance streamflow in the Deschutes River and improve public safety. In August 2020, a severe shortage forced the Arnold Irrigation District to shut off their water supply. As we continue to experience an extreme drought here in Deschutes County, it is critical to prioritize projects that will improve water conservation and irrigation efficiency. Thank you for the opportunity to provide comment on the Arnold Irrigation District Modernization Project.</p>	Thank you for your comment.
17.01	GEN	The canal is like a river. I do want it piped.	Thank you for your comment.
18.01	COST	Will users be assessed for piping now, on going or anytime?	Please see Section 8.7.6 of the Plan-EA for a discussion of how the District would finance the proposed project.
19.01	MAP	Our property backs to the Old back nine with an Arnold irrigation easement. Is there a more detailed map defining the affected canal location?	Please see the new map added in Appendix E.14 of the Plan-EA, which shows tax lots included in the planning area. The project map is also shown in Figure 5-1 of the Plan-EA. AID would complete all work within its easements and rights-of-way. Please contact the District regarding property specific easement questions.
19.02	REC	Due to an increase in the southeast bend population we find many walkers on the backside of our property. There are no barriers or signage on the easement. Will barriers be placed so that access is confined to Arnold irrigation district maintenance.	No fences would be installed as part of the project. Please see updated text in Section 5.3.2 of the Plan-EA. Please see the response to Comment ID 32.03 regarding people walking on AID's maintenance road.
20.01	WAT	How do you know how much water is evaporating from the canal.	Please see the response to Comment ID 173.04.
20.02	PROP	You now have more users without any meters, so you do not have records of there use. This will affect our property value and wildlife, so someone can do as they like with water from your canal.	All patron deliveries are monitored via weirs and are measured at regular and frequent intervals. Under the

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		There should be monitoring of the people using the water and what it is used for before anything is done. Thank you	Preferred Alternative, the number of users would not increase and AID would continue to monitor patron deliveries using existing weirs and ongoing measurements.
21.01	GEN	I love the water feature in my back yard, especially since someone else maintains it. I know that water is a limited resource and must be conserved, so I support piping even though I loose the water feature. In my teenage years I worked for the Bureau of Reclamation and am aware of the many problems associated with open ditches and canals for the distribution of water...pipe them all!!	Thank you for your comment.
21.02	ALT	Along with piping, the "Gentalmen Farmers", those that produce nothing substantial for human consumption, should loose water from the canal/ pipe! Farmers that produce food crops or seed crops should be be required and assisted in improving upon their irrigation practices, flood irrigation should NOT be allowed from this point forward.	Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered, which includes on-farm efficiency upgrades.
22.01	GEN	Your panel members did an excellent job in answering questions posed by the participants.I fully support the piping project that will reduce water losses and improve reliability to the water supply system.[NAME]Retired Civil Engineer	Thank you for your comment.
23.01	BNFT	The project document indicates that NUID would get in excess of \$1,000,000 benefit from the 10K+ acre feet of water. Since NUID receives this water from AID and than reduces their delivery from Wickiup by the same amount it looks to me like there is no change in their water. Since there is no change in NUID water, where does the benefit come from? Requires explanation.	NUID currently experiences water shortages and is expected to experience greater shortages due to changes in water management required as part of the Deschutes Basin HCP. The water passed to NUID by AID would reduce the agricultural damages associated with these water shortages. See Section 3.1.1 of the NEE in Appendix D.1 of the Plan-EA for further description of how this benefit was calculated.
24.01	WAT	Just listened to webinar and have some comments. As a small irrigator this appears to me to be a terrible, expensive project. My issue is who gains and who pays. In concept I agree that piping is an excellent and worthwhile concept. In the plan outlined Arnold returns 10K+ acre feet to the river, North Unit uses that 10K acre feet, North Unit stores their water in Wickiup, than in the off season returns it to the river raising the river CFM well above the target of 100 CFM. The 100 CFM is already a disaster for being able to fill reservoirs. Arnold does not pick up any additional ability to deliver water. In last year and this year, for example, we will still be shut off for a most critical part of the season. If Arnold could store that water to insure a complete season it would be more attractive, worth the cost, questionable. So who does benefit? Arnold- some reduced operating expense; reliability, may be?, safety, a solution looking for a problem, historically how many incidents could have been prevented?. North Unit- end up right where they started so zip. That leaves the only winner in this the folks who want more water in the river in	The costs and benefits of the proposed project have been updated. Please see the NEE in Appendix D.1 of the Plan-EA.

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		winter, their cost \$0.00, If they want the water they should pay the bill, Arnold should pay no more than reduction in operating cost. Even at that it is a bad deal for them in that Arnold saved water should be directly stored eliminating the few hundred acre feet lost sending it from Arnold to North Unit. I realize this may involve other agencies or legislature to change some rules, still a better option.	
24.02	COST	One more issue, is there a budget in here for lawyers to defend the pipe from all the property owners who will undoubtedly sue to stop the pipe who believe a pipe rather than a canal will damage the aesthetics/ value of their property? Who pays that bill? This is clearly a long term benefit plan.	The budget presented in the Plan-EA includes costs for project installation, project administration, and technical assistance. Any costs associated with a potential lawsuit are outside the scope of the proposed project.
24.03	IRA	Given the realities of probable continued low snow pack and continued low stream flows is irrigation even a long term possibility? Judging from letters to the editor a while back many don't think so, I sort of agree with them if the Klamath system is any example, or big chunks of California and rest of Southwest. Bottom line, for me, this is a big NO in its current configuration. If Deschutes Basin wants to pay for it, have at it.	Project effects are analyzed based on the reasonably foreseeable future using the best available information. There is no evidence currently to support irrigation being entirely removed from the area; District operations would continue without the federal investment. Furthermore, the purpose of this project is to improve water conservation and water supply management, which should help sustain irrigation in the future.
24.04	COST	One other thing I did not find is how AID would finance this, I assume a bond. How much is this going to add to patrons bills? Charged as user fee or per acre?	The required match funding would be expected to be provided through a mix of grants, loans, and patron assessments. The District would strive to fully fund the match funding through grants to the extent possible. The District does not anticipate changing per-acre annual rates or the overall base assessment fee as a result of any capital improvement project that is fully funded through grants. See Section 8.7.6. of the Plan-EA for further discussion.
24.05	WAT	I also don't see a description of how water is distributed in years when there is not enough stream flow or storage to cover needs, how does that work?	Section 6.8.2.1 has been updated to describe the conditions under which AID would reduce the rate of water bypassed to NUID.
25.01	GEN	Great idea. We need to save as much water as possible	Thank you for your comment.
26.01	GEN	I would like to extend a letter of support for the Arnold Irrigation District Modernization Project to install 13.2 miles of buried pipe in the District-owned Main Canal. This critical infrastructure project will improve the water supply management and delivery reliability to District-owned canals and laterals. For Central Oregon farmers, extremely dry conditions means that there will be a higher demand for	Thank you for your comment.

Comment ID	Topic Code	Comment	Response
		<p>water. This crucial project will reduce seepage loss and provide better-managed water diversions for agricultural use. Additionally, this project will enhance streamflow in the Deschutes River and improve public safety. In August 2020, a severe shortage forced the Arnold Irrigation District to shut off their water supply. As we continue to experience an extreme drought here in Deschutes County, it is critical to prioritize projects that will improve water conservation and irrigation efficiency. Thank you for the opportunity to provide comment on the Arnold Irrigation District Modernization Project.</p>	
27.01	GEN	<p>I watched the Arnold Irrigation District (AID) Modernization Project Public Comment Meeting on June 23, thank you for pulling that together. I have a few comments and also several questions. Comment: Purpose of Modernization Project. I was really surprised how many of the people who participated in the June 23 meeting appeared to have little or no interest in the actual water supply issues facing AID patrons. Many of them appeared only to care about their view of the canal. I left the June 23 meeting wondering how many meeting participants actually were paying customers of AID and relied on AID water. I think we really need to keep the focus of the project and the EA on the purpose of the canal and AID. That is, on-going reliable water supply to AID patrons. Comment: Pipeline vs. Canal Lining – I was interested in the analysis comparing these 2 alternatives. The water loss in the canal is so high that it is clear we have to do something. After reading through the alternatives and the financial analyses, I support the pipeline as the preferred alternative.</p>	Thank you for your comment.
27.02	COST	<p>Comment and Question: Expected Patron Assessments for Pipeline Project. If I am reading this correctly, there is very little financial benefit to AID patrons from this project. There is \$14,897,000 project funding from non-federal funds which is “expected to be provided through a mix of grants, loans, and patron assessments” (Section 8.7.6). What is the amount expected to come from patron assessments and over what time period?</p>	<p>Please see the response to Comment ID 24.04.</p> <p>The costs and benefits of the proposed project have been updated. Please see the NEE in Appendix D.1 of the Plan-EA.</p>
27.03	WAT	<p>Comment and Questions: Water Delivery Reliability to AID Patrons. One of the project benefits is expected to be increased water delivery reliability to patrons. There was a question on this during the June 23 meeting, but as I recall the answer was basically that we won’t have to worry about sinkholes or the flume burning. I understand the serious issues our NUID neighbors are having. And I agree with many of the Project Benefits you have identified: Implementation of the Preferred Alternative would improve water delivery reliability for AID’s patrons; save an estimated 32.5 cfs of water (10,526 acre-feet) from seepage loss during the irrigation season; provide up to 10,123 acre-feet of water to North Unit Irrigation District (NUID); release and protect an estimated 10,123 acre- feet for instream uses below Wickiup Reservoir during the non-irrigation season; reduce AID’s operation and maintenance (O&M) costs; and improve public safety. But I must also say that I am very worried about water delivery to AID patrons. In 2020 and again in 2021 we have had water rotation (rationing) followed by complete shut-off in the summer. So here are my questions: Will this project ensure that we have water through the irrigation season to take care of our crops/ livestock? For the projected pipeline capacity, will we get that</p>	<p>The project would maintain or increase the amount of water available to deliver to AID's patrons. Section 6.8.2.1 has been updated to clarify the potential water supply benefits to AID's patrons. The project would not ensure that patrons receive their full deliveries during all years due to AID's water rights still being subject to prior appropriation. Section 6.8.2.1 has been updated to describe the conditions under which AID would reduce the rate of water bypassed to NUID.</p>

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		through the irrigation season? If the answer to either question above is no or “we can’t guarantee that”, will we be prepared to back off the amount of water that we were going to send to the NUID in order to provide it to the more senior water rights holders in the AID? Thanks again for the public comment meeting, and I’m looking forward to your response on the questions above.	
28.01	PROP	I, [NAME], completely object to the piping of the canal on my private property. Furthermore, is it not our legal right to prevent you from destroying our trees and property depreciation???	Please see the response to Comment ID 163.01.
29.01	PUB	At this point, we have a formal request, and a number of additional questions stemming from the public meeting on June 23rd that we’ve consolidated into a list for your response. First, we respectfully request that the public comment period for the Draft EA be extended by two weeks through July 22nd, given that we just received the extensive and highly detailed reference materials that we requested. These materials will take significant time to thoroughly review. With the holiday weekend imminent, we would appreciate if you can respond to this request today.	The public comment period for the Draft Plan-EA was set to conclude on July 8, 2021 and was extended to July 23, 2021. This extension was made in response to a public request for additional review time.
29.02	GEN	Could you explain the distinctions in the key questions addressed and respective scales of analyses NRCS is utilizing to satisfy its NEPA duties, PL No. 83-566, and the USDA Principles, Requirements, and Guidelines for water and land related resources implementation studies and Federal Water Resource Investments?	Please see Section 1.4 of the Plan-EA for information regarding how NEPA; the Principles, Requirements, and Guidelines; and PL 83-566 program requirements are being utilized in the Plan-EA. Per guidance in the Interagency Guidelines (IAG), NRCS is using a project-level analysis. Because the project investment is greater than \$20M in federal funds, a standard analysis is being used. Please see the response to Comment ID 433.33 for additional information regarding the geographic scales of analyses used for different resources.
29.03	PURP	Which of the proposed project’s co-sponsors crafted the Purpose and Need Statement?	The Purpose and Need Statement was developed based on concerns outlined in the District's Request for Assistance letter addressed to NRCS and the guidance provided in the National Watershed Program Handbook and Manual (NWPH 601.34 and NWPM 501.34 TTT, respectively). The Purpose and Need Statement was reviewed and accepted by NRCS and the sponsoring local organization, AID. Reference: National Watershed Program Handbook (NWPH). (2014). Title 390-600-H, 2nd Ed., April 2014.

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29.04	ALT	Have you examined any canal projects where comprehensive lining has been done and if not, do you plan to do so, especially in light of the fact that the Draft EA states that the lining alternative meets the Purpose and Need?	In response to public comments, the Canal Lining Alternative was updated with new materials pricing; cost estimates; and a more detailed description of the materials, construction methods, and ongoing maintenance that would be required. Please see Section 5.2 of the Plan-EA for updated description and Appendix D.3 for detailed assumptions for this alternative. The Canal Lining Alternative would meet the project purpose of conserving water. However, it would not meet the project purpose of improving water supply management and delivery, or improving public safety, and it was eliminated from further study due to cost.
29.05	GEN	What has been the experience with and effects of the 7.5 miles of laterals currently piped within AID, as well as those associated with the other piping of canals or laterals by other irrigation districts within the Basin?	Please see Section 6.13 of the Plan-EA, including updated language, for a discussion of the cumulative effects on different resources as a result of past actions and current and reasonably foreseeable actions, including piping in other districts and the District's previous piping projects.
29.06	WAT	How much and what percentage of the water diverted from the Upper Deschutes is used by Arnold Irrigation District, in particular as compared to the water rights they hold?	Please see Section 4.8.1 of the Plan-EA for information about the District's water rights. Discussing all of the diversions and associated rights to divert water from the upper Deschutes River, its tributaries, and associated reservoirs is beyond the scope of this project. Appendix E-4 of the Plan-EA has been updated to include information regarding the District's historical diversion rates.
29.07	WAT	Did NRCS analyze or is it going to incorporate a contingency plan if the estimate set forth in the Draft EA for how much water will be able to remain in the Upper Deschutes during the non-irrigation season turns out to be substantially overstated, especially in light of the ongoing drought or trend of climate-change impacts?	We interpreted your comment to be asking about what happens if the minimum streamflow rate in the Upper Deschutes during the non-irrigation season, as identified in the HCP, cannot be met in the future due to drought or climate change.

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			Basin-wide water resource management plans are beyond the scope of this project. Please see Section 6.8.2.2.3 of the Plan-EA for updated text regarding beneficial effects on the hydrology of the Upper Deschutes River from the proposed project in this Plan-EA.
29.08	PUB	It is our understanding that approximately 520 private wells lie within one mile of AID’s main canal. Has NRCS spoken to any of the owners of any these wells about the proposed action’s impacts to them?	Notice of the Plan-EA was sent to the distribution list in Section 11 of the Plan-EA, including state and federal agencies, AID patrons, and property owners adjacent to the Main Canal. Please see Section 6.8.2.3 of the Plan-EA for information about the effects on groundwater.
30.01	PUB	<p>This is [NAME] in Bend, Oregon. My wife [NAME] and I live in southeast Bend within the AID proposed piping project area—the center of the main canal serves as our property’s eastern boundary. We both attended the recent public comment Zoom meeting. Thanks for the complete answers you gave, and for the information about how concerned parties can continue this conversation through the public comment period.</p> <p>Specific to that last point, you mentioned during the Zoom meeting that to request an extension of the formal comment period one would need to make the request to the NRCS (to you in particular, you said) explaining the good-cause reason for such an extension. That is what I’m doing with this letter.</p> <p>1) In your answer to one of my questions regarding the appearance (to us) in the E.A. that the canal lining alternative had been prematurely dismissed in this process and that both the life-spans and cost estimates provided for canal lining options seemed arbitrarily skewed and weighted against those alternatives, you said that if anyone had additional information to support a different understanding of those details to provide it as part of the public comment record. I plan to do that.</p>	Please see the response to Comment ID 29.01 regarding extending the public comment period. The costs and description of the Canal Lining Alternative have been updated; please see Section 5.2 of the Plan-EA.
30.02	PROP	2) In Kate Hart’s answer to one of my questions regarding the apparent lack of concern (as we inferred it) shown in the E.A. for quantifying the negative impact of the piping alternative on property values she also invited additional input on the matter submitted to the public comment record. I plan to do that. I have begun researching issue #2 and have already received pertinent information from real estate agents and appraisers who deal with eminent domain and similar issues that would apply here toward quantifying damage to property values.	Thank you for your comment.
30.03	PUB	I’m formally asking for an extension to the public comment period to provide time for identifying useful, specific information that relates directly to a better understanding of the two issues above than is provided in the E.A. I feel that there is good cause for this extension as identifying reliable information	Please see the response to Comment ID 29.01.

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		about these matters will take some time and both you and Ms. Hart have requested it. I will be expedient, but two weeks from the public comment Zoom meeting to the end of the public comment period is not enough time, especially when you consider that from preliminary report to draft E.A. two years have elapsed for the responsible parties to have provided this information in the draft E.A.	
31.01	WILD	My name is [NAME] and I am a resident of Bend, OR. And I object to the Arnold Pipeline covering. Have you done an in-depth study of how the burial of the pipeline will affect the wildlife that lives along the canal?	Please see Section 6.11.2 of the Plan-EA.
31.02	PROP	Also. Is there any information available or studies about how this will affect my property value as someone who owns a home along the canal? This is important. And I think these things need to be considered thoroughly by the county before a decision is made. Thank you.	Please see the response to Comment ID 218.13 regarding property value. Prior to construction, the District would have to apply for a Land Use Compatibility Statement with the County. Please see Section 8.5.1 of the Plan-EA for more information.
32.01	GEN	I would not like to see the canal in the Deschutes River Woods area piped. It will destroy wildlife habitat, decrease property values, affect quality of life, and certainly make Deschutes River Woods more of a tinderbox than it already is.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for a discussion on the project's effects on wildlife and the response to Comment ID 218.13 for more information about effects on property value. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
32.02	ALT	This part of the canal should be declared historic as this particular irrigation district was created over 100 years ago. I would submit that guniting the canal in residential areas and piping in agricultural areas is a good compromise.	In response to public comments, the District and NRCS considered a mix of open, lined canal, and piped sections along the Main Canal as an alternative. Please see Appendix D.2 of the Plan-EA for more information about a mix of lined and piped sections and why it was ultimately eliminated from further analysis. Please see Section 4.1 of the Plan-EA for more information about cultural resources.
32.03	PROP	I also feel that creating a public walking trail along the canal area is a terrible idea. I bought my property for the beauty and privacy afforded by the canal setting. This would also affect security. Trespassing of this nature upsets the pets and wildlife who live along the canal.	The proposed action does not include the creation of any public walking trails. Public use of the property alongside the District's canal is not a purpose of the District's easements, nor does the District have the authority to grant public access.
33.01	GEN	Why has a nepa not been done?	This Plan-EA has been prepared to meet NEPA requirements as well as program and environmental review requirements specific to NRCS federal

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			investments in water resources projects. Please see Section 1.4 of the Plan-EA for more information.
33.02	WILD	We have lived on the canal for 20 years and are concerned for the many animals that call the area around the canal home. We have watched 20 generations of ducks and deer call the area home because of the water source here in our back yard. We are strongly against piping it for no good reason	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
34.01	PROP	I am writing in regards to the piping in the canal. I'm very concerned about the price of my house being drastically reduced and the difficulty of selling my home if I choose to do so during that time of construction.	Please see the response to Comment ID 218.13 regarding property value. In regard to a homeowner's decision of when to sell their house, construction of each individual phase would occur over a short time period and the District would provide property owners a construction schedule prior to beginning construction. Please see Section 8.7.2 of the Plan-EA for information about the timing and construction phases of the proposed project.
34.02	CONS	Also, the amount of time that it will take for this to be done. The amount of disturbance this will cause to myself and my neighbors for a long period of time.	Please see Section 8.7.2 of the Plan-EA for information about the timing and construction phases of the proposed project.
34.03	WILD	Not to mention the trees and wildlife that count on this water and path for travel. We have bought our homes in this area because we love the nature and wildlife that is here.	Please see Sections 6.11.2 and 6.9.2 of the Plan-EA for information regarding wildlife and fish. See Section 6.6.2 of the Plan-EA for information regarding effects on vegetation.
34.04	ALT	There are many other alternatives that would be much better than piping the canal and we would greatly appreciate one of them being used instead.	Thank you for your comment. Please see Appendix D.2 of the Plan-EA for discussion of the alternatives that were considered.
35.01	PROP	I, [NAME], am opposed of piping the neighborhood private property in DR W. I DO NOT HAVE INTERNET OR EMAIL. Therfor, I'm using a friends on the same street. Why haven't you researched property depreciation?	Please see the response to Comment ID 218.13.
35.02	PUB	You seem to have everything figured out your way without consideration of other people.	Please see the response to Comment ID 1.01.
36.01	ALT	I, [NAME], am opposed to piping the canal on my property. Have you exhausted ALL the alternative possibilities to come to a compromise?	Please see Appendix D.2 of the Plan-EA for discussion of the alternatives that were considered. See Section 8.1 of the Plan-EA for the rationale of why NRCS selected the Piping Alternative as the Preferred Alternative.
37.01	GEN	To AID, DBBC, FCA & NRCS, Please see the attached Word document (Elling response to AID piping project EA) which serves as our	Thank you for your comment.

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		<p>primary set of public comments regarding the AID proposed piping project and more specifically its Draft E.A.</p> <p>To be clear, we are opposed to this project as are our neighbors and many other property owners in the proposed project area. Our concerns cited in the attached document include, but aren't limited to:</p> <ul style="list-style-type: none"> --A reduction of property values to homes where the open canal would be piped, and difficulty selling properties during a 7-year construction period requiring caching of equipment and supplies on properties. --An attempt to use the Carey Act of 1894 to expand AID easement usage and size on private property beyond its current norm. --Damage done to established vegetation and to wildlife in the area that rely on the canal as a water source, habitat and travel corridor. --A general lack of AID patron engagement in the solution-seeking process and a one-sided E.A. that prematurely dismisses other viable canal seepage mitigation alternatives. --A 'fishy' water-swap shell game that transfers AID water 'saved' from seepage loss back to Wickiup reservoir to improve fish and frog habitat but without any restrictions placed on the creation of new water rights leases. --Fabrication of an overblown public safety risk posed by the open canal to facilitate approval of their preferred piping plan. --A far-fetched claim of irrigation cost savings from a pressurized system that's not explained in anyway. <p>Please respond with an acknowledgement of receipt of this e-mail and attached comment document before the end of the public comment period on 7/8/21.</p>	
37.02	GEN	<p>This document is a page-by-page log of our response to this Draft Watershed Plan E.A. and more broadly our concerns about the proposed piping project. As such, our concerns are not prioritized top to bottom but voiced chronologically as they occur in the document. We ask that you take the time to read our 28-page response with respectful consideration, as we have done the same for the 228-page E.A. document. Note that citations from the E.A. or sources it cites are highlighted in light grey color (<i>italicized when color not available</i>). Non highlighted text is ours. Dark grey are cited outside documents. Green highlight identifies reference to pertinent addenda. Our general sense after reading this Environmental Analysis is that it is entirely one-sided, with an obvious prejudice to push for the adoption of the piping alternative. We also feel, after a close reading of the document, that this E.A. is not honest about the level of negative impacts that exist with the piping alternative, nor do we feel it is honest about the merits and costs of other seepage mitigation alternatives. We have taken the time to identify where we feel these points are supported below. Based on the information provided in this E.A. we are opposed to the proposed piping project as one that unfairly burdens property owners in the proposed project area. Costs and negative impacts to property owners are high and specific benefit of piping to owners are low and ill-defined in</p>	<p>Thank you for your comment. Please see Appendix D.2 for a discussion of alternatives that were considered, and please see the response to Comment ID 218.13 regarding property value.</p>

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		this E.A. We feel there are other, better solutions to reducing seepage loss and returning water to instream flow that have been systematically removed from consideration in the planning process and in this E.A.	
37.03	GEN	<i>Abstract: This document is intended to fulfill requirements of the NEPA and to be considered for authorization of PL 83-566 funding of the Arnold Irrigation District Infrastructure-Modernization Project (project). The project seeks to improve water conservation, water delivery reliability, and public safety for irrigation infrastructure in Oregon’s Deschutes Basin. The project would include piping approximately 13.2 miles of AID’s Main Canal. Total estimated project costs are \$42,759,000 of which \$14,897,000 would be paid by the sponsors and other non-federal funding sources. The estimated amount to be paid through NRCS PL 83-566 funds is \$27,862,000.</i>	Thank you for your comment.
37.04	SAFE	One third of the 42.7 million dollar project’s goals cited above are related to improving public safety—this is an example of an overpriced solution seeking a problem that doesn’t exist. We explore this in more detail in 2.1.4 Risks to Public Safety, below, and again in 5.2.1 Alternatives: Formulation Process.	Please see the responses to Comment IDs 37.12, 37.27, and 37.28.
37.05	PUB	In the Office of Management and Budget Fact Sheet (pg xi) land ownership of the project is listed as 99.2% private land ownership—it doesn’t seem to us that the largest group of directly affected stakeholders (property owners within the proposed project area) have had an adequate or proportionate voice in this process, so far. We feel especially left out of the conversation with regard to the other Alternatives that were, by all indications, dismissed by AID without any input from this group of stakeholders.	Notification of the public meeting and proposed project were published in <i>The Bulletin</i> , online at the NRCS public notice website, and at oregonwatershedplans.org . Notification by email was sent to anyone who provided their email during the public scoping period in 2019, attended the June 23, 2021, public meeting, or otherwise provided their email at oregonwatershedplans.org . For the public comment period that began in June 2021, postcards were mailed to AID patrons and property owners adjacent to the Main Canal and flume. Please see Sections 3 and 7 of the Plan-EA for additional information regarding outreach and consultation that occurred during the planning process.
37.06	PUB	Office of Management and Budget Fact Sheet (continued 1) <i>Under the No Action Alternative, construction activities associated with the project would not occur and AID would continue to operate and maintain its existing system in its current condition. The need for the project would still exist; however, the District would only modernize its infrastructure on a project-by-project basis as funding became available. This funding is not reasonably certain to be available under a project-by-project approach at the large scale necessary to modernize the District’s infrastructure.</i> Why the rush to push the all-or-nothing pipe it or	Please see the response to Comment ID 37.05.

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		<p>forget it decision, without more considered stakeholder involvement in exploring other alternatives? Well, perhaps because the funding is available now—this, in general, seems like a money grab to us.</p>	
37.07	NEE	<p>Office of Management and Budget Fact Sheet (continued 2) Total benefits are listed at \$1,801,000. Total costs are listed at \$42,759,000. The project’s Benefit-to-Cost Ratio is cited by this E.A. at 1.82 This ratio is calculated by dividing the benefits over costs (benefits/ costs=ratio). The simple math here using the E.A.’s figures returns a BCR of 0.042 A google search of “What’s a good benefit to cost ratio?” returns this from Investopedia: If a project has a BCR greater than 1.0, the project is expected to deliver a positive net present value to a firm and its investors. If a project's BCR is less than 1.0, the project's costs outweigh the benefits, and it should not be considered.</p>	<p>The benefit-cost ratio included in the Plan-EA was calculated by dividing the annualized benefits by the annualized costs. The "total benefits" listed in the OMB Fact Sheet are the total annualized benefits. Language has been added to the OMB Fact Sheet to clarify this. Please see Appendix D.1 of the Plan-EA for further information regarding the annualized costs included in benefit-cost ratio.</p>
37.08	BNFT	<p>Office of Management and Budget Fact Sheet (continued 3)According to the Fact Sheet the number of AID patrons are 149—they are listed as the “Direct Beneficiaries” of this project. We are not sure patrons would characterize themselves as a beneficiaries of this proposed project. We are also not convinced that this EA has been able to show a direct benefit that outweighs the high costs (of many types) of this proposed project.</p>	<p>All patrons in the District would benefit from the project; the fact sheet in the Plan-EA has been updated from 149 patrons to 646 patrons. Increased irrigation water delivery reliability would benefit all patrons in AID. A benefit-cost ratio was completed looking at both the benefits and the costs of the project. Please see the NEE in Appendix D.1 for further discussion of the benefits and costs of the project.</p>
37.09	WETL	<p>Fact Sheet (continued) Environmental EffectsThere would be long-term minor adverse effects on artificial wetland habitat within the project area. Opportunistic hydrophytic vegetation growing along 12.2 miles 1 of canal would be permanently removed. However, following construction, BMPs for ecological restoration would be followed and there would be an increase in native, upland vegetation in the project area, returning the project area to a more natural state. Loss of existing artificial wetland and riparian habitat would be offset by enhancement of naturally functioning wetland and riparian habitat in the Deschutes River. There is nothing very “natural” about the state of an irrigated landscape in central Oregon and yet it is the normal state that we live in, and value in its present form. If returning the environment to its truly natural state was the goal of this proposed project AID would have to stop drawing off irrigation water from the Deschutes. For AID to claim that they will return a piped construction site to its more natural state while at the same time continuing to drive their vehicles along the AID easement path through our property on a daily basis during irrigation season (and through the non-irrigation season for a 7-year project) seems disconnected from the project area property owner’s reality.</p>	<p>In the OMB Fact Sheet, the language "returning the project area to a more natural state" has been removed and the clarifying language "similar to vegetation found throughout the region" has been added. USACE and ODSL have been notified of the project, and all permit and reporting requirements determined necessary by USACE and ODSL would be completed prior to project construction (see Section 6.10.2.1 of the Plan-EA).</p>
37.10	CONS	<p>1.4 Decision Framework<i>Due to the multi-year phasing, this Plan-EA does not identify the specific details associated with the engineering design and construction activities that would be required to implement the</i></p>	<p>The Plan-EA was prepared to meet NEPA requirements; PL 83-55 requirements; and NRCS</p>

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		<p><i>proposed action. Instead, this document intends to present an analysis in sufficient detail to allow implementation of a proposed action within the designated project area. If the analysis demonstrates that the project does not significantly affect the quality of the human environment, minimal additional NEPA analysis would be required.</i> How this project will “affect the quality of my human environment” depends quite a bit on the specific details associated with the construction activities that will be required to implement the proposed action—and yet this affect is not even to be considered here? This omission seems to create a huge (and intentional) blind spot for any property owner within the proposed project area who is trying to formulate an informed opinion about this proposed project.</p>	<p>policies, regulations, and guidelines. Please see Section 1.4 of the Plan-EA for a list of these requirements.</p>
37.11	WAT	<p>2.1.2 Water Delivery <i>Over the years, the District has developed rigorous measurement and management methods that have greatly increased District efficiency; however, high seepage loss rates make it challenging to deliver the patrons’ desired delivery rate throughout the irrigation season and cause delivery shortages during the peak season (May 15 through September 14)</i> We have not noticed this to be the case over past 12 years—seepage has never been cited as the reason for any reduction of irrigation flow rate or early season end. Certainly seepage loss contributes to an overall lack of water in the reservoirs on drought years which then may result in service reductions, but to be clear canal seepage has not been directly responsible for interruptions to regular delivery. Furthermore, AID and this E.A. attempts to conflate the savings of water by seepage reduction and some level of reduced uncertainty of water delivery. The water savings from preventing AID canal seepage will transfer to NUID and back to Wickiup Reservoir in a federally financed irrigation district shell game so that an equivalent amount can be released into the upper Deschutes during non-irrigation season. There is no “buffer” water saved from this seepage recovery project to help irrigators weather dry years.</p>	<p>As Comment ID 37.11 notes, "seepage loss contributes to an overall lack of water in the reservoirs on [sic] drought years which may then result in service reductions." We agree. Conveyance losses mean that the District needs to divert more stored water during water short periods to deliver the same amount of water as if there were no conveyance losses. These increased the diversion rates and/or volumes to water supply shortages and service reductions during water-short years. Please refer to Appendix E-4 of the Plan-EA for more information on water rights, seepage, flow, and water savings. Please see updated language in Section 6.8.2.1 in the Plan-EA for a discussion of benefits to AID patrons.</p>
37.12	SAFE	<p>2.1.4 Risks to Public Safety <i>The open Main Canal poses a risk to public safety. In addition to multiple instances of injury in AID, at least 10 deaths have occurred in other irrigation district canals near AID (“19-year old Redmond woman died” 2014; KTVZ 2014; Chu 2004; Cliff 2008; Flowers 2004; Golden 2007; Minoura 2007). The District’s location in a partly urbanized area heightens the potential for an accident, as the Main Canal passes through urban areas, rural residences, private lands, and irrigated fields</i> What are the “multiple instances of injury in AID”? Over how many years? Injuries to whom? The 10 deaths cited occurred in other canals, not within the AID. There’s 100 years of history with this canal in roughly its current form, and not a single, documented canal drowning fatality in the AID? Using these vague and misleading statistics is an attempt to characterize a public risk where there isn’t one. The EA states in the Summary Watershed Plan-Environmental Assessment Document on page xi that of the proposed land affected by the proposed piping project, 99.2% of it is privately owned—this indicates that there is virtually no public risk in the proposed improvement area. Any risk posed by the canal is one borne by the private property owner and is one the owner accepts when they choose to live there. Any</p>	<p>Within AID, cars have crashed into the open canal and canal breaches have caused localized flooding (C. Wills, personal communication, December 12, 2019). The District is not aware of anyone who has died within their canals. However, AID's open canals present a safety risk, as evidenced by canal fatalities and near-drowning instances in other irrigation districts in Central Oregon. The references cited in Comment ID 37.12 and in Section 4.3 of the Plan-EA document these incidents. Public use of the property alongside the District's canal is not a purpose of the District's easements, nor does the District have the authority to grant public access.</p>

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		<p>desire to mitigate such risk on said owner’s property is his/ her responsibility, not AID’s or the Federal government’s. The descriptions of open canal hazards in “partly urbanized areas” and the projected growth of Bend, Oregon are scare tactics. While each private property owner’s assessment of risk posed by the current canal may be different it remains that it’s not a public risk. There is no easement for public access to the canal, only access for AID—any public risk posed by the canal is certainly tertiary to risks of trespassing which pose a much higher likelihood of injury to the public from dogs or startled or threatened property owners. In fact, the proposed project would probably create statistically more risk of bodily injury or death caused by falling trees as they die out after their 100-year seasonal water source is eradicated than it would for public drowning.</p>	<p>However, the public can access AID's open Main Canal and the maintenance road adjacent to the canal at road crossings and other access points. Section 4.3 of the Plan-EA has been updated to describe this public use. This access poses a risk to public safety and a concern for the District.</p>
37.13	SAFE	<p>Appendix D 1.1.3.2. Level of Public Safety Hazard <i>Given that an average of 0.143 drowning death occurred annually during this period (3 deaths over 21 years as described above), the annual drowning risk per mile of exposed canal was 0.000147 (0.143 divided by 973).</i> These are interesting statistics that AID chose to include in their public safety hazard assessment appendix. First, these drowning risk calculations are based off 3 drownings over a 21-year period in other irrigation districts—there hasn’t been a documented drowning in AID according to this EA. The above-cited risk of drowning, per mile is infinitesimally low: 0.000147. It’s similarly difficult to pronounce this risk as a fraction of a percentage point: one-hundred forty-seven, ten-thousandths of one percent. And none of that small amount is a “public” risk.</p>	<p>Please see the response to Comment ID 37.12.</p>
37.14	GEN	<p>2.2 Watershed and Resource Opportunities <i>The following resource opportunities would be realized through the implementation of the project. • Improve streamflow, water quality, habitat, and habitat availability in the Deschutes River downstream from Wickiup Reservoir by protecting 100 percent of the water saved instream during the non-irrigation season; We are unclear as to what “. . . protecting 100 percent of the water saved instream during the non-irrigation season;” means. • Support and maintain existing agriculture through enhanced water supply reliability and improved water management;</i> These goals could be achieved by other alternatives. <i>• Minimize the potential for flooding, injury, and loss of life associated with the open AID Main Canal; and</i> The history of risk of injury due to AID canal is minimal and loss of life associated with it is non-existent.</p>	<p>Please see Section 6.8.2.1 of the Plan-EA for a discussion of how water saved by the projected would be protected in the Deschutes River. Please see Section 5 of the Plan-EA and Appendix D.2 for a discussion of how different alternatives were formulated and their ability to meet the project's purpose and need. Please see the response to Comment ID 37.12 regarding public safety.</p>
37.15	PUB	<p>3 Scope of the Plan-EA 3.1/2/3 Agency, Tribal and Public Outreach/ Scoping Meeting/ Scoping Comments The outreach to the public has been conspicuously minimal. The extent of “our” invited involvement was a one-hour presentation on April 17, 2019 and opportunity to provide public comment afterward. This is not as troubling as the fact that public involvement was only engaged after effectively 6 of 8 Alternative solutions were essentially dismissed. It appears the public was brought in to either rubber stamp AID’s preferred alternative or reject it entirely. If there was a more balanced, middle-ground solution available to us we were not given the opportunity to learn about it or express any opinion about it.</p>	<p>Please see the response to Comment ID 1.01.</p>

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37.16	RES	3.4 Identification of Resource Concerns Air Quality—we live in a dust and pollen rich allergen environment as it is. A 7-years-long project of vehicles and equipment rolling daily through disturbed soil will absolutely be an air quality issue for the property owners directly affected by this project. Both my wife and I are asthma and allergy sufferers and don't as easily dismiss this line item.	Clarifying text regarding the timeline of construction phases has been added to Section 5.3.2 of the Plan-EA. Construction would occur during the non-irrigation season only (approximately October through March), and BMPs would be implemented to avoid and minimize effects on environmental resources.
37.17	RES	Environmental Justice—we feel discriminated against as property owners who will be directly, negatively affected by this project more than property owners within the project area whose property doesn't have the main canal passing through it, and as a couple of limited financial means we are not in a position to mount a legal battle against AID and federal government agencies.	AID would complete all work within its easements and rights-of-way. The District has a Carey Act right-of-way, as well as easements, underlying all infrastructure that is part of the proposed project. The District would install the proposed project pursuant to their easements and right-of-way. Please see Sections 4.2 and 6.2 for more information regarding easements and land ownership.
37.18	RES	Noise—the potential for a 7-year construction project on our property does not strike us as noise free. The fact that this EA does not explore or explain the probable specifics of actual project execution (1.4 Decision Framework) is a willful act of ignorance regarding the true impacts to property owners who will bear the burden of this project both during construction and afterward.	Please see the response to Comment ID 37.16 regarding construction timing.
37.19	RIGHT	4.2 Land Use 4.2.1 Land Ownership <i>The District has a ROW and easements underlying its entire infrastructure in the project area. The District's ROW was granted under the Carey Desert Land Act of 1894. Under the Carey Act, AID's ROW extends 50 feet on each side of the canal from the toe of the bank for a total width of 100 feet plus the width of the canal. Over the course of the last 100 years, there have been re-negotiations in specific areas concerning AID's easements and ROW. AID re-maps and re-surveys its infrastructure, ROW, and easements on an ongoing basis to track changes over time.</i> We are surprised to hear about the Carey Desert Land Act of 1894. We are surprised by AID's claim to a 50' right-of-way on either side of the canal. The reason we are surprised by this is that none of this information has ever been conveyed to us by AID in the more than ten years we have owned this property. We have more to say about this issue below, in 8.4 Land Rights and Easements.	Please see Appendix C for a map documenting the District's Carey Act right-of-way. More information regarding District policy on easements can be found in their District User Handbook (AID 2012). Please contact the District regarding property-specific easement questions. Reference: Arnold Irrigation District. (2012). Arnold Irrigation District User Handbook: District Regulations and Operating Procedures. Accessed on February 8, 2022. arnoldirrigationdistrict.com/files/25a9d2fe8/User_Handbook.pdf
37.2	PROP	4.7 Visual Resources 4.7.1 Open Canal Project Area and Adjacent Lands <i>Although the canal is not a naturally formed waterway, some viewers may consider it a water feature during the irrigation season and a number of participants at the scoping meeting and comments submitted during the scoping period</i>	Please see updated language in Section 4.7 of the Plan-EA describing the project area's visual resources. Please see Appendix D.13 for additional photos of

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		<p><i>expressed concern about removal of this feature.</i>In much the same way that green pastures are not a natural feature of the central Oregon landscape but are a visually appealing part of the landscape that all of us have known as “natural” during our lifetimes, the AID main canal is a seasonally picturesque riparian area that supports a variety of plants and animals. It is one of the most attractive elements of this property to us and has been for previous owners as well. We value it very much. The EA’s description of the visual elements of the open canal and the image in figure 4.2 seek to minimize the open canal’s aesthetic value within the proposed project area. Please see ADDENDUM 1 for a series of images that show the canal passing through our property and through some of our neighbors’ to the south and north of us. Appendix D; Change in Aesthetics and Associated Property Values<i>Large sections of the project are located in suburban neighborhoods just south of the Bend city limits. The Arnold Main Canal, which would be piped under the project, runs through the neighborhoods of the Deschutes River Woods and Woodside. There are approximately 450 tax lots in the project area (Willis, 2020). For some of these properties, the Arnold Main Canal acts as a boundary with adjacent properties and provides an aesthetic value to the property. Some residences have built structural and landscape features designed to view the canal. In 2019, during a project scoping meeting around 125 residents in the project area voiced concern over losing the canal as a result of piping (Willis, 2020).</i>In EA section Scope of the Plan, 3.2 Scoping Meeting, it cites with regard to the only public meeting offered about this proposed project on April 17, 2019: “One hundred and twenty people attended the meeting, excluding staff...” I feel like it pretty much says it all that this E.A. documents that 104% of residents at this meeting were in opposition to the piping project’s negative impact on aesthetics and property values. Change in Aesthetics and Associated Property Values (continued 1) <i>Considering these facts, it is clear that the Arnold Main Canal provides some nearby residents with services that have a positive economic value that likely enhances property values. According to real estate agents in the region, many people interested in purchasing property are willing to pay more for properties that have a view of a canal. A meta-analysis of 25 studies that researched the impact of rivers, streams, and canals showed that these water features increased property values in most cases (Nicholls & Crompton, 2017). Three studies that focused on canals in the U.S. found that nearby canals increase residential property values by 10 to 30 percent (Nicholls & Crompton, 2017).</i> Just above we mentioned that we value the aesthetic value of the open canal on our property. The E.A.’s Appendix D illustrates that other residents in the project area do as well (more than all of them at the meeting 4/17/19, apparently), and in this passage above the EA acknowledges that the existing open canal enhances real property values by upwards of 30%. Change in Aesthetics and Associated Property Values (continued 2) <i>As a result, a potential direct cost of the Piping Alternative is that some local residents may experience adverse effects on property values and quality of life due to the change in aesthetics from piping the canals.</i> And yet, in the very next paragraph (above), they call this a potential cost. It would not be a potentiality—it would be the new reality for these residents, both aesthetically damaged and reduced in value as a result. Change in Aesthetics and Associated Property Values (continued 2) <i>On the other hand, some property owners or</i></p>	<p>the project area that have been added. Please see the response to Comment ID 218.13 regarding the proposed project’s effects on property value.</p>

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		<p><i>potential property owners may not want to have a canal adjacent to their property because of the safety hazard an open canal poses, potentially limiting the effect on property values. However, very few local residents have voiced such concerns to AID (Willis, 2020).</i> This passage was included in Appendix D for comic relief, perhaps? The reason that “very few” local residents have voiced “such concerns” is that a public safety risk does not currently exist to the extent that it rises to the level of their concern. Change in Aesthetics and Associated Property Values (continued 3) <i>The potential aesthetic cost to residential landowners is not quantified due to a lack of available data on property values, the number of properties with views of canals, and the value of those views to local residents. As such, while this effect is recognized as a likely cost, 11 this analysis does not quantify the potential change in aesthetic values of the proposed project.</i> This is another blatant example of AID not being interested in conducting an actual Environmental Analysis, which could have easily found “available data on property values, the number of properties with views of canals, and the value of those views to local residents.” There are pages upon pages of analysis devoted to the minutiae that supports the proposed piping alternative, but to spend any time identifying the nature and scope of the Change in Aesthetics and Associated Property Values is not worth pursuing. Why is that? Because to quantify the negative impact of this issue would be a problem. And yet this negative affect has been quantified by the E.A.—it cites that there is an expected value loss range of 10-30% It’s pretty easy to monetize this range based on an appraisal of the property. We feel that if the piping project continues and AID is unable to produce better-quantified figures they can stick with this range, cover the cost of each affected property owner’s appraisal and then make a payment to the property owners for 25% of the appraised value at the start of the project, then an additional 25% percentage of the amount of property value appreciation that occurred in the market over the course of the 7-year project. And additionally, we feel there should be damages paid to property owners who have their property listed for sale during the construction phase, as properties will be more difficult to sell while “staged” with excavators and pipe in the winter mud bog (aka, yard).</p>	
37.21	PROP	<p><i>11 Note that increased agricultural production value due to a more reliable water supply to AID patrons may tend to increase property values (all else equal), which could offset the effect on property values. The value of increased water supply reliability is not quantified but is discussed in Section 1.1.2.2. While the aesthetic value and the agricultural production value are not necessarily similar in magnitude, the population affected (AID patrons) is largely the same (there may be some residents in the area who benefit from canal views who are not patrons of AID)</i> This footnote (11, D-10) may define the term false equivalence. First, there is currently no unexpectedly unreliable water supply as it relates to the existing canal as means of delivery. The claim that reducing seepage loss, through any alternative, would make water supply (i.e. reservoir volume) more reliable is attempting to link a pipe or a plastic lining to rainfall and snowpack in a causal sense. Any short term time savings a pipe would bring over the occasional repair of a sinkhole or a canal breach is not a big enough benefit to outweigh all of its costs, for us.</p>	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.

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		Whatever increase in property values might be realized by providing piped water versus receiving water from an open canal is debatable and without a doubt slim.	
37.22	WAT	4.8.5 Groundwater <i>Within the Basin, precipitation in the Cascade Range provides 3,500 cfs of annual groundwater recharge. Inflows from outside the Basin provide an additional 850 cfs of recharge. Canal seepage across the region provides approximately 411 cfs of additional recharge based on 2008 data (Gannett et al. 2001; Gannett and Lite 2013). Since the publication of Gannett and Lite (2013), subsequent canal lining and piping projects have reduced recharge from canal seepage.</i> The above citation shows three things: 1) The figures for various sources of annual groundwater recharge are given as rates without time duration, not total amounts, so it's difficult to gauge the comparison between the three sources. 2) Canal seepage is defined as a source of groundwater recharge. 3) Canal lining is identified as an effective means (alongside piping) to reduce canal seepage.	Thank you for your comment.
37.23	ALT	4.9.4 Ecosystem Services <i>Cultural service, Culturally important species (Figure 4-1 [E4]): People's values for species conservation may arise from personal use (i.e., enjoying seeing the species and/or its habitat), personal beliefs and moral ethics (i.e., believing protecting a species and its habitat is the right thing to do), altruism (i.e., believing a resource should be protected so that others can use it or benefit from it), and/or a desire to bequest the resource (i.e., believing a resource should be protected for future generations). To many residents of Central Oregon, the conservation of fish and aquatic life has come to represent the restoration of the Deschutes River ecosystem.</i> We agree with the above statement, but we disagree that piping the AID canal is the best way to achieve those goals. Other alternative solutions would be effective toward meeting the goals expressed above but not come with as high a financial cost nor such negative impacts to property owners and wildlife in the proposed project area.	Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered.
37.24	WETL	4.10.1 Wetland and Riparian Areas along the Project Area <i>Hydrophytic plants are sometimes found along the banks of the Main Canal within the project area, as the hydrology provided by the canal can create favorable growing conditions during a portion of the year. However, the District actively keeps the canal banks clear from vegetation; therefore, the edges of canals do not provide a functioning riparian environment.</i> The above statement is false based on my experience with the AID canal. Please see the photos provided in ADDENDUM 1. I would encourage representatives from all of the involved parties (USDA, NRCS, DBBC) to travel the length of the proposed project area and see for yourselves. You could more accurately rephrase the above paragraph to state: "...the hydrology provided by the canal creates favorable growing conditions, and because the District does not keep the canal banks clear from vegetation the canal provides a functioning riparian environment."	Please see Section 4.10.1 of the Plan-EA for updated language regarding how wetland and riparian areas along the project area are described.
37.25	WILD	4.11.1 General Wildlife <i>Generally, wildlife present within the project area consists of habitat generalists or edge species with the ability to adapt or exploit the agricultural environment. These species are tolerant to disturbance and include deer, coyote, skunk, grey squirrel, raccoon, and red-tailed hawk (Blair 1996; Ditchkoff et al. 2006; McKinney 2002; and Shochat et al. 2006). Wildlife within the project area may use</i>	Thank you for your comment. Clarifying language has been added to Sections 6.11.2, 6.11.2.1, and 6.11.2.2 of the Plan-EA regarding effects on wildlife resources. Please see Appendix E.6 of the Plan-EA for

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		<p><i>the canal system as a water source and dispersal corridor. Additionally, where not cleared, vegetation along the canal can provide food, cover, and breeding sites for many wildlife species throughout the year. Interaction between large ungulates and open canals sometimes results in wildlife injury or death if the animal falls into the open canal and is unable to find its way out (G. Jackal, personal communication, November 15, 2019)</i> You can add these additional species commonly or occasionally seen around the canal on our property: Great Horned owl, Western Screech owl, Bald eagle, Golden eagle, Swainson’s hawk, Cooper’s hawk, Northern flicker, Red Naped sapsucker, Black Capped chickadee, Pygmy nuthatch, Western bluebird, common nighthawk, Mallard duck, Valley quail, Rufous hummingbird, Calliope hummingbird, Pacific treefrog, Golden Mantle ground squirrel. Again, you might rephrase the above quote to more accurately read: “Wildlife within the project area use the canal system as a water source and dispersal corridor. Additionally, vegetation along the canal provides food, cover, and breeding sites throughout the year.” Anybody living with the AID open canal on their property knows that it supports an ecosystem of plants and animals—see ADDENDUM 2. In the citation above, that AID brings up canal risk for “large ungulates” is another attempt to exaggerate the risk of an open canal.</p>	<p>a list of migratory birds that may potentially occur within the project area. The lists of species that may occur in the project area, documented in the Plan-EA and appendix, have been generated through conversation with ODFW, USFWS, and online resources. The species identified in the Plan-EA include those that are state or federally listed as threatened or endangered or are protected under the Migratory Bird Treaty Act (MBTA) or the Bald and Golden Eagle Protection Act (BGEPA) (please see Sections 4.11.2, 4.11.3, 6.11.2, and 6.11.2.1 in the Plan-EA). Per the Principles and Requirements for Federal Investments in Water Resources, the Watershed Plan-EA is supposed to be developed using the best available science and reports available. The description of the risk to ungulates is based on information provided by an Oregon Department of Fish and Wildlife Biologist (see Section 9 of the Plan-EA for the full reference).</p> <p>Reference: U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). Principles and Requirements for Federal Investments in Water Resources. March 2013.</p>
37.26	ALT	<p>5.2.1 Alternatives: Formulation Process <i>Under the canal lining alternative, the bottom and sides of 12.2 miles of the open Main Canal would be covered with a geotextile liner and shotcrete to prevent water from seeping into the underlying soils and rock. This alternative would require sub-grade preparation, geotextile liner installation, and application of a layer of shotcrete to protect the geotextile liner.</i> This is interesting. I wish that this had been an Alternative that had been explored with the public’s/ landowner’s participation—we have many questions.</p>	<p>Please see the response to Comment ID 29.04.</p>
37.27	SAFE	<p><i>Lining would increase water velocity in the canal because the shotcrete cover is a smoother surface than the existing underlying rock. This makes the sides of the canal slippery and more difficult for anyone who might accidentally fall in the water to be able to climb out.</i> This is an exaggeration based on my experience with AID’s shotcrete segments done in areas of the main</p>	<p>The text regarding canal lining that you refer to in your comment (from Section 5.2.1 of the Plan-EA) has been updated to include a supporting reference.</p>

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		canal adjacent to our property. It is a quite rough surface, and depending on the steepness of the banks quite easily climbed-out on. This seems like another effort to amplify the open canal's risk.	
37.28	SAFE	<p><i>Fences would be installed along the length of the canal to prevent public access to the channel in order to increase public safety and reduce District liability. These fences would be chosen to prevent the public from nearing the edge or entering the channel and would be standard chain link with a 3-wire barbed wire cap per NRCS guidelines. In channels deeper than 2.5 feet, safety ladders would be installed every 750 feet to provide the opportunity for human and animal escape.</i></p> <p>The above statement is designed purely to serve as a threat to any property owner who opposes piping based on its aesthetic degradation. Essentially AID is saying, "You might have your open canal, but we're going to make sure your backyard looks like a prison." The source of the mentioned chain link fence with barbed-wire cap requirement per NRCS guidelines is not cited in the E.A., nor its footnotes or references that we could find. Reviewing every NRCS reference cited in the EA yielded no references of such fencing design requirements, nor did research into additional NRCS documents not cited as references. We would like to see that NRCS guideline source document. Again, to state the obvious, there is virtually no public risk created by the open canal. The risk that may exist is a private one—a risk that is up to the property owner to mitigate, or not, as desired. The current risk posed by the open canal has not caused AID to install fencing. In fact, they haven't even updated the No Trespassing signs at the point where the canal meets a road crossing near our property in over 10 years of residence (see ADDENDUM 3). The risk that might be posed by a lined and shotcreted open canal is not substantially greater than the risk posed by the current canal.</p>	Based on public comments received during the public comment period, as well as additional analyses, the District and NRCS have decided to remove fences from the Canal Lining Alternative. Updated language and costs regarding the Canal Lining Alternative have been added to Section 5.2.1 of the Plan-EA.
37.29	SAFE	<p>5.2.1 Canal Lining (continued) <i>The canal lining alternative would meet the project purpose of conserving water and improving public safety. Lining would reduce water loss from seepage by up to 29.3 cfs during the irrigation season (9,473 acre-feet annually), and fences and ladders would increase public safety.</i> That above is a true statement. However, because there is no public safety risk, the fences and ladders are an unnecessary expenditure.</p>	Please see the response to Comment ID 29.04. Fences and ladders have been removed from the Canal Lining Alternative.
37.30	ALT	<p><i>Water loss in an open, lined system is estimated to be 10 percent based on studies of canal lining (Swihart and Haynes 2002).</i> In fact, the Swihart and Haynes report (Canal-Lining Demonstration Project Year 10 Final Report, by Jay Swihart and Jack Haynes, see ADDENDUM 3A) states that the seepage loss using a liner membrane covered with concrete is 5% see below citation: note: all outside source text is bolded</p> <p>1. Three types of canal linings (concrete, exposed geomembrane, and concrete with geomembrane underliner) showed favorable B/C ratios in the range of 1.9 to 3.7 (table 21). < includes table from outside source (Swihart) of benefit/ cost ratio of four types of canal linings >2. Each of these linings has advantages and disadvantages. The geomembrane with concrete cover offers the best long-term performance.</p> <p>a. Concrete-Concrete has excellent durability but only 70 percent long-term effectiveness. Irrigation districts are familiar with concrete and can easily</p>	Please see Section 5.2 of the Plan-EA for an updated description of the Canal Lining Alternative and Appendix D.3 for detailed assumptions for this alternative. The appendix also has current photos of the Reclamation-installed test sections.

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		<p>perform required maintenance.b. Exposed Geomembrane-Exposed geomembranes have excellent effectiveness (90 percent), and the lowest initial construction cost. However, they are susceptible to weathering and damage from animal traffic, construction equipment, and vandalism. Also, irrigation districts cannot readily maintain exposed geomembranes because they are not familiar with geomembrane materials and the special seating equipment needed to perform repairs.c. Concrete with Geomembrane Underliner-The geomembrane underliner provides the water barrier and the concrete cover protects the geomembrane from mechanical damage and weathering. The system effectiveness is estimated at 95 percent. The irrigation district can readily maintain the concrete cover but does not have to maintain the geomembrane underliner.The final conclusion drawn in the Swihart and Haynes reports states:4. Maintenance--Through 10 years, maintenance costs have been relatively low for all the lining alternatives. Generally, exposed geomembranes require about twice the maintenance of concrete linings (\$0.010 vs. \$0.005/ ff/ yr). For all lining alternatives, B/ C analysis shows that every \$1 spent on maintenance returns \$10 to \$20 in conserved water by increasing effectiveness and design life.</p> <p>5.2.1 Canal Lining (continued) <i>Canal lining has a varying lifespan and can require extensive maintenance to continue operating at high efficiency (Swihart and Haynes 2002). Canal lining may be less expensive than piping to implement in its first installation cycle; however, the increased annual maintenance costs and replacement costs cause canal lining to exceed the cost of piping over a 100-year period.</i>The above statement in the AID EA contradicts precisely what the Swihart and Haynes report concluded. Given the amount of misdirection and obfuscation in this EA it is hard to believe the statement that maintenance and replacement costs of a lined/ shotcrete canal exceed the cost of piping over a 100-year period.</p> <p><i>In cooperation with the Bureau of Reclamation (Reclamation), the District installed ten 500-foot long sections of different lining technologies in 1991 and 1992 as part of the Deschutes Canal Lining Demonstration Project (Swihart and Haynes 2002). Currently, 29 years after installation, most of the lining sections are degraded and in poor condition. There is widespread cracking in the shotcrete and holes in the lining where silt has collected, forcing the lining upward and impeding water flow in the canal.</i>Again, it's hard to believe much of anything in this EA when it's obviously written in a one-sided fashion. Where are the images showing this degradation? The shotcreted sections of the canal I have seen look to be in pretty good condition.</p> <p><i>The capital costs of canal lining were estimated based on the size of the existing open canal. Annual operating costs associated with canal lining were estimated based on AID's current operating budget, with a</i></p>	

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		<p><i>25 percent increase in equipment, maintenance, and labor costs due to the relatively fragile nature of a lined canal compared to an unlined canal. Assuming a 33-year design life, 16 the estimated capital costs, replacement costs, and annual O&M costs are \$80,864,000 (2020 dollars) over 100 years. Based on this cost, canal lining was eliminated from further study (see Appendix D.3 and D.4 for cost details).</i> This statement above is full of mischaracterizations, such as the characterization of the alternative’s “fragile nature” and design life assumption, both of which don’t match the Swihart and Haynes report from which their liner life span data is sourced, and no other proof of design life failure is offered here in explanation.</p>	
37.31	ALT	<p>Based on the Appendices D.3 and D.4 there are some savings to be found and questions to be asked: 1) Fencing = \$884,789; Ladders = \$42,992 Both unnecessary. 2) Contingency fee @30% for canal lining = \$11,302,405 (fee is 10% for piping @\$3,538,447); difference of \$7,763,958. Said 30% contingency is stated to be “...higher than contingency in the Preferred Alternative to account for unknown costs related to canal lining engineering and materials.” This statement seems to be either intentionally vague or demonstrative of negligent on the part of AID in not taking the canal lining alternative seriously enough to identify reliable engineering and materials cost estimates. 3) The canal lining construction cost figures are calculated at a “multiplier of 2,” while the piping alternative figures utilize a “variable” multiplier—why, and what are the variable multipliers? 4) 4945 feet of buried HDPE pipe to replace flume specified in canal lining costs = \$2,439,000 (this is not in preferred alternative piping costs, why?)</p>	<p>In response to public comments, the Canal Lining Alternative was updated with new costs and a more detailed description of the materials, construction methods, and ongoing maintenance that would be required. Fencing and ladders were removed from the alternative, and the method for calculating installation costs was modified. Please see Section 5.2 of the Plan-EA for an updated description and Appendix D.3 for detailed assumptions for this alternative. The appendix also has current photos of the Reclamation-installed test sections. Costs have also been updated for the Piping Alternative, including raising the contingency to 30 percent. See updated costs in Appendix D.3.1 of the Plan-EA. Installation costs for the Piping Alternative were estimated with a variable multiplier ranging from 2.23 to 2.35 (depending on pipe size) based on actual costs from other piping projects in the basin. The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
37.32	ALT	<p>< Table D-29 included here > Table D-29 shows three glaring misrepresentations: 1) the design life of the canal lining option is minimized from a 40-60 year span (Swihart & Haynes) to a 33 year span arbitrarily; 2) a 25% increase in annual operations and maintenance is cited, over the current levels of maintenance of the canal without explanation; 3) a complete replacement of the liner (cited as a 40-60 year design life in the Swihart and Haynes document) is budgeted for at 33- and 66-years.</p>	<p>Please see the response to Comment ID 37.31.</p>

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37.33	ALT	5.2.1 Canal Lining (continued)It seems curious that AID is using what appears to be 19-year old data (Swihart & Haynes 2002) to make decisions about the canal lining alternative. Surely there have been improvements made to canal lining technologies and engineering processes in the last two decades? The entire Canal Lining section discussion in the E.A. strikes us as one exaggeration or misdirection after another, designed apparently to frame the piping alternative as the only possible way forward and squash any suggestion that another solution be explored further.	The Canal Lining Alternative now cites the 2019 report by Reclamation regarding the test sections in the District.
37.34	ALT	5.3.1 No Action Alternative <i>This alternative assumes that modernization of the rest of the District’s system, other than replacement of the flume, would not be reasonably certain to occur.</i> This assumption is not logical. There is no reason to believe that there wouldn’t be other opportunities to improve the AID canal system. It seems like a lot of effort is being placed on making the Piping Alternative and its timeframe look like the only possible solution to the seepage loss problem. <i>Since no water would be conserved or permanently allocated instream, the No Action Alternative would not achieve the Federal Objective to protect the environment.</i> There has been no expressed Federal mandate to achieve this objective. Without an expressly stated link of this proposed project to the Minimum Flow Requirement for the Deschutes by 2028 (which we cannot find), we can only assume that this project’s urgency is one of AID’s own creation, designed to take advantage of available Federal funding.	The No Action Alternative is the most probable future condition expected to occur in the absence of any of the study’s alternative plans (NRCS 2014). In the absence of PL 83-566 funding, AID would continue to operate and maintain its existing system in its current condition. See Section 5.3.1 of the Plan-EA for further discussion of the No Action Alternative. The Federal Objective was set forth in the Water Resources Development Act of 2007. See Section 2 of the Plan-EA for an explanation of the Federal Objective.
37.35	CONS	5.3.2 Piping Alternative <i>Construction of the Piping Alternative would occur over 7 years. Construction would be during the non-irrigation season (October to April), with construction beginning as early as the 2022 nonirrigation season.</i> We can only interpret this as the likelihood of dealing with 7-years of forced fall-winter construction on our property—consistent harassment of our pets and livestock, noise pollution, lack of privacy and constant right-of-way disputes.	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. The proposed project would be constructed in four phases. Construction of all the phases would be completed in 6 years.
37.36	CONS	<i>Construction of the Piping Alternative would include mobilization and staging of construction equipment, delivery of pipe to construction areas, excavation of trenches, construction of supports along 450 feet of the existing aerial flume, fusing of pipelines, placement of pipe, compaction of backfill, and restoration and reseeded of the disturbed areas. Pipe installation would require storage areas for pipe, construction equipment, and other materials. Areas that have been previously disturbed and are accessible through existing access routes would be used when possible.</i> This is an excessive burden placed on a small percentage of property owners to achieve goals that do not directly benefit them.	Please see Section 5.3.2 of the Plan-EA for updated construction details.
37.37	SAFE	<i>The project area would be accessed from AID’s existing maintenance roads. Existing maintenance roads may require some improvements for use during construction. Once the project is complete, fences would be installed across the maintenance road where it intersects public roads. Fences would be chain link with solar powered gates that would prohibit the public from accessing the maintenance road.</i> We find it disingenuous that installed fencing at public roadway intersections of AID’s canal maintenance road, ostensibly for	Thank you for your comment.

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		public safety, is a part of the proposed piping project and yet with the current open canal, which they characterize as a threat to human life, they have been unable to install updated, legible no-trespassing signs for over a decade. (see ADDENDUM 3).	
37.38	VEG	<i>Vegetation clearing before construction, vegetation and weed management during construction, and reseeded after construction of AID's ROW and easements would be completed according to AID's current vegetation management practices and NRCS's Oregon and Washington Guide for Conservation Seedings and Plantings (NRCS 2000). During construction, vegetation clearing would be minimized to the extent practicable. Trees would only be removed if there were no other alternative to access the construction site or they posed a safety threat to construction crews.</i> We have no faith that removal of vegetation (i.e. mature ponderosa pine) will be "minimized to the extent practicable" and can only assume that access to the construction site and ensuring the safety of construction crews will serve as license to remove any or all trees within the alleged AID right-of-way and so far undefined "construction site." We have identified 20 mature trees that we expect could be removed during the proposed project (see ADDENDUM 4).	Please see updated language in Section 6.6.2 of the Plan-EA regarding effects on trees. Prior to construction, the District would work with landowners to identify trees greater than 2 feet in diameter and avoid removal to the extent possible.
37.39	PURP	<i>The Piping Alternative contributes to the project purpose and need as follows:</i> <ul style="list-style-type: none"> • <i>Improve water conservation</i> • <i>Increase water delivery reliability to patrons</i> • <i>Enhance streamflow and habitat conditions for fish and aquatic species</i> We do not disagree with the above points but feel there are other alternatives that could achieve those same goals with less human, wildlife, vegetation and financial costs	Please see Section 5 of the Plan-EA regarding the formulation process used to develop alternatives and Appendix D.2 of the Plan-EA for the alternatives considered during the formulation phase.
37.4	SAFE	• <i>Improve public safety: After completion, the project would improve public safety along 12.2 miles of the Main Canal. All open canal in the project area would be converted to buried pipe. This would decrease the risk of drowning, flooding, and other serious accidents associated with the currently open canal</i> This is an alleged risk that currently isn't worth updating the No Trespassing signs for, apparently.	Thank you for your comment.
37.41	WAT	footnote 18: <i>The District anticipates that 100 percent of the project would be funded through PL 83-566 and other public or public-interest funding sources. If the District were to invest its own funds in the project, the District would pass an amount of conserved water in proportion to the amount of public and public-interest funding to NUID (i.e., if the project was funded with 90 percent public funding, then 90 percent of the conserved water would be passed to NUID). The District would not apply to create new water rights for out-of-stream uses</i> This footnote (page 50, Enhance Streamflow bullet point) is unclear and we can't find where the cited references are.	This footnote appears in Section 5.3.2 of the Plan-EA and has been updated. There are no references cited in or required for this footnote. Please refer to Appendix E-4 of the Plan-EA for more information on water rights, seepage, flow, and water savings.
37.42	ALT	Table 5-1 Summary and Comparison of Alternative Plans This comparative table appears to have been compiled by AID with the intention of promoting the piping alternative only. First the heading of this table is "Alternative Plans" and yet that line item is left blank. This is a rubber stamp list for the proposed piping project. Locally Preferred, Socially Preferred,	The format and requirements of the Summary and Comparison of Alternative Plans table is defined by the National Watershed Program Handbook 601.37E (NRCS 2014). See Section 5 of

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		Environmentally Preferred—we would argue that the No Action Alternative deserves a checkmark for each of those line items.	the Plan-EA for discussion of the selection of alternatives. The Summary and Comparison of Alternative Plans table includes only those alternatives that were brought forward for further consideration.
37.43	ALT	<p>6.2 Land Use 6.2.1 No Action (Future without Federal Investment) <i>The No Action Alternative would have no direct effect on land use within the project area. The Main Canal would continue to operate as an open system. Irrigated agriculture producers would continue to face increasing water supply uncertainty. Ecosystem services of water for irrigation would not be affected (Section 6.8.2)</i> Continuing to face increasing water supply uncertainty is not a land use—it’s mentioned here as yet another insertion of AID’s interest in piping the canal. Increasing water supply uncertainty will exist with the piping alternative as well—climate change is driving the water supply crisis and canal seepage exacerbates it. Reducing seepage through a variety of different lining methods could mitigate this loss.</p> <p>6.2.2 Piping Alternative <i>There would be no effect on land use under implementation of the Piping Alternative. Property ownership would not change, and there would be no change to existing land use within or adjacent to the project area. More reliable water delivery would support existing agricultural land uses. Ecosystem services of water for irrigation would be supported through the improvement of delivery infrastructure (Section 6.8.2)</i> The water delivery with the existing canal has not been problematically unreliable, and better managed routine maintenance could improve much of the systemic unreliability issues. Water flow rates have been reduced and stopped early due to a lack of water in our reservoirs. The system of conveyance is not the root problem. Piping does not solve reduced water in reservoirs.</p>	See Section 4.2.2 in the Plan-EA for a description of how land use within the project area is related to irrigation conveyance. Reducing seepage through a variety of different lining methods could mitigate this loss. Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered, including canal lining. Water delivery via the Main Canal is affected by many factors. Piping would eliminate canal failures due to sinkholes along the Main Canal. See Section 3.1.5 of Appendix D.1 in the Plan-EA for discussion and quantification of avoided infrastructure failure damages.
37.44	ALT	<p>6.3 Public Safety 6.3.1 No Action (Future without Federal Investment) <i>Under the No Action Alternative, the Main Canal would be left open and the drowning and flooding risk would remain. In some areas, the risk of drowning, flooding, and other serious accidents would increase as urban and suburban areas grow within the District.</i> Simply repeating this claim over and over does not make it true—with the proposed project area comprised of 99.2% private property there simply isn’t a “public” safety risk. If AID was concerned about the safety risk posed by the canal to private property owners they’d have engaged with them about the property owner’s perceived level of risk and collaborate with them as to how to mitigate that. There is no such effort and has not been. Again, if reducing the current risk isn’t important enough to post new No Trespassing signs at points of public ingress, then we have a hard time believing their projected piping project has much to do with increasing safety.</p> <p>6.3.2 Piping Alternative <i>During construction of the Piping Alternative, public safety would be affected by vehicle and heavy equipment traffic entering and leaving the project area. Construction traffic could interact with motor vehicles, pedestrians, and bicyclists traveling through farmlands and urban and suburban zones along U.S. Highway 97, as well as along county and community roads that intersect the project area. Standard safety</i></p>	See Section 4.3 in the Plan-EA for a discussion of the public safety risks that exist within AID and a list of accidents that have occurred in other irrigation districts in Central Oregon. Although the project crosses private property, the public can access the project area at road crossings and other access points. The proposed project would be constructed in four phases over the course of 6 years. Since each phase would take 2 to 3 years to complete, and best management practices would be followed, effects on public safety would be minor and short-term. See Figure 8-1 in the Plan-EA for a phase map and Table 8-1 for an updated, expected construction timeline.

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		<p><i>protocols and best management practices (BMPs) would be followed during construction to minimize any risk to public safety; therefore, only a minor, short-term effect on public safety is anticipated during construction.</i> This EA has described this as a 7-year long project. That doesn't sound like a minor, short-term effect to us.</p>	
37.45	VEG	<p>6.6 Vegetation 6.6.2 Piping Alternative <i>General Vegetation Construction of the Piping Alternative would involve trenching for pipe placement primarily in the existing canal, disturbance of lands adjacent to the canal for construction equipment access, and the use of existing ROW and easements for moving and staging construction equipment and materials. During construction, existing maintenance roads within the ROW and easements would provide access to the project area. Selection of construction areas adjacent to the canal would consider existing vegetation and avoid mature trees to the extent practicable. During construction within the project area, herbaceous, shrub, and woody vegetation along the canal and turnouts would be disturbed through activities such as clearing, crushing, and digging. After construction, the project area would be recontoured and planted with a seed mix of native grasses and forbs (Figure 6-1 and Figure 6-2). Planting would be done in consultation with NRCS. Vegetation within the ROW and easements would transition to entirely upland species. Some trees that are dependent upon the canal for water may not survive construction of the Piping Alternative. Prior experience with piping projects has shown that 70 to 80 percent of the well-established trees within the project area would survive after piping with active irrigation by the property owner (20 to 30 percent of the trees that do not normally survive in such a location without the canal did not survive after piping). We expect to lose over 20 mature ponderosa pine trees if the proposed piping project occurs (see ADDENDUM 4). We would expect that requiring AID to provide additional irrigation water and drip irrigation infrastructure to maintain the trees they specify in this situation would be reasonable. Overall, implementation of the Piping Alternative would have a minor, short-term effect on vegetation because disturbance would be localized and occur over a small proportion of the District. We consider the effect on our property to be not minor, and feel that AID is intentionally minimizing the negative effect on property owners where the main canal travels through their property.</i></p>	<p>Property owners can water trees and vegetation within their easement with water they have a legal right to, either irrigation water delivered by the District if they are a patron or water from a domestic source. Please see updated language in Section 6.6.2 of the Plan-EA describing effects on vegetation.</p>
37.46	VIS	<p>6.7 Visual Resources 6.7.2 Piping Alternative <i>Canal Project Area and Adjacent Lands Under the Piping Alternative, construction activities including use of heavy equipment and pipe laying would be visible to residents and motorists adjacent to the project area. In residential areas where the open canal is adjacent to the backyards of houses, construction activities would be temporarily pronounced but minimized by taking place during daytime hours and through other BMPs listed in Section 8.3. That AID would characterize a 7-year project in our "backyard" as temporarily pronounced but minimized is representative of their lack of concern for the property owner patrons they serve and a glimpse into how we can expect to be treated over the 7-years of this project, should it be approved. In areas where it would be necessary to clear trees, there would be a permanent decrease in the number and density of trees which would have a long term effect on the visual experience for property owners. The visual change for property owners was not monetized</i></p>	<p>Please see Section 5.3.2 of the Plan-EA for updated language regarding the construction timeline and the length of time required to construct each phase of the proposed project. Regarding the valuation of trees, please see the response to Comment ID 240.06.</p>

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		<p><i>due to insufficient data; further discussion can be found in Appendix D.1.1.4.3. Overall, the Piping Alternative would have a minor, long-term effect on visual resources because the effect would be localized, and the revegetated corridor would blend in with the existing landscape following revegetation.</i> We would like to see how this damage would be monetized. Perhaps the effect is considered minor when divided over all District patrons, most of whom are not on the main canal—locally the effect would be not minor.</p>	
37.47	CONS	<p>6.8.2 Piping Alternative Water Rights. <i>Following construction of each phase, AID would reduce its diversion by the amount of water saved (up to 10,526 acre-feet per year).</i> Would be interested to know more about project phasing over the 7-year duration of proposed project. We saw that our property falls into 3-year phase of construction—wouldn't the entire length of the canal access road be plowed every winter for access of travel along it for all years of the project?</p>	<p>Please see the response to Comment ID 37.44 for information regarding the construction timeline and phasing. No, AID would not plow its maintenance road after installation of the proposed project. The District does not currently plow the maintenance road either.</p>
37.48	WAT	<p><i>Following the completion of each phase, AID would work with OWRD and its partners to verify and measure all water savings prior to creating any instream water leases. Based on AID's historical practices, AID only diverts the water that patrons need. Following project implementation, the District's conveyance system would be more efficient and they would decrease their diversion rate proportionally to the amount of water being saved; therefore, any water that the District does not divert would remain in the Deschutes River and would be available for junior water right holders, including the Deschutes River itself.</i> Creating instream water leases sounds like there's a chance that the "saved" water might be repurposed somehow, rather than left in the Deschutes. This is very concerning. That this water would be available to "junior water rights holders" begs the question of what the point of this proposed endeavor is in the first place. If we bear an overly high burden for the sake of improving habitat within the Deschutes river corridor only to have these improvements wiped out by another water user, then this entire project is flawed. The process for "legally protecting" instream water by trading saved water to NUID strikes us as arcane and potentially unreliable—this swap-and-save arrangement between AID and NUID has not been adequately explained anywhere in this E.A.</p>	<p>Please see Section 6.8.2 in the Plan-EA for an updated discussion of water rights and instream protection.</p>
37.49	WETL	<p>6.10 Wetlands and Riparian Areas 6.10.1 No Action (Future without Federal Investment) <i>Under the No Action Alternative, wetland and riparian vegetation associated with the open irrigation canal would persist and, although the canal within the project area is mechanically managed to clear vegetation, seepage supporting wetland and riparian features adjacent to the canal would remain in its current condition</i> That the EA acknowledges the open canal supports wetland and riparian features in this passage contradicts its previous assertion (4.10.1) that due to the Districts clearing of vegetation that no riparian ecosystem exists.</p>	<p>Please see updated language in Section 4.10.1 of the Plan-EA related to riparian vegetation.</p>
37.5	WILD	<p>6.11 Wildlife Resources 6.11.2 Piping Alternative</p>	<p>Please see Section 6.11.2 of the Plan-EA for updated language.</p>

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		<p><i>The Main Canal is mechanically managed to clear vegetation; therefore, very little habitat for wildlife exists. During construction, terrestrial wildlife could experience noise disturbance due to heavy equipment operation, habitat removal due to tree cutting and other vegetation removal, or injury due to collision with construction equipment or habitat removal. The canal is located in agricultural areas where heavy equipment use is commonplace; therefore, most wildlife in the area are accustomed to noise and these disturbances are anticipated to be minor.</i></p> <p>Again, this characterization of the Districts management/ removal of vegetation is inaccurate and designed to minimize the negative impact of the proposed piping alternative. Heavy equipment use (the likes we'd see for this proposed project) is absolutely not commonplace.</p>	
37.51	WILD	<p><i>The District would follow USFWS guidelines to ensure minimal disturbance to bald or golden eagles nesting near the project area. The critical nesting period for bald and golden eagles is January 1 through August 31. We are interested to learn more about this, as bald eagles commonly roost in the large trees along the canal on our property.</i></p>	<p>USFWS maintains a database of known golden and bald eagle nesting sites (see Section 4.11.2 in Plan-EA). The Environmental Assessment document analyzes the effects of all phases of the project on wildlife at a population-level scale. Site-specific analysis would occur prior to the implementation of each project phase (see Section 1.4 in the Plan-EA). If you have bald eagles nesting or roosting near the canal on your property, please notify USFWS so that they can document the site. This information would then be included in the site-specific analysis. To contact USFWS about potential bald eagle nesting or roosting sites, please contact Emily Weidner at emily_weidner@fws.gov.</p>
37.52	WILD	<p><i>As the canal is piped and the removal of this water source occurs, the distribution patterns of wildlife within the project area could change. Although some species may use the canal as a water source, the canal can have an adverse effect on wildlife due to risk of drowning and the barrier that it creates to terrestrial movement (Beier et al. 2008). As this alternative would be implemented over time, ungulates and other terrestrial wildlife would have ample time to adjust and find new water sources. Furthermore, this alternative would have no effect on excavated water storage ponds served by the project, and these would still allow for summer drinking water and habitat for wildlife.</i></p> <p>The drowning risk to animals that use the canal as a water source is non-existent in my experience with the open canal on our property. The point is that the water source for animals will be removed and movement patterns of wildlife will change.</p>	<p>Communication with an ODFW biologist occurred in September 2021 regarding wildlife and canal interactions. Please see updated text in Section 6.11.2 of the Plan-EA, including additional text related to potential available water sources.</p>
37.53	WILD	<p><i>As this alternative would be implemented over time, ungulates and other terrestrial wildlife would have ample time to adjust and find new water sources. Furthermore, this alternative would have no effect on</i></p>	<p>Thank you for your comment. Coordination and conversation with ODFW and USFWS has not</p>

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		<p><i>excavated water storage ponds served by the project, and these would still allow for summer drinking water and habitat for wildlife.</i> Forcing wildlife to concentrate into un-piped portions of the proposed project area during construction and then forcing them to utilize existing irrigation ponds (both on private property) are not good solutions and may be more hazardous to wildlife than the existing open canal as many private irrigation reservoir ponds are both plastic-lined and steeply banked.</p>	<p>indicated that finding alternate sources of water would be more hazardous to wildlife than piping AID's Main Canal. See Section 6.11.2 in the Plan-EA for clarifying language about alternative water sources for wildlife, potential effects on wildlife in the winter, and wildlife distribution patterns.</p>
37.54	SAFE	<p>6.13.3.3 Public Safety <i>Past, current, and future piping projects in the Deschutes Basin all serve to improve public safety by eliminating the risk of drowning in open irrigation canals. Implementation of the proposed project would contribute to these cumulative effects by further reducing cumulative risk to public safety of open irrigation canals.</i> Again, repeating this over and over doesn't make it true</p>	<p>Thank you for your comment.</p>
37.55	VEG	<p>6.13.3.6 Vegetation <i>Agricultural activities, livestock grazing, vegetation control along roads, and urban and suburban development are responsible for most of the past and ongoing effects on vegetation in the project area and the region. The amount of vegetation that would be affected by the proposed action is small compared to the area affected by past and ongoing agricultural activities, livestock grazing, vegetation control along roads, and other utility corridors in the area. Current and reasonably foreseeable future actions also would have relatively small effects (irrigation infrastructure piping projects in other irrigation districts) or beneficial effects (HCP) on vegetation. Ongoing effects of past actions are not expected to change measurably from current conditions, and additional effects from the proposed action would be minor, resulting in a minor contribution to cumulative effects on vegetation.</i> Minimizing the negative impacts of this proposed piping project by comparing it to agricultural development, writ large, throughout the region over 100 years is an illogical and unfair comparison. Citing a Habitat Conservation Plan (HCP) at this point in the E.A. seems odd. We haven't seen one in this E.A., just a push to eliminate habitat in the project area.</p>	<p>Please see Section 6.13.2.2 of the Plan-EA for a description of what the Habitat Conservation Plan (HCP) encompasses. The HCP is mentioned in several places of the Plan-EA, including cumulative effects, because the HCP affects future instream water, and therefore vegetation and habitat, in and along the Deschutes River. Effects on federally listed species are also considered in the project's Biological Assessment developed for consultation with USFWS.</p>
37.56	VIS	<p>Visual Resources The visual quality of lands in the Deschutes Basin has changed due to past and present development, and these changes are expected to continue. The impact to visual resources from the Piping Alternative would be a minor, long-term effect that would be similar in character to the existing landscape and development; therefore, combined with other actions, the cumulative effects on visual resources would be low. 6.13.3.7 Visual Resources <i>The visual quality of lands in the Deschutes Basin has changed due to past and present development, and these changes are expected to continue. The impact to visual resources from the Piping Alternative would be a minor, long-term effect that would be similar in character to the existing landscape and development; therefore, combined with other actions, the cumulative effects on visual resources would be low.</i> The visual landscape of our property has not changed much in</p>	<p>Please see Appendix E.1 for the Threshold Intensity table, which provides information on how "minor" has been defined in the Plan-EA. Please see Section 6.7.2 in the Plan-EA for updated language regarding potential effects of the proposed project on visual resources.</p>

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		several decades, so this argument does not effectively apply here. For us, the visual impact of this proposed project is neither minor nor similar in character to the existing landscape and development as we experience it.	
37.57	WAT	6.13.3.8 Water Resources <i>The District and other Deschutes Basin irrigation districts have implemented various water conservation projects. These recent, past efforts have included piping existing irrigation canals on-farm conservation, water management changes, and changes to crop production, which have resulted in increased streamflow in the Deschutes River (Section 4.8.3) but decreased seepage into the groundwater table (Section 4.8.5).</i> This doesn't sound like anything that AID has done outside of some small piping projects. Any changes in water management that I'm aware of have only occurred due to limitations in reservoir volumes. We have never been approached or informed by AID about changes to crop production or on-farm conservation measures intended to reduce irrigation water usage. This sounds like a real effort to increase instream water stores, but doesn't sound like anything that AID has done or is doing to our knowledge.	Section 6.13.3.8 in the Plan-EA includes discussions regarding cumulative effects on water resources that result when the effects of an action are added to or interact with other effects in a particular place and within a particular time.
37.58	WAT	<i>In the next 50 years, if AID, SID, and COID's irrigation piping projects are implemented fully, groundwater levels are locally expected to decline 6.8 feet. 33 In conjunction with the effects of climate variability, AID's project would have a minor cumulative effect on local groundwater levels (Section 4.8.5; Gannett and Lite 2013). The effects of local groundwater reduction due to piping would be mitigated by increased streamflow during the non-irrigation season, some of which would likely infiltrate into the regional aquifer.</i> Seepage recharge to local groundwater (wells) and increased streamflow in winter that might infiltrate the regional aquifer are two completely different things. The former has a direct bearing on residents within the proposed project and surrounding areas. Canal piping is anecdotally linked to failure of residential wells in the region (https://www.bendsource.com/bend/drying-up/Content?oid=7129295), and identified as a source of reduced groundwater recharge by the USGS (Analysis of 1997–2008 Groundwater Level Changes in the Upper Deschutes Basin, Central Oregon). The argument that this groundwater recharge is “artificial,” and therefore inconsequential, discounts the reality and value of well water availability to residents.	Please see the response to Comment ID 433.38.
37.59	WAT	Appendix D, 1.1.1.4 Other Direct Costs, Groundwater Recharge Costs <i>Due to the 7-year construction period (and subsequent phasing of groundwater impacts) over the course of approximately 107 years (the life of the project plus the construction period), this annual drop represents a cumulative decreased average groundwater elevation in the central basin of approximately 2.6 feet. Such a drop in pumping elevation would have small effects on pumping costs but would not be expected to result in the need to drill deeper wells or replace pumps at a faster rate. An important caveat is that localized effects of the Piping Alternative on groundwater would differ throughout the central basin.</i> Our concern is for the residents who will bear the brunt of this localized effect on well depths. While the overall impact of reduced canal seepage is minimal	Please see the response to Comment ID 433.38.

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		when divided over the entire basin, the reality for well-dependent residents may be increased costs of deeper well drilling.	
37.6	WILD	6.13.3.11 Wildlife <i>Past and ongoing land use activities including agriculture, urban, and suburban development have affected wildlife and wildlife habitat in the Deschutes Basin starting in the late 1800s. Agricultural activities have substantially altered the habitat in the region by removing native vegetation in some areas and diverting streamflow. Livestock grazing occurs in much of the region around the project area and can result in the introduction and spread of weed species, the degradation of native habitat, and trampling of riparian and wetland areas.</i> To couch the current proposed action within the broader 120-year history of agricultural and urban development of the region as a way to minimize the negative impact of the project is to move backward. The development mistakes of the past are not a reason to condone the easily foreseen mistakes and expected mismanagement of this proposed action.	Thank you for your comment.
37.61	WILD	<i>Effects on wildlife due to the implementation of the proposed action and past, current, and future irrigation modernization projects would be localized and temporary, limited to disturbance during construction and on those wildlife that use open canals as a water source. Implementation of the proposed action and other irrigation modernization projects would cause wildlife to find other water sources as they did prior to installation of the canals.</i> The EA identifies that changes in movement patterns of wildlife will occur as animals search for new water sources, and yet there doesn't seem to be enough data about such migration to merit this dismissal of its potential negative effects—if deer and coyotes move west to find water from the Deschutes or other remaining open canals how will those movements occur, through town, across Highway 97? It seems to us these potential movement patterns would not be inconsequential and could affect safety.	Please see Section 6.11.2 in the Plan-EA for a discussion about water resources available to animals after piping would occur and about barriers to terrestrial migratory patterns. Clarifying language has been added to Sections 6.11.2, 6.11.2.1, and 6.11.2.2 of the Plan-EA regarding effects on wildlife resources.
37.62	COST	8.2 Measures to be Installed <i>In total, 88 turnouts would be upgraded to pressurized delivery systems. Modifications to each turnout would include a pressure relief valve, an appropriately sized tee from the mainline or lateral, a gear-actuated plug valve, a magnetic meter, a combination air and vacuum relief valve, and associated hardware and spool pipe segments (Crew 2017). Five energy dissipators would also be installed as part of the project.</i> There is very little detail provided about the piping produced pressurized system and how AID patrons could utilize it, and even more lack of specificity about the costs required to convert to irrigation from a pressurized source. Claims of cost savings or increased efficiency for irrigators by way of conversion to a pressurized system from source to pasture is exaggerated, as most AID patrons who are invested in ponds, pumps and pipe will continue using that infrastructure.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Benefits related to pressurization have been removed from the NEE. Pressurization benefits were removed because pressure benefits after piping would be small due to the removal of the flume from the project. Turnouts would connect to the existing patron delivery weir box; existing deliveries would function as they do now without any cost to the patron. If a patron has an existing, completely piped on-farm system and wishes to connect directly to the pipe turnout, they would need to be identified and evaluated prior to construction. If direct delivery was feasible, there would be no cost to the patron.

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			Turnout costs, which are incorporated into the project cost, include an appropriately sized tee from the mainline or lateral, a pressure-relief valve, a non-rising stem, a resilient-seat gate valve, a magnetic meter, a combination air and vacuum relief valve, another gate valve for throttling flows, and spool-pipe segments.
37.63	RIGHT	<p>8.4 Land Rights and Easements <i>To the extent possible, the Preferred Alternative and construction activities would be located entirely within the District's existing ROW and easements. The District's ROW was granted under the Carey Act and includes the flume and Main Canal. The District's ROW under the Carey Act extends 50 feet on each side of the canal from the toe of the bank for a total easement width of 100 feet plus the width of the canal. In places where the District has other easements separate from the Carey Act, the width of the easements is variable. Prior to construction, the District would assess the existing easements for the construction segment and work with adjacent landowners.</i></p> <p>This is the first we have heard of the Carey Act and have been AID patrons since 2010. This is the first we have seen anything in writing about an easement or right-of-way extending 50-feet from the canal bank. There is nothing specifying such an easement in the Arnold Irrigation District User Handbook (neither the one provided to us in 2010, nor in the current AID Handbook available online as a PDF). "Any officer, employee, ditchrider, or other authorized personnel of the District may enter upon the land of a water user of the District for inspection, maintenance, and regulation of ditches, pipelines, gates, pumps or other water works."—AID User Handbook</p> <p>One of the AID ditchriders casually mentioned the 50-foot R.O.W. a few weeks ago in conversation, but there has never been any discussion of any easement beyond that for the access road that borders the canal's western edge through our property. In approaching the Deschutes County community planning department for information about building a new barn we were told there was a 25' set-back from the canal. In searching on our own for any publicly available information about AID's Carey Act R.O.W. we found a 2003 surveyor's map of our property that lists our eastern property line as: "centerline of Arnold Canal, easement width varies from 40' to 50'."</p> <p>In a document (that had never been made known to us by AID) I found online, The Arnold Irrigation District Development Handbook, there is mention of federally granted easements: "The District has both federally and state-granted easements for its facilities, easement widths differ throughout the District. Federally granted easements within the District are maintained at 50 feet on each side of the</p>	Please see the response to Comment ID 163.01 related to piping canals within Carey Act rights-of-way. The District operates its infrastructure annually. The District maintains its right-of-way and easements as needed to continue to operate this infrastructure. Please see the response to Comment ID 236.01 regarding encroachment on the District's right-of-way and easement.

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		<p>facility. Because of the variability in their size, it is best to contact the District directly with regard to easement dimensions for any specific location.”—AID Development Handbook Again, this document was never provided to us by AID, nor was any mention ever made by AID employees that there was any easement other than the canal road through our property. In this same document it also says: “The District must maintain its easements, clear and unobstructed, for operations and maintenance of its facilities.” To our knowledge there has been no “maintenance” of their easement outside of traveling upon the canal road and doing occasional maintenance on the canal from said road. The only mention of any obstruction of easement was a discussion about AID’s desire to remove the footbridge that exists across the canal which has been on site for multiple owners at our location. We have multiple permanent structures on site within the alleged Carey Act R.O.W. and no mention has ever been made to us about them. (see ADDENDUM 5) Our point to all of this is that AID has not “maintained” any easement with the exception of its use of the canal road.</p>	
37.64	RIGHT	<p>Research regarding the Carey Act (from a Google search for: “Easements granted under the Carey Act”): Carey Act In August, 1894 Congress enacted the Carey Act, which formally granted the right to water conveyance easements across the public domain. The Act provides: Whenever, by priority of possession, rights to the use of water for mining, agriculture, manufacturing, or other purposes, have vested and accrued . . .the possessors and owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purposes herein specified is acknowledged and confirmed. . .The effect of the Carey Act was to grant an easement across federal land to the holder of any vested water right. Once the U.S. government conveyed the land, no new easements could be created through the Carey Act, but all existing ones were effectively “grandfathered.” These easements can be lost or forfeited by nonuse regardless of the intent of the appropriator. Smith v. Hawkins, 10 Cal. 122, 42 P. 453 (1895) Carey Act easements are typically among the older easements in a district’s portfolio, and the actual water delivery system may be correspondingly out of date. Districts may wish to modernize certain features of these older systems – for example, a district may wish to line an unlined ditch to prevent leakage. Courts outside of Oregon have occasionally held such action is not authorized under current law. See Krieger, 119 Cal. App. 3d 137 (1981). Case Law Update: Krieger v. PGE, 119 Cal. App. 3d 137 (1981). The holder of a Carey Act ditch easement wanted to line its irrigation ditch with gunnite to prevent leakage, but the court refused to allow it. The court held that the ditch had to be maintained in the condition it was in at the time the land was patented. The court reasoned that the easement holder could not now “expand” the scope of the easement by changing the nature of the ditch. Case Law Update: Hutcheson, et al. v. Tulare Irrigation District. (Cal. Super. 2000). The court in Hutcheson granted a preliminary injunction to prevent Tulare Irrigation District (TID) from going forward with any aspect of its project to line a canal unless the district had a fee simple interest in the property traversed by the canal. The nature of the plaintiffs’ enjoyment of the servitude</p>	Thank you for your comment.

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		<p>consisted of increased property value and aesthetic pleasure resulting from the canal. The easement granted to TID did not give it the right to line the canal, thereby expanding the easement and increasing the burden upon the servient estates. This issue has not been addressed in OregonAccess, Maintenance and other Secondary RightsIrrigation ditch owners typically need to enter onto the property across which the ditch flows to inspect it and, if necessary, repair it. Such rights are sometimes referred to as “secondary easements,” see Clesson S. Kinney, A Treatise on the Law of Irrigation and Water Rights 990 at 1750 (1912), and their nature and scope are generally matters of common law. The right and duty to maintain and repair an easement generally rests on the party receiving the benefit from the easement. Unless expressly forbidden, easements are presumed to include the right to enter the landowner’s property for purposes of inspection, maintenance and repair of the easement. Carson v. Gentner, 33 Or. 512, 52 P. 506 (1898). Such rights are subject to the limits discussed in the preceding section on “permitted uses.” [see below] The servient owner may be required to aid in the maintenance of the easement as well. Permitted Uses and Modification of UseAn easement does not convey the unlimited right to use the covered property. The rights of the easement owner are measured by the purpose and character of the easement. The use of the easement is limited to the use that is reasonably necessary and convenient for the intended purpose of the easement. Of course, the intended purpose is not always clear from the easement language itself. Interpreting an easement often requires an investigation of the intentions and circumstances of the parties at the time of the original grant or reservation. These interpretative problems are particularly difficult with irrigation easements since many of them are very old and the character of the areas where they exist has changed dramatically in recent years. Generally, unless the easement contains an express statement to the contrary, use of an easement may be adjusted to conform to newly arising needs that the parties reasonably should have expected to develop in the natural use of the land under the easement. This principle is limited, however, by the rule that an easement owner may not materially increase the burden or impose new burdens on the underlying landowner. Balancing these concerns is not always easy. In sum, all the circumstances surrounding the creation of an easement will be examined before a variation will be permitted. Technological and economic changes may well provide a basis for enlarging permitted uses, but irrigation districts should carefully analyze the situation before taking any action.</p>	
37.65	GEN	<p>8.7.1 Framework for Carrying out the Plan <i>No cost-shared, on-farm measures are involved with this project; therefore, the responsibilities of individual participants do not need to be discussed.</i> This we find hard to believe, when it’s all said and done.</p>	Thank you for your comment.
37.66	COST	<p>8.7.6 Financing <i>NRCS would provide 65 percent of the total project cost for the Preferred Alternative through PL 83-566. The District is responsible for the remaining 35 percent of the costs, including funds that are not eligible under the National Watershed Program (project administration and technical</i></p>	The District would strive to fully fund the match funding through grants to the extent possible.

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		<p><i>assistance</i>).It is not clear to us how the District will finance the remaining 35 percent of costs without somehow passing the cost on to patrons. <i>The required match funding would be expected to be provided through a mix of grants, loans, and patron assessments</i>It’s the patron assessments have us concerned. <i>The District does not anticipate changing per acre annual rates or the overall base assessment fee because of any capital improvement project that is fully funded through grants</i>No matter if the sentence doesn’t completely make sense—not anticipating raising rates, and not raising rates are two completely different things. The project is not fully funded by grants. Just above, the EA states that the required match funding sources would also include loans and patron assessments, and loan repayment funds have to come from somewhere.</p>	<p>Clarifying language has been added to Section 8.7.6 of the Plan-EA.</p>
37.67	COST	<p><i>NRCS reserves the authority and right to discontinue or reduce program benefits based on changes in agency priorities, funding availability, or the failure of AID to fulfill the provisions of their agreement.</i>This does not strike us as a guaranteed funds kind of statement. Assuming this proposed project moves forward and NRCS funding evaporates for any number of different reasons, who is left holding the bag for AID’s debts?< comment contains many pictures of property, a video of wildlife, and link to paper referenced in comments ></p>	<p>The District would not move forward with construction of a project phase until federal and match funding for that phase had been secured. Clarifying language has been added to Section 8.7.6 of the Plan-EA.</p>
38.01	GEN	<p>My husband and I are homeowners living at [ADDRESS]. Our property includes the seasonal canal in question. We have lived at this address for the past 10 years and enjoy the canal daily as a source for viewing wildlife, quiet meditation, and a water feature that supports the life of a multitude of forest creatures.</p>	<p>Thank you for your comment. Please see Sections 6.7 and 6.11 of the Plan-EA regarding effects on visual resources and wildlife.</p>
38.02	ALT	<p>For instance, there is a sizable cost to this proposed project. Has anyone considered using that money to assist farmers along the canal in securing irrigation systems that waste less water? Everytime I drive by a working farm, I see huge irrigation sprinklers where water sprays and evaporates immediately. As a descendant of North Dakota and California farming, I can tell you that there are incredible projects being proposed to reduce the amount of water waste in those states. This hasn't even been considered by the Arnold proposal.</p>	<p>On-farm efficiency upgrades were considered during the formulation of alternatives. Please see Appendix D.2 for discussion of why this alternative was eliminated from further evaluation in the Plan-EA.</p>
38.03	VEG	<p>In terms of how the groundwater will be affected, the impact to the trees on our property will be severe, to say nothing of the land that will be removed along our property line in order to make the piping a reality. In an area that has experienced considerable drought, I would think that trees that are not properly hydrated would be of particular concern to our fire board.</p>	<p>Please see Section 6.2.2 of the Plan-EA regarding effects on property ownership and Section 6.6.2 regarding effects on trees. Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA.</p>
38.04	PUB	<p>I attended the recent Zoom meeting where the planned tubing was discussed. While the presenters appeared knowledgeable and helpful, in truth they presented few actual facts or cited studies that went into any depth as to the impact that this tubing would have on the environment. The proposal seems like a plan that has been speedily put forth with little regard to the actual impact on the wildlife, property values, and lifestyle of the residents who live in the area. So what am I proposing? We need time,</p>	<p>Please see Section 6 of the Plan-EA for discussions of the effects the proposed project would have on an array of different resources. Please see Sections 3 and 7 of the Plan-EA for more information regarding</p>

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		<p>thorough study and public meetings where we can show our support for the canal system that exists. There are ways for this to be a win-win situation for all of us. Expediency is never the right answer. We deserve to be heard, and the Zoom meeting at the end of June was a very poor substitute. Thank you for your consideration.</p>	<p>public participation, coordination, and consultation that have occurred during the NEPA process.</p>
39.01	GEN	<p>We are fee simple property owners at [ADDRESS]. Our property is a [NUMBER] acre parcel with 546 feet abutting the Deschutes River and an elevated irrigation flume maintained by the Arnold Irrigation District (AID). The property is also one of the largest single parcels in Deschutes River Woods (Exhibit A). We purchased the property in 1999 and constructed a home in 2004. We enjoy great Deschutes River views. The Draft Plan-EA (The Report) states that there are no areas of controversy and no issues to resolve. These statements are incorrect, as there are significant environmental and quality of life impacts to us, other property owners and the general public.</p>	<p>The OMB Fact Sheet was drafted based on requirements of the NRCS 2015 National Watershed Program Handbook, which requires that "Areas of Controversy" be included. The OMB Fact Sheet has been updated to identify disputed issues that have been raised by agencies or stakeholders, such as property value, loss of trees, groundwater, and canal lining as "areas of controversy."</p>
39.02	RIGHT	<p>Our property purchase was subject to an easement in favor of AID to operate and maintain irrigation ditches and canals (flume?). We assume that an easement document exists, however neither our title insurance company nor AID has been able to provide a copy. The Report cites right of way granted by the Carey Desert Land Act of 1894, but we believe the act pertains to right of way on public land and not easements on private land. We are not attorneys, but we think it is essential that The Report provide the specific legal authority AID has on private homeowner lands.</p>	<p>The District's ROW under the Carey Act covers the extent of the proposed project (e.g., the Main Canal) and pertains to all lands the District's infrastructure crosses, including both public and privately owned lands. The Carey Act refers to federal land because at the time irrigation infrastructure in the West was being built, it was on federal land; however, once the U.S. government transferred the federal land to private owners, the easement that arose from the Carey Act remained appurtenant to the land that was transferred. Please see Section 8.4 of the Plan-EA for further discussion of land rights and easements. A map of the District's Carey Act ROW has been added to Appendix C of the Plan-EA.</p>
39.03	SAFE	<p>We strongly object to the removal of the historic flume structure. Replacing it with a buried piping system and road will negatively impact our peaceful enjoyment of the Deschutes River and the adjacent forest. It will also create a security risk by facilitating trespassing.</p>	<p>Thank you for your comment. The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
39.04	VEG	<p>The proposed piping plan calls for the removal of the flume and the installation of a buried pipe to be covered with tons of engineered backfill estimated at a minimum of 3-4 feet above the pipe. A road meeting Deschutes county standards is to be constructed and maintained on the top of this buried pipe. In order to accomplish this huge task, the required fill and road will undermine or kill many mature</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>

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		Ponderosa Pine and White Fir trees that exist along the flume. The Report makes no effort to address these impacts or to describe what the project will look like.	
39.05	SYS	Regarding visual resources, Section 4.7.2 in The Report states that: "Below the diversion, the flume is elevated above the ground for the first 450 feet (Figure 4-4). The remaining sections of the flume sit o the ground surface." This is completely false; it does not sit on the ground. The flume support structure is on the ground, but the flume pipe is elevated. At our property the bottom of the metal pipe sections are at least 2 feet above the ground. See Exhibit B for an illustration. Also, other stretches of the flume are considerably higher above ground. Nowhere does the flume pipe sit on the ground. This omission in The Report will create a major complication as tons of base gravel will be needed just to bring the ground surface to the bottom of the replacement flume pipe. This fact may significantly impact construction and environmental mitigation costs, and could render the project infeasible. The Report fails to include any preliminary designs of burying the pipe along the path of the existing flume structure. While it is easy to envision a canal piping, it is difficult for us to imagine a huge dirt mound wedged between two steep grades, trees and rim rock. The Report only refers to an engineering analysis performed in 1995 that identified many significant challenges with the current flume. That was 26 years ago, and there now may be newer technologies and materials to consider for maintenance and repair. Unfortunately, The Report did not include amore current independent, professional engineering analysis of the flume structure nor did it include a copy of the 1995 report for public review.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
39.06	RIGH T	The Report acknowledges the Federal Wild and Scenic Waterways Act (enacted 1968), the Oregon Scenic Waterways Act (OAR 736-040 dated 1970), and the Landscape Management Combining-LM Zone Overlay, however The Report fails to acknowledge the Conservation Easement dated August 30, 2004 recorded on our property. This omission is important, as the easement prohibits the downing of trees within a specific area on our property except those that are dead or diseased. The potential tree loss caused by the project may constitute waste on our land.	The District's federal Carey Act ROW would be superior to any conservation easements that were established at a later date. The Plan-EA considers only those easements and ROWs held by the District for the infrastructure that are included in the proposed action. Other easements that landowners have with other entities on their property were not considered because they are outside the authority of PL 83-566 and therefore outside the scope of the Plan-EA.
39.07	PROP	We are not opposed to seeking ways of conserving our water resources, protecting our fish and wildlife, and supplying our farmers and ranchers with irrigation. However, we are admantly opposed to a piping plan that does not address the adverse impacts on our peaceful enjoyment of our property. No assessment of the impact on property values was conducted. The mere thought of an elevated gravel road running through our river view peroperty within 30 feet of our home is disturbing, unconscionable, and completely unfair. Another omission in The Report is evident in Appendix D: Change in Aesthetics and Associated Property Values. This section does not address the elevated flume at all. It only mentions the	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.

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		canals. It states that property owners "may experience adverse effects on property values and quality of life". The potential aesthetic cost to the affected residential landowners was not quantified.	
39.08	RIGHT	It is significant to note that the easement enjoyed by AID on our property is approximately 54,600 square feet in area. The water that is transported through that easement earns income for AID. Yet, AID does not pay any compensation for their easement use nor do they pay property taxes that include fire protection by Rural Fire District #2. We are paying for their fire protection. We understand that this use may be legally permitted, but now it doesn't seem equitable and fair given the adverse impacts this proposed project would have on our property.	Thank you for your comment.
39.09	PUB	Our property's view of the flume is possibly one of the best in Deschutes River Woods. As one of the largest residential parcels adjacent to the flume, we find it depolarable that the individuals and organizations responsible for preparing this report did not contact us personally. It is evident that The Report contains errors, omissions, and it fails to address environmental mitigation issues that we have easily identified. This seems to indicate a lack of direct research and knowledge of property owner impacts. If The Report's intention was not to address these impacts on affected property owners, then the report did an excellent job.	<p>For the public comment period that began June 8, 2021, postcards were mailed to AID patrons and property owners adjacent to the Main Canal and flume with information about the comment period, including the project website, oregonwatershedplans.org.</p> <p>Notification of the public meeting and proposed project were published in <i>The Bulletin</i>, online at the NRCS public notice website, and at oregonwatershedplans.org. Notification by email was sent to anyone who provided their email during the public scoping period in 2019, attended the June 23, 2021, public meeting, or otherwise provided their email at oregonwatershedplans.org. Please see Sections 3 and 7 of the Plan-EA for more information regarding public participation that occurred during the planning process.</p>
39.1	SYS	The Report process spent countless hours and financial resources collecting and analyzing the water issues, but it spent very little on the flume structure itself. The report simply concludes that it's old and needs replacement. The Report says demolish the flume, lay a pipe, and cover with engineered backfill and a road. How is this going to be accomplished and what will it look like? To top things off, The Report states that the flume is the most important section in the proposed project as it supplies all the water to the canal system.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
39.11	PUB	In order for the general public and the organizations responsible for safeguarding our scenic waterways to understand the true impacts of this project, we request that you extend the comment period time to allow a re-evaluation of the flume replacement alternatives and include the following actions: 1. The	The public comment period for the Draft Plan-EA was set to conclude on July 8, 2021 and was extended to July 23, 2021. This extension was made in

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		Report should correct its characterization of the existing flume pipe being on the ground 450 feet after the diversion.	response to a public request for additional review time. The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
39.12	CONS	2. The Report needs to address the specific areas along the flume's right of way that may be adversely impacted by the construction and loss of trees.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
39.13	RIGHT	3. The Report should acknowledge how the project will comply with the Conservation Easements where applicable.	Please see the response to Comment ID 39.06.
39.14	SOIL	4. The Report should address the mitigation for potential soil erosion, and long term visual impacts of a huge earthen mound with a road to be constructed between steep terrain, trees, and rim rock.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
39.15	SAFE	5. The Report needs to address the security impact the proposed road would have on promoting easy trespassing (an existing problem along the flume).	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 32.03 for information about people walking along AID's maintenance road.
39.16	PROP	6. The Report needs to address the change in aesthetics and associated property values of the owners abutting the flume.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.
39.17	SYS	7. The Report should include a preliminary construction design and cost analysis of the flume replacement project by an independent, professional engineer. This should be made available for public review, so we can better understand the physical and environmental impacts.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
39.18	RIGHT	8. The Report needs to provide the individual easement documents on specific private property to be impacted by the proposed project construction. (Comment includes map of tax lots in Deschutes River Woods and drawing of cross-section of the flume at the commenter's property.)	Per the Council of Environmental Quality, an Environmental Assessment is meant to be a "concise public document which has three defined functions. (1) It briefly provides sufficient evidence and analysis for determining whether to prepare an EIS; (2) it aids an agency's compliance with NEPA when no EIS is necessary, i.e., it helps to identify better alternatives and mitigation measures; and (3) it facilitates

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			<p>preparation of an EIS when one is necessary. Section 1508.9(a). Since the EA is a concise document, it should not contain long descriptions or detailed data which the agency may have gathered. Rather, it should contain a brief discussion of the need for the proposal, alternatives to the proposal, the environmental consequences of the proposed action and alternatives, and a list of agencies and persons consulted. Section 1508.9(b)." Please see Appendix C for a map documenting the District's Carey Act right-of-way underlying the proposed project infrastructure. Please contact the District directly for specific easement information.</p> <p>Reference: Memorandum to Agencies: Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations. (1986). Council on Environmental Quality Executive Office of the President. energy.gov/sites/prod/files/2018/06/f53/G-CEQ-40Questions.pdf</p>
40.01	PUB	Thank you for extending the public comment period to allow more interested people to comment. We mailed and emailed our comments on July 3, 2021. When might we learn your response to our noted errors, omissions, and issues not addressed in the draft report? In the meantime, we would like to receive a copy of the easement recorded on our property at [ADDRESS]. Our title insurance company said you maintained easement documents.	Please see the response to Comment ID 39.18 regarding including individual landowner's easements in the Plan-EA. Responses to comments received during the public comment period have been included in Appendix A of the Plan-EA.
41.01	PUB	As the legal owners of the property located _____ Bend, Oregon, we are writing to formally register our strong objection to Arnold Irrigation District's (AID's) proposed plan to replace its existing flume with a pipe "buried above the existing landscape elevation". (The existing flume is partially located on our property.) By this letter, we also formally request an extension of the public comment period until such time as the questions and concerns listed herein, as well as those submitted by other concerned parties, have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID's responses.	Please see the response to Comment ID 39.11. The flume was removed from the proposed action.
41.02	WILD	If implemented, AID's proposed plan to replace the flume with a buried pipe would permanently deface the scenic natural beauty of our property and of approximately one mile of the Upper Deschutes River	The flume has been removed from the project. Please see the response to Comment ID 12.01. See

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		<p>corridor. This corridor, including the location of the proposed flume replacement, is designated under the federal Wild and Scenic River Act due to its “Outstandingly Remarkable Values: Geologic, Fishery, Vegetation, Wildlife, Cultural, Scenic and Recreation.” It is also designated as an Oregon State Scenic Waterway. The corridor is legally documented, preserved and protected under the 1996 Upper Deschutes Wild and Scenic River and State Scenic Waterways Comprehensive Management Plan. The existing flume is a rustic wood structure located in an area of stunning natural beauty enjoyed each year by thousands of hikers, kayakers, photographers, fishermen, picnickers, tourists and homeowners. It is unconscionable that AID would for its own business purposes propose a replacement plan that would disfigure this treasured section of river and willfully disregard the interests of so many of its fellow citizens. For many Central Oregonians, the Deschutes River represents the heart and soul of our community and underlies the unique character for which Bend is known. We are not opposed to AID’s general objective of improving its infrastructure and reducing water loss from seepage; we are however strongly opposed to AID’s plan to replace the existing one mile long flume with a pipe “buried” above the existing landscape elevation and topped with a service road. The flume runs adjacent to the river and AID’s proposed replacement would not only clash violently with the natural environment but would be highly visible to everyone wishing to enjoy the – from nearly every vantage point: the Deschutes River hiking trail, the river itself, the picnic area, and the river rim. AID’s proposal for replacing the flume is just one part of a much larger project described in its document, Arnold Irrigation District Infrastructure Modernization Project - Draft Watershed Plan- Environmental Assessment, dated June 8, 2021. Section 5.3.2 of this document states: The first 450 feet of the existing aerial flume below the District’s diversion would be removed and replaced by pipe supports that would hold an elevated pipe. The new supports and pipe would be approximately the same height as the existing aerial flume. The remaining 4,945 feet of flume would be removed, and a pipe would be buried. Because this section of pipe must be level with the aerial section, the pipe would be buried above the existing landscape elevation and would hug the hillside. The buried pipe would be covered with a minimum of 3 to 4 feet of engineered backfill. A new maintenance road would be built on top of the buried pipe. (Underline my own.) What this would mean in practice is that a new raised roadway would be constructed along approximately one mile of one of the most scenic portions of the Deschutes River. The road would sit atop an 8 to 19 foot high bed of “engineered backfill”, (based on the 1 to 10 foot height of the existing flume above the ground, plus the 4 to 5 foot diameter of the pipe, plus another 3 to 4 feet of fill on top of the pipe). This would likely require thousands of dump truck loads of “fill” to be trucked in and built up on top of the present terrain. From any point lower than the road surface, (hiking trail, river, picnic area, etc.), one would see the massive sloped side of the artificial “burial mound” facing out toward the river. From any point higher, one would look down on an elevated maintenance road snaking along the edge of the scenic river corridor.</p>	<p>Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.</p>

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41.03	RIGH T	<p>AID’s Plan ignores or fails to adequately address many critical questions and concerns about its proposed flume replacement including: AID’s legal authority to conduct such a massive construction project on other’s private property; visual appearance of the completed project; transparency with regulatory agencies; environmental impact; and public notification and disclosure. It is impossible for regulatory agencies, property owners, and concerned citizens to fully evaluate and comment on the proposed Plan until these questions and concerns are fully and accurately addressed. We therefore request a thorough written response to each of the following questions and concerns as well as to those submitted by other concerned parties. 1. AID claims to have legal easements on all privately owned property on which its existing flume and canal system is located and that these easements grant it legal authority to replace the flume and canal system with a buried pipe on these same privately owned properties. We have requested several times from AID a copy of the specific easement that describes AID’s rights, responsibilities, and limitations on our specific property but have so far received only a general referral to the Right of Way Act of 1891 and the Cary Act of 1894, (both of which concern use of public lands and do not mention easements on private property). If there is a legitimate legal question as to AID’s right to operate its business on privately owned properties belonging to other parties, this question must be resolved before proceeding with further discussion of infrastructure improvement. To resolve the question of easements once and for all, we request that AID provide each private property owner on whose property AID’s flume and canal system currently exists, or whose property would be affected by the proposed flume and canal piping project, with the following documentation: a. Provide documentation proving that AID actually does have a current legal easement to use each of these specific privately owned properties. This documentation should show the original granting and terms of each easement and the legal transfer of the easement to the current property owner.b. Provide documentation proving that if these easements were originally granted as a Right Of Way on public lands and those lands later became privately owned properties that the Right of Way was legally converted into an easement allowing AID to use the now private land.c. If the easements are proven to be legal, we request that AID provide to each affected property owner documentation showing the specific terms, conditions, and limitations of their particular easement, including: the length of the easement period, (if perpetual, where is this stated and what happens if AID goes out of business); the limitations of the easement, (what does it allow AID to do on privately owned property and what does it prohibit AID from doing); and does the easement specifically grant AID the right to use privately owned property with no monetary compensation to the property owner.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. For information about the Carey Act, please see the response to Comment ID 39.02. For discussion about individual easement documents, please see the response to Comment ID 39.18.</p>
41.04	PUB	<p>2. It is imperative that all relevant regulatory and management agencies and all affected private property owners be notified of AID’s proposed Plan because each will be directly and significantly impacted by the Plan. Some of these parties are still unaware of AID’s proposed plan. To ensure that all concerned</p>	<p>For the public comment period that began June 8, 2021, postcards were mailed to AID patrons and property owners adjacent to the Main Canal and flume with information about the public meeting</p>

Comment ID	Topic Code	Comment	Response
		parties are informed of the Plan and have the opportunity to comment on it during the public comment period, we request that each of these parties be notified by registered mail.	and the comment period, including the project website, oregonwatershedplans.org . Please see the response to Comment ID 1.01 for more information regarding public participation. Please see Section 7 of the Plan-EA and Appendix E.11 for documentation of consultation and coordination that occurred with regulatory agencies.
41.05	SYS	<p>3. For regulatory and management agencies with responsibility for the Upper Deschutes River Corridor, affected private property owners, and the general public to visualize and fully comprehend the aesthetic impact of AID’s plan to replace the flume with a pipe “buried above the existing landscape elevation”, it is essential that AID prepare a detailed written description of what the proposed flume replacement would actually look like when completed, including drawings and/ or other visual representations of the completed project as viewed from multiple points along the river, the hiking trail, the picnic area, and the river rim. We request that such a written description be prepared and made accessible on-line to all parties listed above.</p> <p>a. After the written description specified above has been provided to and reviewed by all relevant regulatory and management agencies, we request that a copy of their written responses, including all written approvals and disapprovals, be made accessible on-line to all parties listed above.</p>	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
41.06	VEG	<p>4. Many mature trees would necessarily be removed or killed by AID’s proposed plan to replace the flume with a buried pipe. This would dramatically affect the scenic beauty and ecology of the Deschutes River corridor. A. What are the average and maximum distances on each side of the proposed roadway where all existing trees would be removed? B. What is the total estimated number of trees larger than 3 inches in diameter that would be removed or killed by the project? C. Will AID replant native trees to replace those removed and killed? If so, will this be done on a tree for tree basis?</p>	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
41.07	WILD	<p>5. The proposed flume replacement would require a lengthy and massive construction project using heavy equipment in a fragile ecological environment used by osprey for annual nesting. The osprey is a protected species. What measures would AID employ to ensure this species is not harmed by the construction?</p>	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
41.08	SYS	<p>6. The proposed flume replacement calls for a 4 to 5 foot pipe to be buried in “engineered backfill”. This backfill would be clearly visible from most vantage points and would dramatically impact the scenic beauty and ecology of the Deschutes River corridor. A. What would the “engineered backfill” consist of and what would it look like visually? B. What would be the slope and maximum height of the backfill on the side facing the river? C. Would native trees be planted on the sloped side of the backfill facing the river? D. What measures would prevent erosion of the sloped sides of the backfill and what would these measures look like visually? E. What measures would AID employ to ensure the backfill material and any</p>	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

Comment ID	Topic Code	Comment	Response
		<p>topsoil used are free of noxious and invasive seeds? F. Is it AID’s intention to completely fill in the area between the road bed and the adjacent terrain on the inland side of the road so that no low areas are created which would be subject to pooling? G. If the answer to Question (f) is yes, this would require large amounts of “fill” material that would encroach far inland onto private property in some areas. Has AID received written permission for this encroachment? And how will AID compensate the property owner’s for this encroachment? H. If the answer to Question (f) is no, what measures would AID employ to prevent pooling on the inland side of the backfill and what would these measures look like visually?</p>	
41.09	SYS	<p>7. The proposed flume replacement calls for a “maintenance road” to be constructed on top of the burial mound and run along the entire length of the buried pipe. This road would likely sit approximately 8 to 19 feet higher than the current terrain and would therefore be clearly visible from most vantage points around both sides of the river rim. The proposed road would be highly detrimental to the scenic beauty and ecology of the Deschutes River corridor. A. How wide would the “maintenance road” be? B. How wide would the entire “flat” area on top of the burial mound be, (including road, shoulders, and adjacent ground)? C. How would the road and its shoulders be surfaced? (asphalt, gravel, dirt, etc.)</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
41.10	PROP	<p>8. Many homeowners on both sides of the river have selected and purchased their property primarily, if not solely, for the scenic beauty of the Deschutes River Corridor and this natural beauty is a major factor in the aesthetic and monetary value of their property. Replacing the flume with a buried pipe and elevated roadway would significantly detract from both the aesthetic and monetary value of their property. a. Does AID intend to compensate these homeowners for the property devaluation it causes? b. If so, how will the dollar amount of the devaluation be calculated and how will it be paid?</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.</p>
41.11	ALT	<p>9. According to AID’s Plan, the primary reasons for replacing the existing flume with a buried pipe are that it would reduce AID’s maintenance costs and that it would need to be replaced in 15 to 20 years anyway due to its age. The estimate of its remaining life appears to be based on a 1995 “Steele” engineering report; however a copy of this report is not included in AID’s Plan. ALL outdoor structures will deteriorate over time unless properly maintained. However, if well constructed and properly maintained, most structures will last hundreds of years and we earnestly request that AID give serious consideration to this option. The cost of maintenance is simply a cost of doing business and in our opinion is not justification for inflicting permanent damage on the irreplaceable natural beauty of the Deschutes River corridor. However, if for some reason the preservation and maintenance of the existing flume is not feasible, we respectfully request that AID propose an alternative that would not harm the Deschutes River corridor and those who love it.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 3.1.4 of Appendix D.1 of the Plan-EA for updated language regarding how operation and maintenance costs would change.</p>

Comment ID	Topic Code	Comment	Response
41.12	PUB	We hereby request that the public comment period be extended until all of the above questions and concerns, as well as those submitted by other concerned parties, have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID's responses.	Please see the response to Comment ID 39.11.
42.01	PUB	To Whom It May Concern.It has come to my attention that many property owners whose property is affected by AID's piping plan, including many with AID easements, were completely unaware of the June 23 Zoom and were completely unaware that the AID plan even exists! For this reason, AID must postpone its July 8 deadline for public comments and then notify ALL affected property owners about the proposed Plan and give them sufficient opportunity to respond. Notification should be done in a manner that ensures successful communication, such as registered mail.	Please see the responses to Comment IDs 39.09 and 39.11.
43.01	PROP	How about listening to the people! It is our land you are destroying, NOT YOURS! Our land values will go down, are you going to compensate us? Probably not.	Please see the response to Comment ID 218.13. Please see Section 8.4 of the Plan-EA for more information.
43.02	WILD	What about the wildlife that depends on the water during the summer? Surely there will be a decrease in wildlife population.	Please see Section 6.11.2 of the Plan-EA.
43.03	ALT	The canal has been here for over 100 years and now you decide that it needs to be piped because of seepage and evaporation. A BTL liner will take care of seepage; evaporation will probably be negligible.	Please see Section 2 of the Plan-EA for information about the purpose and need of the project. Canal lining was explored as an alternative to piping. See Section 5.2 of the Plan-EA for an updated description of this alternative.
43.04	ALT	Cost of piping- millions! Is this money coming out of your bank account? Trace it back far enough and you will find that it is taxpayer money. This is a perfect example of governmental waste. AID has managed this long without piping; surely with good management you can leave the canal as it is - open, but with a liner.	The proposed project would be funded through a mix of PL 83-566 federal funding and match funding secured by AID. See Section 8.7.7 of the Plan-EA for more information. Canal lining was explored as an alternative to piping. See Section 5.2 of the Plan-EA for an updated description of this alternative.
44.01	SAFE	I would question several points that were made during this zoom meeting.~ This canal poses no threat to the safety of children in the neighborhood. You have no supporting data to state otherwise. I think it might have the opposite effect, that is, to provide a place for family to walk where there is no traffic.	Please see Section 4.3 of the Plan-EA for a discussion of the current risks to public safety.
44.02	PROP	~ I do not believe your position on property devaluation. I think you have skewed those numbers to minimize the impact on property owners. ~ I do not have the data but I wonder, considering the above issues, if your numbers on piping vs lining are correct.	Please see the response to Comment ID 218.13 regarding property value. The cost and description of the Canal Lining Alternative have been updated; please see Section 5.2 of the Plan-EA and Appendix D.3.

Comment ID	Topic Code	Comment	Response
44.03	ALT	~ I see no reason why a fair compromise could not be reached IE: lining where it effects property owners and piping where it does not.	In response to public comments, the District and NRCS considered a mix of open, lined canal, and piped sections along the Main Canal as an alternative. Please see Appendix D.2 of the Plan-EA for more information about a mix of lined and piped sections and why it was ultimately eliminated from further analysis.
45.01	SAFE	The “public safety” argument in support of the AID piping project was repeatedly mentioned at the Infrastructure Modernization Project public meeting last month. Not only does the canal not pose a threat to public safety, piping it will.No one has ever drowned in the Arnold canal. The odds of someone losing their life in the future are slim to none (as cited in your own report: “expected number of deaths from the existing AID open canal over the next 100 years is .18 persons.”)The recent sinkhole was cited as a public safety concern (in an excitedly ominous, manipulative tone by the paid spokesperson from the Farmer’s Conservation Alliance.) No one died or got hurt because of the sinkhole. The canal pipe WILL, however, create a trespasser superhighway through the backyards that lie along the canal. Break-ins and suspicious activity are on the rise in south Bend;	Please see Section 4.3 of the Plan-EA for a discussion of the current risks to public safety. Please see the response to Comment ID 32.03 regarding people walking on AID's maintenance road.
45.02	SYS	the piped-over canal will provide easy criminal access through the fields and trees behind our homes. Hideous chain link fencing and gates were mentioned in the meeting as a deterrent. This is not even legal on private land. Where will this fencing be installed? The pipe over the Arnold Canal poses the real safety hazard—not the open water.	No fences would be installed as part of the project. Please see updated text in Section 5.3.2 of the Plan-EA. Please see the response to Comment ID 32.03 regarding people walking on AID's maintenance road.
46.01	PUB	I Am writing you over my concerns for our property and our home.After attending the meeting that was held on Zoom last month, I have come to the conclusion that long before you even held such meetings, you had chosen do as you please in regards to this Canal issue, this meeting was just a formality. You actually had no intention to 'hear' our concerns, or to understand our feelings. Is there not one of you that has any compassion for the damage you will be doing overall?All that you will be doing is causing more pain and stress in what is already a difficult world. You have the ability to leave our homes and property intact, it is my hope that you will consider the damage you will causing and change your plan to something we all can agree with. I do not want you on my property, I will stand with my neighbors against this awful plan.Sincerely, a very concerned home owner~	Please see the response to Comment ID 1.01 regarding the public process. Please see the response to Comment ID 218.13 regarding property value.
46.02	PROP	You have already decided to destroy our property and replace it with ugly unsightly piping! During that meeting you said there would be no compensation for the loss of value to our property, so everything we have invested over the years is wasted value. When we purchased this property, it was for the beauty of the Canal, and the wildlife that enjoys the use of this property. It was bare land, so everything that we have done was planned on and around the Canal for the benefit of our enjoyment, and the enjoyment of	Please see the response to Comment ID 218.13 regarding property value. Please see Section 5.3.2 of the Plan-EA for updated language regarding the dimensions of land that would potentially be

Comment ID	Topic Code	Comment	Response
		the wildlife. Due to the fact that we lived so near the water, we had to upgrade our Septic System which was a very costly project, and now YOU say you have the right to strip that all away. Your proposed plan will strip our property of everything we have worked so hard for these past 21+years.	disturbed during construction of the proposed project.
46.03	WILD	We are older, so we seldom travel, the one thing we have for enjoyment is our land..when we step out onto our deck, or look out our windows, we have the sight and sound of our beautiful water view, and the daily enjoyment of the various wild life; and now you say all of that has no compensation value!	Thank you for your comment.
46.04	ALT	It is your plan to strip it all away and replace it with an unsightly pipe! You decided on your own against lining the canal, saying it would be more cost effective for piping, as the lining may only last about 20yrs. You reject that plan, because you MAY have to replace portions of it over time, so YOU decide it is more cost effective to spend MILLIONS on piping rather than lining the canal to avoid some natural seepage and evaporation? ! If you feel you must do something, I have no issue with lining the canal, it would definitely cost less, and on the plus side will be a satisfactory conclusion for all.	Please see the response to Comment ID 29.04.
46.05	WAT	Seepage will recycle itself and does benefit plant life. There is so much greenery along the canal, you take away this water source, and all of this will die, leaving us with a serious fire threat to our homes and property. This seepage and evaporation issue is something that happens with every body of water. Yes, we are experiencing a drought, there has always been droughts, and there always will be cycles of droughts. This canal has been here for over a hundred years and somehow it still survives.	Please see Section 6.8.2.3 of the Plan-EA for information about the effects on groundwater. For information about the effects on vegetation, please see Section 6.6.2 of the Plan-EA. Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA.
46.06	SAFE	Your option will cost millions, leaving us with an ugly mess, destroying and devaluing our property, our neighbors' property, loss of trees, and displacing wildlife, possibly causing wells to dry up, not to mention the desolate area this will cause, leaving open access for others to enter our homes and property, which in turn will be leaving access for vandalism. Small vehicles racing through the back of our property, bikers... a wide-open path for anyone to gain access to the yards of so many homes. The canal was our natural protective barrier, now you want to strip it all away. If you proceed with this plan there will be no feeling safe in our homes.	Please see the response to Comment ID 32.03. See Sections 6.6, 6.8.2, and 6.11 of the Plan-EA, and the NEE in Appendix D.1 of the Plan-EA for more information about the proposed project's effects on vegetation, groundwater, wildlife, and property values.
47.01	PUB	My husband and I live at [ADDRESS]. We are patrons of Arnold Irrigation. We strongly oppose the proposed canal piping project. Please extend the public comment period. Patrons need more time to become aware of this project and its economic and environmental impacts.	Please see the response to Comment ID 39.11.
48.01	PUB	The Corps received notification of the Draft Watershed Plan EA public notice period on July 6, 2021. The Corps would like to provide comments, but will not be able to respond by tomorrow (July 8, 2021) when the commenting period ends. We would like to request an extension. Please let me know if there is a formal process for doing so.	Please see the response to Comment ID 39.11.

Arnold Irrigation District Infrastructure Modernization Project
 Final Watershed Plan- Environmental Assessment Appendix A: Comments and Responses

Comment ID	Topic Code	Comment	Response
49.01	GEN	Vote against piping, if you have to do something, vote for lining canal.	Thank you for your comment. Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA for a description of that alternative.
49.02	WAT	Disagree with the amount of seepage. Have lived there since 1978. Property is on the canal. Have seen puddles last all through the winter. Water stays in the lined sections all year too. And water that is seeping is going into the aquifer.	Individual locations within the Main Canal may experience puddling. Two separate water loss assessments performed on the Main Canal each found similar water losses across the measured reaches. Please see Appendix E.4.1 of the Plan-EA for additional information.
49.03	PUB	Public meeting wasn't accessible. Had to go over to a neighbors house with a computer, wasn't easy to ask questions or be heard. Answers weren't very helpful either, referencing a section in the plan, a huge document, is not helpful.	Due to COVID-19 precautions, the meeting was held virtually. The meeting was recorded and can be found at oregonwatershedplans.org .
49.04	ALT	Expense - think lining would be cheaper than piping based on a friend's construction knowledge.	Please see the response to Comment ID 29.04.
49.05	CUL	Canal is 100 years old, has a historical element too.	The District and NRCS completed a cultural resources survey and consulted with the State Historic Preservation Office (SHPO) after the public comment period. Section 6.1.2 in the Plan-EA has been updated to include the findings of the cultural resource survey and the consultation process. Updated language has been added to Sections 6.1.2 and 8.3.9 of the Plan-EA describing mitigation measures that were agreed upon with SHPO.
49.06	WILD	Generations of wildlife and vegetation and trees that depend on the canal. All the little creatures will be affected. Tree loss, old growth timber.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources, and Section 6.6.2 for information regarding impacts to vegetation.
49.07	PROP	Property value loss, mentioned 30%loss, owners not going to benefit.	Please see the response to Comment ID 218.13.
50.01	WAT	The old practices and legal framework that have governed the use of irrigation water in the west in the past are not serving us now. New technology, laws, and better management of our increasingly scarce water is required. In Deschutes County we have been in drought conditions with increasing frequency	Thank you for your comment. Please see updated language in Section 6.8.2.1 of the Plan-EA for

Comment ID	Topic Code	Comment	Response
		<p>and intensity since 1950. Looking at history drought has persisted for centuries, destroyed ancient civilizations, and caused mass migrations. The trapping of the earth’s heat by the increase in atmospheric carbon is likely to intensify the effects and make certain areas unlivable. In accordance with past practices the piping and pressurizing of the Arnold Canal, the dedication of water to North Unit, and the servicing of farmers makes the expenditure on piping and the disruption of the environment of the canals necessary: 65%water loss is unacceptable. However, the over-appropriation of the the waters of the Deschutes by the Cary act and later by the Duffy decree in the 1920s was apparent by 1930 and made much worse by multiplying water rights appurtenant to the land when subdividing large parcels. There could be enough water for fish, people, agriculture, and recreation but trying to do so with the current system is not possible or effective. I attended the on-line meeting with FCA and others in June. While glossing over the concerns that NEPA requires (loss of old growth ponderosa and dislocation of wildlife) may avoid an EIS and the effort that requires, it angered those whose concerns were considered negligible and did not educate the public or address any mitigation measures that might, even with legislative measures, be undertaken at the outset of the project but would likely not be effective if addressed later. Water is wasted too often in AID. Much of the land has become urbanized and irrigation water used for lawns and gardens but real farming also takes place and should be supported. The water used to allow delivery of water to these farms, appropriated in order to make up for the water lost to leaking, seepage and evaporation allocated under the Duffy decree may be “conserved” water but is also no "longer needed water” once piping and pressurizing take place and should be left in the Deschutes River to help improve the health of the River and it’s ecology. This water should not be considered the District’s own to “lease” or “reallocate” as they please. With better on-farm management of water such as that practiced by North Unit Irrigation District AID should be able to meet its patrons needs and the needs of others such as municipalities and other districts. Thank you for this opportunity to comment.</p>	<p>discussion of how AID would bypass water to NUID.</p>
51.01	WAT	<p>I fully support the piping project. We need to conserve water as much as possible. Our reservoirs are drying up destroying recreation and wildlife. As an angler I am seeing the horrible effects on our fisheries due to low water. I would like to see more water maintained in our reservoirs to replenish the water tables that have been seriously damaged in recent years. Please get this passes!</p>	<p>Thank you for your comment.</p>
52.01	CONS	<p>The Arnold Irrigation Canal runs 55 ft from our house. We have trees over 100 yrs old bordering the canal very close to our house and the canal. We also have 4 acres of irrigation rights associated with our property. In many places upstream from our house the canal is only 1-2 ft deep on lava rock bedrock. Pounding a canal into this rock would most assuredly cause damage to our house foundation and many other unforeseen damages to the property.</p>	<p>Please see the response to Comment ID 368.01.</p>
52.02	WILD	<p>The loss of trees and the open water flowing would create numerous problems for wildlife, which we have many species, loss of a windbreak for our dwelling, sun protection, and scar the countryside forever</p>	<p>Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information</p>

Comment ID	Topic Code	Comment	Response
		that we have so grown to love and take care of. We have worked so hard to create our lifestyle in the countryside in the 25+years we have lived here and raised our family and now our grandchildren.	regarding impacts to wildlife and Section 6.6.2 for information regarding effects on vegetation.
52.03	ALT	I am vehemently opposed to piping the canal in the residential areas of the AID and feel that the lining of the canal is a most cost effective and reasonable way with so much less impact to the land, to handle the seepage problem that the canals in the area experience in varying degrees. I am for piping the canal in the wide open spaces of the growing fields of crops north of the Bend area. Lets not ruin the beauty of this area we all love and handle this situation in a common sense manner. Thank you	Please see the response to Comment ID 29.04. Regarding an alternative that includes both lined and piped sections of canal, please see the response to Comment ID 32.02.
53.01	PROP	In 1996, when we first visited the property we now live on, the entire property (except for the 4 acres of unfarmable woods) was covered in yellow plastic tree tubes. The previous owners had planted 3,000 trees to start a Christmas tree farm. Three weeks later, the irrigation was cut off due to draught and almost all of them died. We at the time were very low on money, and the owners were willing to owner finance just to get out of it. Our boys were 11 and 7 when we moved into the small farmhouse originally built in the 1970s. We had a fledgling home based business and as that grew we were able to make our payments for a couple of years until we qualified for a bank loan. We cleaned up and removed all of the plastic tree tubes and grew hay in the 4 acre field, which became a favorite destination in the spring for Canada geese to nest and raise their young next to the canal. Other wildlife we have been accustomed to enjoying are deer, the occasional coyote, ducks, porcupines, bald eagles and red tail hawks. Our boys had a popular“sleep over” location and had many a fun time with their friends playing Capture the Flag. One night, a large owl landed on the power line near our lawn as the boys were playing. They started creeping up closer to the owl. I was amazed to watch the owl completely ignore them as they crept closer and then spread its wings and flew to capture a vole or mouse without losing concentration. In 2007, we finally were able to refinance and take some equity to do our long dreamed of expansion of our home to what it is today.Little did we know the Great Recession would strike the next year and we found ourselves like many others “underwater” on our mortgage. We were encouraged to “walkaway” many times, and hounded by a few realtors to do a “short sale”. But we didn’t because we love this property. We continued to make payments for several years until we sought a loan modification. This was agonizing because our loan mod specialist instructed us to quit making payments to the bank because that was the only way to get them to work with us. I had never missed paying a bill in my life and it was truly a dark time. But after 9 long months we accomplished the loan mod and paid into that for several years until the real estate market started its rebound and we last summer were able to refinance out of the loan mod with a decent interest rate for 30 years. At last, we thought, we are set to live out our life on our little piece of paradise.Less than a year later we are faced with the possible destruction of much of our property. Our property line is the middle of the canal which is 53 feet from our house. There are several mature ponderosa pine trees that line the canal road, including the big one where several of our beloved dogs are buried. AID claims to have a 50 foot right of way on either side of the canal. That means they can destroy	Please see the response to Comment ID 218.13 regarding property value. Clarifying text regarding the dimensions of land that would be disturbed during construction and use of the maintenance road has been added to Section 5.3.2 of the Plan-EA. Please see Section 6.6.2 of the Plan-EA regarding effects on trees.

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		<p>our property to within 3 feet of our house. We are in the locale of Phase 1 of the proposed action to place a pipe in the canal and bury it. This will involve heavy equipment, noise, disruption of my business activities, not to mention feeling like trespassers are invading our property. And then there is the loss of value to our property that we fought and struggled to keep for our retirement. On top of that, we have heard from people who have already experience destruction of their property due to piping in another irrigation district. We were told that as they bury the pipe in Phase 1, the covered pipe is then designated as the “haul road” to access the subsequent phases of the project. If this were true, we would not only have to endure the piping and clear cutting of trees on our section of canal, but for years to come have heavy equipment traipsing across our property with noise and further destruction.</p>	
53.02	ALT	<p>At age 70, this is not what we should have to endure. This is not what people in neighborhoods near the canal should have to endure. The piping idea is not the only viable solution. We are requesting that AID revisit the lining of parts of the canal as a compromise solution. There are parts of the canal that are better suited for piping, but there are parts of the canal that are a part of the property owners’ aesthetic value and should be maintained. We believe AID is not considering lining because they just want the easy federal money to line (no pun intended) their coffers. In addition, the harm to the environment should be evaluated with an Environmental Impact Statement.</p>	<p>Please see the response to Comment ID 29.04. Regarding an alternative that includes both lined and piped sections of canal, please see the response to Comment ID 32.02.</p>
53.03	WILD	<p>We are already experiencing many more deer we believe is due to dense housing development in town, including Reed Market and Fifteenth St, driving wildlife away. They come to find water in the canal and conveniently graze in our field. The EA says that they can just find water somewhere else. Well, that somewhere else from this location is the Deschutes River which would include hazardous crossing of Hwy 97, increasing danger to motorists as well as wildlife.</p>	<p>Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources.</p>
53.04	PUB	<p>We are just now realizing how many people will be affected if this project is allowed to progress as outlined in the EA. AID is not informing most of them of their intentions. Most of them bought their property because the canal provided a beautiful water feature to look at, even if they are not possessors of irrigation rights. They live in highly populated neighborhoods and not on farmland. Imagine how blind sided they will feel when without advance knowledge their neighborhoods could also look like a ‘war zone’ as one property owner described their property after the destructive heavy equipment moved on. All in all, this proposed project is just not right. We are requesting that AID “take a pause” and re-evaluate a compromise where lining is used on certain parts of the canal.</p>	<p>During the NEPA process, federal agencies involve the public during the scoping process and public comment process. NRCS accepted scoping comments from April 3 to May 15, 2019. Public comments on the Draft Plan-EA were accepted from June 8, 2021, through July 8, 2021. The public requested an extension to the comment period, and NRCS extended the comment period by 15 days to July 23, 2021. Please see Section 7 of the Plan-EA for a full description of the public engagement and notification for this project, including the notices that were sent to AID patrons and landowners. Regarding an alternative that includes both lined and</p>

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			piped sections of canal, please see the response to Comment ID 32.02.
54.01	WILD	I do not want the pipe installed. It will effect deer and their off springs. Canadian geese and the goslings use the canal.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
54.02	VEG	Our trees that line the canal will die which will be a huge wild fire hazard	Please see Section 6.6.2 regarding effects on vegetation. Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA.
55.01	CUL	For SO many reasons we are adamantly against the underground piping of the canal. This canal is not only historic and a seasonal stream, but why all of a sudden it's an issue.	Please see the response to Comment ID 49.05.
55.02	WILD	Wildlife (bald eagles, golden eagles, ducks, deer, etc.) use this water, this needs some serious studying on the impact.	Please see Section 6.11.2 of the Plan-EA.
55.03	PROP	In addition, the MAIN reason we bought our home was because of the canal that runs behind it. Piping it will decrease the property value (there is much documentation by those already affected by the canal being put underground).	Please see the response to Comment ID 218.13 regarding property value.
55.04	ALT	In addition, the costs for lining the canal have been greatly exaggerated. The Basin Recharge is also understated. I am requesting that you put a halt to the plan as it affects far too many people.	Canal lining costs have been updated; please see the response to Comment ID 29.04. Please see Section 6.8.2.3 of the Plan-EA for information about the effects on groundwater.
56.01	WILD	We live on [ADDRESS] in Woodside Ranch. The canal is a source of pleasure for us to look at the flowing water from our deck. But, much more important than that, it is a source of water for many animals. We have deer drinking from it all the time. We see baby ducks and geese in the spring. Please don't take away another spot in Bend that supports wildlife.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
57.01	ALT	We are opposed to piping the canal in the Bend, Oregon area (SE Bend to be more specific, since some areas it may be more beneficial) for a variety of reasons, until further options are fully researched and appropriately presented to all parties involved and concerned. This is in addition to the current EA that was (semi) discussed on the Zoom with the public. What are (all) the strengths, weaknesses, opportunities and threats (SWOT Analysis) to "both sides" so to speak? How can we make this a "win-win" so everyone benefits?	Please see Section 5.2 of the Plan-EA and Appendix D.2 for discussion of the alternatives that were considered. For information about the opportunities that existed for public comment during the project's NEPA process, please see Section 7 of the Plan-EA.
58.01	PROP	I am a Woodside Ranch resident for 20 years. The Arnold Canal is the number one reason we bought this house. We got the paperwork on the canal history which was very old and felt like we were living in a part of water history. The water doesn't flow that many weeks in the year. But we; all the ducks, deer, trees, other birds all wait for the spring water flow. It is only 50 feet or so from my home. Can you imagine the impact a piped area would have on my property?	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources. Clarifying text regarding the dimensions of land that would be

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			disturbed during construction has been added to Section 5.3.2 of the Plan-EA.
58.02	ALT	I have watched the hobby farmer (no animals) across the canal from me water day and night in the bright sun with wide flows of water so that when it is windy, I feel the spray in my yard. Can't you take steps to control that kind of waste? That is evaporation and uncontrolled sprinkling. There are other steps that need to be taken. Piping is favored for the farmers with crops. That makes sense and I do care a great deal about the river but just because you got money from the government doesn't mean you have to hurry and make this dramatic change. Why can't the money be used for incentives to improve the technology to conserve water first? It would take less money. I have looked at other canals. The COID piping that was done off of Brookwood carries the water to the pipe but lets the canal by the homes be open. Why can't that be a possibility? It is sickening to think of. We are not being unreasonable. What if it was your home?	On-farm efficiency upgrades was analyzed as an alternative; please see Appendix D.2 of the Plan-EA. Regarding an alternative that includes both lined and piped sections of canal, please see the response to Comment ID 32.02.
59.01	ALT	This system only runs for 5 months a year. I have walked parts of the trails by the canals and there is so much water leaking from the viaducts. You would be wasting a lot of money by digging and putting in underground pipes. First Of all you new pipes will also leak because of the joins between the pipes.	Please see the response to Comment ID 11.03.
59.02	WILD	Second you will be destroying lots of vegetation and residents personal property even if there is a water easement. Lots of wildlife uses the irrigation ditches, wher will those animals go?	Please see Sections 6.6.2 and 6.11.2 of the Plan-EA for information about the effects on vegetation and wildlife. See Section 5.3.2 of the Plan-EA for updated text about the expected construction footprint.
59.03	BNFT	Third this will be something to pay for over lots of years with little benefit. Just fix the leaks, pipe areas where there is no housing, and save tons of money.	The Preferred Alternative would have a number of benefits. Please see Section 3 of the NEE in Appendix D.1 of the Plan-EA for a quantification of benefits that would occur as a result of the project.
60.01	VEG	This is how close our house is to the canal. 53 feet. These are some of the trees that could be lost if AID uses ANY of its ROW. Not to mention eliminating our yard and destroying the land within 3 feet of our house.	Clarifying text regarding the area of land that would be disturbed during construction has been added to Section 5.3.2 of the Plan-EA. Please see Section 6.6.2 of the Plan-EA regarding effects on trees.
61.01	GEN	Save the canal and my well.	Thank you for your comment.
62.01	WILD	Recently the marbled murrelet was ruled an endangered species I think there needs to be some research on how it relies on the canal for water along with all the other animals. Especially since we are in a record drought. I say no to piping the canal.	The marbled murrelet's range does not extend into Deschutes County and therefore was not considered in this Plan-EA (ODFW 2021). Effects on federally listed threatened and endangered species and state-listed species are discussed in Sections 6.9.2 and 6.11.2 in the Plan-EA. Effects on federally listed species are also considered in the Biological

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			<p>Assessment developed for the project. USFWS concurred with NRCS' determination that the project may affect but is not likely to adversely affect the Oregon spotted frog (Letter of Concurrence 2022-0062518-S7; received by NRCS August 1, 2022). With respect to birds, the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) are managed and enforced by USFWS. Coordination with USFWS regarding construction timeline and species covered by MBTA and BGEPA has occurred (Sections 4.11.2 and 6.11.2.1). Prior to implementation, site-specific clearance surveys would be completed by USFWS (Section 6.11.2.1), and any additional consultation regarding birds covered under MBTA and BGEPA would occur as needed. See Sections 6.11.2, 7.1, 8.3.8, and 8.5.3 of the Plan-EA.</p> <p>Reference: Oregon Department of Fish and Wildlife (ODFW). (2021). Biological Assessment of the Marbled Murrelet (<i>Brachyramphus marmoratus</i>) in Oregon and evaluation of criteria to reclassify the species from threatened to endangered under the Oregon Endangered Species Act. Report prepared for the Oregon Fish and Wildlife Commission, June 2021. Oregon Department of Fish and Wildlife, Salem, Oregon. Website: dfw.state.or.us/wildlife/hot_topics/docs/2021%20DFW%20Marbled%20Murrelet%20Biological%20Assessment%20and%20Reclassification%20Criteria%20Review_ODFW_6-21-21.pdf. Accessed: August 31, 2021.</p>
63.01	PROP	I am strongly against the piping of the Arnold District canal in my neighborhood for just some of these reasons, My property value would likely drop \$50,000 I would not gain access to my easement property after piping.	Please see the response to Comment ID 218.13 regarding property value. Please see Section 6.2.2 of

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			the Plan-EA regarding effects on property ownership and easements.
63.02	VEG	Massive ponderosa pines on canal edge rely on this to stay alive, the fire danger in DR W is already great, this would make it much worse.	Please see Section 6.6.2 regarding effects on vegetation. Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA.
63.03	WILD	Waterfowl, deer, birds and many other forms of wildlife depend on this water source to survive.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
63.04	ALT	Please reconsider this project or at least consider modifying the plan to accommodate all parties. Maybe a smaller pipe below while allowing water to flow above. Lining the canal instead of piping, or a combination. Line some areas and pipe others.	<p>A variety of alternatives were considered and evaluated. Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives.</p> <p>Canal lining was considered as an alternative in the Plan-EA. The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA.</p> <p>Regarding an alternative that includes both lined and piped sections of canal, please see the response to Comment ID 32.02.</p>
64.01	SAFE	My wife and I agree the Arnold Irrigation District canal needs to be piped. Not only to conserve and efficiently transport water, but to reduce or eliminate safety concerns, and reduce or eliminate liability due to inconsiderate human trespassers on the Arnold Irrigation District dedicated easement, and adjacent properties encumbered by said easement. Regarding safety; the canal presents a danger to both humans, domestic animals, and wildlife in that the canal embankments are unstable and the fast flow of water in places can carry whatever falls in a considerable distance before it reaches a suitable place to get out, or is captured on a culvert grate only to become exhausted and drown. Sinkholes are also a safety problem. A specific incidence: my wife was riding her horse on the canal road (with permission of that property owner) northwesterly of Woodside Road when a sinkhole engulfed them. Fortunately the hole was shallow enough where the horse was able to lift himself and rider out without injury. Shortly before this, your “ditch rider” drove over that same area without incident. The recent sink hole should add “fuel to the fire” to pipe the canal for above stated reasons. Appropriate “NO TRESPASSING” signs are posted by Arnold Irrigation District where their easement intersects with a public right-of-way. In	Thank you for your comment. Please see the response to Comment ID 32.03 regarding people walking on AID's maintenance road.

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		<p>addition, individual property owners along the canal easement have posted “PRIVATE PROPERTY- NO TRESPASSING” signs for their legal protection. But this does not deter humans from freely trespassing along the canal maintenance road for their personal enjoyment. When trespassers are confronted by property owner, they give excuses like “I have been walking the canal for years and have the right to continue” (prescriptive rights?), or “this is a county road”, or “this is a dedicated recreational trail”, or “my brother pays \$30,000 to irrigate his property and I have the right to bike on the canal”, or use offensive language and not listen to the property owners explanation for them to get off. Some trespassers will apologize and return to a public right-of-way. Piping the canal may reduce or eliminate these confrontations. With the ever increasing ‘recreational minded’ population in the area, piping the canal may deter unwanted trespassing for personal enjoyment and relieve private property owners encumbered by the canal easement of unnecessary liability and confrontations.</p>	
64.02	ALT	<p>In the long run the initial piping cost will out way the overall cost of an open canal and maintenance as your research studies indicate. Furthermore, the proposed open canal concept with chain link fence topped with three rows of barbed wire is totally unacceptable from a visual perspective and may negatively influence property values bordering the canal. In addition, this fence concept presents a safety hazard to humans and animals that try to cross over.</p>	<p>Please see the response to Comment ID 29.04. Fencing was removed from the Canal Lining Alternative.</p>
65.01	WILD	<p>I object to piping the canal due to the property value loss, to loss of nature, trees and our birds, deer and our fish out here in Deschutes River Woods. I don't know what happens to the beaver on our canal. They can't just go somewhere else. They will die. Please reconsider an alternative.</p>	<p>Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources.</p>
66.01	VEG	<p>I'm strongly against Arnold irrigation piping the canal in my backyard because it will kill the trees along the canal making my backyard a fire hazard.</p>	<p>Please see Section 6.6.2 of the Plan-EA regarding the project's effects on vegetation. Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA.</p>
66.02	PROP	<p>It will significantly decrease my property value and it will destroy all the wildlife in the surroundings who very much depend on the Water Source from the canal.</p>	<p>Please see the response to Comment ID 218.13 regarding property value. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.</p>
67.01	VEG	<p>I [NAME] homeowner at [ADDRESS] am strongly against arnold irrigation piping the canal in my backyard because it is a vital source of water for the old growth trees and vegetation within the vicinity of the canal.</p>	<p>Please see Section 6.6.2 of the Plan-EA regarding effects on vegetation.</p>
67.02	FIRE	<p>Lacking this vital source of water these trees will become a huge fire danger to the neighborhood.</p>	<p>Please see Section 6.6.2 regarding the project's effects on vegetation. Updated language regarding the</p>

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			project's effects on wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA.
67.03	WILD	On top of that there is a very diverse ecosystem of animals that thrive along this canal and would no longer exist if the canal was piped.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
67.04	PROP	Regarding Property Values- Board members answer was property values would go down 30% If that is a board members answer then our property values will go down even further than that. Who wants their property values to decrease at all, let along 30%or more. Again, if the board members put themselves in the homeowners shoes this project would not go through.	Please see the response to Comment ID 218.13.
68.01	FIRE	I am strongly against Arnold irrigation piping the canal in my back yard because: 1. It will kill all the trees along the canal making my backyard a fire hazard zone.	Please see Section 6.6.2 regarding the project's effects on vegetation. Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA.
68.02	PROP	2. It will significantly decrease my property value.	Please see the response to Comment ID 218.13.
68.03	WILD	3. It will destroy all the wildlife in the surroundings who very much depend on the water source from the canal.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
68.04	BNFT	4. There is no benefit for the home owners. Canal inspection will continue to drive through the canal. And home owners like my self will not be able to use the land above it.	Please see Section 8.8 of the Plan-EA for a discussion of operation and maintenance of the proposed project and Section 6.2.2 of the Plan-EA regarding land use.
69.01	WILD	I stand against the decision to move forward with the piping project of the Arnold irrigation canal. The canal provides irrigation for tree growth and contributes to the health and wellness of the diverse ecosystem of animal that thrive in this area.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources, and Section 6.6.2 of the Plan-EA for information regarding effects on vegetation.
69.02	COST	In addition, the cost of this project is an inefficient use of funding compared to alternative options available. To reiterate, as a homeowner, I am strongly against the Arnold Irrigation canal project proposal!	Please see Section 8.1 of the Plan-EA and the NEE in Appendix D.1 of the Plan-EA for discussion of why NRCS chose the Piping Alternative as the Preferred Alternative.
70.01	GEN	The sooner the better. Evaporation is eliminating almost 50%of the water in the canals. Do what is necessary to save as much water as you can. The recent trend toward solar panels over the water could be a major step forward.	Thank you for your comment.
71.01	VEG	Hello and thanks for taking emails about piping irrigation water.I work in Sisters on the Sisters Ranger District, but live in DRW. When Three Sisters Irrigation District talked about switching to pipes they	Trees would be removed if there were no other alternative to access the construction site, if they

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		<p>focused on the positive side effects of saving water etc., we knew there would be tree mortality and wildlife impacts, but to actually see the number of dead trees at year 3 after piping completed was remarkable. Thousands of mature trees died. Animals and humans near the ditch will adjust and or move on, but the vegetation may not adjust and if so it'll most likely die. Question: If piping water saves water and money do to leaky ditches; is the owner of the ditch and water responsible for altering the growth patterns of the adjacent vegetation? Is there liability for creating an altered ecosystem?</p>	<p>posed a safety threat to construction crews, or if their roots could interfere with the pipe. For more information about effects on vegetation from construction, both on the maintenance roadside of the canal and the other side of the canal, please see the updates in Sections 5.3.2 and 6.6.2 of the Plan-EA. Please see the response to Comment ID 37.45 about watering trees after project completion.</p>
71.02	VEG	<p>Are irrigation companies responsible for hazard tree mitigation (dead tree abatement) if ditch is converted to pipe?</p>	<p>Please see updated language in Section 6.6.2 of the Plan-EA regarding the removal of hazard trees after project completion.</p>
71.03	ALT	<p>In sisters the irrigation/ pipe line is now a dead zone, full of fuel wood and is mostly void of vegetation. Easily seen from google map, looks like a road now. Maybe the ditch can be part of a new bike /walking path, after the pipe is buried, pave a trail on top of the easement. This paved access would make managing dead trees easier. Thanks again for letting me rant. Good luck.</p>	<p>Please see the response to Comment ID 32.03 and Comment ID 91.02.</p>
72.01	ALT	<p>Please consider piping portions, and leaving open areas of the canal. I am all for water conservation.</p>	<p>Please see the response to Comment ID 32.02.</p>
72.02	WAT	<p>I have talked with an environmental scientist that specializes in water conservation. Piping the canals will affect the aquifer, which will affect trees, wildlife, and wells. You could pipe portions, and leave portions open. Water "loss" in open canals feeds the aquifer, and a low % is lost to evaporation.</p>	<p>Please see Section 6.8.2.3 of the Plan-EA and the response to Comment ID 433.38 for information about the effects on groundwater. Please see Section 6.6.2 for information about the effects on vegetation and Section 6.11.2 for information about the effects on wildlife.</p>
72.03	FIRE	<p>In addition, DRW is a fire tinderbox. Piping all of the canal will result in native tree and plant loss. All the dry vegetation will create more fire fuel.</p>	<p>Please see Section 6.6.2 regarding the project's effects on vegetation. Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA.</p>
73.01	VEG	<p>I currently own a home on Galen Drive in Bend, Oregon. We purchased our home about 5 years ago, and the biggest selling feature was Arnold Canal running through our backyard. Not only because of it being a water feature, but because of the abundance of plants and wildlife that use the canal to thrive and live on a daily basis. Deer, geese, ducks, and many other animals are seen everyday, all day long, and have become accustomed to getting their food, water, and shelter from the canal. I understand that the animals are transit species, but the plants and trees are not.</p>	<p>Please see Section 6.6.2 of the Plan-EA regarding effects on vegetation.</p>

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73.02	PROP	It is not fair that our property value will decline sharply. This water feature has brought so much joy to our family, children, and grandchildren over the years. It doesn't seem right that it can be striped from our yard.	Please see the response to Comment ID 218.13.
73.03	WILD	It will also forever change the ecosystem in which many animals, plants, and trees need for survival. Please reconsider this decision to pipe the canal and move the water source underground.	Thank you for your comment. Please see Sections 6.6.2 and 6.11.2 of the Plan-EA for information regarding effects on vegetation and wildlife resources.
74.01	ALT	Please consider shotcreting instead. Arnold just recently performed a repair in our backyard and this is the best middleground for all!	Please see the response to Comment ID 29.04.
74.02	WILD	The animals need this water... deer, ducks, geese and frogs.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
74.03	FIRE	Additionally, we are in a rural area and by removing the water- Arnold Irrigation will independently be putting thousands of homes and people in a high fire danger.	The Deschutes County Rural Fire Protection District #2 serves lands within AID. The Deschutes County Rural Fire Protection District #2's primary source of water for fighting fires are fire hydrants that are situated throughout the areas they serve. Maps of fire hydrant locations can be requested from Bend Fire and Rescue. Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA. Reference: Medina, L. (Bend Fire and Rescue). (2021). Personal Communication with Rajja Bushnell (FCA). October 21, 2021.
75.01	PUB	My wife and I purchased our home brand new five years ago. We bought our house for the beauty of the backyard where the canal is and where it attracts wildlife from deer to ducks and geese. As some neighbors have put up a back fence we elected not to because of the wildlife, which is attracted to the canal. I have listened to some of the meetings put on by watershed committee. I could not disagree more with the findings of some of your board members. Let me say a little about my background. I was a manager for a large city's police department in southern California for 30 years. I was asked many times to research and give an environmental impact report for projects the city wanted. On many occasions I gave reasons why the project should not move forward due to the negative impact on the citizens that lived and worked in our community. Each time the city disregarded my and other managers information because they wanted the project to move forward. This is no different and your board giving people their	Please see the response to Comment ID 1.01.

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		voice is just part of a protocol you must have to show a court down the line that you listened to the people. I would like each and everyone of your board members to put themselves in the homeowners shoes and this would not go forward. I would bet none of your board members have a house on the Arnold Canal.Listening to your board members answers to our homeowners is scripted, canned, and sometimes false.	
75.02	WILD	Regarding Wildlife- Board members answer was something to the effect, wildlife is transitory? Well, for every so called professional you get to say the answer you want, I can get a professional to say it would be devastating and cruel to the animals that have for the last 100 years been using the Arnold Canal. PETA would have a field day with your board members answer.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
75.03	SAFE	Regarding Quality of Life and Crime Impact- Broad members answer was something to the effect, because this is a new project we don't have any evidence or data to accurately answer the question. Really? Again, one sided answers to fit the passing of this project. How to predict crime impact on a community is take a look at past history and the huge effects a project like this will have on that (our) community. If the canal is piped it will give a path for the homeless to walk in our backyards and steal anything and everything that is not nailed down. Crime will sky rocket! We will have homeless camps in our backyards. Again, please put yourselves in the homeowners shoes. If you did this project would never go through.	Please see Section 6.3.2 of the Plan-EA for the effects on public safety from the proposed project. Regarding public access, please see the response to Comment ID 32.03.
75.04	PROP	Regarding Property Values- Board members answer was property values would go down 30% If that is a board members answer then our property values will go down even further than that. Who wants their property values to decrease at all, let along 30%or more. Again, if the board members put themselves in the homeowners shoes this project would not go through.	Please see the response to Comment ID 218.13.
75.05	ALT	Solution: Line the canal as in the past. Your board members said it last 10 years. If they are saying 10 years, you can bet the lining last for 15 to 20 years. I would not be opposed to paying a little more on my property taxes so that money would go toward the funding for the lining and upkeep of the canal. This a sad day in Bend Oregon. We all know that we, the actual homeowners can legally fight this and put this project off for some years but eventually big government will win because they have all the money. Please do the right thing for the animals and our quality of life and line the canal where it is in the backyard of homes.	Please see the response to Comment ID 29.04.
76.01	GEN	Here are pictures of my property. And you want to destroy it. PLEASE,DON'T	Thank you for your comment.
77.01	GEN	For over 100 years the Arnold Irrigation District (AID) canal has been a resource for all residents fo Deschutes County. The benefits of the canal accrue not only to the agricultural patrons of AID but also to a wider range of residents, wildlife and plants.AID proposes to pipe some 14 miles of canal "with the goal of addressing environmental needs for instream flows while still delivering enough water to district patrons". While this is an admirable position, close inspection of the Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment June 8, 2021 shows it is critically flawed in that	Please see the following sections in the Plan-EA for information about effects on the Deschutes River (Section 6.8.2.2), groundwater (Section 6.8.2.3), vegetation (Section 6.6.2), and wildlife (Section 6.11.2).

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		<p>it presents only information beneficial to AID. This project relies on \$27.9M of federal funding plus an additional \$14.9 from state and other sources. The total water losses that this project will address amount to 32.5 cfs, some of which MAY be returned to the Deschutes River. However, the Draft Plan states that any water saved will be transferred to COID raising doubts that the Deschutes will benefit at all or at best minimally. The canal benefits a much wider community than just the patrons of AID. Water loss to seepage is in fact not lost, it becomes ground water recharging wells and providing habitat for countless animals and plants. It's a diverse ecology that runs through miles of what would otherwise be desert. This diversity and habitat will be lost if the canal is piped. The vision of the Reclamation Projects was to encourage beneficial use of the land, not only for irrigators but for the entire community. Please consider everyone before approving or funding this project.</p>	
77.02	COST	<p>1. Because of continuing drought, there may be many years when irrigation water is not available to junior water rights holders like Arnold Irrigation District. What will happen if agriculture is no longer viable and the pipe is abandoned? Arnold Irrigation will be required to remove the pipe/ lining/ canal and restore the ground to original conditions. Arnold Irrigation District should be required to put up a bond to assure there's enough money for removal/ restoration. These costs should be estimated, added to the costs and the bond in place before funding is approved and work begins on piping.</p>	<p>This Plan-EA has been prepared to meet NEPA requirements as well as program and environmental review requirements specific to NRCS federal investments in water resources projects. The project life is 106 years (see the NEE in Appendix D.1 of the Plan-EA). Project effects are analyzed based on the reasonably foreseeable future using the best available information. There is no evidence currently to support agriculture being entirely removed from the area; District operations would continue without the federal investment. Hence, estimating costs for removal/ restoration of the proposed project if agricultural is no longer viable is outside the scope of the project.</p>
77.03	PROP	<p>2. Decrease in property values along the canal will result in litigation, it is a hidden cost. Conservative market value of the 450 or so properties along the canal exceeds \$175 million (Deschutes County Tax Records). Appendix D, page D-10 states that property devaluation in the range of 10% to 30% is expected. This will add at least \$17.5M to \$52M to the stated costs, not including the costs of litigation. Please add this to the budget for piping.</p>	<p>Please see the response to Comment ID 218.13.</p>
77.04	ALT	<p>3. The Lining Alternative is not seriously considered. It's completely omitted from Section 6 - Environmental Consequences. Costs for lining are exaggerated and durability of lining materials is understated. R-02-03 CANAL-LINING DEMONSTRATION PROJECT, YEAR 10 FINAL REPORT lists excellent durability (60 year expected life) in spite of no maintenance, for the Geomembrane under shotcrete sections at an installed cost of \$2/ sf. Visual inspection provides evidence that the lining has not "failed" as the EA suggests. Section D -3.1 Canal Lining Alternative Costs appears</p>	<p>Please see the response to Comment ID 29.04. Pricing sources for canal lining have been updated, see the updated information in Appendix D.3 of the Plan-EA, including current photos of the Reclamation test sections. Regarding public safety risks within the District, please see the response to</p>

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		to use \$14.66/sf as the lining installation cost. Please supply supporting documents for Table D-27 Canal Lining Alternative Costs.Safety risks in Arnold Canal are over stated, especially considering the draft states “un-piped canals in AID carry a risk of 0.0018 death per year” (pg. D-28). This equates to 1.8 deaths per century. Further, the examples listed are from other irrigation districts, not Arnold. There is no public record of a death or automobile crash and injury in the Arnold canal. Please provide specific details for this as well as the “walking on the flume” report. The supposed costs for fencing will not be required as the servient estate has a right to use the land for their own purposes unhindered, thus no fence will be installed.	Comment ID 37.12. The flume has been removed from the proposed action. Please see the response to Comment ID 12.01 for more information.
77.05	WAT	4. Basin Recharge is understated – many wells near the Swalley Irrigation piping project have gone dry as a result of the piping yet the AID Plan expects ground water to drop only 2.6’. This is unrealistic and will result in degraded water supplies for many residents (ODFW records 80 wells in the vicinity of the canal).	Please see Section 6.8.2.3 of the Plan-EA for updated information about the effects on groundwater.
77.06	RIGHT	5. If piping is installed, the easement will be narrower since “canal” will be the pipe. This will require a new survey and monuments which should be added to the cost. Further, the pipe, if installed, should lay within the confines of the existing canal so as not to increase the burden on the property (no enlargement of the easement).	Existing easements would not change as a result of the proposed project. Language has been added to Section 6.2.2 of the Plan-EA specifying this. Pipe would be laid within the existing canal alignment. Language has been added to Section 5.3.2 of the Plan-EA specifying this.
77.07	RIGHT	6. ROW Act of 1891 authorized earth and stone construction not pipes. Arnold Irrigation has not demonstrated that piping the canal is within the scope of the easement and is not an increase in the burden on the servient property. Also, AID has not demonstrated that piping is reasonably necessary to accomplish the purpose of the easement (transport of water). Without hydroelectric, Swalley Irrigation District v Alvis (2009) is not precedent.	Please see the response to Comment ID 163.01 regarding the District's easement. Please see the response to Comment ID 169.01 regarding the question of increasing the burden on a property.
77.08	WILD	7. After over 100 years of existence, the Arnold canal has become a seasonal stream supporting a wide and diverse ecology. This is completely ignored in the Arnold EA. Section 4.11.1 General Wildlife states “Generally, wildlife present within the project area consists of habitat generalists or edge species with the ability to adapt or exploit the agricultural environment. These species are tolerant to disturbance and include deer, coyote, skunk, grey squirrel, raccoon, and red-tailed hawk (Blair 1996; Ditchkoff et al. 2006;McKinney 2002; and Shochat et al. 2006)”. This does not mention eagles, cougars, mice, snakes, lizards, bees and all the other diverse wildlife present. While some may be “tolerant to disturbance” none are tolerant to living without water. They will be forced to leave or die, producing a less diverse and diminished ecosystem.	Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating the effects of the project on species with different home ranges and their ability to find other potentially available water sources.
78.01	FIRE	If the canal is piped behind our home, (on [ADDRESS]) we will lose our beautiful scenery and much more. Our trees along the canal will die and become fuel for wildfires.	Please see Sections 6.6.2 and 6.7.2 of the Plan-EA regarding effects on vegetation and visual resources. Updated language regarding the project's effects on

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			wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA.
78.02	WILD	The duck and geese return every year to have their little ones along the canal. Deer and other wildlife use it for drinking.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
78.03	ALT	The canal was a big reason for our purchasing this land almost 40 years ago. Our property as well as other's will lose value. Please, rethink this, and look for an alternative.	Please see Appendix D.2 and Section 5.2 of the Plan-EA for discussion of the alternatives that were considered. Please see the response to Comment ID 218.13 regarding property value.
79.01	ALT	I am 100%in support of piping all canals of Arnold Irrigation District, however, I would like to see a reservoir built and lined in the Arnold District to help catch wasted water. I feel all patrons need to line their ponds as well to prevent waterloss and feel as an organization we should be able to secure discounts for those who do not have lined ponds to buy liners. Plus a fund to help those who can't afford to line their pond.Also, anyone that is not raising a crop or does not have livestock should be limited to 1/4-1/2 acre of grass to water. Watering acres of LAWN is a waste of water. There are lots of water saving plants that can be planted versus lawn. These measures need to be addressed, it's time to manage water for everyone. Those who are wealthy should have to comply with water saving measures just like the farmers. Look up Desert Mountain in Carefree, Arizona, for their CC&R guidelines which do not allow lawns for anyone in their development except for the golf course which is also limited in the amount of actual grass planted. Their strict guidelines have now been adopted by the city of Scottsdale, Arizona. Central Oregon is High Desert and landscaping and water conservation are crucial.Plus our measures to save water and save farming should apply to ALL irrigation districts. It's time for the past to stay in the past and the future needs of Central Oregon Water Management be foremost for our community. No more C.O.I.D. Superiority or Grandfathered rules. Grandpa is dead it's time to focus on the future. Also, No more curb lawns! No more giant lawns, all Bend and Deschutes County development, whether commercial or residential need to be restricted on how much lawn, if any, can be planted. For an example, Knott Landfill wastes water daily water unnecessarily watering lawn around the border of the landfill, this type of water waste HAS to stop.I don't expect Arnold Irrigation District to implement all the community changes needed, but we need to start on our own farms and in our regulations, and set an example for ALL.	The District and NRCS agree that water conservation through piping district infrastructure is one of various potential water management tools. During the formulation phase, multiple alternatives were evaluated based on meeting both NEPA and environmental review requirements specific to NRCS federal investments in water resources projects (NRCS 2017a). Some of the alternatives for water conservation projects that you presented in your comment are included in the list of alternatives that were evaluated during the formulation phase (i.e., conversion to dryland farming, fallowing farm fields, voluntary duty reduction, and on-farm efficiency upgrades). However, these alternatives were eliminated during formulation. Please see Appendix D.2 for further discussion of these alternatives. Water conservation projects and management tools outside of the District's jurisdiction (e.g., Deschutes County development codes, actions in other irrigation districts) or that conflict with Oregon water law (e.g., water rights seniority) are beyond the scope of this project and are not discussed in the Plan-EA.
80.01	GEN	I am writing to express my ardent support for piping the Arnold Irrigation District Canal. We must adapt to our changing climate, and as a member of the district and user of the canal, I fear that not piping it will only worsen our ability to get water to those who truly need it.I water land for my livestock as well	Thank you for your comment. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.

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		<p>as garden. Pasture is my sole source of food for large animals for roughly 5 months out of the year, and diminished water severely impacts my ability to do that and increases my costs. The three most common arguments I see in favor of leaving the canal unlined are: wildlife access to water, vegetation drying up along the canal, and property values. Of those, I feel the argument about the potential fire hazard of dried up vegetation is the only legitimate concern. However, with proper planning even this can be easily mitigated as issues come up. Many species, I believe, will adapt and survive. As for wildlife, they survive in the area for six months of the year when the canal isn't lined, so the argument that they're dependent on the canal's water seems weak. I make a similar argument about property values - I don't believe they rise and fall with the turning on/ shutting off of the canal each year. None of us owns "waterfront" property if we are on the canal. Greater value comes from being able to irrigate our land, and that will become less possible the longer we leave the canal in lined. The benefits of lining the canal are plentiful: more water available throughout dry summer months for irrigators, particularly those in other districts who lose water earlier than others; conserved water for fish and other aquatic species in the rivers and reservoirs; conserved water to support central Oregon's economy; more efficient use of resources; less waste through drainage and evaporation; and an overall more conservative approach to water usage which will help us in these drier, hotter summers.</p>	
81.01	VEG	<p>I am against the canal lining project planned the way it is now. It will kill all the vegetation along the canal that needs the water to grow.</p>	<p>Please see Section 6.6.2 of the Plan-EA regarding effects on vegetation.</p>
81.02	WILD	<p>It will destroy the wildlife in this area that have been drinking the water in the canal for over 100 years and decrease my property value.</p>	<p>Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife. Please see the response to Comment ID 218.13 regarding property value.</p>
81.03	ALT	<p>Perhaps a lined canal open to the wildlife would be a better option.</p>	<p>Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.</p>
82.01	GEN	<p>I vote NO!! Part of what keeps Deschutes county beautiful is the irrigation canal. Please keep the canal open as it is lining it up turns this natural community into a urban sidewalk.</p>	<p>Thank you for your comment. Please see Section 5 of the Plan-EA regarding alternatives that were analyzed.</p>
83.01	GEN	<p>I am opposed to the lining of the canal in Deschutes River Woods. The impact on flora and fauna as well as disruption to the underlying ground water system is not acceptable.</p>	<p>Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources and Sections 6.6.2 and 6.8.2.3 of the Plan-EA for information regarding effects on vegetation and groundwater.</p>

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83.02	FIRE	DRW is already at great fire risk due to drought and climate change. We do not need more impact. I know the opposing argument about water evaporation but do not think that issue warrants this type of response. While you are a water company and legally may have rights here this impacts the whole community and ecosystem and this is not good solution.	Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3 of the Plan-EA.
84.01	ALT	I don't oppose the idea on piping and pressurized delivery. It seems like a win win if the point of pressurized is moved past the residential areas affected. This would allow those farmers and ranchers who truly need efficient delivery to get it while those of us whose properties would be affected still retain our current property values and way of life.	Please see the response to Comment ID 14.01 for discussion of why AID identified a need to modernize the Main Canal.
85.01	FIRE	My husband [NAME] and I are opposed to piping Arnold Canal for many reasons, but one of them is increasingly becoming more important to us. With all of the fire danger that seems to be the "norm" every year now, it makes no sense to pipe the only water source for fighting wildfires in rural areas and also in neighborhoods like Woodside Ranch and Deschutes River Woods. We are constantly told to create defensible space. The risk of wildfires is only growing every year. We and our neighbors have pumps that we could use to keep our roofs wet and the ground near our houses wet if the canal remained open. This is why piping is a better idea and certainly not as expensive nor as destructive as bringing heavy equipment in to destroy our property to within 3 feet of our house. Attached are pictures of what our property next to the canal looks like today for the record.	Please see the response to Comment ID 74.03 regarding water availability for fire suppression. Updated language regarding the project's effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. Clarifying text regarding the dimensions of land that would be disturbed during construction has been added to Section 5.3.2 of the Plan-EA.
86.01	ALT	I am a land owner along the Arnold Canal and submit these comments in response to the United States Department of Agriculture ("USDA") and Natural Resources Conservation Service's ("NRCS") Arnold Irrigation District Infrastructure Modernization Project, Draft Watershed Plan Environmental Assessment ("EA"). While water conservation is an important and shared goal, the EA fails to consider important and available information, analyze a reasonable range of alternatives, and to conduct a complete and accurate cost-benefit analysis.	Thank you for your comment. The topics in your letter are addressed in Comment IDs 86.02 through 86.08.
86.02	NEE	I. Incomplete Cost-Benefit Analysis The EA fails to conduct a complete and accurate economic analysis and to consider the full costs of project implementation. Independent of the distribution of property rights, and the question of whether canal access and adjacent trees belong to landowners or the irrigation district, the costs related to the piping of a canal are real (in an economic sense) and should be included in any determination of whether the federally funded project is cost-effective. One of these costs is the impact of piping on property values. The EA's cost-effectiveness analysis should include these costs explicitly. In similar cases, the argument has been made that excluding impacts to property values is defensible because of complexity. In fact, hedonic valuation using basic econometrics can establish these costs using well-established and widely used economic methods taught at the college level. Failure to establish and consider these costs is a major inadequacy in determining project cost-effectiveness. Further, the value of trees and related habitat lost due to piping must also be considered in determining whether the project has benefits that exceed the costs – this is the case independent of who owns the trees	Please see Section 2 of Appendix D.1 of the Plan-EA for discussion of the costs of the proposed action. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Regarding the value to trees, please see the response to Comment ID 240.06.

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		<p>and native vegetation (See appendix A, photos of trees and native vegetation along the canal and on the private property of 60347 Zuni Circle). Failure to include these costs (which are painfully evident in this EA) is a major methodological flaw. The failure to consider impacts to property values, and to conduct an accurate cost-benefit analysis of the projects true cost, makes it impossible for the lead agencies and irrigation district to make an informed decision, as required by NEPA.</p>	
86.03	NEE	<p>II. Unrealistic Analysis Period The analysis, including a robust cost-effectiveness analysis, should be based on the useful life of the projects. A 30-year term would be standard practice and is certainly appropriate given recent trends in water availability in Oregon and across the west. Inclusion of benefits beyond 30-years (e.g. the 100-year period of analysis) is not only inconsistent with common practice, straining credibility, but simply is not realistic, ignoring local water availability and climate trends.</p>	<p>Please see the response to Comment ID 433.83.</p>
86.04	WAT	<p>III. Flawed Assumptions & Inaccurate Baseline The limited cost-benefit analysis in the EA is not based on an accurate baseline and at times appears to use assumptions, rather than quantitative data, to reach conclusions. For example, it is unclear what data support the determinations made in table 5-1. The notion that the preferred alternative is locally preferred, economically efficient at a national level, socially preferred, and environmentally preferred is flawed based on the issues discussed above, and due to numerous unsupported assumptions within the EA (See EA at 51). For example, the statement that “[u]p to 10,123 acre-feet of water protected instream below Wickiup Reservoir during the non-irrigation season would help improve threatened fish and aquatic species habitat and populations” fails to address the declining water availability in the region. Because there is no guarantee of a minimum acre-feet/ proportion of “newly” available water for instream use, the benefit to aquatic systems is purely hypothetical.</p>	<p>Following NEPA and PL 83-566 guidelines, the Plan-EA considered best publicly available information to determine reasonably foreseeable effects of the proposed action on various resources. These sources are cited in the Plan-EA and listed in Section 9 of the Plan-EA.</p> <p>Information supporting determinations made in Table 5-1 in the Plan-EA about the effects on fish and aquatic species can be found in Sections 6.8.2 and 6.9.2 in the Plan-EA. Information supporting other determinations made in Table 5-1 can be found in the relevant resource sections throughout Section 6 in the Plan-EA.</p> <p>Please see the response to Comment ID 247.05 related to future water availability.</p>
86.05	WAT	<p>Currently more than 90%of the West is classified as being in a drought, with most areas experiencing “extreme” to “exceptional drought,” the two highest measured categories. The US Drought Monitor reports our current conditions to be the most expansive and intense drought the western United States has experienced in the past century. For Oregon, the “conditions are among the driest going back to 1895.” Currently (July 2021), most of the state’s snowpack has melted and it did so at a historic rate, making for a summer water supply forecast that is below average for almost every river in Oregon. The glaciers that feed the Deschutes River, and therefore the Arnold Canal, are disappearing at an alarming</p>	<p>Please see the response to Comment ID 86.04.</p>

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		rate. The EA notes these trends, which are predicted to continue under a variety of climate change scenarios, yet fails to fully incorporate the effects and implications into the analysis.	
86.06	ALT	Lastly, and perhaps most egregious of the unsupported claims within table 5-1 to a property owner along the canal, is the idea that the preferred alternative is “locally preferred.” Did the agencies conduct surveys of residents within the Arnold Irrigation district to determine this? What is meant by “local?” As a property owner on the canal I can state as a fact that we were never contacted or asked about our opinion on “preference.” Since the only place in the entire document that discusses “local preference” is in table 5-1, it’s unclear how the agencies reached this conclusion and seriously calls into question the legitimacy of the analysis.	The locally preferred alternative is defined in NRCS (2017a). NRCS identified the locally preferred alternative in cooperation with AID, which is the local interest that has oversight or implementation authorities and responsibilities.
86.07	ALT	IV. Inadequate Range Of Alternatives NEPA requires federal agencies to “study, develop, and describe appropriate alternatives to recommended courses of action.” 42 U.S.C. § 4332(2)(E). “[C]onsideration of alternatives is critical to the goals of NEPA even where a proposed action does not trigger the EIS process.” Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228–29 (9th Cir. 1988. Courts have consistently described that an agency’s failure to consider a reasonable alternative is fatal to its NEPA analysis. Here the agencies only considered an action alternative and a no action alternative. Although NEPA “does not impose a numerical floor on alternatives to be considered,” an environmental review that considers only two reasonable alternatives will rarely satisfy the statute’s “hard look” standard. The two alternatives presented are in no way a “full range” of viable options. The EA states that a canal lining alternative was considered but eliminated from detailed analysis, however, the failure to analyze this alternative in detail has resulted in the lost opportunity to compare cost benefits in more depth and to analyze important considerations related to the overall benefit of the proposed action. As discussed previously, if an accurate cost-benefit analysis was conducted (which it has not been), including property values etc., the comparison of these two alternatives (as well as other reasonable alternatives) would help inform the agencies’ decision making process. The EA further states that “[e]ight alternatives were initially considered; six were eliminated from full analysis because they did not address the purpose and need for action, did not achieve the Federal Objective and Guiding Principles, or because they became unreasonable due to cost, logistics, existing technology, social, or environmental reasons.” EA at xii. It is incomprehensible that there is only one possible action alternative that meets the projects purpose and need, and that the only way to move water management forward in Central Oregon and the Arnold Irrigation District is to pipe a canal. While the EA claims to have considered but eliminated other alternatives, the decision to put forth such a narrow range of alternatives points squarely to an “ordained outcome” regardless of the EA’s findings. This willingness to use the NEPA process as a paper exercise instead of an opportunity to meaningfully consider reasonable alternatives to water conservation is extremely concerning given the water scarcity challenges Central Oregon faces in our future.	Please see Appendix D.2 of the Plan-EA for a description of how potential alternatives were analyzed, selected for further evaluation in the Plan-EA, or eliminated from further evaluation in the Plan-EA.

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86.08	COST	<p>V. Conclusion If the project cannot pass a legitimate cost-benefit screening that includes i) the costs of lower property values and lost trees, ii) an accurate quantitative baseline for calculations of “benefits,” iii) and a 30-year period of analysis, then it is not cost-effective and should not proceed. Cost effectiveness requirements are not merely a procedural hoop; instead they are critical to ensuring that public investment leaves the public better off. It is not at all clear that this is the case for the project. The failure of the EA to include these basic measures, as well as a reasonable range of alternatives, has led to a flawed analysis and uninformed decision-making process, running a foul of NEPA.</p>	<p>Please see the responses to Comment IDs 86.02 through 86.07.</p>
87.01	GEN	<p>I am a community volunteer. I am a retired physician (M.D.) residing in Bend Oregon. Over the past ~ twenty years I have been involved with a large number of varied projects and issues involving the waters of the Deschutes basin and its fisheries. These have ranged from the Metolius River system on the west side of the Deschutes basin, to the middle Deschutes and major tributaries Whychus Creek and Tumalo Creek, to the lower Deschutes below the Pelton Round Butte project, the Pelton Round Butte project itself, the upper Deschutes above Bend, and Wickiup and Crane Prairie reservoirs. Experience on the east side of the basin includes in the lower Crooked River, Crook County youth education, water quality problems, fish passage projects at Opal Springs and multiple other fish passage obstructions within the lower basin, and the McKay Creek "switch" which is critical for the anadromous fish reintroduction project in the upper Deschutes basin. In the upper Crooked River basin above Prineville Reservoir a variety of involvements included streams in the Ochoco mountains and the South Fork of the Crooked River. I was an active participant in the recently completed 3 year Bureau of Reclamation Basin Study which analyzed Deschutes basin current and future water supply and demand issues. I have previously served on the board of directors for the Central Oregon Fly fishers and Central Oregon Land Watch and currently serve on the board of the Deschutes River Conservancy in an environmental seat and on the board of the Deschutes Red Band Chapter of Trout Unlimited as ex-president of the chapter. This body of experience has been stimulating and educational. The draft EA addresses many of the issues of this complex project reasonably well. However inadequacies with respect to analyses of diversions for AID and impacts on North Unit Irrigation District (NUID), and the way conserved waters will be permanently protected, are significant. The draft EA should not be approved given these flaws.</p>	<p>Thank you for your comment. Please see Appendix E.4 of the Plan-EA for more information on seepage, flow, and water savings. Please see Section 6.8.2 of the Plan-EA for updated language regarding the effects on water resources.</p>
87.02	WAT	<p>I) AID diversions and impacts on NUID On p. 66 (section 6.8.2) of the draft EA it is stated: "AID's water right currently allows it to divert up to 150 cfs, and this rate exceeds AID's historical diversion rates. To reduce effects on junior water right holders, AID would voluntarily reduce this maximum rate and identify 120 cfs as the District's pre-project diversion rate for the purposes of any water rights administrative processes. Following construction of each phase, AID would reduce its diversion by the amount of water saved (up to 10,526 acre-feet per year). "No data are included in the draft EA to support the assertion that 120 cfs "for water rights administration" is appropriate. Problematically in the AID System Improvement Plan (June 2017) it is stated that ordinary peak diversions from 2006-2016 were</p>	<p>Please see Section 6.8.2.1 of the Plan-EA for an updated discussion of patron and District water rights and District diversion rates. Please refer to the National Economic Efficiency Analysis in Appendix D.1 for an updated analysis of the costs and benefits of the project. Please refer to Appendix E-4 for more information on water rights, seepage, flow, and water savings.</p>

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		<p>108 cfs. In table 3.3.2(p18) it is stated that historical peak diversions corrected for canal improvements were 98 cfs.</p> <p>This apparent overstatement of historical diversions for the EA analyses by over 20% calls for objectively validated clarification. And in the 2017 System Improvement Plan it is stated that engineering modeling addressed system engineering for an increase of on-farm water usage from 7.55 GPM/ acre to 9 GPM/ acre for future AID "management flexibility" including possible "additional future acreage" for irrigation. Is this consistent with water law? The EA does not address these consideration for district management plans for post project water use or diversions. Failure to resolve these inconsistencies questions the validity of the EA at a fundamental level. Currently as stated in draft EA, AID diverts less than their water rights. These unused waters have historically been available to NUID under their junior rights. The amount of water NUID has obtained by virtue of AID underutilization of water rights is not clear from the draft EA. The statement that 120 cfs is identified for water rights administration is of questionable meaning unless AID reduces its certificated rights formally.</p> <p>Consider this simple analysis:</p> <p>First it is acknowledged that one can address these issues either in acre feet or flows. Flows (cfs) as used in most sections of the draft EA are used in this section..If AID identifies 120 cfs as the pre-project diversions per draft EA, and commits to reducing this by the conserved waters (32.5 cfs) the post project diversions would be 87.5 cfs. The 2017 SIP states the ordinary peak diversions were 98 cfs from 2006 to 2016..The draft Watershed Plan -EA and AID SIP taken together suggest AID will reduce diversions by 10.5 cfs; this would be the actual increase in live flows available to NUID..Review of data supplied by OWRD confirms approximately the SIP numbers..The plan states conserved water, 32.5 cfs, will be released from Wickiup Reservoir by NUID during the storage season in return for receiving 32.5 cfs live flow during the irrigation season. And this assumes the AID live flow rights will be wet water, but it is not clear that AID rights priorities assure availability of this live flow in all seasons..Therefore NUID will potentially suffer a net reduction of 22.5 cfs, or more, in water available for irrigation: 32.5 cfs reduction in storage in exchange for a possible increase of 10.5 cfs above historical live flow supply..This argument challenges the validity of EA benefits analyses: on p106 table 8.5 average annualized agricultural damage reduction for NUID is tabulated as \$1,489,000 or 87% of the total \$1,720,000 for this category, and annualized non-agricultural damage reduction as \$42,000 or 52% of that benefit category. Correct assessment of the impacts on NUID, which are damages not benefit, calls for revised analyses as to whether the proposed project meets cost/benefits criteria for PL83-566 federal funding.</p> <p>Has NUID formally agreed to this outcome? One can envision an enforcement quagmire.</p>	

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		<p>This critique would be non-productive if it did not consider possible solutions:</p> <ul style="list-style-type: none"> •AID patrons and district enter a binding agreement to continue to use their historical per acre water amounts. It is fair to suggest that most patrons have learned sustainable usage patterns over past years, even if this has been less than certificated water rights. Administration of any plan will require AID reduce its certificated water rights. •Total diversions would be the reduced rights plus carry water for conveyance losses. With time as losses are eliminated by infrastructure modernization, the total diversions can be easily administered by OWRD: for the proposed project AID reduces its diversions by the amount of conserved water: 98 cfs(historical ordinary peak diversions)-32.5 cfs conserved water = 65.5 cfs new peak rate The peak diversion rate leaves large margins for most days of the irrigation season during which, historically, diversions were well below peak diversions. •This would be a very favorable, perhaps excessively favorable, plan for AID patrons: <ul style="list-style-type: none"> oModernization of AID infrastructure has reached a critical need stage as exemplified by the infrastructure failures of 2021, as well as by the outlook for climate change impacts. oA pressurized delivery system will yield substantial direct economic benefit for patrons via pumping power cost savings as presented in the draft EA, as well as facilitating more efficient irrigation methodology. oPublic financing for the project is a major direct financial benefit for patrons and the district, which otherwise will face major expenses for operation and maintenance of an aging infrastructure. To put a number on this: PL 83-566 federal funding of \$27,862,000 per 149 patrons directly benefited (p xiii) = \$186,993/patron, or for the entire districts 646 patrons(p 18) = \$43,130/patron. And additional public financing, potentially up to \$14,897,000 (p xiii), from non-federal sources, providing further direct benefit. The plan states patrons will not incur any increase in costs, so the total direct public investment=\$66,190/patron. oNegative consequences for AID patrons will be negligible. Simply continuing with the sustainable usage patterns they have developed over many years seems a reasonable ask in return for these major benefits. While this modification of the proposal would enable meaningful administration, NUID will still potentially suffer some supply reduction if live flows under AID rights priorities do not always yield live flow to NUID (paper water), but at least in theory NUID could receive increased live flows equal to increased storage releases. Thus this solution would be at best a net neutral for agricultural damage reduction re:cost/benefits analyses. 	

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		<p>However, this solution does not resolve the problem of permanent protection of conserved waters as instream flows, addressed in the following.</p>	
87.03	WAT	<p>II) Permanent protection of conserved waters as instream flows. The draft EA addresses instream flow needs and benefits in many places throughout the document, which will not be tabulated here. Topics are far ranging: needs of fish and aquatic species, habitat degradation and water quality problems from historical practices, compliance with federal law such as the Clean Water Act, impacts on Outstandingly Remarkable Values identified for the Wild and Scenic Deschutes River segments; the list goes on. Entwined in these topics is acknowledgement of the need for permanent protection of instream flows based on the water conserved by the proposed AID project. For example on p 47 the No Action analyses states "Since no water would be conserved or permanently allocated instream, the No Action Alternative would not achieve the Federal Objective to protect the environment." The EA addresses the issue on p 67: "Protecting Water Released by NUID to the Deschutes River Following the completion of each phase, NUID would legally protect the water released from Wickiup Reservoir through an instream lease under Oregon water law (ORS 537.348 [2] and OAR 690-077). The water leased instream would retain the same priority date as the originating water right (Certificate 51229). The instream lease would protect water in the Deschutes River downstream from Wickiup Reservoir during the non-irrigation season (i.e., in the late fall, winter, and early spring). Once an instream lease was approved by OWRD, the leased portion of NUID's water right would be unavailable for use by NUID or its patrons. Oregon statute allows for NUID's storage water rights to be permanently transferred instream (ORS 537.348). However, OARs need further clarity to allow these storage water rights to be permanently transferred instream. An agreement would be established specifying that these instream leases would be renewed in perpetuity or until the State of Oregon provided the clarity needed for a permanent change." A "lease in perpetuity" is an oxymoron; hardly permanent protection. "Or until..." is not a sufficiently binding solution for permanent protection either. Additionally the economic analyses are based on 100 years net present values. Are these analyses valid if the instream waters are not irrevocably protected for 100 years? Much text is devoted to the recently finalized HCP and how the project will assist the districts with compliance; the HCP is a legally binding contract. But the HCP has a duration of 30 years at best; that is not permanent protection. There has been active debate within basin stakeholders and state agencies over this issue of permanent protection for storage season releases from Wickiup. The most recent discussions of this occurred in a</p>	<p>Please see Section 6.8.2.1 of the Plan-EA for an updated discussion of water resources. Please refer to Appendix E-4 for more information on water rights, seepage, flow, and water savings. Please refer to the Deschutes Basin Habitat Conservation Plan (HCP), 2021, for more information regarding instream requirements. The proposed project would provide instream benefits for the years 2024 through 2027 of the HCP only. However, while the HCP has a duration of 30 years, the project described in this Plan-EA and the live flow and stored water transferred in stream would be permanent (Section 6.8.2.1). The benefits of the project, therefore, outlive the requirements of the HCP and are evaluated as such in the economic analysis (Appendix D). The effects of the project on federally listed species are considered in the Plan-EA (Sections 6.9.2 and 6.11.2) and in the project's Biological Assessment developed for consultation with USFWS under Section 7 of the Endangered Species Act. Please see Section 3.1 of the National Economic Efficiency Analysis (NEE) in Appendix D.1 of the Plan-EA for a discussion of economic benefits.</p>

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		<p>series of meetings of the Deschutes Basin Water Collaborative. Meeting minutes are available from the DBWC. The outcome of these discussions was that the pathway for permanent protection of the conserved waters remains undefined. From my environmentalist perspective this protection should mimic the Oregon Conserved Water Act by which conserved waters are returned to the public domain and are not subject to any potential future diversion or storage. Unfortunately, the CWA provisions for return instream in the season and at the point of diversion cannot be applied to the proposed plan, which moves the conserved waters away from the original point and season of diversion. Debate has suggested that pursuing this through a storage water right transfer concept could result in "paper water" for the conserved waters, while possibly reducing Wickiup storage rights capacity, an outcome inconsistent with future basin comprehensive water management goals. Even more problematically legal counsel for NUID has maintained that they will hold the water rights and control the Wickiup releases; hard to morph that concept into "permanent protection". It has been argued that Central Oregon Irrigation District's Watershed Plan was approved using very similar language as used in the AID plan, for protection of conserved waters released from Wickiup. However as briefly summarized above, discussions within basin stakeholders subsequent to the finalization of the COID plan have only confused issues further. It has become apparent that while COID has expressed willingness to move from perpetual leasing to permanent protection, COID has no authority to compel NUID to agree to the required changes in Wickiup operations, which are under control of NUID. Learning from this experience, solution to this problem must now be completed in a new reality: in 2021 Oregon passed HB 3103 which formally allow transfers of storage water rights to instream flows, and the OWRD has committed to completing administration rules for execution of such. The AID plan must include protection of conserved waters based on these new legal realities, and include binding commitments by NUID to the new management regimes. Conserved water must be returned to the public domain as for other CWA outcomes.</p> <p style="text-align: right;">It is fair to conclude that permanent protection of conserved waters is a necessary project provision if the project is to qualify for PL83-566 funding; the current proposal is inadequate on this point. Revision of management and regulation provisions for AID diversions, with revised analyses of impacts (section I) should also be required before final approval of the EA is granted</p>	
88.01	GEN	Farms need water. Selfish property owners who like having a water feature paid for by the rest of us are out if touch with reality.	Thank you for your comment.
89.01	WILD	We are opposed to the Arnold canal being filled in. Our property at [ADDRESS] is on the canal. Every year when the canal runs, wildlife is abundant here. Ducks lay their eggs among the reeds and raise their young. The violet-green swallows migrate here in the summer to mate. Deer congregate along the canal.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
89.02	PROP	The ambiance of the whole area will be downgraded and along with it property values.	Please see the response to Comment ID 218.13 regarding property value.

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89.03	VEG	Trees and vegetation will suffer and or be destroyed. Construction noise will be persistent and will ruin the peace in all surrounding neighborhoods. So,we say, stop the pipe!	Please see Section 6.6.2 of the Plan-EA regarding effects on vegetation. See Section 8.3.5 for BMPs related to noise control.
90.01	PROP	Hello, I live at [ADDRESS] my property backs up to the canal I would like to register my opposition to piping the canal in my backyard as it would decrease my property value and dramatically change my enjoyment of watching wildlife utilize the water in the canal.	Please see the response to Comment ID 218.13 regarding property value and Section 6.11.2 of the Plan-EA for information regarding effects on wildlife.
90.02	ALT	I feel lining the canal in residential areas would be a good compromise.	Please see the response to Comment ID 32.02.
90.03	VEG	I am also concerned about damaging my large tree near the canal.	Please see Section 6.6.2 of the Plan-EA regarding effects on trees.
91.01	WAT	I know there has been a lot of backlash about piping the canal, but I wanted to chime in with my support for the plan. I live on a property backing the canal, and I've loved having it there. However, given the unprecedented drought conditions and the massive amount of water lost due to evaporation, I think the logical choice is to pipe the canal. It would save immense amounts of water and would dramatically help the wildlife downstream in the Deschutes.	Thank you for your comment.
91.02	SYS	I would love it if we could turn the piped canal (at least where it passes through Deschutes River Woods) into a publicly accessible trail that we could all enjoy, as has been done in some other locations.	The District's ROW and easements are only for maintaining irrigation infrastructure and conveying irrigation water. Public use of the property alongside the Main Canal is not a purpose of the District's ROW or easements.
92.01	ALT	There are better ways to address canal seepage other than wiping out trees and damaging an ecosystem that has been established which already has environmental stressors put upon it from climate change. It seems very obvious that the proposed piping of the arnold canal is based on money and not in the best interest of the environment while seemingly trying vaguely address it. I've seen the damage scars of piping off Brookwood and the slow return of any native plant other than invasive weeds. There obviously needs to be a better plan that will address the environment along the canal and especially within the Wild & Scenic Deschutes. The damage to the area surrounding Lava Island Falls is unacceptable. Bend is already losing valuable wild areas do to poor city planning, massive zoom town growth and greed. Greed is destroying what once was a community town.	Please see Appendix D.2 and Section 5.2 of the Plan-EA for discussion of the alternatives that were analyzed. Regarding effects on the Wild and Scenic Rivers, the flume has been removed from the proposed action. Please see the response to Comment ID 12.01 for more information. The effects of the proposed action on Wild and Scenic Rivers have been updated in Section 6.12 of the Plan-EA to reflect the removal of the flume.
93.01	WILD	Please know I am adamantly opposed to the piping plan of the Arnold Irrigation District. I value well water here and the wild and scenic designation of the upper Deschutes.	Please see Section 6.8.2.3 of the Plan-EA for information about the effects on groundwater. Please see the response to Comment ID 12.01 regarding the proposed project within the Wild and Scenic Area.
93.02	ALT	There simply is not enough information on the environmental impact!	The beneficial and adverse effects of the No Action Alternative and the Piping Alternative are discussed

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			in Section 6.1 through Section 6.13 of the Plan-EA. Please see Section 7.2 of the Plan-EA for more information.
93.03	VEG	Yay farmer irrigation, but what about the loss for the homeowners possible water source, vegetation and animals in the area of the proposed project?	Patron water rights would not change as a result of the project. Please see Section 6.8.2 of the Plan-EA for more information regarding effects on water. See Sections 6.6 and 6.11 of the Plan-EA respectively for a description of effects on vegetation and wildlife as a result of the proposed project.
93.04	SYS	I also would like to see a more detailed plan of the area off Ochoco Cir, down to the Deschutes River.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
94.01	SYS	I think the proposed plan for burying the flume is a bad one. I fear that, because of the slope of the terrain around the flume in most areas is so steep, that they will be long term affects in terms of landslides into the river. This could affect the river, vegetation, habitats, trees, and who knows what other unintended consequences.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
94.02	ALT	I request that the Arnold Irrigation District conduct a comprehensive environmental impact study prior to initiating this proposed project. As one who hikes the Deschutes river in that area frequently, I fear that what we love about this town and what people come here for will be affected. The flume is historic and I love seeing it on my hikes. I fear the repercussions and unintended consequences may far outweigh the benefit of saving a little bit of water. Please conduct an EIS before it is too late to reverse.	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p> <p>Consistent with the guidance provided in 7 CFR 650.7 and 40 CFR 1500-1508, an EA has been prepared to determine if there would be a significant impact on the human environment from the project. The assessment will determine if the project requires the preparation of an EIS or if a Finding of No Significant Impact (FONSI) is appropriate. This Plan-EA used a systematic interdisciplinary analysis and evaluation of data and information responding to the five provisions of Section 102(2)(C) of NEPA to include economic or social and natural or physical environmental effects. A threshold matrix of effects was developed to assist in determining if the proposed action results in significant direct, indirect, or cumulative effects on</p>

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			resources and consequently whether it would be a major action significantly affecting the quality of the human environment, requiring an EIS to be prepared. Furthermore, it should be noted that economic or social effects are not intended by themselves to require the preparation of an environmental impact statement. Rather, the analysis of interrelated effects on the human environment will determine if an EIS is necessary (see 40 CFR 1508.14).
95.01	PROP	My husband [NAME] and I are completely opposed to piping the canal in DRW and to the East in woodside ranch area!! If you have a leak way higher, then fix it there and leave our canal alone!!You will not only deprecated the value of all of out homes, but the trees on the canal and Wildlife depend on that water to drink!!I see not only did you not pipe the canal off of 15 towards Reed market road, but a beautiful bridge was constructed there!! We have the right to have the canal continue to run as is through our property as well!!I wouldn't have bought this property had I known you were going to try to pull this on our community!!	Please see the response to Comment ID 218.13 regarding property value. See Sections 6.11.2 and 6.6.2 of the Plan-EA for information regarding effects on wildlife and vegetation.
95.02	WILD	The wildlife and trees out here are important to me as well!! And you would be killing both!!	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources and Section 6.6.2 of the Plan-EA for information regarding effects on vegetation.
95.03	PROP	Myself and many of the people in DRW will continue to protest this piping, to the point of laying our bodies down in front of your bulldozers and trackers in protest!! The canal goes through OUR PROPERT IES!! That's our property and not yours!! Your property values will not be effected by this, but ours will!! NO PIPING THE CANAL!!!! Period!!! LEAVE THE CANAL ALONE!! SAVE THE TREES AND WILDLIFE IN DRW!!!!	Please see the response to Comment ID 218.13 regarding property value.
96.01	ALT	Pleas consider other options.	Thank you for your comment. Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered.
97.01	ALT	Please stop the pipe project! There are other alternatives that would be much better and cheaper to fix the problems. A lined canal would be much better for everyone as well as the wildlife and vegetation. Please stop the pipe project! I am including pictures of my property as of right now.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.

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97.02	PROP	A piped canal will decrease my property value.	Please see the response to Comment ID 218.13 regarding property value.
97.03	FIRE	Also, the big machinery will cause damage to these areas. It would add to the fire danger we already deal with in this dry area.	Updated language regarding the project's effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
98.01	GEN	In regards to the piping of the scenic Arnold canal due to a lack of provided documentation we have some concerns. Please list us and our property as a concerned party in this matter.	Thank you for your comment.
99.01	GEN	As the legal owner of the property located [ADDRESS], I am writing to formally register my strong objection to Arnold Irrigation District's (AID's) proposed plan to replace its existing flume and canal with an underground pipe. By this letter, I also formally request a pause on any further planning until the discrepancies here in this letter have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID's responses.	Please see the response to Comment ID 39.11 regarding the public comment period and the response to Comment ID 1.01 regarding the public process.
99.02	RIGHT	Specific Questions and Concerns AID's Plan ignores or fails to adequately address many critical questions and concerns about its proposed Plan including: AID's legal authority to conduct such a massive construction project on other's private property; visual appearance of the completed project; transparency with regulatory agencies; environmental impact; and public notification and disclosure. It is impossible for regulatory agencies, property owners, and concerned citizens to fully evaluate and comment on the proposed Plan until these questions and concerns are fully and accurately addressed. We therefore request a thorough written response to each of the following questions and concerns as well as to those submitted by other concerned parties. 1. AID claims to have legal easements on all privately owned property on which its existing flume and canal system is located and that these easements grant it legal authority to replace the flume and canal system with a buried pipe on these same privately owned properties. We have requested several times from AID a copy of the specific easement that describes AID's rights, responsibilities, and limitations on our specific property but have so far received only a general referral to the Right of Way Act of 1891 and the Cary Act of 1894, (both of which concern use of public lands and do not mention easements on private property). If there is a legitimate legal question as to AID's right to operate its business on privately owned properties belonging to other parties, this question must be resolved before proceeding with further discussion of infrastructure improvement. To resolve the question of easements once and for all, we request that AID provide each private property owner on whose property AID's flume and canal system currently exists, or whose property would be affected by the proposed flume and canal piping project, with the following documentation: a. Provide documentation proving that AID actually does have a current legal easement to use each of these specific privately owned properties. This documentation should show the original granting and terms of each easement and the legal transfer of the easement to the current property owner. b. Provide documentation proving that if these easements were originally granted as a Right Of Way on public lands and those lands	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. For information about the Carey Act, please see the response to Comment ID 39.02. For discussion about individual easement documents, please see the response to Comment ID 39.18.

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		later became privately owned properties that the Right of Way was legally converted into an easement allowing AID to use the now private land. If the easements are proven to be legal, we request that AID provide to each affected property owner documentation showing the specific terms, conditions, and limitations of their particular easement, including: the length of the easement period, (if perpetual, where is this stated and what happens if AID goes out of business); the limitations of the easement, (what does it allow AID to do on privately owned property and what does it prohibit AID from doing); and does the easement specifically grant AID the right to use privately owned property with no monetary compensation to the property owner."	
99.03	SYS	"3. For regulatory and management agencies with responsibility for the Upper Deschutes River Corridor, affected private property owners, and the general public to visualize and fully comprehend the aesthetic impact of AID's plan to replace the flume with a pipe "buried above the existing landscape elevation", it is essential that AID prepare a detailed written description of what the proposed flume replacement would actually look like when completed, including drawings and/ or other visual representations of the completed project as viewed from multiple points along the river, the hiking trail, the picnic area, and the river rim. We request that such a written description be prepared and made accessible on-line to all parties listed above.a. After the written description specified above has been provided to and reviewed by all relevant regulatory and management agencies, we request that a copy of their written responses, including all written approvals and disapprovals, be made accessible on-line to all parties listed above."	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
99.04	VEG	"4. Many mature trees would necessarily be removed or killed by AID's proposed plan to replace the flume and canal with a buried pipe. This would dramatically affect the scenic beauty and ecology of the Deschutes River corridor.a. What are the average and maximum distances on each side of the proposed roadway where all existing trees would be removed?b. What is the total estimated number of trees larger than 3 inches in diameter that would be removed or killed by the project?c. Will AID replant native trees to replace those removed and killed? If so, will this be done on a tree for tree basis?"	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
99.05	WILD	5. The proposed flume replacement would require a lengthy and massive construction project using heavy equipment in a fragile ecological environment used by osprey for annual nesting. The osprey is a protected species. What measures would AID employ to ensure this species is not harmed by the construction?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
99.06	WILD	6. The proposed project area is also home to the White-headed woodpecker, which is an Oregon Conservation Strategy Species and a sensitive species of concern which is specific to this area and only resides in a very limited range throughout the United States. What measures would AID employ to ensure this species is not harmed by the construction?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
99.07	SYS	"7. The proposed flume replacement calls for a 4 to 5 foot pipe to be buried in "engineered backfill". This backfill would be clearly visible from most vantage points and would dramatically impact the scenic beauty and ecology of the Deschutes River corridor.a. What would the "engineered backfill" consist of	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

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		and what would it look like visually?b. What would be the slope and maximum height of the backfill on the side facing the river?c. Would native trees be planted on the sloped side of the backfill facing the river?d. What measures would prevent erosion of the sloped sides of the backfill and what would these measures look like visually?e. What measures would AID employ to ensure the backfill material and any topsoil used are free of noxious and invasive seeds?f. Is it AID’s intention to completely fill in the area between the road bed and the adjacent terrain on the inland side of the road so that no low areas are created which would be subject to pooling?g. If the answer to Question (f) is yes, this would require large amounts of “fill” material that would encroach far inland onto private property in some areas. Has AID received written permission for this encroachment? And how will AID compensate the property owner’s for this encroachment?h. If the answer to Question (f) is no, what measures would AID employ to prevent pooling on the inland side of the backfill and what would these measures look like visually?"	
99.08	SYS	"8. The proposed flume replacement calls for a “maintenance road” to be constructed on top of the burial mound and run along the entire length of the buried pipe. This road would likely sit approximately 8 to 19 feet higher than the current terrain and would therefore be clearly visible from most vantage points around both sides of the river rim. The proposed road would be highly detrimental to the scenic beauty and ecology of the Deschutes River corridor.a. How wide would the “maintenance road” be?b. How wide would the entire “flat” area on top of the burial mound be, (including road, shoulders, and adjacent ground)?c. How would the road and its shoulders be surfaced? (asphalt, gravel, dirt, etc.)"	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
99.09	PROP	"9. Many homeowners on both sides of the proposed piping plan have selected and purchased their property primarily, if not solely, for the scenic beauty and this natural beauty is a major factor in the aesthetic and monetary value of their property. Replacing the flume and canal with a buried pipe would significantly detract from both the aesthetic and monetary value of their property. a. Does AID intend to compensate these homeowners for the property devaluation it causes? b. If so, how will the dollar amount of the devaluation be calculated and how will it be paid?"	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.
99.10	ALT	10. According to AID’s Plan, the primary reasons for replacing the existing flume with a buried pipe are that it would reduce AID’s maintenance costs and that it would need to be replaced in 15 to 20 years anyway due to its age. The estimate of its remaining life appears to be based on a 1995 “Steele” engineering report; however a copy of this report is not included in AID’s Plan. ALL outdoor structures will deteriorate over time unless properly maintained. However, if well- constructed and properly maintained, most structures will last hundreds of years and we earnestly request that AID give serious consideration to this option. The cost of maintenance is simply a cost of doing business and in our opinion is not justification for inflicting permanent damage on the irreplaceable natural beauty of the Deschutes River corridor. However, if for some reason the preservation and maintenance of the existing	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

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		flume is not feasible, we respectfully request that AID propose an alternative that would not harm the Deschutes River corridor and those who love it.	
99.11	PUB	By this letter, I also formally request a pause on any further planning until the discrepancies herein this letter have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID's responses.	Please see the response to Comment ID 39.11.
100.01	GEN	I AM TOTALLY AGAINST THE PIPELINE!!!!!!! I live at [ADDRESS] and my north property line is the main canal.	Thank you for your comment.
101.01	WILD	How can the legally cover up a Wild and Scenic site? This aid a travesty. I heartily object to this.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.
102.01	ALT	I don't want your damn buried pipe. Leave the canal alone. If you must do something then line the canal with concrete. But leave the canal alone.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.
103.01	ALT	Hello Arnold Irrigation, I just wanted our family's name added to the list of those who oppose the piping of the canal in DRW. I do understand the reason behind the piping project, but I believe there is some negotiating that can happen that might satisfy both parties instead of the "all or nothing" proposition of piping from DRW all the way to Horse Butte. We propose starting the piping of the canal just east of the Parkway (where it's wide open for installment) and leaving the canal open through DRW for residents and wildlife to enjoy. We could even add that part of the canal as a historic landmark, it being over 100 years old. This would also eliminate the need to squeeze all your equipment and material on the narrow access road and disrupting the backyards and lives of so many residents for the construction. Anyway, that's our 2 cents, Please consider it. You would be rock stars if you weren't "all business" and were willing to give a little. Thanks for your time	Please see the response to Comment ID 14.01 for discussion of why AID identified a need to modernize the Main Canal. Regarding an alternative that includes both lined and piped sections of canal, please see the response to Comment ID 32.02. See Sections 4.1 and 6.1 of the Plan-EA for information on cultural resource surveys, which included surveys for historic resources in the project area.
103.02	MET H	I understand that much of the water evaporates on the trip from DRW to Horse Butte, but how much study has gone into how much water loss there is from the Deschutes River to, let's say, just after the Parkway? The canal is shaded most of the way to the Parkway. My guess is much of the evaporation happens in the open land east of the Parkway.	A water loss assessment was performed in AID in 2016. For information, please see Appendix E.4 of the Plan-EA.
104.01	WILD	We live at [ADDRESS]. The canal is right behind our home. We want to save our Canal from being covered up and gone forever. The sound and the Beauty is well appreciated of the water moving. The ducks and wildlife are drawn to this area and we appreciate the Wildlife that come and go. It brings sounds of birds and frogs at night and throughout the day. It will never be the same if it is covered up.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.

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104.02	SAFE	It will also bring more traffic to our land cuz of easier access for burglary and such horrible things. Please do not do this. Our Family is Native to Central Oregon of 47 years . Please re think this and help us keep Arnold canal . Thank You for Your time reading this,	Please see the response to Comment ID 32.03.
105.01	WILD	We have lived on the canal for 24 years. Our property is intersected by Arnold Canal running within a few feet of our house and continues through our property for several hundred feet. We have enjoyed not only the view but have seen numerous families of deer, raccoon, raptors, owls, coyote, geese, ducks, dozens of varieties birds and various other wildlife all depending on the canal. He canal provides the cycle of life and we should not destroy this part of Central Oregon for the benefit of very few. Arnold Canal has since its inception provided a source of water for literally hundreds of different plants and trees including beautiful Ponderosa pine trees. If this source of water is cut off we truly will become more of a high desert rather than the beautiful area we all enjoy.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding impacts to wildlife resources and Section 6.6.2 of the Plan-EA for information regarding effects on vegetation.
105.02	PROP	As far as how the piping will personally apply to us it is very clear. We have contacted several realtors as to how this would effect our homes value. The answer was unanimous that it will have a significant reduction on our property value. Couple that with the destroyed wildlife habitat, loss of trees and plants along damage to our existing property this leaves us with both emotional and finacial losses that cannot be replaced if Arnold Canal is piped.	Please see the response to Comment ID 218.13 regarding property value. See Sections 6.11.2 and 6.6.2 of the Plan-EA for information regarding effects on wildlife and vegetation.
105.03	ALT	We are most definitely OPPOSED to a piping only decision. What alternatives have been looked at and what cost studies have been done? We have heard no discussion of that from Arnold Irrigation. Stop the Pipe!	Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered.
106.01	COST	What a terrible waste of money. No wonder we're all drowning in the national debt.	Thank you for your comment. The costs and benefits of the proposed project have been updated. Please see the NEE in Appendix D.1 of the Plan-EA.
107.01	PROP	After the alert we had, short notice by the way, on your plans to repair our historic flume, I find myself in a position to voice my complaints. We have lived in our home for over 30 years, raised 2 children here and have invested time, energy and money to make it a place we are proud of! Your plans to remove the flume and replace it with a raised pipe monster that will be covered with trucked in fill is beyond imagination. When we bought our home 32 years ago we agreed to the right of way for the canal and flume, but that was for maintenance, not destruction! The noise, dust,, and the harm to habitat and wildlife are not worth the cost. I am including a photo of one of the boys that were visiting last night, getting a drink from the open canal! That is just a small amount of the wildlife that come by for a drink. Here is a few! Raccoons, beaver , cougars, rock chucks, coyote, squirrel, rabbits, ducks, quail. Osprey, eagles, blue herons, and many more. Please reconsider your plans. We feel that they could harm the anesthetic of our property and affect the monetary value of our home.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regarding property value. See Section 6.11.2 of the Plan-EA for information regarding effects on wildlife.
108.01	GEN	BAD IDEA RUINING THIS RIVER!! STOP THE ARNOLD PLUME PIPING NOW!!	Thank you for your comment.

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109.01	GEN	Please do not uproot the vegetation and rock that borders the canal by the river. It will disturb all the animals and plant life that are along the river near the canal and lava falls. Has an environmental report been prepared to study the impact of this project?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see Section 6 of the Plan-EA for a discussion of effects of the proposed project to a variety of resources, including vegetation and wildlife. This Draft Plan-EA has been prepared to assess and disclose the potential effects of the proposed action.
110.01	PUB	We do not want you to destroy our land by taking out the canal. That is the reason we purchased it. I understand we can comment but we are also not being heard because the 42 million allocated by government supersedes our wishes with our monies. How do we as the people get our rights back? I am not sending pics because you already know how beautiful the canal presently is. Do not destroy our land!	Please see the response to Comment ID 1.01.
111.01	GEN	Why do you want to mess with any of our ecosystems in Oregon. There is already way too much building , plowing trees, etc all over. Do not pipe it, please.	Thank you for your comment.
112.01	GEN	I am writing you this email to Stop the Pipe. I do not agree with this and do not want the canal to be filled in. The canal runs through our property	Thank you for your comment.
113.01	PROP	I urge you to consider other options than piping the Arnold Canal, and advise the public why you think piping is better than any of the other options that have been proposed. We bought our property at [ADDRESS] years ago because of the canal and the wildlife that frequent it. It runs along the widest stretch of our lot and there are many trees that line it, some that we had planted ourselves at a high cost years ago. What will happen to those trees? Will there be any compensation for the destruction of the trees and landscaping along the canal? Will there be any compensation for the loss of privacy when it becomes a walking/ biking path? Any compensation for the noise pollution from the golf course's holding pond pump without the trees? The pump runs 24/7 about 6 months a year. We spent our own money to upgrade the walls on the basic structure around the pump and received no compensation from the golf course owners. My husband did the work himself. And we planted 4 Austrian pines to help block the pump noise as well. These trees will be damaged or removed by the canal installation and the noise pollution will increase. I don't think it's fair to the homeowners who live on the canal if there is no recognition for the loss of landscaping and reduction of property value. What compensation do you plan?	Please see Section 6.6.2 of the Plan-EA for updated language regarding tree removal during construction and effects after construction. Construction of a walking/ biking path within the District's ROW is not part of the proposed project. Please see the response to Comment ID 218.13 regarding effects on property value. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more information regarding alternatives.
113.02	ALT	Why not pipe areas of canal that don't have homes on it and spare the areas that run through our backyards??? Many of us bought our homes because of the existence of the canal on the property. Please consider other options.	Please see the response to Comment ID 14.01 for discussion of why AID identified the need to modernize the Main Canal.

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114.01	FIRE	Please do not go forward with the piping of Irrigation water! This canal water provides drinking water for wildlife as well as moisture for thousands of coniferous trees. Without this water source, DRW will most certainly become a tinderbox!	Please see Sections 6.6.2 and 6.11.2 of the Plan-EA regarding effects on vegetation and wildlife. Updated language regarding the project's effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
115.01	GEN	Please see the attached and updated PDF for my comments on the proposed Arnold Irrigation District canal piping proposal dated 2021-06-08. Please contact me if you need in in a form other than a PDF. I am happy to provide it.	Thank you for your comment. Responses to the comments provided in the PDF can be found in Comment IDs 115.02 through 115.10.
115.02	GEN	I am an owner of two contiguous properties in Deschutes River Woods which would be dramatically and detrimentally affected by the proposal to pipe the Arnold Irrigation District canal. This property is not only my family's home but also our single most important financial asset. I was and continue to be concerned by the conclusions reached and the factors that seem to have been minimized or altogether ignored to justify the desired outcome of this draft plan, both in the plan itself and during the public meeting of June 23, 2021.	Thank you for your comment.
115.03	SAFE	The Effect on the Security of Properties which Border the Canal: Arnold Irrigation District (AID) has easements across hundreds of privately-owned properties where both the canal and a maintenance road run. Legally, AID is the only entity authorized to access these easements. In reality, it is used by vehicles (rarely), motorcycles (occasionally), and pedestrians (regularly) as if they were a public right-of-way. This situation was perfectly illustrated when an attendee at the June 23 online meeting asked if a trail was going to be built as part of the piping project to accommodate walkers. This is the degree to which AID has failed to keep trespassers from illegally using their maintenance road. The proposed solar access gates would serve to prevent unauthorized vehicles (and law enforcement?) but fails to address the bigger problem of pedestraim trespassers. In my area, both the canal and the maintenance road fall on one side of a property line. This arrangement allows peroperty owners behind the maintenance road to erect security fences to keep trespassers and potential thieves and vandals off of their land. On the opposite side, it is the canal itself - either full or empty - that protects homes and property from these same individuals. With the canal disappearing, that protection is gone.	Please see the response to Comment ID 32.03.
115.04	SAFE	The Argument Regarding Public Safety: The authors of this report cite an improvement to public safety as a benefit of piping the canal, yet are unable to provide any significant example of safety issues over the course of the canal's long history. There has never been a single drowning victim in the AID canal. According to the draft report's own statistics, over the cours of the next 100 years, the expected number of deaths from the existing AID open canal is .18 persons (Appendix D-28) This is not a \$42 million problem. Indeed, the report seems to rely on the mere potential for something bad to happen, ignoring the fact that there is no problem. It is worth noting that, when asked for examples of acutal public safety	Please see the response to Comment ID 37.12 for discussion of risks to public safety. See Section 2 of the Plan-EA for information about the purpose and need of the proposed project.

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		occurrences during the public meeting, the one occurrence that was cited repeatedly was the appearance fo a small sinkhole. Lives lost: 0. Crops lost: 0. Inconvenience to AID and its water rights holder: 3 days.	
115.05	FIRE	The Effect on Fire Safety and Prevention: Part of the AID canal runs thurough a Wildland-Urban interface, a transition zone between wilderness and development that has proven particularly susceptible to catastrophic wildfire events. In fact, so much so that for decades now there has been a specific and concerted effort to educate residents living in this zone, to reduce unnecessary fuel sources, and to take all additional steps available to mitigate wildfire danger in whatever ways possible. Clearly, piping the canal moves the needle in the wrong direction. It is hard to argue that a body of water the size and length of the canal as it runs through this wildland-urban interface isn't an effective fire break; and that replacing it with combustivle vegetation and a zone of large dead trees (p.62) doesn't increase the risk to the affected communities. It is worth noting that on page 39, footnote 11, fire suppression is one of the benefits and accepted uses of canals like that of the AID open canal.	Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3.2 of the Plan-EA.
115.06	WAT	The Effect on Underground Water Levels as it Relates to Wells and the Supply of Drinking Water: Water that seeps back into the water table is repeatedly referred to in the draft as "lost" which is only accurate in the narrow context of the goals of the agencies involved in this analysis. Everyone understands that this water is not really lost. It remains available to Central Oregonians as ground water. The piping of the canal merely redistributes the water away form the water table and underground aquifer. The draft plan offers a number of estimates for how much the piping project contributes to dropping underground water levels. In isolation, the impact is small on a regional level. It is 100 times greater locally. (p.71) When the effects of all the piping projects in the region are considered, the impact of groundwater levels is larger still. (p.85) But, after all of these estimates and calculations, we get to the real problem: There is no way to predict the actual effect in any particular region. (Appendix D-5) All of this begs the question of what happens to residents and property values of affected neighborhood should estimates furn out to be significantly off. This is an issue that affects more than just properties along the canal. What happens should well run dry?	Please see the response to Comment ID 433.38.
115.07	PROP	The Effect on Property Values and Visual Aesthetics: That this plan does not consider loss of property value and visual aesthetics in assessing the costs is unacceptable and feels like a manipulation to keep the cost-benefit number above 1.0. The draft acknowledges property value losses in teh range of 10-30%yet the authors choose to remove it from consideration due to lack of data. (Appendix D-10) Everyone in the process knows and understands that property value losses are an inevitable result of this process. Common sense demands that losses be included in the calculations. The draft authors do not hesitate to use estimates throughout the report for other purposes. There is no justificaiton for not using them here. We purchases our two lots in Deschutes River Woods specifically because of the canal, it's visual appeal, its colling effect during hot summers, its support of wildlife and a riparian zone where plants and trees would flourish, and the relaxing sound of the water, which is clearly audible both outside and inside the	Please see the response to Comment ID 218.13 regarding property value. Please see Section 6.11 of the Plan-EA regarding effects on wildlife.

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		house. As is true of so many of the homes along the canal, we positioned our home to maximize the benefits of the canal in terms of quality of life and of property value, as illustrated in the following images. (several images included) It cannot be disputed that this piping proposal dramatically decreases the value of properties along the canal as well as the quality of life for the thousands of people and the animals who make their homes here.	
115.08	VEG	Cost of Dead Tree Removal: In addition to the losses of value and quality of life, this project guarantees that 20-30% of large, well-established trees near the canal will die (p.62). The cost of removing these trees is significant. There are at least seven very large ponderosa pines within the AID easement on my property alone. Are property owners expected to bear this cost as well? In or around 2015, I received an estimate of slightly over \$2,000 just to remove one of them. This potential expense represents an unfair burden on property owners. It is worth noting that the 20-30% figure assumes that the property actively irrigates these trees. How much does it cost to actively irrigate even one eight-storey tall tree?	Please see updates in Section 6.6.2 of the Plan-EA regarding effects on trees, tree removal during construction, and irrigation of trees.
115.09	ALT	Alternatives Not Fully Considered: There are at least two alternatives that appear to be much better compromises. The first is lining the canal. This is a technique which has already been used successfully along both the AID canal and others in the area. It is visually appealing and meets the goals of this proposed project, yet AID appears to have minimized the effectiveness and exaggerated the costs as a justification for not fully exploring this option. It is a better choice. Second, it has no doubt occurred to planners that the majority of the burden of costs and losses are borne by property owners in neighborhoods along the canal which only represent a small portion of the proposed project. Any fair cost-benefit analysis generates a completely different number for these neighborhoods than for the rest of the project. How is the best solution not to simply pipe the majority of the canal while leaving the open canal intact through dense neighborhoods, thereby preserving property values, visual aesthetics, wildfire mitigation benefits, and security where it is most impacted by piping? This is also a better choice and should be explored.	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04. Please see Appendix D.2 of the Plan-EA for a description of how potential alternatives were analyzed and either evaluated further in the Plan-EA or eliminated. As compared with the Preferred Alternative, a mix of open, lined canal, and pipe along the Main Canal would increase District O&M costs associated with maintaining the sections of open canal. Additionally, water supply management and delivery reliability and the public safety risk would not improve along the sections of open canal.
115.10	GEN	Final Thoughts: Arnold Irrigation District's approach to this project has been that they can do whatever they want to do without considering any other interests. They said as much during the initial public meeting. Property owners along the canal must bear whatever burden is placed upon them without a voice or compensation - this despite the fact that piping the canal is never contemplated in the documents establishing the easement. Piping the canal has been AID's desired outcome from the beginning. Every step in this process has served that goal, including the exclusion of more balanced alternatives. It has been suggested that the "experts" relied on as part of this environmental assessment have ties to the California company that would supply the pipe for this very project. If accurate, that makes the report itself about as credible as those produced by scientists funded by tobacco companies which assure the public that cigarettes don't cause cancer. The bottom line is that this proposal seeks to	Please see the response to Comment ID 1.01 regarding public input during the NEPA process. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. A variety of alternatives were initially formulated and considered during the planning process. Please see Section 8.1 of the Plan-EA for a description of why the Piping Alternative was selected as the Preferred Alternative. Please see Section 10 of the Plan-EA for a list of preparers that

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		have property owners and neighborhoods along the Arnold Irrigation District canal bear the entire burden of the proposed project while realizing none of its benefits and while having no seat at the table. Property value losses are acknowledged, then ignored and uncompensated. The destruction of the visual aesthetics of a property are rationalized away with phrases like "things are always changing", as though this proposed piping is part of a natural evolution of the landscape. If a wildfire ravages our communities, property owners bear the entire cost. If our wells run dry, property owners bear the entire cost. If 30% of the massive ponderosa pines on our properties die off, property owners bear the entire cost. To be clear, I understand the need - more than ever - to use our most precious natural resource wisely. But it is hard not to view the profound one-sidedness of this proposal as an abuse of power. (comment includes pictures of wildlife and property along canal)	were involved in developing the document and Section 9 for a list of references that information was drawn from.
116.01	GEN	Your proposed pipe for all reasoning is unfounded, incomplete, excessively expensive & fails to address the REAL problem.	Thank you for your comment. Please see Section 8.1 of the Plan-EA for rationale for the Preferred Alternative.
117.01	GEN	Don't want canal piped or filled. Deer in backyard, love the nature, kids get to appreciate that. Their was a sinkhole in the canal on their property, people showed up to spray concrete to fix it, but never told the property owners anything about it, didn't give advanced notice. They concreted both sides of the canal and it doesn't look good. [NAME] owns property across both sides of canal and objects to the project.	Thank you for your comment. Please see Sections 6.6, 6.11, and 8.3 of the Plan-EA for more information.
118.01	PROP	I am a home owner on [ADDRESS] and the canal sits on the back of my property. I have lived there for 20 years, the canal is home to so much wildlife, wildlife that depends on this canal. This canal also adds value to my property and by piping it, it lowers property value for all the homes that back to it. This canal has been here for 30 years and should not be taken down.	Please see the response to Comment ID 218.13 regarding property value. Please see Section 6.11 of the Plan-EA for more information.
119.01	PROP	Do not want the canal closed up. Will depreciate my house/home value. If this happens, a lawsuit will be forthcoming. Sure heck you do not fill in with a pipeline. Shame that you think that's necessary. It's not going to save water, you know that, so stop the crap.	Please see the response to Comment ID 218.13 regarding property value. Please see Section 6.8.2 of the Plan-EA regarding water loss information.
119.02	WILD	Won't give animals/ deer/ wildlife water.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
120.01	GEN	I do not agree with the plans to reconstruct the Arnold Flume with the pipe and road. It will extremely detrimental to that natural area. The overall seepage of water is minimal compared to what an eye sore and loss of natural habitat will be. Please do not proceed with this plan. It's overall just absolutely terrible.	The flume has been removed from the project. Please see the response to Comment ID 12.01.
121.01	GEN	Lives in DRW, on the canal for 35 years. Deep concerns with the project.	Thank you for your comment.
122.01	PROP	I am a landowner of approximately [NUMBER OF ACRES] on [ADDRESS]. The Arnold canal runs along my entire northeaster and Eastern border. The open canal contributes an enormous value in property value, wildlife value and aesthetic value. I have matte Ponderosa pines that grow along the edge	Patron water rights would not change as a result of the proposed project. Please see Sections 6.8.2.1 and 6.8.2.3 of the Plan-EA for information regarding

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		<p>of the canal who's loss would be catastrophic to my property value as would the covering of the canal on general.I firmly oppose to piping project , not only for myself but for those adjacent landowners who would suffer similar degradations of value along with the loss of well water from seepage.I am fully aware the piping project would conserve water along the canal's run, but the irrigation districts along with the USDANRCS have had years to bring the canals into the modern era with other methods and through expanded storage.This project will greatly hurt those of us with senior water rights to benefit several corporate farms at the north end whose water rights are junior.Thank you for the opportunity to comment.</p>	<p>effects on water rights and groundwater. Please see the response to Comment ID 218.13 regarding property value.</p>
123.01	ALT	<p>I am strongly opposed to piping of our irrigation canal. I am disappointed that a pipe is AID's first choice is to install a pipe that is hugely detrimental to our environment. There are other alternatives that be considered. I want to reduce canal seepage that will enable us to maintain better reservoir levels. I want to improve the Oregon spotted frog and threatened fish species habitat that live in our upper Deschutes River.</p>	<p>Thank you for your comment. Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered. Effects on federally listed threatened and endangered species and state-listed species are discussed in Sections 6.9.2 and 6.11.2 in the Plan-EA. Effects on federally listed species are also considered in the project's Biological Assessment developed for consultation with USFWS.</p>
123.02	VEG	<p>I want to keep thousands of our trees alive along the 13-mile stretch of the main canal.</p>	<p>Please see Section 6.6.2 of the Plan-EA regarding effects on trees.</p>
123.03	WILD	<p>I want to protect the wildlife that use the canal corridor for water, habitat and travel I want to keep our neighbors' wells functioning</p>	<p>Please see Section 6.8.2.3 pf the Plan-EA. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources. See Section 2.3 of the NEE in Appendix D.1 for updated text regarding effects on groundwater.</p>
123.04	ALT	<p>Why is the first choice a pipe? Have you considered a liner which would be a fraction of what a pipe will cost. It will not cause damage to our environment. Liners can last for years. The pipe that was installed at the Tumalo Irrigation District was installed despite a majority of public opposition. As a consequence, miles of the pipe have been vandalized requiring replacement of the pipe. What a waste of taxpayers'money. Let's get smart and find other alternatives. I know it is attractive and tempting when millions of federal money is dangled in your face. Please do not choose to install a pipe.</p>	<p>Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.</p>
124.01	PUB	<p>We are writing to formally register our comments to Arnold Irrigation District's (AID's) proposed plan, as the legal owners of the property located at [ADDRESS]. Attached is our official comment to submit, along with photos. By this letter, we also formally request an extension of the public comment period until such time as the questions and concerns listed herein, as well as those submitted by other concerned parties, have been thoroughly addressed and all concerned parties have had sufficient time to review and</p>	<p>Please see the response to Comment ID 39.11.</p>

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		comment on AID’s responses. Please let me know if you have any questions for us, or answers to our questions. We hope that our comments are heard and considered, along with many other concerned citizens.	
124.02	PUB	We are writing to formally register our strong objection to Arnold Irrigation District’s (AID’s) proposed plan to replace its existing flume with a pipe “buried above the existing landscape elevation”, as the legal owners of the property located at [ADDRESS]. The existing canal runs through our property. By this letter, we also formally request an extension of the public comment period until such time as the questions and concerns listed herein, as well as those submitted by other concerned parties, have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID’s responses.	Please see the response to Comment ID 39.11. The flume was removed from the proposed action.
124.03	WILD	<p>General Concerns with AID’s Plan to Replace the Flume with a Buried Pipe If implemented, AID’s proposed plan to replace the flume with a buried pipe would permanently deface the scenic natural beauty of our property and of approximately one mile of the Upper Deschutes River corridor. This corridor, including the location of the proposed flume replacement, is designated under the federal Wild and Scenic River Act due to its “Outstandingly Remarkable Values: Geologic, Fishery, Vegetation, Wildlife, Cultural, Scenic and Recreation.” It is also designated as an Oregon State Scenic Waterway. The corridor is legally documented, preserved and protected under the 1996 Upper Deschutes Wild and Scenic River and State Scenic Waterways Comprehensive Management Plan. The existing flume is a rustic wood structure located in an area of stunning natural beauty enjoyed each year by thousands of hikers, kayakers, photographers, fishermen, picnickers, tourists and homeowners. It is unconscionable that AID would for its own business purposes propose a replacement plan that would disfigure this treasured section of river and willfully disregard the interests of so many of its fellow citizens. For many Central Oregonians, the Deschutes River represents the heart and soul of our community and underlies the unique character for which Bend is known. We are not opposed to AID’s general objective of improving its infrastructure and reducing water loss from seepage; we are however strongly opposed to AID’s plan to replace the existing one-mile-long flume with a pipe “buried” above the existing landscape elevation and topped with a service road. The flume runs adjacent to the river and AID’s proposed replacement would not only clash violently with the natural environment but would be highly visible to everyone wishing to enjoy the scenery – from nearly every vantage point: the Deschutes River hiking trail, the river itself, the picnic area, and the river rim.</p> <p>AID’s proposal for replacing the flume is just one part of a much larger project described in its document, Arnold Irrigation District Infrastructure Modernization Project - Draft Watershed Plan Environmental Assessment, dated June 8, 2021. Section 5.3.2 of this document states: The first 450 feet of the existing aerial flume below the district’s diversion would be removed and replaced by pipe</p>	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.

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		<p>supports that would hold an elevated pipe. The new supports and pipe would be approximately the same height as the existing aerial flume. The remaining 4,945 feet of flume would be removed, and a pipe would be buried. Because this section of pipe must be level with the aerial section, the pipe would be buried above the existing landscape elevation and would hug the hillside. The buried pipe would be covered with a minimum of 3 to 4 feet of engineered backfill. A new maintenance road would be built on top of the buried pipe. What this would mean in practice is that a new raised roadway would be constructed along approximately one mile of one of the most scenic portions of the Deschutes River. The road would sit atop an 8- to 19-foot-high bed of “engineered backfill”, (based on the 1-to-10-foot height of the existing flume above the ground, plus the 4-to-5-foot diameter of the pipe, plus another 3 to 4 feet of fill on top of the pipe). This would likely require thousands of dump truck loads of “fill” to be trucked in and built up on top of the present terrain. From any point lower than the road surface, (hiking trail, river, picnic area, etc.), one would see the massive sloped side of the artificial “burial mound” facing out toward the river. From any point higher, one would look down on an elevated maintenance road snaking along the edge of the scenic river corridor.</p>	
124.04	RIGHT	<p>Specific Questions and Concerns AID’s Plan ignores or fails to adequately address many critical questions and concerns about its proposed flume replacement including: AID’s legal authority to conduct such a massive construction project on other’s private property; visual appearance of the completed project; transparency with regulatory agencies; environmental impact; and public notification and disclosure. It is impossible for regulatory agencies, property owners, and concerned citizens to fully evaluate and comment on the proposed Plan until these questions and concerns are fully and accurately addressed. We therefore request a thorough written response to each of the following questions and concerns as well as to those submitted by other concerned parties. 1. AID claims to have legal easements on all privately owned property on which its existing flume and canal system is located and that these easements grant it legal authority to replace the flume and canal system with a buried pipe on these same privately owned properties. AID has yet to provide a copy of the specific easement that describes AID’s rights, responsibilities, and limitations on our specific property but have so far received only a general referral to the Right of Way Act of 1891 and the Cary Act of 1894, (both of which concern use of public lands and do not mention easements on private property). If there is a legitimate legal question as to AID’s right to operate its business on privately owned properties belonging to other parties, this question must be resolved before proceeding with further discussion of infrastructure improvement. To resolve the question of easements once and for all, we request that AID provide each private property owner on whose property AID’s flume and canal system currently exists, or whose property would be affected by the proposed flume and canal piping project, with the following documentation:a. Provide documentation proving that AID actually does have a current legal easement to use each of these specific privately owned properties. This documentation should show the original granting and terms of each</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>

Comment ID	Topic Code	Comment	Response
		<p>easement and the legal transfer of the easement to the current property owner. b. Provide documentation proving that if these easements were originally granted as a Right of Way on public lands and those lands later became privately owned properties that the Right of Way was legally converted into an easement allowing AID to use the now private land. c. If the easements are proven to be legal, we request that AID provide to each affected property owner documentation showing the specific terms, conditions, and limitations of their particular easement, including: the length of the easement period, (if perpetual, where is this stated and what happens if AID goes out of business); the limitations of the easement, (what does it allow AID to do on privately owned property and what does it prohibit AID from doing); and does the easement specifically grant AID the right to use privately owned property with no monetary compensation to the property owner.</p>	
124.05	PUB	<p>2. It is imperative that all relevant regulatory and management agencies and all affected private property owners be notified of AID’s proposed Plan because each will be directly and significantly impacted by the Plan. Some of these parties are still unaware of AID’s proposed plan. To ensure that all concerned parties are informed of the Plan and have the opportunity to comment on it during the public comment period, we request that each of these parties be notified by registered mail.</p>	<p>Please see the responses to Comment IDs 1.01 and 39.09.</p>
124.06	SYS	<p>3. For regulatory and management agencies with responsibility for the Upper Deschutes River Corridor, affected private property owners, and the general public to visualize and fully comprehend the aesthetic impact of AID’s plan to replace the flume with a pipe “buried above the existing landscape elevation”, it is essential that AID prepare a detailed written description of what the proposed flume replacement would actually look like when completed, including drawings and/or other visual representations of the completed project as viewed from multiple points along the river, the hiking trail, the picnic area, and the river rim. We request that such a written description be prepared and made accessible on-line to all parties listed above.</p> <p>a. After the written description specified above has been provided to and reviewed by all relevant regulatory and management agencies, we request that a copy of their written responses, including all written approvals and disapprovals, be made accessible on-line to all parties listed above.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
124.07	VEG	<p>4. Many mature trees would necessarily be removed or killed by AID’s proposed plan to replace the flume with a buried pipe. This would dramatically affect the scenic beauty and ecology of the Deschutes River corridor. a. What are the average and maximum distances on each side of the proposed roadway where all existing trees would be removed? b. What is the total estimated number of trees larger than 3 inches in diameter that would be removed or killed by the project? c. Will AID replant native trees to replace those removed and killed? If so, will this be done on a tree for tree basis?</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
124.08	WILD	<p>5. The proposed flume replacement would require a lengthy and massive construction project using heavy equipment in a fragile ecological environment used by osprey for annual nesting. The osprey is a</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>

Comment ID	Topic Code	Comment	Response
		protected species. What measures would AID employ to ensure this species is not harmed by the construction?	
124.09	SYS	6. The proposed flume replacement calls for a 4-to-5-foot pipe to be buried in “engineered backfill”. This backfill would be clearly visible from most vantage points and would dramatically impact the scenic beauty and ecology of the Deschutes River corridor. a. What would the “engineered backfill” consist of and what would it look like visually? b. What would be the slope and maximum height of the backfill on the side facing the river? c. Would native trees be planted on the sloped side of the backfill facing the river? d. What measures would prevent erosion of the sloped sides of the backfill and what would these measures look like visually? e. What measures would AID employ to ensure the backfill material and any topsoil used are free of noxious and invasive seeds? f. Is it AID’s intention to completely fill in the area between the road bed and the adjacent terrain on the inland side of the road so that no low areas are created which would be subject to pooling? g. If the answer to Question (f) is yes, this would require large amounts of “fill” material that would encroach far inland onto private property in some areas. Has AID received written permission for this encroachment? And how will AID compensate the property owners for this encroachment? h. If the answer to Question (f) is no, what measures would AID employ to prevent pooling on the inland side of the backfill and what would these measures look like visually?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
124.10	SYS	7. The proposed flume replacement calls for a “maintenance road” to be constructed on top of the burial mound and run along the entire length of the buried pipe. This road would likely sit approximately 8 to 19 feet higher than the current terrain and would therefore be clearly visible from most vantage points around both sides of the river rim. The proposed road would be highly detrimental to the scenic beauty and ecology of the Deschutes River corridor. a. How wide would the “maintenance road” be? b. How wide would the entire “flat” area on top of the burial mound be, (including road, shoulders, and adjacent ground)? c. How would the road and its shoulders be surfaced? (Asphalt, gravel, dirt, etc.)	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
124.11	PROP	8. Many homeowners on both sides of the river, and in Deschutes River Woods, have selected and purchased their property primarily, if not solely, for the scenic beauty of the Deschutes River Corridor, and the canal, and this natural beauty is a major factor in the aesthetic and monetary value of their property. Replacing the flume with a buried pipe and elevated roadway would significantly detract from both the aesthetic and monetary value of their property. a. Does AID intend to compensate these homeowners for the property devaluation it causes? b. If so, how will the dollar amount of the devaluation be calculated and how will it be paid?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. See Section 6.7.2 of the Plan-EA for updated language describing the project's effects on visual resources.
124.12	ALT	9. According to AID’s Plan, the primary reasons for replacing the existing flume with a buried pipe are that it would reduce AID’s maintenance costs and that it would need to be replaced in 15 to 20 years anyway due to its age. The estimate of its remaining life appears to be based on a 1995 “Steele” engineering report; however, a copy of this report is not included in AID’s Plan. ALL outdoor structures will deteriorate over time unless properly maintained. However, if well-constructed and properly	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

Comment ID	Topic Code	Comment	Response
		<p>maintained, most structures will last hundreds of years and we earnestly request that AID give serious consideration to this option. The cost of maintenance is simply a cost of doing business and in our opinion is not justification for inflicting permanent damage on the irreplaceable natural beauty of the Deschutes River corridor. However, if for some reason the preservation and maintenance of the existing flume is not feasible, we respectfully request that AID propose an alternative that would not harm the Deschutes River corridor and those who love it. Our concerns stated above, reflect more of an objective point of view to the proposal. Just questions that should be asked, and answered, before the project should ever be considered to move forward.</p>	
124.13	PROP	<p>As a homeowner, tax-paying US Citizen, full time working parents of 2 children, we want to share with you the love we have in our home and property, and the devastation that would come to us if this pipe project were approved. We have worked hard in our lives to be able to buy a home to raise our family in. We have put blood and sweat into the equity of our home, to teach our kids how to work hard to earn the dream of owning a home, AND building it into your dream. We have raised garden beds, and sown seeds together on this land. We watch the geese, ducks and deer return to the same place along the canal every year to lay eggs and raise their young. We have a sanctuary along the canal where the natural ecosystem thrives and flourishes, where we can find peace and solitude on our property to enjoy life and be thankful. It is a huge part of the quality of our lives. The scenery of our backyard is similar to a park, and it is one of the main reasons we purchased this home. (see attached photos)If the piping project goes through as currently proposed, we will not only lose the visual sanctuary and place of peace we call home, we will lose a HUGE amount of value in our property.</p>	<p>Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. See Section 6.7.2 of the Plan-EA for updated language describing the project's effects on visual resources.</p>
124.14	FIRE	<p>We are also EXTREMELY CONCERNED about the fire danger that would be created with a winding corridor of dead trees, left by the devastation of piping this portion of the canal, and the devastation to the natural ecosystems and wildlife. Deschutes River Woods is already a high-risk community for lethal, devastating forest fires, with only one main exit out of the area. For AID to consciously decide to move forward with such a negligent decision, is completely irresponsible.</p>	<p>Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3.2 of the Plan-EA.</p>
124.15	PUB	<p>We hereby request that the public comment period be extended until all of the above questions and concerns, as well as those submitted by other concerned parties, have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID's responses. <comment includes several photos></p>	<p>Please see the response to Comment ID 39.11</p>
125.01	ALT	<p>We live at [ADDRESS] and the canal runs through our property. I understand that there is water loss every year, but I don't believe that piping it is the best or only solution. Therefore, we are absolutely opposed to this piping project. We would love to see some alternative solutions.</p>	<p>Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered.</p>
126.01	PROP	<p>I have written before and greatly oppose destroying the canal and putting in a pipeline. The results are disastrous to us that live on the canal. First. frontage to water is like gold in Central Oregon and I paid extra just to be on the canal. I literally prayed for a property with water running through because I lived</p>	<p>Please see the response to Comment ID 218.13 regarding property value.</p>

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		on and was raised on the Willamette River and it was my greatest desire to be on the water. When my realtor brought me to this property and I realized it had water, I knew it was a place for me and enjoyed these surroundings for 23 years. Following are consequences if you put in a pipe: 1. Loss of value to our property. People pay more for the water-front. Also the cost of decks, gazebos, fire pits etc that have been designed around the canal.	
126.02	VEG	2. Loss of vegetation. Many plants, flowers, shrubs and trees etc designed around the canal will be lost or out of step with design.	Please see Section 6.6.2 of the Plan-EA regarding effects on vegetation.
126.03	WILD	3. Loss of wildlife. Many live here in our area. Deer that roam here to water, Ducks and birds that return to give birth to new babies The rabbits, squirrels, chipmunks, etc that we all enjoy watching that drink from your canal. etc	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
126.04	RES	4. Loss of beautiful scenery while you exercise. Walks along the canal and the joy of putting your feet in to cool off.	Although the maintenance roads along the District's canals and pipelines are sometimes used for recreation by area residents, public use of the District's right-of-way and easement is not authorized.
126.05	CONS	5. Construction destruction and noise. I do not agree with getting rid of canals where there is already established housing that have already purchased and designed their land accordingly. Please reconsider what this would mean to those who live there and the losses involved.	Please see Section 6.7.2 of the Plan-EA for discussion about the effects on visual resources, Section 8.2 for construction BMPs, and Section 8.7.2 for an updated construction timeline.
127.01	ALT	We are writing in opposition to the proposed piping of the Arnold Canal. We have several issues with the present EA. Alternatives to piping:•The piping study summarily dismissed other alternatives to piping without providing sufficient explanation of reasons. It makes you wonder what is really going on behind the scenes, who is truly going to benefit from the project –could it be the Arnold board, the consultants and the construction companies involved in the project?•Lining the canal should be given deeper consideration. Some lining methods can greatly reduce seepage, be durable and substantially less expensive than piping. Plus it would preserve wildlife habitat and the local ecosystem, preserve valuable old-growth trees and local vegetation, and the aesthetics of landscape for those living along and near the Arnold canal.	Please see Appendix D.2 of the Plan-EA for a description of how potential alternatives were analyzed and either evaluated further in the Plan-EA or eliminated. Please see Section 5.2 of the Plan-EA for an updated description of the Canal Lining Alternative and Appendix D.3 for detailed assumptions for this alternative.
127.02	VEG	Property Damage:•We are located in Woodside Ranch, a long-time residential community. Our property borders the Arnold Canal. We believe that piping the Arnold Canal is a foolhardy, wasteful and ill-thought-out project that should not happen. However, in the unfortunate event that it does occur there will be much damage to properties that needs to be mitigated. •There will be significant damage to our property. Probable loss of 10 to 15 large ponderosa pines directly bordering the canal as well as possible death of other ponderosas further back from the canal due to root damage, soil compaction, etc. from heavy equipment used to pipe the canal. •There should be mitigation and compensation for this damage	Please see updates in Section 6.6.2 of the Plan-EA regarding potential dead tree removal and property owner's ability to water trees.

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		<p>and loss, including covering cost of tree removal up to 10 years later as it takes many years for trees to die from damage to the root system. •Property owners should also be compensated for the loss in value to their property due to the loss of mature trees, many are 80 to 100 years old •Our property will be significantly impacted by loss of ground level native vegetation due to heavy equipment on the property, dumping of dirt piles, etc.. That should be restored.</p>	
127.03	VEG	<p>Additionally, dredging of the canal in the past has resulted in many noxious weeds such as cheat grass and spotted knapweed growing on our property that was not there before the dredged debris was dumped on our side of the canal. That needs to be mitigated.</p>	<p>Please see Section 6.6.2.2 of the Plan-EA for a description of the approach to control noxious weeds. Section 8.3.6 lists measures that would be followed to avoid introduction of invasive plants and noxious weeds, including using certified weed-free seed mix.</p>
127.04	ALT	<p>Failure of current water users to conserve water: •We have been able to observe for many years the watering practices of Arnold Canal water users. It is discouraging to say the least. Most shoot sprinkler water high into the air, water during the heat of the day, frequently and consistently water the roadway and some even flood the field. These are wasteful practices that continue now with no apparent effort to modernize methods even though new approaches and technologies exist. Why should the taxpayers foot the bill for a multi-million dollar project while the end users continue with wasteful practices? We strongly object. End users should foot their share of the conservation effort and modernize all their irrigation practices before any piping begins. •Many of the current Arnold Canal water users are non-agricultural users, often known as “hobby farmers”. They water acres of pasture with a few horses, sheep or other animals that do not contribute to the farmers income. Those vast pastures make for a tranquil and beautiful home site but this activity does not meet the spirit or intent of the irrigation canal creation, to assure water for agricultural production. •The “use it or lose it” rules of water usage promote waste by non-agricultural users. Non-agricultural users should have to pay for the water they use. That would significantly impact the amount of water conserved and focus water usage on agricultural watering as intended. Removal of non-agricultural users would conserve water and reduce the need to pipe the small Arnold Canal. This is one of the many alternatives to piping that was not considered in the piping study. •Might it be a better idea to put the \$42M piping project funds into a trust fund for the farmers and shut off the canal? This would keep water in the Deschutes and provide a base income for farmers.</p>	<p>See Appendix D.2 for a description of how potential alternatives were analyzed and why on-farm efficiency upgrades and fallowing farm fields were eliminated from further study. In Oregon, water resources are broadly governed by provisions of the Oregon Revised Statutes and associated administrative regulations. The statutory provisions dealing with water often include general legislative purposes related to the use and management of water resources. Amendments and changes to Oregon water law (i.e., removal of nonagricultural users) are outside the authority of PL 83-566 and therefore are beyond the scope of this Plan-EA. Creating a trust fund for farmers and decommissioning the Main Canal would not meet the purpose and need of the project and is therefore not considered as an alternative in the Plan-EA.</p>
127.05	WAT	<p>Effects of drought and climate change on irrigation canals: •It is increasingly obvious that the impacts of drought and climate change are making water conservation by everyone, everywhere paramount. •Arnold Canal has the most junior rights and will be the first canal to have reduced flow and to even be shut off before the end of the season. And it will be the last to have water re-instated. As climate change continues to progress, Arnold Canal may not have any water at all in the near future and for many seasons to come.</p>	<p>Please see updated language in Section 6.8.2.1 of the Plan-EA describing the modeling that was utilized for future conditions. Piping other districts' canals would not meet the purpose and need of the proposed project and was therefore not considered as an alternative.</p>

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		So why spend 42M dollars of taxpayer funds on a piping project that will save very little or no water at all. Shouldn't the larger canals be piped first to have more impact?	
128.01	PUB	We are writing to formally register our strong objection to Arnold Irrigation District's (AID's) proposed plan to replace its existing flume with a pipe "buried above the existing landscape elevation", as the legal owners of the property located [ADDRESS]. The existing canal runs through our property. By this letter, we also formally request an extension of the public comment period until such time as the questions and concerns listed herein, as well as those submitted by other concerned parties, have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID's responses.	Please see the response to Comment ID 39.11.
128.02	WAS	General Concerns with AID's Plan to Replace the Flume with a Buried Pipe If implemented, AID's proposed plan to replace the flume with a buried pipe would permanently deface the scenic natural beauty of our property and of approximately one mile of the Upper Deschutes River corridor. This corridor, including the location of the proposed flume replacement, is designated under the federal Wild and Scenic River Act due to its "Outstandingly Remarkable Values: Geologic, Fishery, Vegetation, Wildlife, Cultural, Scenic and Recreation." It is also designated as an Oregon State Scenic Waterway. The corridor is legally documented, preserved and protected under the 1996 Upper Deschutes Wild and Scenic River and State Scenic Waterways Comprehensive Management Plan. The existing flume is a rustic wood structure located in an area of stunning natural beauty enjoyed each year by thousands of hikers, kayakers, photographers, fishermen, picnickers, tourists and homeowners. It is unconscionable that AID would for its own business purposes propose a replacement plan that would disfigure this treasured section of river and willfully disregard the interests of so many of its fellow citizens. For many Central Oregonians, the Deschutes River represents the heart and soul of our community and underlies the unique character for which Bend is known. We are not opposed to AID's general objective of improving its infrastructure and reducing water loss from seepage; we are however strongly opposed to AID's plan to replace the existing one-mile-long flume with a pipe "buried" above the existing landscape elevation and topped with a service road. The flume runs adjacent to the river and AID's proposed replacement would not only clash violently with the natural environment but would be highly visible to everyone wishing to enjoy the scenery – from nearly every vantage point: the Deschutes River hiking trail, the river itself, the picnic area, and the river rim.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.
128.03	SYS	AID's proposal for replacing the flume is just one part of a much larger project described in its document, Arnold Irrigation District Infrastructure Modernization Project -Draft Watershed Plan Environmental Assessment, dated June 8, 2021. Section 5.3.2 of this document states: The first 450 feet of the existing aerial flume below the district's diversion would be removed and replaced by pipe supports that would hold an elevated pipe. The new supports and pipe would be approximately the same height as the existing aerial flume. The remaining 4,945 feet of flume would be removed, and a pipe	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

Comment ID	Topic Code	Comment	Response
		<p>would be buried. Because this section of pipe must be level with the aerial section, the pipe would be buried above the existing landscape elevation and would hug the hillside. The buried pipe would be covered with a minimum of 3 to 4 feet of engineered backfill. A new maintenance road would be built on top of the buried pipe. What this would mean in practice is that a new raised roadway would be constructed along approximately one mile of one of the most scenic portions of the Deschutes River. The road would sit atop an 8- to 19-foot-high bed of “engineered backfill”, (based on the 1-to-10-foot height of the existing flume above the ground, plus the 4-to-5-foot diameter of the pipe, plus another 3 to 4 feet of fill on top of the pipe). This would likely require thousands of dump truck loads of “fill” to be trucked in and built up on top of the present terrain. From any point lower than the road surface, (hiking trail, river, picnic area, etc.), one would see the massive sloped side of the artificial “burial mound” facing out toward the river. From any point higher, one would look down on an elevated maintenance road snaking along the edge of the scenic river corridor.</p>	
128.04	RIGHT	<p>Specific Questions and Concerns AID’s Plan ignores or fails to adequately address many critical questions and concerns about its proposed flume replacement including: AID’s legal authority to conduct such a massive construction project on other’s private property; visual appearance of the completed project; transparency with regulatory agencies; environmental impact; and public notification and disclosure. It is impossible for regulatory agencies, property owners, and concerned citizens to fully evaluate and comment on the proposed Plan until these questions and concerns are fully and accurately addressed. We therefore request a thorough written response to each of the following questions and concerns as well as to those submitted by other concerned parties.</p> <p>1. AID claims to have legal easements on all privately owned property on which its existing flume and canal system is located and that these easements grant it legal authority to replace the flume and canal system with a buried pipe on these same privately owned properties. AID has yet to provide a copy of the specific easement that describes AID’s rights, responsibilities, and limitations on our specific property but have so far received only a general referral to the Right of Way Act of 1891 and the Cary Act of 1894, (both of which concern use of public lands and do not mention easements on private property). If there is a legitimate legal question as to AID’s right to operate its business on privately owned properties belonging to other parties, this question must be resolved before proceeding with further discussion of infrastructure improvement. To resolve the question of easements once and for all, we request that AID provide each private property owner on whose property AID’s flume and canal system currently exists, or whose property would be affected by the proposed flume and canal piping project, with the following documentation:</p> <p>a. Provide documentation proving that AID actually does have a current legal easement to use each of these specific privately owned properties. This documentation should show the original granting and terms of each easement and the legal transfer of the easement to the current property owner.</p> <p>b. Provide documentation proving that if these easements were originally granted as a Right of Way on public lands and those lands</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. For information about the Carey Act, please see the response to Comment ID 39.02. For discussion about individual easement documents, please see the response to Comment ID 39.18.</p>

Comment ID	Topic Code	Comment	Response
		<p>later became privately owned properties that the Right of Way was legally converted into an easement allowing AID to use the now private land.c. If the easements are proven to be legal, we request that AID provide to each affected property owner documentation showing the specific terms, conditions, and limitations of their particular easement, including: the length of the easement period, (if perpetual, where is this stated and what happens if AID goes out of business); the limitations of the easement, (what does it allow AID to do on privately owned property and what does it prohibit AID from doing); and does the easement specifically grant AID the right to use privately owned property with no monetary compensation to the property owner.</p>	
128.05	PUB	<p>2. It is imperative that all relevant regulatory and management agencies and all affected private property owners be notified of AID’s proposed Plan because each will be directly and significantly impacted by the Plan. Some of these parties are still unaware of AID’s proposed plan. To ensure that all concerned parties are informed of the Plan and have the opportunity to comment on it during the public comment period, we request that each of these parties be notified by registered mail.3. For regulatory and management agencies with responsibility for the Upper Deschutes River Corridor, affected private property owners, and the general public to visualize and fully comprehend the aesthetic impact of AID’s plan to replace the flume with a pipe “buried above the existing landscape elevation”, it is essential that AID prepare a detailed written description of what the proposed flume replacement would actually look like when completed, including drawings and/or other visual representations of the completed project as viewed from multiple points along the river, the hiking trail, the picnic area, and the river rim. We request that such a written description be prepared and made accessible on-line to all parties listed above.a. After the written description specified above has been provided to and reviewed by all relevant regulatory and management agencies, we request that a copy of their written responses, including all written approvals and disapprovals, be made accessible on-line to all parties listed above.</p>	<p>Please see the responses to Comment IDs 39.09 and 1.01 regarding public participation and outreach that has occurred during the planning process. The flume was removed from the proposed action. Please see the response to Comment ID 12.01. Please see Section 7 of the Plan-EA and Appendix E.11 for documentation of consultation and coordination that occurred with regulatory agencies.</p>
128.06	VEG	<p>4. Many mature trees would necessarily be removed or killed by AID’s proposed plan to replace the flume with a buried pipe. This would dramatically affect the scenic beauty and ecology of the Deschutes River corridor.a. What are the average and maximum distances on each side of the proposed roadway where all existing trees would be removed?b. What is the total estimated number of trees larger than 3 inches in diameter that would be removed or killed by the project?c. Will AID replant native trees to replace those removed and killed? If so, will this be done on a tree for tree basis?</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
128.07	WILD	<p>5. The proposed flume replacement would require a lengthy and massive construction project using heavy equipment in a fragile ecological environment used by osprey for annual nesting. The osprey is a protected species. What measures would AID employ to ensure this species is not harmed by the construction?</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>

Comment ID	Topic Code	Comment	Response
128.08	VIS	6. The proposed flume replacement calls for a 4-to-5-foot pipe to be buried in “engineered backfill”. This backfill would be clearly visible from most vantage points and would dramatically impact the scenic beauty and ecology of the Deschutes River corridor.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
128.09	SYS	a. What would the “engineered backfill” consist of and what would it look like visually?b. What would be the slope and maximum height of the backfill on the side facing the river?c. Would native trees be planted on the sloped side of the backfill facing the river?d. What measures would prevent erosion of the sloped sides of the backfill and what would these measures look like visually?e. What measures would AID employ to ensure the backfill material and any topsoil used are free of noxious and invasive seeds?f. Is it AID’s intention to completely fill in the area between the road bed and the adjacent terrain on the inland side of the road so that no low areas are created which would be subject to pooling?g. If the answer to Question (f) is yes, this would require large amounts of “fill” material that would encroach far inland onto private property in some areas. Has AID received written permission for this encroachment? And how will AID compensate the property owners for this encroachment?h. If the answer to Question (f) is no, what measures would AID employ to prevent pooling on the inland side of the backfill and what would these measures look like visually?7. The proposed flume replacement calls for a “maintenance road” to be constructed on top of the burial mound and run along the entire length of the buried pipe. This road would likely sit approximately 8 to 19 feet higher than the current terrain and would therefore be clearly visible from most vantage points around both sides of the river rim. The proposed road would be highly detrimental to the scenic beauty and ecology of the Deschutes River corridor.a. How wide would the “maintenance road” be?b. How wide would the entire “flat” area on top of the burial mound be, (including road, shoulders, and adjacent ground)?c. How would the road and its shoulders be surfaced? (Asphalt, gravel, dirt, etc.)	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
128.10	PROP	8. Many homeowners on both sides of the river, and in Deschutes River Woods, have selected and purchased their property primarily, if not solely, for the scenic beauty of the Deschutes River Corridor, and the canal, and this natural beauty is a major factor in the aesthetic and monetary value of their property. Replacing the flume with a buried pipe and elevated roadway would significantly detract from both the aesthetic and monetary value of their property.a. Does AID intend to compensate these homeowners for the property devaluation it causes? b. If so, how will the dollar amount of the devaluation be calculated and how will it be paid?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regarding property value.
128.11	ALT	9. According to AID’s Plan, the primary reasons for replacing the existing flume with a buried pipe are that it would reduce AID’s maintenance costs and that it would need to be replaced in 15 to 20 years anyway due to its age. The estimate of its remaining life appears to be based on a 1995 “Steele” engineering report; however, a copy of this report is not included in AID’s Plan. ALL outdoor structures will deteriorate over time unless properly maintained. However, if well-constructed and properly maintained, most structures will last hundreds of years and we earnestly request that AID give serious	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

Comment ID	Topic Code	Comment	Response
		<p>consideration to this option. The cost of maintenance is simply a cost of doing business and in our opinion is not justification for inflicting permanent damage on the irreplaceable natural beauty of the Deschutes River corridor. However, if for some reason the preservation and maintenance of the existing flume is not feasible, we respectfully request that AID propose an alternative that would not harm the Deschutes River corridor and those who love it.</p>	
128.12	PROP	<p>Our concerns stated above, reflect more of an objective point of view to the proposal. Just questions that should be asked, and answered, before the project should ever be considered to move forward. As a homeowner, tax-paying US Citizen, full time working parents of 2 children, we want to share with you the love we have in our home and property, and the devastation that would come to us if this pipe project were approved. My father, a three time US Army Vetran, passed away seven years ago- and his wish was for my family to own a home. We had fallen in love with Bend, after many years of visiting and in turn- fell in love with our home on Choctaw and were able to purchase it, because of him. He raised me to have a respect for the land, the environment, the animals and ecosystem that supports one another perfectly. Our canal that runs through the back of our beautiful property was one of the reasons we purchased this home. Our backyard has become our own piece of heaven- where our children play and thrive. The family of geese that return every year to raise their young, lay their eggs in the same place year after year. The ducks, the deer, they return too. It is all of our sanctuary. It is OUR home. It is what my father fought and bled for our country, for my family to have this freedom, this dream come true of home ownership, and it is what we are fighting for today. The group behind AID is trying to steal our land, period. And that is illegal. If the piping project goes through as currently proposed, we will not only lose the visual sanctuary and place of peace we call home, we will lose a HUGE amount of value in our property.</p>	<p>There would be no change in property ownership as a result of the project. See Section 6.2.2. of the Plan-EA. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.</p>
128.13	FIRE	<p>We are also EXTREMELY CONCERNED about the fire danger that would be created with a winding corridor of dead trees, left by the devastation of piping this portion of the canal, and the devastation to the natural ecosystems and wildlife. Deschutes River Woods is already a high-risk community for lethal, devastating forest fires, with only one main exit out of the area. For AID to consciously decide to move forward with such a negligent decision, is completely irresponsible.</p>	<p>Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3.2 of the Plan-EA.</p>
128.14	PUB	<p>We hereby request that the public comment period be extended until all of the above questions and concerns, as well as those submitted by other concerned parties, have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID's responses.</p>	<p>Please see the response to Comment ID 39.11.</p>
129.01	FIRE	<p>I'm writing to protest against the changing of the Arnold aqueduct behind my property along [ROAD] into a buried pipe with a road on top. I have lived and been an owner at [ADDRESS] now since 1988 and have found no problems with the way it is. I have valid reasons against this project regarding Safety factors, Ecology factors, Property devaluation, and..... especially Fire safety.! Being a property on the river ridge, at the very back of the subdivision leaves us with the lack of fire protection. The way the canal is</p>	<p>Updated language regarding the project's effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. Please see the response to Comment ID 218.13 regarding property value.</p>

Comment ID	Topic Code	Comment	Response
		<p>now, there are definite possibilities of saving every home the aqueduct goes by. A pump into the canal, in places, by firetrucks and having access to river water that runs thru the aqueduct makes it safer for every home at the back of the subdivision. We all know Fire has been a large problem the last couple of years... especially. I'm sure 99.9% of the people along this aqueduct will all agree that you are taking our best chance at our safety, not to mention all the other factors.</p>	
129.02	ALT	<p>Has there been an Ecological Impact report on this project? I'm also sure the rest of my neighbors would be interested in seeing one...</p>	<p>A Plan-EA is required for any project that applies for federal financial assistance through the NRCS Watershed Program in accordance with the NEPA. Environmental effects considered in the Plan-EA include social, cultural, economic, and natural resources. Please see the response to Comment ID 94.02 regarding the need for an EIS.</p>
130.01	CONS	<p>We have received a letter on June 30, 2021 from the Natural Resources Conservation Service (NRCS) requesting the U.S. Army Corps of Engineers (Corps) review the draft watershed plan-environmental assessment (Draft Plan-EA) for the Arnold Irrigation District Infrastructure Modernization Project (Project), located in Deschutes County, Oregon. The NRCS requested that we review this Project and provide comments. The Arnold Irrigation District (District) would install 13.2 miles of buried pipe ranging in size from 48 to 63 inches in diameter and would upgrade 82 turnouts to pressurized delivery systems to achieve optimal efficiency of water delivery, reduce costs, and improve safety. The main point of diversion for the District's conveyance system is on the Deschutes River (River Mile 174.5). The Draft Plan-EA describes the Project as multiple efforts to be completed over several years across a large geographic area. Thus, it does not disclose the details of specific projects, but instead proposes to tier to site-specific project evaluations as they occur. As a result, we can only provide general comments on the Project regarding Corps jurisdiction and authority. We have reviewed the Draft Plan-EA pursuant to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899 (RHA). Under Section 10 of the RHA, a Department of the Army (DA) permit is generally required to construct structures or perform work in or affecting navigable waters of the U.S. The Deschutes River and its tributaries are not regulated under Section 10 of the RHA. Therefore, based on the maps included in the Draft Plan-EA, it appears a Section 10 DA permit would not be required for the Project. Under Section 404 of the CWA, a DA permit is generally required for the discharge of dredged or fill material (e.g., fill, or mechanized land clearing) into waters of the U.S., including wetlands. The Corps' regulations, 33 CFR 328.3, define waters of the U.S. Certain ditches are not considered waters of U.S. However, certain ditches may be a water of the U.S., such as those constructed in or through a jurisdictional water, including a jurisdictional wetland. Discharges of dredged or fill material in waters of the U.S. that may result from certain activities can be exempt from regulation under Section 404. The</p>	<p>Thank you for your comment. If this project moves forward, NRCS would further coordinate with USACE. If a permit was needed, it would be secured prior to construction.</p>

Comment ID	Topic Code	Comment	Response
		<p>Corps' regulation, 33 CFR 323.4(a)(3), defines some activities not requiring a permit as the construction or maintenance of a farm or stock pond or an irrigation ditch, or the maintenance (but not construction) of a drainage ditch. In addition, the Corps Regulatory Guidance Letter No. 07-02 discusses exemptions for construction or maintenance of irrigation ditches and maintenance of drainage ditches under Section 404 of the CWA. The Draft Plan-EA references the July 24, 2020 "Joint Memorandum to the Field Between the Department of the Army, Corps of Engineers and the U.S. Environmental Protection Agency Concerning Exempt Construction or Maintenance of Irrigation Ditches and Exempt Maintenance of Drainage Ditches Under Section 404 of the Clean Water Act" (Memorandum). The Memorandum supersedes Corps Regulatory Guidance Letter No. 07-02. However, given the general nature of the Project description, the Corps is unable to determine if the exemptions outlined in the aforementioned Memorandum would apply to all of the activities proposed as part of the Project. For example, the Draft Plan-EA states that wetlands may be affected by the Project. The construction and maintenance of irrigation ditches constructed in jurisdictional wetlands or other waters of the U.S. may not meet this exemption. Section 14 of the Rivers and Harbors Act of 1899 and codified in 33 U.S.C. § 408 (referred to as "Section 408") authorizes the Secretary of the Army, on the recommendation of the Chief of Engineers, to grant permission for the alteration or occupation or use of a Corps federally authorized project if the Secretary determines that the activity will not be injurious to the public interest and will not impair the usefulness of the project. An alteration is defined as any action that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity of a Corps federally authorized project. The geographic location of the Project as described in the Draft Plan-EA is not in the vicinity of Corps federally authorized projects. Also, our Real Estate Division evaluated whether your Project may impact any real estate interest held by the Corps. The geographic location of the Project as described in the Draft Plan-EA is not in the vicinity of Corps real estate interests. The Draft Plan-EA and your letter states that coordination and consultation with the Corps will occur prior to the implementation of each project group. I encourage this coordination with my staff regarding the applicability of the Corps jurisdiction and authority over nonexempt activities associated with your Project.</p>	
131.01	CUL	<p>For gods sake do the right thing and drop your water piping project. The canal has irreplaceable historic significance as well eye appeal for all Bend residents.</p>	Please see the response to Comment ID 49.05.
131.02	PROP	<p>U will forever change the landscape of the area not to mention have major impact on property values for many homeowners. There are other way to help conserve water... please reconsider and drop this piping project!!!</p>	Please see the response to Comment ID 218.13 regarding property value.
132.01	GEN	<p>I am amazed that people are against piping canals. I understand they like to have the canals to enjoy, but my goodness, we are in historic times: drought, climate crisis and Water is a precious comodity. People</p>	Thank you for your comment.

Comment ID	Topic Code	Comment	Response
		forget that we are living in a desert! So many lawns as if water can last forever. Please do whatever you can to keep from wasting water.	
133.01	ALT	Please hear that I am in support for an alternative to piping the canal. The proposed ecological destruction and property devaluation is immense. Surely there is another way. I have spent time on my friends property in DRW and urge AID to reconsider the plan.	Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered.
134.01	WAT	The Arnold Irrigation District (AID) Infrastructure Modernization Project is an exorbitant waste of taxpayer money. The FCA's prepackaged Irrigation Modernization Program—at a cost of almost \$43 million—will serve very few legitimate ranchers and farmers on the Arnold Canal. Most of the parcels on the canal are of very small acreage—and a very small percent of that acreage is being used for hay and/or pasture. Other areas of waste are concerning that have nothing to do with piping the canal to “conserve water.” Users with Arnold rights have to use or lose the water. Canal water is being gratuitously wasted just to irrigate large yards and hobby farms. Outdated hydrology methods are inefficient. Evaporation blame lies at the grass level, not in the canal.	Thank you for your comment. Please see Appendix D.1 of the Plan-EA for costs and benefits of the project and Appendix D.2 of the Plan-EA for alternatives considered, including on-farm efficiency upgrades. What constitutes the beneficial use of water under Oregon water law is outside the authority of the NRCS Watershed Protection and Flood Prevention Operations Program and therefore beyond the scope of this Plan-EA.
135.01	GEN	Please keep the canal. It's a relief to the wildlife, parting these dry fir days. I live on the canal. It also separates homes from the forest.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife.
136.01	GEN	We completely support the project. It is obvious that all of us need to do all we can to have as much flow in the Deschutes River as possible. This drought year is likely to be repeated often. All of the people who are from our neighborhood who publicly oppose the project live along the canal. They want to retain their personal water feature. The people of Oregon cannot afford to waste water for the visual appeal of the canal from backyards.	Thank you for your comment.
137.01	CONS	This fence is about 25 feet from my back porch. I did not build the porch. I was not informed about the easement. I hope that you treat homeowners fairly when you begin the destruction of their property.	Thank you for your comment. See Sections 8.2 and 8.4 of the Plan-EA for updated information about construction BMPs and easements.
138.01	GEN	The ditch and canal system of delivering water to legitimate farms is terribly out of date and wasteful. Please do the right thing and pipe the canal to conserve water.	Thank you for your comment.
139.01	ALT	The piping of the Arnold canal has been politicized. The effects of piping the canal would be catastrophic to our environment. There are other alternatives that should be considered that would not be detrimental to our environment and would be a fraction of the cost of piping the canal. Please do not let this be railroaded in over the real objections of the residents. In Tumalo the residents' objections were ignored and the piping project has been a disaster. Listen to the people who will be directly affected by this project. Listen to the environmental concerns that will result in piping the canal. Do not allow the project to go through. Seek another alternative. The argument against using a liner is that it is not a	Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered. For information about the opportunities that existed for public comment during the project's NEPA process, please see the response to Comment ID 53.04.

Comment ID	Topic Code	Comment	Response
		<p>permanent solution. Liners can be an effective solution. They will last for 20++ years. This will save millions of dollars but most importantly, it will save our environment.</p>	<p>The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04.</p>
140.01	METH	<p>We live in Woodside Ranch area of Bend. We are concerned about the proposed project: piping Arnold Canal. We do not approve and feel that adequate impact studies (that should include more than the evaporative components of the open canal) have not been complete or exhaustive. This is something that impacts many of us locally and request a longer and more in depth evaluation of the effects of this project be undertaken.</p>	<p>The Plan-EA considered available, relevant resource studies to determine the effects of the proposed action on various resources. This approach aligns with requirements for Watershed Plan-Environmental Assessments as outlined in the PR&Gs. Please see Section 7.2 of the Plan-EA for more information.</p>
140.02	WAT	<p>If water is truly being conserved then consideration of groundwater seepage for aquifer replenishment is significant and should be studied before eliminating this by piping the canal. The current practices of city watering are abysmal. Just the fact that Knott landfill waters a lawn area is ridiculously wasteful, midday windblown rainbirds along the road. The new high school has an enormous amount of landscaping that's been watered for almost a year, before completion and occupancy. Real turf??? In a desert this is ludicrous. But, I digress, the canal piping project has some merit but until an exhaustive study of the greater impacts has been completed I feel it is more destructive than helpful and disapprove.</p>	<p>Please see Section 6.8.2.3 of the Plan-EA for information about the effects on groundwater.</p>
141.01	ALT	<p>RE: Arnold Irrigation District Proposed Historic Flume replacement As impacted residents to the Flume replacement, we'd like to let you know that we are not in favor of your plan to replace our backyard with a road, scarring all scenery, instead of leaving the magnificent scenery currently there and protected by the federal Wild and Scenic Rivers system by shoring the piers and replacing the existing flume materials eliminating all leakage. Trust me – in this area, excavation costs go well over-budget. This request will help you keep your costs lower and on budget. Below, we are breaking down some of our talking points, which we would be happy to discuss with anyone. Historic Flume Leave existing infrastructure. As mentioned above, shore up any piers that need it. Leave existing road, beside the Flume. Building a road on top of a buried pipe is extra view impediment into our backyard. Plus, the “Road Supporting Materials” would be necessary, adding feet to that elevation, is the assumption. This Option is Unacceptable to the residents. Replace Flume material eliminating leakage. Open Flume evaporation rate would be the same as in the River at this point in the canal journey.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
141.02	RES	<p>Land Use – 40 ft on the Easterly side Right of Way for Arnold Irrigation Flume. How is Arnold Irrigation District proposing to widen into the Right of Way, consisting of boulders abutting Rim Rock? This question is raised because some of the narrowest section should be considered in this proposal in the flume path – and it's narrow because of boulders. o Can we keep our rocks if they can be</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>

Comment ID	Topic Code	Comment	Response
		safely removed?o What is future liability to the potential disruption of the land and hillside?What happens to my Rim Rock stability?o Not only is there concern for the stability of the land and hillside but for the property values that will diminish as the river and gorge view is eliminated with your road on top of a buried pipe at an insane height for a federal Wild and Scenic Rivers protected River Gorge.	
141.04	WAS	Wild and Scenic Rivers· We do not see how Arnold Irrigation District is planning on not violating the federal Wild and Scenic Rivers system regulations.· Currently, we are abiding all Wild and Scenic Rivers regulations, regardless of fear and anxiety caused by Wildfire Danger of leaving forest floor detritus just feet from a dead tree that is all set to ignite.o How can such a scarring of the easterly side of the Deschutes River, within full view of the Deschutes River Trail looking directly at it, not be impactful of the other side of the gorge?o One of my Covid-19 pastimes was watching the hikers, joggers, bikers all adventuring (and distancing) along the trail, within my view, through the trees. This whole proposed scarring process will be fully in view of the Deschutes River Trail travelers.o The Easterly side of the River will be scarred forever and will not be natural in appearance.o Has there been request of a Sign-off on this proposal by Department of Interior? That all Land Management Rules will be followed and not subject to just the Extent practical mentioned multiple times in the proposal? For me, being practical would be to eliminate Forest Floor fuel, but I'm not allowed to do that and that is VERY practical. Potentially blowing up rocks to bury a pipe is not practical, or part of the Land Management Rules.o This would be a very bad paradigm to approve and precedent to set.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.
141.05	ALT	In Summary, § Shore up the Support Piers and Infrastructure – Don't replace it all. § Replace all of the open Flume, so leakage is eliminated. § Use the Existing road. § Lower Costs. Save Money.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
142.01	WETL	The backyard to this property contains the Arnold irrigation canal and the property lines actually extend to the otherside of the canal. There are also National Historic Wetlands that run parallel to the canal and right through it. We have been told that due to the wetlands and preservation of them there is to be no disturbance of that area whatsoever. The property contains fencing that was stopped prematurely due to the wetlands and preserving their natural state.	Please see Section 6.10.2 of the Plan-EA for information about the effects on wetlands and riparian areas along the project area.
142.02	VEG	There are six large ponderosa pine trees on the very bank of the canal that you will see in the picture. These trees have a root system that go directly into and underneath the Canal area that will be compromised should any piping be done. The size of these trees indicate they are over 75 years old and very valuable to the natural landscape and oxygen they bring to the environment.	Please see Section 6.6.2 of the Plan-EA regarding effects on trees.
142.03	WILD	There are several wildlife such as deer, ducks Canadian geese, frogs, birds and several owls that currently habitat the area directly where the canal is located.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.

Comment ID	Topic Code	Comment	Response
142.04	PROP	This property value will be significantly decreased in value as well as safety should a pipe replace the canal and be covered over with dirt.	Please see the response to Comment ID 218.13 regarding property value. Please see Section 6.3.2 of the Plan-EA for information on the proposed project's effects on public safety.
142.05	ALT	We have a strong opinion that there are several other options to save the minimum water released through evaporation of the canal. Primarily, there can be a liner installed when the canal is dry on the bottom surface as well as running up the bank of the canal to preserve most of the water that is being claimed to be wasted while the canal is in use. Please let us know what we can do to help the city realize that taking away one of the last natural beautiful amenities to this countryside is the wrong decision. Rather to preserve the environmental and natural wildlife land is in the best interest for the canal and its natural habitat.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.
143.01	ALT	I would like to enter the following comments as they relate to the Bend Bulletin article published on 7-21-21, attached. In this article David McKay of the FCA is quoted saying that the flume is “pretty leaky,” That characterization is not provided in the EA and visual assessment of the flume does not appear to support that claim. McKay also states that the support structures are “getting pretty old,” These are both examples of the vague language used in the EA to describe the planned renovation of the flume. There are no supporting specifics offered for what the essential problems are with the flume or why it would be buried, nor why a county spec dirt road would need to be built on top of it. AID and FCA continue to treat this part of the project with a lack of specificity that is shocking considering the oversight required by the Oregon Scenic Waterway Act (OAR 736-040-0030) and the Wild and Scenic Rivers Act.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.
143.02	CONS U	McKay also states in this article that the planned replacement of the flume would happen in the late stages of the proposed modernization project—while this may be the case, as an integral part of the Draft EA’s plan this last phase must be approved at the front end of this process and the proposed project must not move on in a bifurcated or modular way. Has AID provided written notification to the Parks and Recreation Commission as required by state law?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Since the flume has been removed from the project, consultation with Oregon Parks and Recreation Department is no longer required.
143.03	WAS	In this same article I would like to point out that Colin Wills, Arnold Irrigation District Manager, supports people’s understanding of the flume as a historic structure, stating that it would be worthy of display in the High Desert Museum. While issues of historic value are legitimate, the most concerning issues at stake here pertain to the scope of the planned earthwork in a protected area of the Deschutes Wild and Scenic River and an Oregon Scenic Waterway. It’s bothersome that this newspaper writer missed this fact but even more worrisome is the extent to which AID and FCA have gone to hide this fact from the public	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.

Comment ID	Topic Code	Comment	Response
144.01	ALT	As a 25yr resident and patron of AID the only viable solution to the seepage problem in the canal is to line it with one of the "modern" innovative and highly effective applications that have been proven as super successful in many of the irrigation and aqueduct districts throughout the Western United States. We moved here 33 years ago from Alaska and the huge deciding factor to come to this area was the beauty of the forests, wildlife and quality of life that was here. I've been seeing that chipped away at for a number of years now and this is certainly another huge chip to that quality. We need to save this beauty and modernize in a responsible and loving way not damaging the residents of this area and not destroying the landscape Mother Nature has bestowed on us all. Lining the canal is the responsible way to do this. Thank you	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.
145.01	FIRE	Please do not pipe the irrigation canal - there are other ways to save water from seeping into the ground. The environmental impact (loss of vegetation and water for animals, aesthetic impact and lack of access to water in case of fire is not acceptable.	See the following sections of the Plan-EA regarding effects on vegetation (Section 6.6.2), wildlife (Section 6.11.2), and visual resources (Section 6.7.2). Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more information regarding the alternatives considered.
146.01	ALT	If you want to make all the landowners happy, you need to line the canal with one of the methods that has been proposed. AID did a test section of canal lining that has proven successful. After 25 years they are holding up in excellent shape. Sounds like they will last for many, many more years. Why not use one of those methods? Why is AID so adamant about piping the canal?	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Additional description and photographs of the canal lining test sections installed by Reclamation have also been added to the Plan-EA. Please see the response to Comment ID 29.04. NRCS has selected the Piping Alternative as the Preferred Alternative based on its ability to meet the project purpose and need; meet the Federal Objective and Guiding Principles; and provide the most beneficial effects on environmental, social, and economic resources.
146.02	VEG	The flume replacement on the river will destroy vegetation and would be an eyesore to everyone who has to look at it. Needless to say, piping the canal would destroy much vegetation and wildlife habitat; the trees alone would be an irreplaceable loss	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see Sections 6.6 and 6.11 of the Plan-EA for information regarding the effects on vegetation and wildlife.

Arnold Irrigation District Infrastructure Modernization Project
 Final Watershed Plan- Environmental Assessment Appendix A: Comments and Responses

Comment ID	Topic Code	Comment	Response
147.01	ALT	My name is [NAME] and I own the property located at [ADDRESS] in Deschutes River Woods. The Arnold Canal passes through the end of my property. I STRONGLY DISAGREE with piping the canal. There are numerous reasons why this should not happen. Simply lining the canal with shotcrete through the DRW section would be more cost effective and prevent all the destruction piping the canal would cause.	Please see the response to Comment ID 32.02.
147.02	WILD	Wildlife use and rely on this canal.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
147.03	VEG	Trees and other plants rely on this canal.	Please see Section 6.6.2 of the Plan-EA regarding effects on vegetation.
147.04	PROP	Property values would decrease significantly.	Please see the response to Comment ID 218.13 regarding property value.
147.05	WAT	Wells and underground aquifers could dry up. Please hear our concerns and realize that piping the Arnold Canal through Deschutes River Woods is not only a terrible idea, but a destructive one. There are other options. Thank you for taking the time to read this email. I hope you consider our concerns.	Please see Section 6.8.2.3 of the Plan-EA for a discussion regarding the effects on groundwater. Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered.
148.01	GEN	We have to go ahead with the piping project for Arnold Irrigation. It is critical in order to have water in the future, to conserve however we can. To be sustainable and self sufficient with our food supply, we must grow our own pasture, hay, livestock, and crops. Without irrigation water that is impossible. Thank you for continuing with the piping project.	Thank you for your comment.
149.01	GEN	As the legal owners of the property located at [ADDRESS] we are writing to formally register the following additional comments, concerns and objections pertaining to Arnold Irrigation District's (AID's) proposed plan to replace its existing flume with a pipe "buried above the existing landscape elevation". (The existing flume is partially located on our property.) Our original list of comments was dated July 4, 2021 and submitted to arnold.id.comments@gmail.com by email on July 5, 2021.	Thank you for your comment. The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the responses to Comment IDs 149.02 through 149.12 for the additional comments provided in your letter.
149.02	PUB	ADDITIONAL COMMENTS and CONCERNS (in addition to those dated July 4, 2021) Regarding: Public Notification and Opportunity for Public Comment AID and Farmers Conservation Alliance (FCA) have not broadly publicized AID's proposed Plan and we continue to encounter many Deschutes County residents who have never heard of the Plan, including residents whose property is directly affected by AID's claimed easements. I previously requested (by email to arnold.id.comments@gmail.com on July 6) that AID notify all property owners affected by the Plan via registered mail to resolve this problem. This was not done. These residents and property owners cannot possibly submit comments if they are not even aware of the AID Plan or the	Please see the responses to Comment IDs 39.11 and 39.09.

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		Public Comment Period. We therefore strongly request that the public comment period be extended until all affected property owners and the general public have been informed and given sufficient time to investigate the facts and submit comments.	
149.03	GEN	Regarding: Environmental Impact AID’s proposal to replace its existing elevated flume by replacing it with a pipe “buried above the existing landscape” defies common sense, environmental concern, fiscal responsibility with taxpayer dollars, and civic consideration. The historic flume runs for over a mile along the edge of one of the most scenic sections of the federally protected Wild and Scenic Upper Deschutes River. It runs along thunderous Class V whitewater rapids and serene riparian habitats. It runs through stands of mature ponderosa pine and towering white fir. It runs through the native habitat for deer, beaver, porcupine, cougar, squirrel, frogs, and a dozen species of birds – including wild turkey and the majestic osprey. For Central Oregon residents, the Deschutes represents much more than a river. It represents the unique love of nature that has characterized our community for more than a century. And now, inexplicably, AID proposes to construct a massive earthen dam-like structure along this entire section of river – just to hide a pipe! The structure would permanently alter the terrain, the river water quality, the animal habitat, the natural vegetation, and the stunning natural beauty that draws hikers, kayakers, fishermen, and nature lovers from around the world. And yet, no Environmental Impact Statement has been developed. The AID Plan raises some serious questions and concerns in addition to those listed in our July 4 comments:	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See the response to Comment ID 94.02 regarding the need for an EIS.
149.04	CONS U	1. Replacing the flume with a pipe “buried above the existing landscape elevation” as described in the Draft EA would have a massive and permanent environmental impact affecting every nearly aspect of the native environment. The extent of the impact is impossible to determine from the Draft EA and once the Plan is implemented, the damage is done and irreversible. It is imperative the public and all relevant management and regulatory bodies be able to assess the Plan’s full environmental impact BEFORE it is implemented. We therefore strongly request that a full Environmental Impact Statement be developed and made available to the public and all other concerned parties before proceeding further with the proposed plan.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See the response to Comment ID 94.02 regarding the need for an EIS.
149.05	VIS	2. The Draft EA states in Section 4.7.2 “Below the diversion, the flume is elevated above the ground for the first 450 feet. The remaining sections of flume sit on the ground surface.” This is categorically false and is misleading to anyone seeking to understand the environmental impact of the AID Plan. Nowhere does the flume sit on the ground surface. It is actually elevated above the ground from one to ten feet throughout its entire length (depending on the terrain). The EA statement is misleading because it gives the false impression that if the flume were replaced with a pipe, it too would “sit on the ground” and therefore be relatively inconspicuous. In reality, the EA itself states in Section 5.3.2 that the first 450 feet of the proposed pipe would be “at the same height as the existing aerial flume” and that the remaining 4,945 feet of pipe “must be level with the aerial section”. This means the proposed pipe would not sit on	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

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		<p>the ground but would also be elevated at least one to ten feet above the existing terrain just like the flume. And according to the EA it would be sitting on a trucked in bed of “engineered backfill material” to support it at this height above the ground. This would mean hundreds, if not thousands, of truckloads of alien fill material dumped onto the natural terrain just to support the pipe! Then, thousands more truckloads to cover the four to five foot diameter pipe with four more feet of fill material. This is why, according to the description provided in the EA, the top of the burial mound would be at least 8 to 19 feet above the existing terrain and why it would cause such a massive scar in the scenic river corridor, and why it would be visible from so many points along the river. We request that the incorrect statement be corrected in the Draft EA and that the Draft EA provide a clear and accurate description of what the proposed burial mound would actually look like, including the roadway AID plans to construct on top of it.</p>	
149.06	PUB	<p>We further request that the corrected and revised Draft EA be then provided for public comment before proceeding further with the proposed plan.</p>	<p>The Final Plan-EA is provided for public review; however, there is not a subsequent public comment period per the Watershed Program Manual and NRCS Environmental Compliance Handbook.</p>
149.07	SYS	<p>3. Many factors would determine the actual finished height of the proposed burial mound and roadway above the existing terrain and therefore the degree of environmental impact it would have on the river corridor. Most of these factors are not addressed in the EA including the following: a. Section 5.3.2 of the EA states the buried pipe would be 40 to 63 inches in diameter but doesn’t say where these different diameters would be used. The diameter would directly affect the overall height of the burial mound / roadway. b. Section 5.3.2 of the EA states the buried pipe “must be level with the aerial portion” (used in the first 450 feet). If this is true, then the pipe would actually be higher above the existing terrain than the flume, which would increase the overall height of burial mound / roadway. c. Section 5.3.2 of the EA states “A new maintenance road would be built on top of the buried pipe.” Would this roadway add additional height on top of the “3 to 4 feet of engineered backfill”? Because the finished height of the burial mound / roadway would have a direct and profound impact on the environment, the scenic beauty of the river corridor, and the property values of each property owner along the flume, we request the Draft EA be revised to accurately describe the actual height of the finished roadway surface above the existing terrain for each of the abutting privately owned tax lots throughout the length of the flume. 4. The AID Plan calls for a “maintenance road” to be constructed to “city, county, and state requirements” on top of the burial mound and run along the entire length of the buried pipe. The environmental impact of this road and its impact on the privately owned property through which it runs can only be determined and evaluated if its design, appearance, and construction are clearly and accurately described in advance. For example: a. Would the road have vehicle turnouts which would widen the overall mound on which it sits? And if so, how wide and long</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>

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		<p>would they be? Would they be located on the river side or inland side of the road? Where exactly would they be located, (on which tax lots)? Would any excavation of the hillside be required to construct them? And if so on which tax lots would this excavation occur and how extensive would it be?b. Would the road have a vehicle turnaround at the west end? If so, would this result in engineered fill material spilling over the steep embankment in this area toward or into the river?c. Since it would be elevated, would the road have a guard rail or fence along either of its sides? If so, where exactly would it be located? How high would it be? What would it look like? Would it present a barrier to property owners from easily accessing their property on the other side of the road? Would it have a visual impact on the scenic river corridor?d. What are the specific “city, county, and state requirements” that the road would be required to comply with?In addition to answering the questions in our July 4 comments pertaining to the proposed maintenance road we request the Draft EA be revised to clearly describe the design, appearance, and construction of the road, and address the specific questions and concerns listed above.</p>	
149.08	VEG	<p>5. In addition to the trees removed or damaged during the proposed construction, many additional trees would be killed more slowly because the proposed “engineered backfill” would raise the soil level around the trunk or within the drip line. The loss of hundreds, if not thousands, of mature trees along the river corridor would have a significant environmental impact, would increase the danger of wildfire, and would adversely affect the property value of property owners along the flume. In order to fully and accurately assess the true environmental impact caused by the removal or death of these trees, we request an accurate count of the number of trees (and their species) which would be removed or killed. We further request that this tree loss count be provided to the general public and to all agencies and bodies having oversight or regulatory responsibility for the Upper Deschutes River.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regarding the proposed project’s effects on property value. Additional language regarding wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. Please see Section 6.6.2 for how the project would minimize tree removal.</p>
149.09	WILD	<p>6. Animals routinely pass from the river rim down to the river to drink. AID’s Plan calls for a burial mound and elevated roadway to be constructed along approximately one mile of the Deschutes River corridor which would range from 8 to 19 feet in height above the existing terrain. This would present a barrier to some animals and expose some to predators. The EA does not address this. We request the Draft EA be revised to address this environmental impact and that the impact be further addressed in a full Environmental Impact Statement.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
149.10	WAT	<p>7. The Draft EA calls for a massive quantity of “engineered backfill” to be piled to a depth of between 8 and 19 feet along almost a mile of the Deschutes Riverside. This fill material has the potential to contain toxic minerals, chemicals, or other substances which could leach into the river and ground water for hundreds of years. The Draft EA does not appear to address this potential. We request the Draft EA be revised to address this potential and that it be further addressed in a full Environmental Impact Statement.</p>	<p>The flume has been removed from the proposed action, so engineered backfill would no longer be needed along the referenced section of the Deschutes River. Please see the relevant portion of the response to Comment ID 12.01.</p>
149.11	RIGHT	<p>Regarding: AID’s claimed “easements” 1. As stated in our July 4 comments, AID claims to have an easement on our private property which they claim is derived from the Carey Act of 1894 and a Right of</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment</p>

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		<p>Way Act dated 1891 (FIFTY-FIRST CONGRESS, Sess. II, Ch. 561, 1891). These Acts only appear to grant a Right of Way on public lands and do not mention privately owned property. Despite several requests, we have never received clear legal documentation from AID proving the validity of its claim to an easement on our private property and we therefore again request such documentation BEFORE proceeding with any of the measures outlined in the EA regarding the flume. However, IF the easement is proven to be legally valid, we have the following concerns:</p> <p>2. The AID Plan to replace the flume would require a massive mound of “engineered fill” to be constructed on many of the private properties on which it claims to have easement rights. This mound would be approximately 8 to 19 feet in height (minimum) and would have a road constructed on top. The mound would likely be 50 feet, or considerably more, in width at the base depending on its height above the existing terrain and the width of the roadway and shoulders on top of the mound. This raises several serious concerns:</p> <p>a. The mound would create a major and permanent alteration to the private property on which it sits. The alteration would likely render the portion of property on which it sits permanently unusable by the property owner and worthless in value. For all practical purposes this would amount to AID forcibly taking a large amount of usable and valuable private land away from its legal owners.</p> <p>b. Some of the private property on which the mound would sit extends well beyond both sides of the flume. The mound with its steep sloping sides would make it almost impossible for these property owners to access their own property on the “other” side of the mound. The privately owned land currently occupied by the flume and service road would remain usable by its owners if in the future, AID’s claimed easement is abandoned or revoked and the flume removed. But with AID’s proposed Plan for replacing the flume, this same land would become permanently useless and would therefore significantly reduce the overall value of the property. It is unlikely that AID has the legal right to cause this level of harm to private property owners. We therefore request that BEFORE proceeding further with the proposed plan AID provide proof of the following:</p> <ul style="list-style-type: none"> - Proof that AID has the legal right to permanently render private property it does not own useless and worthless to the legal owners of that property. - Proof that IF AID does have this legal right, that AID will secure a bond or other insurance that will cover the full cost of restoring the property to its pre-construction condition if in the future AID ceases to exist, or its need for the buried pipe ends, or its claimed easement is abandoned or revoked. If such proof does not exist and cannot be provided by AID, we request that AID’s current Plan for replacing the flume be discontinued. <p>3. There is no recorded survey identifying the exact location of the flume on our property. AID claims their easement extends 50 feet from each side of the existing canal. If the existing canal/ flume is removed or buried and is no longer visible, there would no longer be any marker or point of origin from which to measure out the legal boundaries of the easement. This is unacceptable from a common sense perspective and probably illegal, as it would allow AID to claim the boundaries of their easement to be anywhere they want, and there would be no way to prove if they were correct or incorrect. From the moment the existing canal/ flume is removed, the prospect of a legal dispute becomes</p>	<p>ID 12.01. Regarding the inclusion of specific easement information, please see the response to Comment ID 39.18. Please see the response to Comment ID 39.02 regarding the Carey Act.</p>

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		<p>likely because the massive size of the proposed construction project would very likely extend past the 50 foot boundaries as measured from the currently existing canal/ flume. This same problem exists in many, if not most, of the locations where AID claims to have an easement on privately owned property. We therefore request that PRIOR TO ANY PLAN APPROVAL, the exact location of the existing canal/ flume be surveyed at AID’s expense and its exact location on each affected private property be recorded as well as the exact location of the boundaries of the easements on those properties. We further request that this survey be added at AID’s expense to the legal title of each property affected. 4. Section 5.3.2 of the Draft EA states “the pipe would be buried above the existing landscape elevation and would hug the hillside.” This would require moving the pipe from the location of the existing flume, since the flume does not “hug the hillside”. This raises several issues not addressed in the Draft EA, including:</p> <p>a. The Cary Act of 1894 and Right of Way Act of 1891 refer to canals, ditches, and reservoirs. They don’t mention flumes. Does AID have proof that a flume legally qualifies as a canal, ditch or reservoir? If so, what is that proof?</p> <p>b. The Cary Act of 1894 and Right of Way Act of 1891 do not mention pipes. Does AID have proof that a pipe legally qualifies as a canal, ditch or reservoir? If so, what is that proof?</p> <p>c. The Right of Way Act of 1891 states: “That nothing in this act shall authorize such canal or ditch company to occupy such right of way except for the purpose of said canal or ditch, and then only so far as may be necessary for the construction, maintenance, and care of said canal or ditch.” It is hard to imagine that entirely replacing the existing above ground flume with a buried pipe and an elevated roadway could qualify legally as “construction, maintenance, and care of said canal or ditch”. If AID claims that such an entire replacement with a completely different infrastructure qualifies under the terms of this Act, we request legal proof before approval of the proposed plan.</p> <p>d. Neither the Cary Act nor the Right of Way Act of 1891 state that the canal can be relocated within the Right of Way. For the pipe to “hug the hillside” would require it to be relocated from the location of the currently existing flume and it would then no longer be 50 feet from the currently existing easement boundary. The location of the easement on private property cannot be moved as this would be an illegal encroachment on the private property. But to place the pipe closer than 50 feet from the currently existing easement boundary would not comply with the Right of Way Act of 1891 that specifies the 50 foot Right of Way from the edge of canal. We request a clear written explanation of how AID plans to solve this.</p>	
149.12	SAFE	<p>Regarding: Access for River Rescue Operations In the 18 years we have lived adjacent to the Deschutes River, we have witnessed numerous river rescues below Lava Island Falls. In each case the rescue teams have accessed the river using AID’s existing service road that runs through the private property located at [ADDRESS] and under the existing flume. AID’s proposed burial mound and elevated maintenance road would cut off emergency rescue access to this portion of the Deschutes River. (This area is not readily accessible from the West side of the river.) In the interest of public safety, we request that AID</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>

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		<p>provide documentation that its intended blocking of emergency rescue access has been reviewed and approved by the various rescue agencies serving this area. Regarding: Increased Safety and Security Risk for Private Property Owners Currently AID operates a service road that runs adjacent to the river side of the flume. This road runs mostly through private property and is frequently used illegally by trespassers. The flume presents a barrier which prevents these trespassers from easily accessing the property owners' yards and homes. AID's proposed Plan would eliminate this barrier and provide direct and easy access for trespassers from AID's proposed new maintenance road into each of the private properties on which it claims to have an easement. It is unethical, abusive of its claimed easement rights, and we suspect illegal, for AID to engage in construction or other measures that would knowingly increase the risk of harm to the servient property owner. We request that AID refrain from any such construction or measures.</p>	
150.01	CUL	<p>I am writing to express my extreme OPPOSITION to the planned destruction of the flume above the Deschutes River. This structure has significant historic value to encourage farming development in the early 1900's in this area. We are factfinding to begin the procedure to have it designated as such which would make it unlawful to attempt to remove a structure deemed to have historic value.</p>	<p>The flume has been removed from the proposed project. Please see the response to Comment ID 12.01. Section 6.1.2 of the Plan-EA has been updated to include the findings of the cultural resource survey of the project area and consultation process between NRCS and SHPO. The section also includes mitigation measures that were deemed necessary by SHPO.</p>
150.02	WAS	<p>Secondly, but even more important, is the fact that the Deschutes River is designated a Wild and Scenic River and there can be no federal grants allowed on any construction project that would have a direct adverse effect on the Deschutes River. This ill thought out proposal is fraught with many issues that will require an objective & independent Environmental Impact Study to be done. Because the Wild and Scenic River designation is a state and federal designation the EIS will be mandatory prior to any removal of the flume or any construction work of any kind above the river.</p>	<p>The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.</p>
150.03	PROP	<p>It should also be noted that those of us who live above the river where the flume is located and whose property values will be negatively impacted are prepared to file a class action lawsuit against Arnold Irrigation and the Farmers Conservation Alliance if this project proceeds. I know of one neighboring property down the street from me that just sold for \$1,000,000....\$50,000 over asking price! That price was paid by the buyer for the property specifically because of its outstanding river view and that person would not stop at taking legal action against Arnold Irrigation and the Farmers Conservation Alliance.</p>	<p>Please see the response to Comment ID 218.13 regarding property value.</p>
150.04	PUB	<p>I have written to our Deschutes County Commissioners and filed a complaint against Arnold Irrigation and the Farmers Conservation Alliance for being negligent in providing a well advertised period of time in which people could do their research and make comments. It is obvious from the lack of transparency in the poorly advertised comment period that the Farmers Conservation Alliance and Arnold Irrigation were hoping to sneak by without the public being aware of the destructive plan being put forth. I live</p>	<p>The public comment period was conducted per NRCS and NEPA requirements. The public comment period for the Draft Plan-EA was set to conclude on July 8, 2021, and was extended to July 23, 2021. This extension was made in response to a</p>

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		<p>above the flume and the river and I only just found out last week that all comments had to be made by tomorrow, July 23. People in this community who just found out about this are angry and up in arms about what Arnold and the Farmer's Concervation Alliance are trying to railroad through. You need to allow another extension since very few people were aware of this situation and did not know there had been an extension period for commenting when it wasn't even known about the destructive plan Arnold Irrigation and the Farmers Conservation Alliance had cooked up! Many have not had the opportunity to comment because of the poor advertismment of the situation by your organization and are on vacation or work everyday. More time must be given for this to be a fair and transparent process and not just some kind of underhanded attempt to eliminate public review and comment! For the sake of showing that your organization is a fair and objective one, you need to allow more time and put notices of the comment period on the local tv, radio & newspaper as well as OPB since so many people watch PBS and listen to it on the radio as well, so that everyone who cares about the Deschutes River will know what Arnold is intending to do!It has also come to my attention that the Farmers Conservation Alliance has some kind of ties to Granite Construction of Los Angeles who install pipelines. That is incredibly suspicious and may be found to be a potential conflict of Interest that should be investigated!!!!It should also be noted that I have written to the Farmers Conservation Alliance Communications Director at the urging of one of our Deschutes County Planners and this is what I received back....she won't be back until one week AFTER THE DEADLINE FOR COMMENTS!!!!</p>	<p>public request for additional review time. For the public comment period that began June 8, 2021, postcards were mailed to AID patrons and property owners adjacent to the Main Canal and flume with information about the public meeting and the comment period, including the project website, oregonwatershedplans.org. Notification of the public meeting and proposed project were published in <i>The Bulletin</i>, online at the NRCS public notice website, and at oregonwatershedplans.org. Notification by email was sent to anyone who provided their email during the public scoping period in 2019, attended the June 23, 2021, public meeting, or otherwise provided their email at oregonwatershedplans.org. Please see the response to Comment ID 218.11 regarding NRCS and FCA contracting.</p>
151.01	PUB	<p>I would like to strongly object to the current piping proposal that AID put forward for the historic flume along the Upper Deschutes. While I believe piping in general is highly beneficial, the current proposal is to build a roadway ontop of the above-ground piping. This could have a devastating environmental impact on the Upper Deschutes water quality, wildlife, vegetation and natural beauty. Specifically, I object to this proposal on 2 grounds:1. I believe that AID and the Farmer's Conservation Alliance have demonstrated a lack of goodwill toward the public by failing to broadly publicize this proposal and by ending their public comment period before the general public is informed and able to respond. I therefore request that the general public comment period be extended until the general public has been informed and given sufficient time to investigate and submit comments.</p>	<p>The flume has been removed from the proposed project. Please see the response to Comment ID 12.01. Please see the response to Comment ID 150.04 regarding the public comment period.</p>
151.02	ALT	<p>2. Despite the massive and permanent environmental impact that could result from the proposed project, AID and FCA have not requested a full Environmental Impact Study and no EIS has been prepared. I am requesting that a full EIS be prepared and made available to the general public before proceeding further with the proposed plan. Thank you for your consideration.</p>	<p>Please see the response to Comment ID 94.02.</p>
152.01	CONS	<p>We live in Woodside Ranch and the canal runs behind our house. Although we hate to lose the beauty of the running water, we understand the necessity of conserving water and are not opposed to the plan for piping through our neighborhood. HOWEVER, we want assurances that whatever is done in order to make the waterway more efficient and reduce evaporation/ leakage will receive regular maintenance by</p>	<p>After construction, the project area would be planted with a seed mix of native grasses and forbs. Please see Section 6.6.2 of the Plan-EA for more information</p>

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		Arnold. We don't want a neglected patch of weeds and dead grass that will create a fire hazard or an eyesore, and we definitely don't want to bear the costs of ensuring that the new configuration is safe and attractive. We will not reap any direct benefits from this project, unlike Arnold will. We should not have to pay the costs and put in the work to maintain it. Please enter this into the considerations before moving forward.	about how vegetation in the project area would be managed after the project.
153.01	ALT	Have property in DRW. Live in John Day, OR. Don't have a computer/internet, so it's hard to find out about the project and comment. Really opposed to the pipe. Why not line it, cement it, like they've done elsewhere? Would allow the ducks, wildlife, and people to enjoy the canal. Lining could be more cost effective.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.
154.01	RIGH T	I own the property at [ADDRESS]. This property has granted an easement to the Arnold Irrigation District (AID) for the existing flume. This is the flume which AID proposes to pipe and bury under tons of fill dirt. I strongly object to AID's proposal, and per review of the easement granted, I do not believe that AID has the right to modify the flume on my property in this manner, nor does AID have the right to enter my property for the proposed pipe construction.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
154.02	WAS	AID's plan to bury the flume in a mile-long earthen dam-like structure is a massive construction project planned in the Deschutes River Wild and Scenic Area. There is a very real risk that AID's massive amount of "engineered fill" could dump into the Deschutes and alter the right channel of Lava Island Falls. The Wild and Scenic River Act includes protections against any action that might alter the natural flow of the river or introduce sediments or pollutants to it—which AID's plan very likely could.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.
154.03	WAS	In addition, the massive fill berm will be highly visible from the Deschutes River Trail across the river, an important recreational and tourism resource for Bend and Deschutes County.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
154.04	FIRE	Importantly, the open flume and canal is an important fire protection asset in case of fire emergency, made all the more important by climate change. A catastrophic fire emergency is likely in this area due to the many existing pines, home density and unique terrain. It's likely that power, wells (dependent on electric power) and the local private water system will fail or be shut off in a fire emergency. The existence of the canal, as a backup source of water during a fire emergency, is an invaluable asset for our property and this neighborhood. The local, private water service is limited and does not have the resilient infrastructure of those in municipalities, such as Bend. The area is currently covered by a service agreement with the Bend Fire Department, but the closest fire station is many miles away. This community was built without and prior to the establishment of many zoning and common safety features that incorporated areas enjoy. This makes the community much more vulnerable to significant wild fire damage. The loss of the canal and flume will leave our home and this neighboring community extremely vulnerable to climate change-driven catastrophic fire threat to life and property. The canal	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.

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		provides an important protection not only to the community residents, but also to the fire crews which will be called to fight fires in the area.	
154.05	GEN	The pipe is just the wrong solution. The pipe comes with too much collateral damage to real people and it's also too expensive for taxpayers. Complete eradication of seepage by using a pipeline will choke out trees and vegetation, threaten existing area wildlife and reduce the groundwater recharge local to the canal corridor which could affect wells in the area. Many residents of this area are lower income and simply cannot afford the great expense to re-dig wells to much greater depths. A much less expensive, and much less disruptive solution is improvement to the canal lining.	Please see Sections 6.6.2, 6.8.2, and 6.11.2 of the Plan-EA for information regarding the effects on vegetation, groundwater, and wildlife. See Appendix D.3 of the Plan-EA for more information on canal lining costs.
154.06	ALT	This solution has not been thoroughly reviewed by AID. Improvement to the canal lining would minimize seepage, while mitigating the negative impacts of piping to the existing and established ecosystem and community residents. Importantly, lining improvement will maintain the open canal flow, therefore not eliminating the important fire protection asset which is currently attached to our property and which is important to the surrounding community.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
155.01	PROP	While we certainly appreciate the need to not waste water, the canals as they are currently operating, do serve the following functions: 1) Aesthetics/ Property Value: We purchased our home partially because of the view and climate in our backyard. We believe we will suffer a decline in our property value because of the piping project. The district and landowners who have the water rights will gain access to additional water and improvements (and payment for that water), but we, as property owners will pay a price in loss of property value and the enjoyment of using our property the way we purchased it.	Individual patron water rights and District water rights would not increase as a result of the proposed project. Please see Section 6.8.2.1 of the Plan-EA for further discussion. Please see the response to Comment ID 218.13 regarding property value.
155.02	WILD	2) Wildlife: The population and various species of ducks, geese and other birds that live in and around the canals outside our property depend on this water and habitat to foster their young and live their lives.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
155.03	VEG	3) Trees & foliage: There are many large old trees living on the edge of the canal that depend on the water from the canal. The foliage on our side of the canal are also water-loving plants and serve to provide habitat for the water birds mentioned above in #1.	Please see Section 6.6.2 of the Plan-EA regarding effects on vegetation and Section 6.11.2 of the Plan-EA for effects on wildlife.
155.04	ALT	We believe that piping everything is too simplistic of an approach. We believe the district should line the canal where there are existing homes and pipe it everywhere else.	Please see the response to Comment ID 32.02.
155.05	PROP	I would also like to know the District's plans to compensate the homeowners for loss in property value.	Please see the response to Comment ID 218.13 regarding property value.
156.01	PROP	In regards to the Arnold irrigation piping we DO NOT SUPPORT it at all. This will destroy our property that backs up to the canal, drop our market value and it will take part of my property which we pay for. We will fight as hard as we can to stop this from happening.	Please see the response to Comment ID 218.13 regarding property value.

Comment ID	Topic Code	Comment	Response
156.02	FIRE	STOP THE PIPING there is more negative then positive from doing such. Let bring to attention all fires that open canal is a saving grace if good forbid we ever had a fire out here we would have no natural line or support. Our property address right on the canal: [ADDRESS] WE ARE AGAINST PIPING THE ARNOLD CANAL!	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
157.01		(just pictures)	
158.01	PROP	We are the owners of the following address for 25 years.[NAME][ADDRESS]7/ 23/ 2021We would like to register our concerns regarding the piping of the canal as Arnold irrigation district has an easement on our property.Property value depreciation.Fire hazardUnreimbursed and increased work load on the property owner.The easement on our property consists of the canal access road and a portion of the canal property. Arnold Irrigation district has an obligation to properly maintain the easement, this includes the removal of noxious weeds. County ordinance 2014-002. It has been our observation that Arnold does not honor their obligation of property maintenance under common easement laws. We have made it our job to remove knapweed from the easement as we recognize the implications of not doing so. Easements in properties adjacent to ours are thick with knapweed. Arnold irrigation ditchriders, I believe, probably spread the seeds with their truck tires as they travel through infested land. Additionally when Arnold irrigation does do maintenance they dump whatever they plow off of the canal banks and dump it in our yard for us to dispose of.I have called to complain about this practice and the lack of concern regarding the noxious weed problem. I was rudely informed that they had the canal way before homes were there and I was literally just brushed off.Easement maintenance: the aesthetics of the canal are obvious. We enjoy the abundance of wildlife and the divide between our home and the golf course. It is our understanding that the pipe will be covered with dirt. The width of the access road and the new pipe coverage will probably be about 25 feet wide. Who will irrigate and maintain this property? We are concerned that this will now become a no mans land and increase fire danger to ours and adjacent properties due to overgrowth of dry vegetation.Please see photos at the beginning of the email communication.	Please see the response to Comment ID 218.13 regarding property value. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. The District would revegetate areas disturbed during construction with a weed-free seed mix of native grasses and forbs per NRCS Conservation Practices. Please see Section 6.6.2 of the Plan-EA for more information and updated language. Please contact the District with concerns about current District operation and maintenance practices.
159.01	ALT	The flume is in our backyard and raising it several feet like you are proposing would make it very intrusive.Instead of replacing the flume with a pipe, have you thought about lining it or repairing it so that it does not leak? The flume itself is about a mile long, and it would be much less expensive to repair it than to replace it in the way you are suggesting.I am all on board with conserving water, and I can see that the canals would need to be piped because they leak water constantly. The flume is in a different category, and I think should be treated differently.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
160.01	ALT	I just learned of the plan to pipe the historic flume in Deschutes River Woods. The plan calls for adding 9-19' above the current flume, with backfill and building a road on top. This is adjacent the River and people's homes. Why? There needs to be an environmental study done, as well as engineers to look at how this will affect	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

Comment ID	Topic Code	Comment	Response
		homeowners foundations. More time is needed to better research to see if this is the best design for this area.	
161.01	PUB	I'm a homeowner on the canal in DRW. I oppose piping the canal for the all same reasons that I've heard from other people: Loss of property value... Loss of habitat... Dead vegetation... Noise pollution and construction traffic... Loss of/ invasion of property and rights... Biased environmental study... No accurate or thorough cost-benefit analysis... No proposed alternatives... benefits only a few and harms everything and everyone else. Life is too complex these days to pay attention to every detail that passes by us. Sending postcards saying it's "infrastructure modernization" instead of "we want to pipe the canal" was extremely, and likely intentionally, deceptive. So although and because I'm a homeowner on the canal, I've only recently discovered what this proposal is really about. I have not had enough time to research and compose my entire argument. The announcement about when acceptance of comments would be closed is ambiguous, so I'm sending this brief email to be sure my official opposition is received by end of business day. However, I have more to say that I doubt you've heard before. I'll be composing and sending a second email by the end of the day. For everyone's sake, I hope you read it. To be continued...	Please see the response to Comment ID 39.11 regarding the public process. Please see the response to Comment ID 218.13 regarding property value. See Section 6.2.2 of the Plan-EA regarding property rights and ownership. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more information regarding alternatives.
161.02	RIGHT	In addition, piping the canal may be a good solution in open farm country, but may have significant impact in a heavily treed/ forested area, that also impacts private property (like Deschutes River Woods). How will the 100' easement impact people's private property?	See Section 6.6.2 of the Plan-EA for information regarding effects on trees. See Section 6.2.2 of the Plan-EA regarding easements.
161.03	WAT	How will piping affect the aquifer?	Please see Section 6.8.2.3 of the Plan-EA regarding the effects on groundwater.
161.04	VEG	Will thousands of mature ponderosa pines and other vegetation be killed? Again more time is needed to research if the current plan is the best.	Please see Section 6.6.2 of the Plan-EA regarding effects on vegetation.
162.01	PROP	My family's home is on the canal [ADDRESS] and we would like to express our concerns with the plan to pipe the canal. Our concerns are: Impact to our property - the claim of a 50 ft easement into our property would result in the destruction of our backyard, outbuildings (including storage areas/ shed and garage) and gardens. In addition, this would shrink a significant portion of the backyard area which we enjoy spending time in and was a part of the reason we purchased our property... Negative impact to property value. This project would both decrease the usable size of our lot, as well as negatively impact our view amenity, resulting in a lower property value	Please see the response to Comment ID 218.13 regarding property value. Please see Section 5.3.2 of the Plan-EA for updated language regarding the potential construction dimensions.
162.02	CONS	Impact to our family and home during the piping project. I am the sole earner for our family and work from home. I will be greatly disrupted by the constant construction of the pipe in our backyard	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. The proposed project would be constructed in four phases. Construction of all the phases would be completed in 6 years.
162.03	VEG	Destruction of the large ponderosa pines on our property, which would result in a significant cost to remove and again, potentially damage not only outbuildings on our property, but also our house	Please see Section 6.6.2 of the Plan-EA regarding effects on trees.

Comment ID	Topic Code	Comment	Response
162.04	WILD	Negative impact to wildlife. Each year, we have families of geese and ducks who return to our property and nest and have babies. The piping of the canal would disrupt this wildlife, as well as any other wildlife in the area	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife.
162.05	ALT	Lack of consideration of alternative plans - such as lining the canal or burying the pipe. Lack of environmental study to analyze the impact of this project. Unsatisfactory consideration given to the fact that this will be a significant disruption to a large portion of DRW and our residents. There should be stronger partnerships formed within the community to find a solution Please see the attached photos to show the proximity of the current easement to our backyard.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04. Please see Section 6.1 through 6.11 of the Plan-EA for discussion of effects on a variety of social, environmental, and cultural resources. The proposed project would be constructed in four phases over the course of 6 years. Generally, construction activities would be limited to one or two phases at any given time. Please see Section 8.3 of the Plan-EA for more information regarding construction BMPs.
163.01	RIGHT	I own and reside in the property at [ADDRESS]. This property has granted an easement to the Arnold Irrigation District (AID) for the existing canal. This is the canal which AID proposes to pipe. I strongly object to AID's proposal, and per review of the easement granted, I do not believe that AID has the right to modify the canal on my property in this manner, nor does AID have the right to enter my property for the proposed pipe construction.	The District has a Carey Act right-of-way underlying all of the infrastructure that would be part of the proposed project. The District additionally has easements underlying some of the infrastructure that would be part of the proposed project. The District would install the proposed project pursuant to their easements and right-of-way. Please see Sections 4.2 and 6.2 for more information regarding easements and land ownership
163.02	WILD	The existing canal provides established habitat for wild birds and native flora. It is an historic ecosystem which is now over 100 years old	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources and Section 6.6.2 of the Plan-EA for information regarding effects on vegetation.
163.03	FIRE	Importantly, it is an important fire protection asset in case of fire emergency, made all the more important by climate change . We own portable pumps to pump water from the canal in case of catastrophic fire emergency. A catastrophic fire emergency is likely in this area due to the many existing pines, home density and unique terrain. It's likely that power, wells (dependent on electric power) and the local private water system will fail or be shut off in a fire emergency. Members of our household have wildland fire training, and we believe the existence of the canal, as a backup source of water during a fire emergency, is an invaluable asset for our property and this neighborhood. The local, private water service	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.

Comment ID	Topic Code	Comment	Response
		<p>is limited and does not have the resilient infrastructure of those in municipalities, such as Bend. The area is currently covered by a service agreement with the Bend Fire Department, but the closest fire station is many miles away. This community was built without and prior to the establishment of many zoning and common safety features that incorporated areas enjoy. This makes the community much more vulnerable to significant wild fire damage. The loss of the canal will leave our home and this neighboring community extremely vulnerable to climate change-driven catastrophic fire threat to life and property. The canal provides an important protection not only to the community residents, but also to the fire crews which will be called to fight fires in the area.</p>	
163.04	ALT	<p>A much less expensive, and much less disruptive solution is improvement to the canal lining. This solution has not been thoroughly reviewed by AID, as there is a tremendous amount of financial incentive to AID and to the piping companies they are working with to implement a large-scale pipe project. Improvement to the canal lining would minimize the impact of seepage, while mitigating the negative impacts to the existing and established ecosystem. Importantly, lining improvement will maintain the open canal flow, therefore not eliminating the important fire protection asset which is currently attached to our property and which the surrounding neighborhood enjoys.</p>	<p>Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.</p>
164.01	ALT	<p>In this late hour for commenting, I will keep this short. We are the legal owners of property located at [ADDRESS]. I was surprised that we had not heard about Arnold Irrigation District’s (AID) proposed piping project until very recently when neighbors informed us. We were shocked as our property abuts the conservation land between our property and the river, and on which the flume is built. It was unconscionable to think that we, and many of my neighbors along the flume, had not been informed by AID regarding its proposed changes that would take place in our back yards. To replace the flume with an elevated pipe, covering it with millions of yards of fill and then covering it with an additional three feet and putting a road on top seems like an expensive and unnecessary course of action. It would be a better use of the money to repair the flume where needed. Any seepage is returned to the aquifer and/or river.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p> <p>For the public comment period that began June 8, 2021, postcards were mailed to AID patrons and property owners adjacent to the Main Canal and flume with information about the public meeting and the comment period, including the project website, oregonwatershedplans.org.</p> <p>Please see Section 6.8.2 of the Plan-EA for a discussion of the project's effects on groundwater and surface water.</p>
164.02	WILD	<p>We know there will be months of construction just to cover the flume. Do we know how this will affect wildlife and vegetation?</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Sections 6.11.2 and 6.6.2 of the Plan-EA for more information regarding the proposed action’s effects on wildlife and vegetation.</p>

Comment ID	Topic Code	Comment	Response
164.03	WAT	Will this affect our well?	Please see Section 6.8.2.3 of the Plan-EA for a discussion of the effects on groundwater. Based on CEQ guidance, the level of analysis used in this Plan-EA is not based on a property-by-property or individual well basis. Please see the response to Comment ID 39.18 for more information.
164.04	GEN	Will we see the road? Will those using the river and river trail see the road?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
164.05	SAFE	Will this open up an avenue for others to use the road and trespass on our properties?	Please see the response to Comment ID 32.03.
164.06	PUB	Was an Environmental Impact Statement done? We respectfully request an extension of time to review AID's proposed plan, to further comment, and hear from AID with regard to our concerns.	Please see the response to Comment ID 94.02 regarding the need for an EIS. The public comment period for the Draft Plan-EA was set to conclude on July 8, 2021, and was extended to July 23, 2021. This extension was made in response to a public request for additional review time.
165.01	WILD	I have been made aware of the proposed Arnold Irrigation Project by my children who currently own property/homes that back up to the canal that is part of this plan. Eliminating the current water flow/ canal and replacing it with a pipe will devastate the wildlife that depend on this canal to survive.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources.
165.02	ALT	It also will have a negative impact on the environment and property values of every home affected by this project. I have read several email from other concerned property owners in this area and completely agree with all issues they have stated. I ask that you please consider an alternative plan to save the canal in its current state. Thank you.	Please see Sections 6.1 through 6.11 of the Plan-EA for discussion of the effects on a variety of environmental, social, and cultural resources. Please see the response to Comment ID 218.13 regarding property value. See Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered.
166.01	WAS	Mt. Bachelor and Sun Country Tours are opposed to this project based on the disruption to the beauty and historical significance of the area and existing flume. Sun Country Tours takes approximately 20,000 people on memorable experiences to this area every year. Also, we employ between 80 – 100 people, many of whom now have benefited year-round positions as a result of combining summer rafting employment on the Deschutes with a winter recreation job at Mt Bachelor. The proposed pipeline and	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Sections 6.11.2 and 6.6.2 of the Plan-EA for more information regarding the proposed action's effects on wildlife and vegetation.

Comment ID	Topic Code	Comment	Response
		road project would destroy the natural beauty of the area and wreak havoc on wildlife habitat, thus directly affecting our customer experience.	
166.02	ALT	While we understand the importance of reducing canal seepage, which would in turn retain more water in the Wickiup reservoir, we believe it should be done with canal lining rather than piping. Concrete canal lining would stop seepage loss approximately 70% which allows for intentional seepage that maintains the established canal ecosystem, a water source for wildlife and functional local wells. Maintaining deeper reservoir levels will provide more support against increasingly reducing CFS throughout the irrigation season, which directly effects the safety factor of rafting the Big Eddy portion of the Deschutes River. We do understand that repairs and revisions need to be made. However, this project requires more study to ensure that a solution that balances the existing ecosystem, recreational use, and the natural beauty of the area with water conservation strategies. Mt. Bachelor and Sun Country Tours believe a full Environmental Impact Statement needs to be produced prior to this project moving forward.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04. Regarding an Environmental Impact Statement, please see the response to Comment ID 94.02.
167.01	GEN	I am against piping the canal. The impact on the environment, wildlife and local property values are simply not worth it. I already give up an easement through my property for the canal. I've already sacrificed enough for Canal District profits. The argument that this plan will stop waste makes no sense. What's next piping the Deschutes River?	Thank you for your comment. See Section 6.11 of the Plan-EA for information about effects on wildlife. Please see the response to Comment ID 218.13 regarding property value.
169.01	PROP	I am adamantly against the piping of Arnold Canal. I live at [ADDRESS] the canal runs through my backyard and is abutted on both sides by my property. I feel that piping the canal along this section, will increase the burden on property owners and devalue properties. How can Arnold Irrigation increase the burden on private property owners?	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. The District would install the proposed project pursuant to their right-of-way and easements.
169.02	GEN	As a residential home owner, I have irrigation rights and a irrigation system. How is Arnold Irrigation going to pay, implement, and incorporate the potentially new pipe system into my existing system?	It is not expected that patrons would incur any costs to connect to the pipeline. Please see the response to Comment ID 37.62.
169.03	PROP	If construction of the pipe happens instead of lining the canal, or some other option not yet considered, property owners should be allowed time to document proof of value lost via piping. *Property owners should have the right to a pre-pipe and post-pipe property value analysis.	Please see the response to Comment ID 352.03.
169.04	RIGHT	Where is Arnold Irrigation's legal documentation stating the size of easements pertaining to individual property owners? A lot of structures and houses are within 50 feet! <photocopy of property survey and property images included in comment>	Please see the response to Comment ID 39.18. Language describing the dimensions of the area that would be disturbed during construction has been added to Section 5.3.2 of the Plan-EA.
169.05	WILD	I feel that piping the canal along this section, which is approximately 1+ miles from where it is diverted from the Deschutes River near Lava Falls, will cause reprehensible environmental damage. My property borders on the Deschutes National Forest and the canal provides water for Trees, Vegetation, and Wild Life.	Please see Sections 6.6.2 and 6.11.2 of the Plan-EA for information regarding the effects on vegetation and wildlife.

Comment ID	Topic Code	Comment	Response
		The canal and swath of woods that border, are a haven for migrating and residential birds, such as the pair of White Headed woodpeckers that frequent the ponderosa trees in my backyard. What about the wild life that rely on this corridor for their survival?	
169.06	GEN	Time should be allowed for a proper Environmental Impact Statement.I am not opposed to change, but this project is short sighted, and only benefits a few people with out considering all the impacts to OUR natural resources and OUR environment. <images of property included in comment>	Please see the response to Comment ID 94.02.
170.01	WILD	I am owner of [ADDRESS] property. Very concerned about filling the Arnold Canal. Please consider the following negative consequences. Loss of wildlife habitat	Please see Section 6.11.2 of the Plan-EA.
170.02	PROP	Loss of property value/ aesthetics	Please see the response to Comment ID 218.13 regarding property value.
170.03	VEG	Loss of valuable, established trees	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees.
170.04	CONS	Permanent destruction of property	Please see updates to Section 5.3.2 of the Plan-EA for a description of where construction activities would occur.
170.05	FIRE	Fire danger to Woodside Ranch and Deschutes River Woods neighborhoods	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
170.06	COST	Mismanaged spending of taxpayer dollars	Thank you for your comment. Please see the NEE in Appendix D.1 of the Plan-EA for costs and benefits of the project.
170.07	WAS	Eyesore visible within the Wild & Scenic Deschutes area	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.
170.08	ALT	Please explore alternative options to minimize the destruction of a beautiful area.	Please see Appendix D.2 and Section 5.2 in the Plan-EA for a discussion of the alternatives that were considered.
171.01	ALT	The first go to and least expensive water conservation of our, (the citizens of Central Oregon) Deschutes River Water asset is use a canal or Aquaduct or engineered liner that is used already, world wide. This also includes the water management of the sacramento river water delivery system to Southern California and the systems from Colorado, Arizona across the southern states. I question why such a brazen invasive and vastly more expensive approach to water consevation is being pushed thru. This how controversial	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04. Regarding excavating below the canal, please see Section 8.4 of

Comment ID	Topic Code	Comment	Response
		and permanently damaging legacies are formed. The intension of excavating the canal below the current level installed over 100 years ago by Army Core of Engineers is illegal and permanently damages all the invested engineering permanently.	the Plan-EA for more in formation about the District's ROW.
172.01	COST	While I strongly support water conservation efforts, I am writing to express opposition to the current project to enclose the Arnold Irrigation Canal. The project will be extremely costly and destructive.	Thank you for your comment. Please see Section 8.3 of the Plan-EA for a description of BMPs that would be used during construction to avoid and minimize effects. See Appendix D.1 of the Plan-EA for the National Economic Efficiency Analysis, which details the costs and benefits of the project.
172.02	ALT	And it is clear there are other approaches that haven't been adequately examined.	Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered.
172.03	PROP	I am very concerned that the project implementation will adversely affect the quality of life as well as property values.	Please see the response to Comment ID 218.13 regarding property value.
173.01	WAS	I am concerned about the effects the proposed flume reconstruction will have on the banks of the Deschutes River, designated a wild and scenic river.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
173.02	CUL	I would prefer the flume to be preserved as an historic artifact.	The flume has been removed from the project. Please see the response to Comment ID 12.01.
173.03	CONS U	I want the Federal Government to be officially involved with the selection of design and mitigation of the disruption to the environment caused by your proposed project.	The lead agency for the Arnold Irrigation District Infrastructure Modernization Project is the Natural Resources Conservation Service (NRCS), a division of the United States Department of Agriculture. NRCS is responsible for NEPA and program requirements as well as ensuring compliance with all other applicable laws and regulations that inform the selection of the preferred alternative (see Sections 1.4 and 8.1 of the Plan-EA for more information).
173.04	MET H	Has the evaporative loss from the flume been evaluated. I suspect the difference in water temperature at the inflow and outflow of the flume would indicate the heat absorbed and would be indicative of the evaporation. Perhaps this is insignificant and would not justify the cost to the environment and public to eliminate the flume.	Evaporative loss of water in the flume was not measured. A water loss study was completed for the Arnold Main Canal. Please see Appendix E.4.1 of the Plan-EA for a description of that water loss study. The flume has been removed from the project. Please see the response to Comment ID 12.01.

Comment ID	Topic Code	Comment	Response
174.01	ALT	Why Pipe and bury the flume? It doesn't leak and we could stop what little evaporation that happens by putting a top on the current flume. I agree with the rest of the piping, but the expense of burying the flume is silly and will achieve little, use that money elsewhere.	The flume has been removed from the project. Please see the response to Comment ID 12.01.
175.01	GEN	Piping the canal will cause unconsidered destruction to our trees, to local wildlife, and seriously damage property values. For these reasons I am against piping the canal until further discussion and other ideas are brought to the community.	Please see Sections 6.6.2 and 6.11.2 of the Plan-EA for information about effects on vegetation and wildlife. Please see the response to Comment ID 218.13 regarding property value. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more information about the considered alternatives.
176.01	ALT	I am a resident of Woodside Ranch (not on the canal) who is writing to express concern over the current plan for piping the canal. I am curious to know what alternative options have been, or can still be explored which would have a less invasive impact on the beauty, peacefulness, and property values of homes that are on the canal?	Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered.
176.02	METH	What is available to read that outlines the benefits and the downsides of this plan and how it came to be?	Please see Appendix D.1 of the Plan-EA for an analysis of the costs and benefits of the proposed project.
176.03	RES	Honestly, in addition to a concern over the cost v benefit of the project and the environmental impact it will have, I am incredibly concerned about noise pollution. We chose Woodside Ranch when we moved to Bend 7 years ago because of the peaceful location. I am open-minded and willing to be a critical thinker if this is truly the best solution, but the proposed cost and the destructive impact (on multiple levels) appears so great that I would like to be convinced of the worthiness of this project by being provided with more information.	Please see Appendix D.1 of the Plan-EA for an analysis of the costs and benefits of the proposed project. Please see Section 8.3 of the Plan-EA for mitigation measures and construction practices.
177.01	ALT	I live in Woodside Ranch. I am writing to state my opposition to filling in the Arnold canal. I'd like to know about alternatives, and haven't seen any.	Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered.
177.02	ALT	What I know about this project is that it seems very invasive to wildlife, plant life, existing wells in the area, as well as humans living in and around the canal. The timeline "seven years?" and high cost to taxpayers all without exploring alternate, less invasive ways to conserve water seems incomplete.	Please see Sections 6.11, 6.6, 6.8, and 6.7 of the Plan-EA for a discussion of the effects of the project to wildlife, vegetation, groundwater, and visual resources, respectively. The project's extent and timeline have been updated; please see Section 8.7.2 of the Plan-EA. For a discussion of the alternatives that were considered, please see Appendix D.2 and Section 5.2 of the Plan-EA.

Arnold Irrigation District Infrastructure Modernization Project
 Final Watershed Plan- Environmental Assessment Appendix A: Comments and Responses

Comment ID	Topic Code	Comment	Response
178.01	GEN	I live in Woodside Ranch and am heavily opposed to the filling in of the canal. Please reconsider and adopt a different path.	Thank you for your comment. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more information about the considered alternatives.
179.01	GEN	As residents of Woodside Ranch subdivision, we strongly oppose the plans to fill in the Arnold Irrigation canal.	Thank you for your comment.
180.01	PROP	You may want to address these bullet points from our association: Hi Woodsiders: Starting in 2022, scenic Arnold Canal is slated to be filled in. Consequences to Woodside Ranch residents will be many: Your property value will be reduced.	Please see the response to Comment ID 218.13 regarding property value.
180.02	WILD	Trees, landscaping, and wildlife habitat will be destroyed.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources and Section 6.6.2 of the Plan-EA for information regarding effects on vegetation.
180.03	WAT	Area wells will be negatively impacted.	Please see Section 6.8.2.3 of the Plan-EA regarding the effects on groundwater.
180.04	FIRE	Dangerous fire risk in our neighborhood will be increased.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
180.05	CONS	Property damage and noise will last for seven years.	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. The proposed project would be constructed in four phases. Construction of all the phases would be completed in 6 years.
180.06	ALT	Everyone is in favor of water conservation, but not this way. There are alternatives to piping the canal, but none are being considered. This project will cost taxpayers \$42 million, help few, and harm many. Please participate in the discussion by voicing your opposition to the Arnold Irrigation District all-or-nothing proposal to pipe our canal. Your opinion matters! Everyone in Woodside Ranch—not just those who have property on the canal—will be affected by this destructive and expensive project. Please send an e-mail right away with your comments to: arnold.id.comments@gmail.com . THE DEADLINE FOR COMMENTS IS FRIDAY, JULY 23, 2021. If you do not submit comments by July 23, 2021, you will not be eligible for compensation. (If you live on the canal, include photos.) You may also call (541) 716-6085.	Please see Appendix D.2 and Section 5.2 of the Plan-EA for a discussion of the alternatives that were considered. The project cost has been updated; please see Section 8.6 of the Plan-EA.
181.01	WAS	I would like to voice my concern for the impact on the surrounding area if Arnold Irrigation is granted permission to cover the flume and build a road over it. Besides the fact they will need to destroy so many	The flume has been removed from the project. Please see the response to Comment ID 12.01. Please see

Comment ID	Topic Code	Comment	Response
		trees, what will be the long range impact on our beautiful and scenic river? I am very concerned about the environment around this project and its future implications for that area.	Section 6.12 in the Plan-EA for information about the effects on the designated Wild and Scenic Rivers within the project area.
181.02	ALT	At the very least, I believe Arnold Irrigation should be required to do an Environmental Impact Statement which will address concerns regarding this very expensive and environmentally destructive project. I believe all avenues should be explored before final approval of such a project. Thank you for "listening" to my concerns.	Please see the response to Comment ID 94.02 regarding the need for an EIS.
182.01	WAT	Once more stupidity rules the day. Every day there are MONSTER water spraying devices throwing millions of gallons of water on nearby properties. Some of these properties have cattle and horses. But there are more that just pump water over barren wasteland in order to maintain their water rights. Meantime home owners are required to limit their watering. On Knott near the new high school the watering is literally beyond belief. Golf course, school grounds, (not the sports fields) huge lawns at businesses, churches, parkways, the list goes on. PLEASE STOP WASTING WATER FOR WATER RIGHTS! STOP THE WATER WASTERS FIRST.	Thank you for your comment. Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered, which includes on-farm efficiency upgrades.
183.01	ALT	I am opposed to enclosing the Arnold Irrigation flume because I think lining the canal would help with seepage.	Canal lining was considered as an alternative in the Plan-EA; please see Section 5.2 of the Plan-EA.
183.02	WILD	My other concerns are losing the anesthetic value and disrupting wildlife and the ecosystem which has been in place for 100 years.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
184.01	GEN	Don't pipe the canal. So many other City's have learned this lesson! It will have too many negative impacts to off set the benefits.	Thank you for your comment. Please see Section 8.9 of the Plan-EA regarding costs and benefits of the Piping Alternative over the No Action Alternative.
185.01	PROP	I'm apposed to the piping of canal for multiple reasons I have seen first hand of the destruction piping canals can do! My family owned a home on a canal in bend on high standard street this project left all the wild life and vegetation destroyed. Because of this my family sold their home at a loss and relocated.	Thank you for your comment. Please see Sections 6.6 and 6.11 of the Plan-EA for more information.
185.02	WILD	The Arnold canal has been operating for over 100 years the wildlife that it supports is vast, I've witnessed elk, deer, beaver, geese, multiple varieties duck, frogs, quail, osprey, eagles, hawks, owls and coyotes. A large number of these utilize this canal to mate and raise their young and return year after year. I have attached just a few of the hundred's of photos I've taken over the past 18 yrs I've lived on the canal.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
185.03	ALT	I am pro water conservation and know there are multiple ways to solve this problem that does not include inclosing a canal that dead ends out in the desert and doesn't return to the river.	Please see Appendix D.2 and Section 5.2 in the Plan-EA for a discussion of the alternatives that were considered.

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186.01	WILD	Please do not pipe Arnold Canal. I am the owner of [ADDRESS], a house that backs up to Arnold Canal. My family and I enjoy the wildlife that use the canal such as ducks and geese, owls, bald eagles, deer, coyotes, frogs, and quail just to name a few.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
186.02	PROP	The canal is a highlight of our property, and to replace it with a pipe and service road would negatively impact our home.	Updated language describing the cultural service values associated with the District's Main Canal and effects of the proposed project has been added to Sections 4.8.6 and 6.8.2.4.
186.03	PROP	I believe the loss of the canal would not only reduce the value of our property, but would destroy wildlife habitats, damage trees and vegetation, and remove what could act as a firebreak in this heavily wooded area. Please see the attached photo, and I implore you, please do no pipe Arnold Canal.	Please see the response to Comment ID 218.13 regarding property value. See Sections 6.6.2 and 6.11.2 in the Plan-EA for information regarding effects on vegetation and wildlife resources. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
187.01	ESA	The Cascade frog, American dipper, monkey flower, mallards, geese, Oreos, Western Tanager and many other varieties of endangered or threatened species have been seen along this canal. Piping the canal will be detrimental to wildlife and fauna.	Effects on federally listed threatened and endangered species and state-listed species are discussed in Sections 6.9.2 and 6.11.2 in the Plan-EA. Effects on federally listed species are also considered in the Biological Assessment developed for the project. USFWS concurred with the NRCS determination that the project may affect, but is not likely to adversely affect, the Oregon spotted frog (Letter of Concurrence 2022-0062518-S7; received by NRCS August 1, 2022). With respect to birds, the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) are managed and enforced by USFWS. Coordination with USFWS regarding construction timeline and species covered by MBTA and BGEPA has occurred (Sections 4.11.2 and 6.11.2.1). Prior to implementation, site-specific clearance surveys would be completed by USFWS (Section 6.11.2.1), and any additional consultation regarding birds covered under MBTA and BGEPA would occur as needed. See Sections 6.9.2, 6.11.2, 7.1, 8.3.8, and 8.5.3 of the Plan-EA.

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187.02	CONS	Property values will be affected, as well as the homeowners that will be listening to loud equipment throughout the day.	Please see the response to Comment ID 218.13 regarding property value. Please see Section 8.7.2 of the Plan-EA for an updated construction timeline.
187.03	VEG	Soil compaction from all of the heavy equipment, and tree destruction will affect the surrounding, heavily wooded areas. The compaction can cause subsequent tree destruction, combined with winds common to this area, that could destroy buildings on the owners property.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and tree removal. Please see Section 8.3 of the Plan-EA for more information regarding construction BMPs.
187.04	FIRE	Furthermore, Mechanical equipment through the woody areas could induce fires.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
188.01	ALT	I do not want the irrigation canal in Woodside Ranch buried. I support any improvement that keeps the canal where it is with visible flowing water.	Please see Appendix D.2 and Section 5.2 in the Plan-EA for a discussion of the alternatives that were considered.
189.01	PROP	My family and I strongly oppose this piping project. The pipe is planned to literally go through our backyard (our backyard runs on both sides of the canal). Not only will you drastically reduce our home value, but you will also be taking away from the wildlife that depends on the canal.	Please see the response to Comment ID 218.13 regarding property value. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
189.02	WILD	Yes, I understand the argument that the canal was man-made and the wildlife didn't previously depend on it. However, the canal has now been here for so long that the vast selection of wildlife that have now adapted to -- and now depend on -- this canal for their water source.	Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources.
189.03	WAT	Lastly, you will be depleting ground water/ aquifers, drying up neighbors' wells and essentially depleting/killing all of the vegetation that grows alongside the canal that depend on this water source, including various trees.	Please see Section 6.8.2.3 of the Plan-EA and the response to Comment ID 433.38 for information about the effects on groundwater. Please see Section 6.6.2 for information about the effects on vegetation.
189.04	ALT	If you are really wanting to make an impact on water usage/ evaporation, there are better, less destructive options. For example, flood irrigation should be implemented, rather than wheel-lines. The amount of evaporation of irrigation water from the wheel-line to ground is tremendous, especially for those that irrigate during the day. Flood irrigation is much more efficient; I should know -- my family has been flood irrigating hundreds of acres for generations. In closing, much of Central Oregon has been piped, or is in the process of being piped. However, these areas aren't forested areas that contain large amounts of wildlife and vegetation, such as ours. In addition, much of what was/ will be piped doesn't literally run through homeowners' backyards, such as ours. This 13-mile stretch of proposed piping should be reconsidered and cancelled.	Conversion to flood irrigation would not meet any of the purposes of the project. Water losses would still occur through seepage in the Main Canal, water supply management and delivery reliability would not be improved, and public safety would remain an issue. Conversion to flood irrigation is also not within the scope of actions that AID can entertain as the project sponsor under PL 83-566 because AID lacks the authority or responsibility to carry out, operate, and maintain on-farm infrastructure owned

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			and operated by AID patrons. Therefore, conversion to flood irrigation would not meet NRCS PR&G alternative formulation criteria (USDA 2017) and would not be considered in the Plan-EA.
190.01	ALT	<p>We are very concerned about the potential piping of the one mile of flume as discussed in the Watershed Plan. Questions I have are: 1. How is it possible to install a pipe in a wild and scenic corridor? We are proud of the beautiful corridor we live on and everyone who lives along this one mile of flume follows strict guidelines for visibility of every structure. 2. Has anyone evaluated the flume for evaporation as an entity alone? Is it possible to retain this one mile stretch of flume before the flume turns into the canal, and pipe the other 11.2 miles that do not run along the wild and scenic corridor? I am unable to attend the virtual meeting this Wednesday due to a mandatory work meeting, will it be recorded?</p> <p>We live at [ADDRESS], on the flume. We reviewed the proposal and find it glaringly lacking in realistic projections for the cost, damage to the terrain and amount of materials needed to execute the “only” option mentioned, for example the amount of backfill required and potential exacerbated erosion is not evaluated or addressed, among many other important factors. The scope of the proposal is limited nor does it provide any visual diagrams of what the structure will look like. Why did you reject other options previously brought to the table, like lining the canal to prevent water loss and other less invasive and damaging solutions?</p>	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. The virtual public meeting was recorded and can be viewed at oregonwatershedplans.org . Please see Section 5.2 of the Plan-EA for an updated description and cost of the Canal Lining Alternative as well as rationale for why it was excluded from further consideration.
191.01	PROP	My address is [ADDRESS]. I am one of the many homeowners that live on the canal. My husband and I bought our home on the canal 10 years ago. The peacefulness of the canal and the wild life that it attracted was one of the big reasons we bought our home. I'm concerned that piping the canal would reduce our property value and destroy wildlife habitats. The homes that have recently been advertised for sale on the canal have all mentioned the canal in the description/ advertising of the home. This tells me that the canal is a selling point. I'm guessing a realtor would have a hard time putting in the description that it has a pipe cutting through the backyard and that the homeowner does not really have the use of the full 1/2 acre.	Please see the response to Comment ID 218.13 regarding property value. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
191.02	WILD	For the past 10 years we have watched a family of ducks and geese building their nests and welcoming their babies on the bank of the canal. The plants along the canal are a great hiding spot for their nests and for the babies to stay safe from larger predators. The canal also provides a safe space for the deer and their babies to find water and shelter.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
191.03	FIRE	Another concern I have with piping the canal is fire. This neighborhood is a tinderbox. Around four years ago the property across the canal from ours caught fire. We were out of town at the time and luckily our neighbors sprang into action to turn our sprinklers on. The fire department also responded quickly and was able to put the fire out before it spread. The canal provided a barrier, and an easement for the	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.

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		fire department. Luckily we only had holes in our trampoline and a window that cracked from debris. The canal is a layer of protection whether it is intended to be or not.	
191.04	ALT	I understand that water conservation needs to happen, however I think there needs to be additional options explored before the people that live on the canal have to deal with destruction or damage of the trees and vegetation on our properties, construction noise, and loss of property value. Many of the homes that have irrigation rights have been purchased by people who are not using the water to irrigate for farming purposes but using the water to fill pools, or water giant lawns. How about thinking about redefining the rules on what irrigation water can be used for? The neighbors that live on the canal need to be heard. The "all or nothing" option that is being pushed upon us is not ok.	Please see Appendix D.2 and Section 5.2 in the Plan-EA for a discussion of the alternatives that were considered. Redefining the rules on what irrigation water can be used for is outside the authority of the NRCS Watershed Protection and Flood Prevention Operations Program and therefore beyond the scope of this Plan-EA.
192.01	GEN	Don't pipe the canal! Doing so will have monumental detrimental effects socially, environmentally, and financially. Line the canal if you must, but don't pipe it.	Thank you for your comment. Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.
193.01	GEN	Please do not let these selfish and self-centered people control our water!!! Open canals in a desert with temperatures documented to be increasing is ridiculous. Those claiming hardship for their trees can water them with the canal water that would normally be lost to evaporation and convection. The canals are not and were never intended as "water feature"for homeowners. Stand up for what is right!! Our farms and our future is at stake!	Thank you for your comment.
194.01	GEN	Yes pipe it! Save water!	Thank you for your comment.
195.01	WILD	There is so much life that depends on the water being available in the canal. Piping it would bring so much stress to desert wildlife and inflammatory construction. The pipe is a move in the wrong direction.	Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources.
196.01	WILD	We moved to the country to have a Little Piece of Heaven. We love where we live. We get to see numerous animal roam and use the canal. Everyone says that when the canal is covered they will find other places. They don't realize the impact this will have. All the wildlife we have seen come back every year to have there young. They also don't realize the Trees that have been here for years and years that will be removed. There are a lots of birds like American Eagles, Red Hawks, Owls, Falcons etc. that live close to the canal. Every spring we see lots of different babies. We would hate to see that go away because money talks. Please reconsider covering the canal. There are many uncovered ways to fix the canal that would benefit the canal district and the many wild animal, trees and ecosystem that live and use the canal.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources and Section 6.6.2 for information regarding effects on vegetation. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more information regarding the considered alternatives.
197.01	GEN	Hello, my name is [NAME] and I live at [ADDRESS], the canal is behind my property and I am emailing to protest the piping of the canal.	Thank you for your comment.
198.01	WAT	We are writing in support of the plan. It should have been done long ago. We live in Deschutes River Woods. We desperately need the water this project will put back into the water system.	Thank you for your comment.

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199.01	GEN	There is so much more to consider than saving water. Saving water should have been thought about BEFORE all the Golf clubs, new housing lawns with landscaping and Facebook data centers that use tons of our water. What in the world are you thinking? Destroying the unique waterfowl, trees and ambience that is Bend. Get real. Put the brakes on these other money sucking capitalists like golf courses and save the natural resources.. so sickening what’s happening to Bend. Don’t be stupid. These well meaning people are stuck on only one issue. Open Your mind and eyes PLEASE. Bends beauty is dying before our very own eyes. Please stop The slaughtering of Central Oregon.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources and Section 6.6.2 for information regarding effects on vegetation. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more information regarding the considered alternatives.
200.01	ALT	If you are going to Pipe the flume, Make it disappear completely bury it and restore the area to its natural Slope and give access to the river back to the property owners. Bury it completely and then put the Road-Trail at the Natural Level of the ground. Once in the Pipe the water will flow regardless of it being Level as an open canal. Be a good Neighbor and do the right thing.	The flume has been removed from the project. Please see the response to Comment ID 12.01.
201.01	VEG	I have property that borders the Arnold Irrigation Canal, and I am writing to express my strong opposition to the piping of the canal.I ask that you give serious consideration to the followingpoints:- Piping the canal will require the destruction of hundreds of massive old trees along the right of way, trees that are essential for oxygen, shade, and wildlife habitat. Every year we’re seeing more and more effects from climate change in the form of hotter summers and rampant wildfires. Every Small step we take today affect that change – and that means NOT removing any more trees!-Seepage from the canal promotes further tree and plant growth along its banks, another critical link in cooling the air while also helping the wildlife that thrive along it	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees.
201.02	PROP	-Piping the canal will have a detrimental effect on the value of properties that border it. I understand the canal is not meant to be a “water feature”, but the reality is that it adds value, and you can’t remove that value without consequence.	Please see the response to Comment ID 218.13 regarding property value.
201.03	ALT	- There are alternatives! I fully understand that water loss and water conservation is crucial. However, there is room for compromise here. Instead of piping the canal, it should be lined. The estimates I’ve seen indicate that lining it will stop approximately 70%of the leakage. The remaining 30%of seepage along the route of the canal will support the critically needed trees and wildlife habitat. Please help turn this situation from a heated, contentious, all-or-nothing debate into a situation where the District and the property owners all work together to get what we want.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.
202.01	GEN	Have Arnold irrigation, and definitely for piping if it saves water. If it helps get us more water that would be great to pipe it.	Thank you for your comment.
203.01	ALT	I live above the flume and enjoy its serenity and sense of history. Your proposed project would be a tremendous eyesore not to mention a staggering expense. In my opinion, patching and replacing sections of the flume, and lining the existing trenched sections makes better financial sense. Just doesn’t seem feasible or cost effective and unfair to property owners. Please consider a less expensive and drastic alternative.	The flume has been removed from the project. Please see the response to Comment ID 12.01.

Arnold Irrigation District Infrastructure Modernization Project
 Final Watershed Plan- Environmental Assessment Appendix A: Comments and Responses

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203.02	CONS	How would you propose bringing in the amount of fill needed to make the project happen?	The flume has been removed from the project. Please see the response to Comment ID 12.01.
204.01	GEN	Patron of AID. For piping of the main line canal because we have lost water over the years due to climate change. So all for saving water and piping that ditch.	Thank you for your comment.
205.01	SAFE	Daughter bought property b/c canal, loves all the deer, wildlife. They enjoy sitting out there, appreciating the value of the property. Main concern with piping is that canal is extra security in the back of the property. It's like a moat.	Please see the response to Comment ID 32.03.
205.02	PROP	Would depreciate value of property, want it for their grandkids. She knows how much her daughter and grandson have enjoyed it, and she's enjoyed it too.	Please see the response to Comment ID 218.13 regarding property value.
206.01	GEN	I am in support of piping the canals in all areas of Central Oregon.	Thank you for your comment.
206.02	WAS	I strongly feel whatever is done to the flume needs to have zero impact to the river and care should be taken to minimize the impact to adjacent homes.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
207.01	GEN	Thank you for the opportunity to provide comments on the Arnold Irrigation District (AID) Infrastructure Modernization Project's Draft Watershed Plan-Environmental Assessment. The Wild River Owners Association (WROA) represents approximately 200 homeowners who live on or near the Upper Deschutes River about 8 miles below Wickiup Dam. WROA is a member of the Deschutes Basin Water Collaborative and I am a member of its Technical Committee. Our development straddles the Deschutes just north of Burgess Road in Deschutes County. We are directly affected by river flows, water quality, erosion and fish and wildlife habitat. River flows are dramatically impacted by irrigation system operation and are of great concern to our community. Comments & Conclusion: WROA feels that the Arnold Plan, as drafted, falls short of balancing public benefit with public cost. We feel that NRCS has an obligation to the public to assure that a proper balance is achieved.	Please see the NEE in Appendix D.1 for further information regarding the benefits compared with the costs of the proposed project.
207.02	WAT	Further the draft plan as submitted has a high potential for damaging North Unit Irrigation District. North Unit currently takes the 40 cfs of Arnold water that Arnold cannot take due to system capacity limitations. There is concern that "paper water" will be used to justify plan approval and funding. AID must save real water (not "paper" water) and conserve it permanently instream. Permanently conserved "wet" water must benefit winter flows in the Upper Deschutes River. Perpetual instream leasing as described by AID is not permanent protection and Plan approval should be withheld until a legal, permanent mechanism is used to conserve saved water instream in the Upper Deschutes.	Please see updated language in Section 6.8.2.1 of the Plan-EA regarding the effects of the proposed project on AID and NUID water rights and water availability, AID's diversion starting point, and the legal mechanism for protecting water instream. See the National Economic Efficiency Analysis in Appendix D.1 of the Plan-EA for further discussion of the proposed project's effects on agriculture in NUID as a result of water being passed to NUID. Please refer to Appendix E-4 of the Plan-EA for more

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			information on water rights, seepage, flow, and water savings.
207.03	WAT	AID's Draft Plan relies on agreements and actions that must be put in place by NUID to assure benefit to the Upper Deschutes. How and when will legally binding agreements be put in place?	Section 6.8.2 in the Plan-EA describes AID's and NUID's commitment to putting the water saved by the project instream in perpetuity. If a Finding of No Significant Impact were issued, the Plan-EA were authorized, and AID were to proceed with the project with financial assistance through PL 83-566, AID would enter into a contract with NRCS obligating AID to complete the project as described in the Plan-EA. The failure of AID to meet the terms of the contract would require AID to reimburse NRCS for the financial assistance provided for the project.
207.04	WAT	Below are a number of additional concerns and questions. We feel that the draft EA should not be approved until they are addressed. Sec. 6.8.2.1: AID historically cannot take 40 cfs of their water right due to system capacity limitations. AID says that their water right is 150 cfs and that they will voluntarily reduce it to 120 cfs. - What happens to the remaining 10 cfs? - How much water is actually saved with the new piping? What percentage of that is the proposed 10,526 AF reduction in AID's right? It appears that AID will transfer water to NUID for use by NUID patrons and other junior water right holders. - How much water will be legally conserved instream? Who (NUID or Arnold) will be responsible for legally and permanently conserving saved water instream? - What guarantee is there that NUID and/or the other junior districts will leave an equal amount of water in Wickiup Reservoir for use to augment winter flows in the Upper Deschutes? - Will AID legally reduce its water right by the amount of water conserved with public funds, thereby permanently protecting it instream? - Why would the water released by NUID be beneficial to the Upper Deschutes only until Year 8 of the HCP? If is part of the 300 cfs HCP target for the life of the HCP (as stated) isn't that a benefit? 6.8.2.2.3: - What happens to the carry water that is currently required to operate the irrigation system? This carry water should no longer be needed to operate the irrigation system once it is piped and should be conserved instream. 6.8.2.2.4 - What guarantee is there that NUID will store 100% of the AID non-diverted water and release it into the Upper Deschutes in the non-irrigation season? - How will the saved and transferred water be protected from other junior water right holders?	Please see the response to Comment ID 29.07 related to guaranteeing that NUID will leave water instream in the Deschutes River below Wickiup Reservoir. Until Year 8 of the HCP, the water released by NUID into the Deschutes River below Wickiup Reservoir would be in addition to the minimum streamflow required during the non-irrigation season under the HCP. Starting in Year 8 of the HCP, when the streamflow required in the Deschutes River under the HCP will increase to 300 cfs, the water released by NUID would not be in addition to the streamflow required under the HCP. Since the project would not increase streamflow in this reach starting in Year 8 of the HCP, it would not accrue associated benefits. Please see Section 6.8.2 of the Plan-EA for more information about the effects on water resources and Appendix D.1 of the Plan-EA for more information on how benefits are monetized. The project would not fully pipe the District's entire conveyance system; therefore, it would not eliminate all of the seepage and evaporation from the system.

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			Following completion of the project, and after accounting for water savings resulting from the project, the District would continue to divert some carry water as needed to ensure that the remaining open portions of the conveyance system operate efficiently and effectively. Please see Section 5.3.2 of the Plan-EA for information on what District infrastructure is included in the proposed project. Please see Section 6.8.2.1 of the Plan-EA for a discussion of protecting the water released by NUID to the Deschutes River.
207.05	WAT	6.8.2.4: - Wouldn't Ecosystem Services also be affected in the sense that carry water will not be necessary in the piped system?	Please see the response to Comment ID 207.04 for information regarding the effects on carry water.
207.06	MET H	How is carry water accounted for in the plan? The Wild River Community appreciates your consideration of the above. Thanks again for this opportunity to comment.	Please see the response to Comment ID 207.04 for information regarding the effects on carry water.
208.01	WILD	I am opposed to Arnold Irrigation District's plan to pipe the canal. It will detrimental to local established wild life in the area.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
208.02	ALT	It will be destructive and damaging to the area and my property. Please explore other options to piping such as lining the canal to reduce seepage as that seems to be the goal of piping. It would be a more cost effective option with less impacts to wildlife and homeowners.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04. Improving water conservation is only one of the project's purposes. Please see Section 2 of the Plan-EA for discussion of the purpose and need of the project.
209.01	WILD	We are not directly benefitted by the irrigation water from the canal, but have the benefit of it running behind our house. We have a great number of birds that have hatched their eggs on the banks of the canal.	Thank you for your comment. Please see Section 6.11 of the Plan-EA for more information.
209.02	ALT	Esthetically, it adds a great feature to our property and of course, is beneficial to the resale of the property with this feature. Because of the climate of Bend being dry the added benefit of the look and feel of the water is welcome. It would certainly change the look of the property to have a dirt alley behind us. We are opposed to the piping of the canal without taking into consideration other options. Thank you for taking the time to read our thoughts, [NAME].	Please see Section 6.7 in the Plan-EA for effects of the project on visual resources and Appendix D.2 and Section 5.2 for a discussion of the alternatives that were considered. Please see Section 4.4 of the Plan-EA for more information about property values.

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210.01	WILD	Our property is bounded on the east side by the Arnold Canal. We fell in love with the property 29 years ago and what closed the deal for us was walking down the lawn to the canal when a pair of geese flew in and landed on the canal. Over the years we have seen numerous duck and geese families being born along the canal and growing to take their first flights. The deer also make the canal their major watering site, raising their young in the manzanita and in the spring evenings, we know spring has actually arrived as the choirs of frogs along the canal start their singing. The Canal also provides a security aspect in case of wildfires. All-in-all, the piping of the canal would endanger the wildlife in our area and on our property. There has to be a way to save the water and save the wildlife too.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
210.02	PROP	Piping the canal would seriously reduce the value of our property. Attached is a picture facing south which includes a lawn used daily by the ducks and geese. Please consider an alternative to piping!	Please see the response to Comment ID 218.13.
211.01	WILD	My wife, [NAME], and I and many others oppose the piping of the Arnold Canal. Many of my reasons for opposition are the same as those posted by several others. Here are my concerns: A. Destruction of natural habitat along the proposed demolition route- including the removal of numerous pipe trees and displacement of wildlife	Please see Sections 6.11.2 and 6.6.2 in the Plan-EA.
211.02	FISH	B. Loss of water habitat and effect on waterfowl and humans who value the sound and tranquility offered by a gently flowing water source	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife.
211.03	CONS	C. Generation of noise, dust and debris along the path of demolition/ construction (which I understand will take over 6 years to complete.)	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. The proposed project would be constructed in four phases. Construction of all the phases would be completed in 6 years.
211.04	PROP	D. The inevitable decrease of property values to all homeowners in the immediate vicinity of the project. Thank you for the opportunity to voice my opinion.	Please see the response to Comment ID 218.13.
212.01	ALT	Wow, I'm amazed that this is the most efficient, cost effective, solution to stop seepage! I am questioning this. Second of all, has anyone of you been paying attention to the news? We have an in your face example of Climate Change. I have a better solution, yes it means less irrigation water, but the Deschutes river needs it, it also address's the issue of seepage. Lower the current Structure, replace the pipe, and where needed add small covered earth bridges for animals! The current flume has been seeping for a long time, there is no rush to change that, take time to rethink the impact of what you are doing. In the short and long term what you are proposing is an environmental disaster. Creating an earthen mound to be strong enough to hold a road bed on top would require retaining walls of a large magnitude, this would stop a lot of surface runoff from reaching the river, and over time undermining the whole pipe line structure. If you don't have a river, you don't have irrigation water.. Please rethink your position, your future is also at stake!	The flume has been removed from the project. Please see the response to Comment ID 12.01. Please see Appendix E-4 of the Plan-EA for more information on seepage, flow, and water savings.

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213.01	GEN	The entire canal system is an essential component of the environmental culture in Deschutes County. There are alternatives, but they seem to not be under consideration. The canal and the culture are intertwined as the canal brings relief to our high desert as a visual resource and as an essential part of a fragile ecology. We appreciate the need to conserve water, however, piping the canal is not necessarily the best choice, nor the most efficient financially. Ask any waterfowl, deer, or person. We are richer collectively for the presence of the canal. This change deserves robust discussion before proceeding, with disclosures of environmental studies, and a thorough report on the impacts to sensitive flora and fauna, as well as increased risk for wildfire, and well levels. Thank you for reading my contribution.	Please see Section 6 of the Plan-EA, which provides an analysis on the project's effects on a variety of environmental, social, and cultural resources. Please see Sections 6.6.2, 6.11.2, and 6.8.2 of the Plan-EA for information about effects on vegetation, wildlife, and wells. Updated language about effects on wildfire have been added to Section 6.3 of the Plan-EA. Please see Section 4.4 of the Plan-EA for more information regarding property values.
214.01	GEN	Call in to petition against the canal work that they are going to be covering up.	Thank you for your comment.
215.01	GEN	How and where do we vote to pipe the Arnold Irrigation Canal? We're in favor of it.	Thank you for your comment.
216.01	WAS	I would like to go on record as being opposed to the Flume Piping project. 1. A project such as this has no place in the wild and scenic confines of the river. If a buried pipe is necessary it should divert away from the river at the weir.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
216.02	VEG	2. The damage to the surrounding area of construction and loss of mature trees will take decades to recover.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and vegetation.
216.03	WILD	3. Wildlife and their passage to the river will be hampered.	Please see Sections 6.11.2 in the Plan-EA for a discussion about barriers to terrestrial migratory patterns.
216.04	CUL	4. Losing a historic feature such as the flume is unthinkable.	The flume has been removed from the project. Please see the response to Comment ID 12.01.
216.05	RIGHT	5. Any project overlapping mine or anyone else's adjoining property must be made with the full knowledge and understanding of the project and the ramifications for each individual property.	Please see the response to Comment ID 28.01 regarding easements. Please see Sections 5.3.2 and 8 of the Plan-EA for descriptions of the proposed project.
217.01	GEN	This letter is to help document the coming destruction that will be caused by the loss of the flow of the canal.	Thank you for your comment.
218.01	GEN	Under the National Environmental Policy Act ("NEPA"), an agency is required to take a "hard look" at the action's environmental impacts. National Audubon Society v. Department of the Navy, 422 F.3d 174 (4th Cir. 2005). In the Draft Environmental Assessment for the Arnold Irrigation District Infrastructure Modernization Project, NRCS is required to thoroughly investigate the environmental impacts of the proposed project, and candidly acknowledge the risks that those impacts entail. Under this standard, the Draft Environmental Assessment falls short. Our comments on those failings are discussed	Thank you for your comment. Please see Section 1.4 of the Plan-EA regarding the decision framework and authorities the Plan-EA was developed under.

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		below. (see accompanying e-mail attachment COST COMPARISONS OF CANAL LINING METHODS 7-21-21,) <This comment has numerous photos, drawings, and a table>	
218.02	PROP	1) EA fails to consider devastation of property value, visual aesthetic and established riparian ecosystem. a reduction in property value of 10-30% is the EA's cited range of likely loss (see addendum #1).i. the cumulative market value (Deschutes County DIAL) of on-canal property owners (430) is \$184,700,000.ii. the range of loss based on the EA's prediction is \$18,470,000 to \$55,410,000.iii. value loss of mature ponderosa pines or costs associated with removal or replacement. cost of dead Ponderosa pine removal is \$2000 per large tree.ii. inventory and valuation of living trees within the alleged AID right-of-way is easily accomplished, per property—ours were just evaluated: “In the case of this tree inventory, the positive property value impact would be quite significant due to the volume and maturity of the trees listed. The shade, social benefits and psychological benefits of these trees makes them more valuable as long term landscape features as opposed to their timber value.” (see addendum #1).c. value loss of other canal-supported vegetation and habitat for wildlife. costs of forced change to wildlife movements as they seek new water sources, possibly harmful. failure of wells and costs incurred to deepen or re-drill at \$40/ foot (avg Bend depth 500’).i. this has already occurred for many well users in Swalley Irrigation District after piping—I have been in touch with a local well-drilling operation owner who can attest to this fact.ii. well depth estimates for our area is 800-900’, costing a range of \$32-36,000 for a new well.iii. re-drilling existing wells deeper can save some of this expense but only if the failed well was within current code and many established wells are not as codes have recently been updated, requiring new drilling.ii. the EA establishes that groundwater recharge by canal seepage is completely stopped by a pipe, yet their statistics on its ultimate negligible impact focuses on groundwater levels of the entire Deschutes basin—this intentionally ignores the localized reality of negative impact on area wells. The EA acknowledges the possible negative local impact on wells but isn't willing to put it in the piping alternative costs column. f. property owners in the project area trying to sell property will be excessively burdened as few buyers will want to purchase while during construction and with ongoing and unknown damages to come.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see the response to Comment ID 240.06 regarding trees. Please see updated language regarding effects on groundwater wells in Section 6.8.2.3 of the Plan-EA and the NEE in Appendix D.1.
218.03	ALT	2) Failure of the EA to provide a fair analysis of the canal lining alternative; estimates are inflated. costs cited by the EA are inflated excessively to allow dismissal of the canal lining alternative (see addendum #2).i. geomembrane materials costs are inflated 200% installation costs are inflated 425% in the EA.ii. shotcrete materials and install in the EA are inflated as much as 792%. analysis of grout-filled-mattress lining alternative not considered.iii. concrete mattress costs are 225% less than a membrane and shotcrete cover (EA cost).ii. concrete mattress lining is the second-least expensive of all lining methods explored.iii. no analysis of shotcrete lining without a geomembrane (the least expensive	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04.

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		<p>and preferred alternative)i. a 3-5” shotcrete canal lining without geomembrane is up to 354%less than the EA lining alternative as estimated in the EA and can be completed in half the time as piping.d. design life span of all the above lining methods is arbitrarily reduced in the EA by factor of 0.66</p>	
218.04	WAS	<p>3) The EA’s plan for the historic flume will destroy an iconic landmark (see addendum #3 & video exhibit link)a. the historic flume is within the boundary and viewscape of the Deschutes Wild and Scenic River Area and will be lost as we know it--the entire piping project should be nullified for this reason alone. The proposal is fundamentally detrimental to the protected Wild and Scenic Deschutes Riverb. the nearly mile-long stretch of the elevated wood and metal “flume” would be destroyedi. AID’s plan is to convert this to an elevated but buried pipe, essentially creating an earthen dam structure for the pipe to run within, and for vehicles to run across a road on its top surface—all within the Deschutes Wild & Scenic Area.ii. in order to build a large enough “earthen dam” structure to bury the pipe and run a road that meets code on top of it a massive amount of fill will be required, with no plan in place for how to prevent this material from entering the river channel and possibly altering its flowc. negative property value impacts are very high to property owners in this areai. this burial mound will obstruct the view of the Deschutes for virtually every property owner along the flume, kill many of their trees and leave a large portion of their properties in ruinsii. any currently used path to the river on owner’s property would be blocked by the moundd. the buried flume earthen dam-like structure would be visible from the River Trail on the west side of the Deschutes within the Wild and Scenic River Area and the plan completely ignores the County, State, and Federal requirements to protect Wild and Scenic Riversi. this huge 4900’-long scar will be plainly visible from the river below in a world-classstretch of whitewater that is used by expert kayakersii. this eyesore will be visible from residences at Seventh Mountain Resort, Points West properties as well as from river level at the popular Meadow Camp access pointiii. Deschutes County Code (Chapter 18.84) places this feature within the Landscape Management (LM) Zone for the purpose of maintaining “scenic and natural resources of the designated areas and to maintain and enhance scenic vistas and natural landscapes as seen from designated roads, rivers, or streams.” The EA fails to acknowledge the impacts of the proposed project that will affect the Deschutes River within the Wild and Scenic corridor and fails to address the compliance requirements by County, State, and Federal regulations for a project originating in a protected area.e. there is no immediate reason to consider any sort of major renovation or change in design of the flume that is cited in the EA</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.</p>
218.05	RIGHT	<p>4) Failure of AID to maintain easement and right-of-way and placing excessive burden on servient propertya. AID has made no effort to convey any information on easements or right-of-wayb. there is no mention of AID easement specifics in requested title reportsc. AID has not made any effort to inform us that structures were within r.o.w.d. proposed piping project is an over-reach of existing easement definitions in AID User Handbook: <i>Any officer, employee, ditch rider, or other</i></p>	<p>Please see the response to Comment ID 37.63 regarding the District's maintenance of their ROW and the response to Comment ID 236.01 regarding encroachment into the ROW. The proposed project would be installed pursuant to the District's right-of-</p>

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		<p><i>authorized personnel of the District may enter upon the land of a water user of the District for inspection, maintenance, and regulation of ditches, pipelines, gates, pumps or other water works</i> i. AID may enter upon the land for inspection, maintenance and regulation, the handbook states. operating vehicles and equipment 12 months per year for 7 years is an excessive burden on property ownersf. AID’s easement was designed for, exclusively, operations and maintenance of its distribution system The easements are private and exclusive for the operations and maintenance of the district’s distribution system.i. AID’s distribution system is a canalg. AID’s failure to inform of any obstruction or impediment to their easement establishes its boundary, <i>Easements may not be blocked and no encroachments, crossings or other uses will be allowed that will interfere with the District’s operation and use. This includes fences, gates, trees, or bridges or any structures or obstructions</i> i. AID’s failure to describe any structures, fences, gates or trees as blocking or encroaching would indicate that they were not within the easement areaii. By AID’s allowance, without contingency, trees, fences, gates and obstructions on properties they have defined its easement boundariesNo trees, fences, gates or obstructions of any kind are permitted with the District’s easements</p>	<p>way and easements. Clarifying text regarding the timing of construction phases has been added to Section 5.3.2 of the Plan-EA.</p>
218.06	GEN	<p>5) AID’s failure to adhere to its specified chartera. from AID User Handbook: <i>An irrigation district is a cooperative organization, and every water right holder is a member of the organization. The district makes no profit and is operated for the sole benefit of the lands and people within its boundaries</i> i. AID fails to consider the needs of its patrons, by simply never asking themii. AID fails to consider how to maintain the benefit of the lands within its boundaries by falsely claiming that it keeps its canal devoid of vegetation to keep it from being characterized as an established seasonal riparian area which would be lost to piping. The canal is heavily vegetated and contributes to the human and animal environment as a seasonal stream in function.</p>	<p>Please reach out to the District directly with any concerns regarding the operation and maintenance of their right-of-way and easements. Please see Sections 6.6.2 and 8.3 of the Plan-EA for more information regarding effects on vegetation and best management practices that would be followed as part of the proposed project.</p>
218.07	RIGH T	<p>6) Property Line obliteration via piping and costs to re-establish are not included in EA cost/benefit analysis a. EA fails to address properties where the canal serves as a property line, piping will erase that b. EA fails to explain who pays for resulting property line adjustments c. EA fails to address property owner disputes caused by piping in the case that one loses land to a neighbor due to pipe position; EA fails to consider how losing owner will be compensated or if a taking by AID has occurred. d. EA fails to explain how property line survey points be set and how will survey costs be met</p>	<p>Land ownership and easements would not change as a result of the proposed action. Please see Section 6.2.2 of the Plan-EA for further information.</p>
218.08	NEE	<p>7) Cost/Benefit analysis performed by AID et al and published in EA is intentionally incomplete a. EA cites total costs of \$42,759,000, total benefits of \$1,801,000, and yet cites a BCR of 1.82. The math does not support this findingb. EA fails to quantify costs or impacts of property value loss, loss of Ponderosa pine, failure or necessary reconstruction of wells, cost to displaced wildlife, cost of loss of existing vegetation, costs of property line surveys and adjustments</p>	<p>Regarding the benefit to cost ratio, please see the response to Comment ID 37.07. Please see the response to Comment ID 218.3 regarding property value and Comment ID 240.06 regarding effects on trees. Easements and property lines would not change</p>

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			as a result of the project. Please see Section 6.6.2 of the Plan-EA for more information.
218.09	SAFE	8) EA uses an intentionally fabricated risk to public safety to coerce piping support a. there is no record of any drowning in AID’s canals b. the EA’s calculated risk of drowning per mile in AID canal (based on other districts) is 0.000147 i. this is so low that the issue of canal safety risk should not even be considered c. the project area exists on 99.2%privately owned land—any risk posed by the canal is not public i. AID has done virtually nothing to enhance safety because there is no demonstrated need to enhance “canal safety.” d. the EA uses this falsified risk to rationalize including a cost for fencing and ladders to the canal lining alternative as an intentional and arbitrary way of making the canal lining alternative look cost prohibitive i. \$1,855,562 is charged to the canal lining alternative for unnecessary fencing and ladders	Please see the response to Comment ID 37.12 for information about risks to public safety. Regarding canal lining, please see the response to Comment ID 29.04.
218.10	BNFT	9) The EA claim of value-added from piping’s pressurized delivery system is not supporteda. claims that water delivery will be more reliable are doubtful; many patrons in Swalley and Tumalo districts claim water delivery is now worse after pipingi. no different than other canal lining technologies, plastic pipes can be damaged by fallen trees, but you can’t fix a buried pipe with some fill or a caulking gun of cement adhesive—it’s a major project compared to an exposed canalb. AID admits there is only 14’ of “fall” from start of the proposed pipe to the end—not enoughi. claims that there will be enough pressure for irrigators on the main canal to switch from their pond and pump system to a pipe-pressurized system are both unbelievable and completely unsupported with any system engineering details in the EAii. there is not enough supporting evidence in this EA to show that a gravity fed pressurized pipe system will work for AID patron irrigation needsc. there is no chance that there is value added or savings to be recovered given the costs of abandoning current on-farm pond, pump and pipe irrigation systems for a completely unknown and unexplained pressurized delivery system that offers what must be construed as imaginary savings; Appendix D 1.1.2.5d. to be clear, there is no fundamental problem with the conveyance of irrigation water currentlyi. dealing with sinkholes and breaches could be managed with better maintenanciii. early water shut-offs have been the result of low reservoir levels caused by shallow snowpack, neither piping nor lining canals will change the reliability of our water source from a climatological perspectivee. for all the extreme cost of the piping project, its proposed benefits are not supported in this EA	The costs and benefits of the project have been updated. Please see Section 8.9 of the Plan-EA for updated costs. In addition to conserving water, there are many other benefits of the proposed project. See the NEE in Appendix D.1 of the Plan-EA for a description of those benefits. Benefits related to pressurization have been removed from the NEE. Please see the response to Comment ID 37.62. See Section 2 of the Plan-EA for the purpose and need of the project.
218.11	GEN	10) Potential Conflicts-of-Interest for AID and FCA are Worrisome and Merit Examinationa. AID owns roughly 7-acres of Deschutes river frontage property in the project areai. they have not disclosed this nor explained their plans for this propertyii. the proposed project may improve the property value of these two parcels by streamlining road accessiii. AID’s charter is to not produce a	The flume has been removed from the proposed action. See the response to Comment ID 12.01. The proposed action would be taking place within the project area only; see Section 1.2 of the Plan-EA.

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		<p>profit and to serve its patrons and the lands within its water distribution area—how does this real estate investment comply with that?b. Farmers Conservation Alliance appears to partner with pipeline installer Granite Construction of Los Angeles based on published online articles on both companies’ websites and elsewhere but it has not disclosed any relationship with this company in the draft EAi. FCA’s 2019 tax returns show that Granite Construction was their largest expenseii. Does a financial relationship with a pipeline installer create a conflict-of-interest for the entity that is producing a so-called Environmental Assessment as a public document, especially as they have not disclosed this relationship?</p>	<p>Please see Section 10 of the Plan-EA for a list of preparers involved with the preparation of the Plan-EA. Please reach out to NRCS-OR with any questions regarding NRCS contracting protocols.</p>
218.12	ALT	<p>In summary, the Draft Environmental Assessment fails to take a hard look at the environmental impacts of the proposed agency action. By failing to take into account viable options within the scope of consideration, it appears that the Draft Environmental Assessment is biased in favor of the most skewed alternatives: piping or nothing. By failing to adequately and candidly explore and identify the risks and impacts associated with the piping project, the Draft Environmental Assessment should be heavily revised or withdrawn. Moreover, because of the failure to identify the myriad of environmental impacts and their risks to the environment, there is no basis in fact or law to support a finding of no significant impact (FONSI). We appreciate the opportunity to comment on this important matter, and the above-mentioned addendums follow.</p>	<p>Thank you for your letter. Please see the responses to Comment IDs 218.01 through 218.11 for responses to all of your comments. The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered.</p>
218.13	NEE	<p>NEGATIVE IMPACT OF PIPING ON PROPERTY VALUES ADDENDUM The EA acknowledges the positive influence of the existing Arnold canal on property values for “nearby” residents. The EA states in Change in Aesthetics and Associated Property Values that “it is clear that the Arnold Main Canal provides some nearby residents with services that have a positive economic value that likely enhances property values.” This section goes on to further identify the amount of property value increase the Arnold Main Canal provides: “A meta-analysis of 25 studies that researched the impact of rivers, streams, and canals showed that these water features increased property values in most cases (Nicholls & Crompton, 2017). Three studies that focused on canals in the U.S. found that nearby canals increase residential property values by 10 to 30 percent (Nicholls & Crompton, 2017).” The EA in these passages makes it clear that it is understood that the open canal enhances property values. The EA goes on to cite studies that show that there is an amount of value derived from an open canal—10 to 30-percent, it cites. It stands to reason that the eradication of such an open canal by piping then obliterates that increased value, resulting in a loss equal to that. In this same section, Change in Aesthetics and Associated Property Values, the EA then explains its reasoning for not listing damages to property value as one of the costs considered in the project’s benefit/ cost analysis: “The potential aesthetic cost to residential landowners is not quantified due to a lack of available data on property values, the number of properties with views of canals, and the value of those views to local residents. As such, while this effect is recognized as a likely cost, this analysis does not quantify the potential change in aesthetic values of the proposed project.”</p>	<p>Following the public comment period, additional analyses completed have demonstrated that although property values may be higher when located next to a canal, there is a lack of market evidence to demonstrate that property values would change following implementation of the proposed action. Please see updated language in Section 2.3.3 of Appendix D.1 of the Plan-EA and in Appendix E.12, where a memo describing the analysis methods has been added.</p>

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		<p>This paragraph above contradicts what the previously cited sections made clear. The EA had stated, and cited studies to support its claim, that the open canal adds value to a property. This cited paragraph immediately above claims that the cost is not quantified due to a lack of available data on property values, which is not true. Every single affected property can be easily identified on the Deschutes County DIAL website and located by following the Arnold canal along its length on the interactive map. Current property values, both assessed and market values, are provided for each property on this search tool. I, along with others researching this issue, have identified 430 properties that either abut the main canal or are transected by it and totaled their cumulative market value as listed on the county website—the sum is \$184,700,000. The EA also tries to conflate only canal views with value, but their cited studies discuss viewscape values along with proximity values—just being near a canal is valuable, it states, and even more valuable if the property abuts the canal. “The majority of studies indicated that significant positive property price effects are associated with river, stream and canal view and proximity,” and “The 25 studies reviewed reveal the value of views of and access to linear water features as demonstrated by the willingness of adjacent and nearby homeowners to pay property price premiums for these qualities; these findings held true across a variety of settings.” (Nicholls & Crompton, 2017). Every property we identified has a view of the canal—the Arnold main canal is on each of these properties and it is visible. Property owners have access to it. The 10-30% range of value added by the open canal that would be lost to these homeowners is \$18,470,000 to \$55,410,000. How those damages would be spread among owners if piping were to occur would depend much on each property’s use and enjoyment of the canal as an asset. Issues of residence proximity, type of view or amount of frontage would all be a part of that calculus, as would the way a property was used to highlight the open canal as a visual or aesthetic asset. One property might have more frontage (ours left), while another (property owner’s in Woodside Ranch) may have less frontage but make it a more central focus of the property and perhaps both might enjoy a similar percentage property value increase due to the canal. These individual property valuations are more complex but they are certainly not incalculable. They could be handled by real estate appraisers who do this specific type of analysis (we have identified one and will be contracting his services). However that calculus is not necessary because the aggregate range of loss is not in contention given the EA’s description of how value would be quantified and should suffice to show that the piping alternative is a poor option when the real costs are added into the equation. The EA acknowledges that there will be a loss of property value if the canal is piped. The EA cited a specific likely range of loss of 10-30% The EA claimed that that amount was not quantifiable for a lack of property value information—I’ve shown that this is not the case and provided a total market value for all the properties that abut or are transected by the main canal in the proposed project area. The EA claims, without support, that a canal view is requisite for value to be added by the canal but in fact cites studies that refute that assumption and rather show that proximity and especially abutment or frontage were the critical elements to consider for increasing value. I have cited only properties that have those criteria and by virtue of those two facts a</p>	

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		<p>view of the canal is present on each property. You may not ignore the data you present in this document simply because it doesn't ultimately support your position. A quantified range of property value loss of \$18,470,000 to \$55,410,000 is not insignificant. It is a quantified range of damage that belongs in the costs column of the piping alternative. To ignore it is to intentionally mislead the people that this supposed modernization project is designed to help. To ignore it makes a mockery of this process—a process that is supposed to be an objective assessment of the benefits and costs of the proposal.</p>	
218.14	PROP	<p>THE VALUE OF TREES AS PART OF THE CANAL ECOSYSTEM ON PROPERTIES IN THE PROJECT AREA (SUB-ADDENDUM TO NEGATIVE IMPACT OF PIPING ON PROPERTY VALUES) This is a 300-year-old Ponderosa pine on our property within the alleged AID R.O.W. (photo) In doing our part to help show how elements of the canal ecosystem add value to our property we hired a certified arborist to do an inventory of the trees on our property within the alleged AID 50' right-of-way, both as an exercise to show that the property value assets which would be lost to piping that the EA claims are not-quantifiable most certainly are quantifiable, and also to set a price for damages if the trees were ever removed. We contracted the arborist to complete a CTLA Trunk Formula Method appraisal of all the trees inventoried on 7-16-21. His initial valuation of trees in this zone was: "In the case of this tree inventory, the positive property value impact would be quite significant due to the volume and maturity of the trees listed. The shade, social benefits and psychological benefits of these trees makes them more valuable as long term landscape features as opposed to their timber value." [Attached a Value Assessment of trees located at property.]</p>	<p>Please see the responses to Comment ID 240.06 regarding trees and Comment ID 218.13 regarding property value.</p>
218.15	ALT	<p>CANAL LINING ALTERNATIVE ADDENDUM The EA (and the previous Preliminary Investigative Report) prematurely dismisses canal lining as a viable option for meeting the goals of this proposed action. The EA cites that canal lining is prohibitively expensive but the cost estimates and life span information the EA provides are not accurate and they seem to be intentionally skewed to present the canal lining alternative as not tenable, but they do remain a viable way to achieve the goals of the proposed improvement plan. Canal lining of a variety of methods is currently used in the Arnold Irrigation District main canal successfully, and there is a section of lining tests completed over 30-years ago on the main canal between China Hat Rd. and Highway 97 on the defunct golf course grounds. During the public comment Zoom meeting on June 23, 2021 AID District Manager Colin Wills described these test sections as "all failed." Wills said, "Go see for yourselves." We did, and the sections that matter, the full-width concrete-lined sections, are in great shape and aesthetically pleasing. These are two different views (above) of geotextile-grout-filled-mattress lining applied full-width from bank to bank in 1991 and 1992. Some sections were tested with a geomembrane layer underneath and some were lined only with the concrete mattress. The non-membrane grout-filled-mattress seepage prevention level is widely cited as 70% This amount of designed seepage would keep the open canal's existing ecosystem healthy and local wells functional while returning a still-massive amount of water to Wickiup Reservoir.</p>	<p>The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04. Appendix D.3 also has current photos of the Reclamation-installed test sections.</p>

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		<p>Design life for concrete mattress liners is 40-60 years. At 30-years they seem nowhere close to their end of design life. The EA claims they require complete replacement at 33-years—it’s obvious that this is not the case. Additional benefits of grout-filled-mattress lining is the ability to lay it over rough and rocky surfaces (above left) if required and it can be installed with water in a canal if need be. Over time the segmental nature of the “quilted” surface can allow some bank sediment to collect for establishment of vegetation. See the Canal Lining Cost Comparison totals as well as the Arnold Irrigation District’s test segments’ 25-year assessments below. Another commonly used canal lining technique is the application of a shotcrete layer to the banks and bottom of the canal. Shotcrete is concrete that is sprayed at high velocity onto the surface being coated—it’s easily applied and used as a lining currently in the AID main canal and also as a repair technique. It can be laid in varying thicknesses and with less earthwork prep than many other methods. A shotcrete lining also prevents seepage at 70%and is rated for a 50-year design life (not 33 as cited by the EA) and the sections shown (below) in the AID test segment area (left) and the North Unit Irrigation District test area (both from 1992) appear to be in excellent shape. The cost of shotcrete lining is the least expensive of all the 50+ year canal lining methods. Another benefit to a 3-5” layer of shotcrete as a canal lining solution is the timeframe. Locally, another 5-mile stretch of main canal in a different district was done in 1-year. Estimating that the entire project could be accomplished in half the time of the piping alternative would not be an exaggeration. The light-colored patches in the NUID photo to the right are repaired holes that had been drilled by trespassing kayakers for anchors—you can see if you zoom in that the holes were easily patched with a simple concrete adhesive solution. See the Canal Lining Cost Comparison totals as well as the Arnold Irrigation District’s test segments’ 25-year assessments below. Another method for lining an open canal is with a geomembrane that’s then protected with a covering of shotcrete. This is the method that the EA cited as the canal lining alternative that was too expensive. While it’s true that adding the geomembrane layer contributes roughly 25%of this method’s total cost, the EA’s cost estimates for lining material are 228%of current quotes provided for the same project dimensions specified. Similarly, the EA’s cost estimate for the shotcrete component of this lining method was over-priced by a huge range (depending on the bid) of between 126%and 792% Like the other two concrete lining methods, a shotcrete cover over a geomembrane has a design life of 50-years (not 33 as cited in the EA), but because of the geomembrane, seepage prevention is greater, at 95% This potentially would keep slightly more water in Wickiup reservoir but also will likely damage the health of trees and vegetation in the canal corridor as well as greatly reduce local well production. Depending on the preparation of the canal bottom surface for lining (more critical due to the somewhat fragile nature of geomembranes and therefore adds to cost) there could be some geomembrane perforation during install which would allow slightly more seepage. Problems with geomembrane liners in general would be holes or tearing, which can occur underneath a shotcrete covering if the cover is too thin and is punctured. See the Canal Lining Cost Comparison totals as well as the Arnold Irrigation District’s test segments’ 25-year assessments below. The photo above shows a shotcrete lined section of</p>	

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		<p>the Arnold main canal done in common fashion. Here, bank prep earthwork on the right bank was minimal to allow for existing trees and vegetation to remain. The left bank's slope was left low to minimize risk.</p>	
218.16	SAFE	<p>A note about safety. The surfaces of both grout-filled-mattress and shotcrete linings are highly textured and so long as bank slopes are not too vertical they are easy to climb out upon if someone or an animal were to fall in the canal. There is no need to fence them off as a hazard, and as such AID has left the long run of test segments unfenced for 30-years (along with the rest of the main canal). The EA wastes \$1,855,562 for fencing and ladders for a non-existent safety need. Yes, this test area is marked No Trespassing, but if there was any real risk associated with these lining methods they would have taken action to secure the canal test segment many years ago. In fact, this area is widely used as a linear park and popular dog walking and dog swimming area, and is also identified as the Arnold Canal Trail to be developed in conjunction with the coming Bend Southeast Area Plan—one wonders if Bend city planners know AID wants to pipe and bury this scenic waterway?</p>	<p>Please see the response to Comment ID 29.04. Fences and ladders have been removed from the Canal Lining Alternative.</p>
218.17	ALT	<p>A note about the seepage prevention percentages and design life estimates used in this addendum—all of these figures were sourced from the same documents that the EA cited (Swihart & Haynes 2002: Deschutes-Canal-Lining Demonstration Project Year 5 Durability Report, Swihart & Haynes 1997; and the Canal Lining Demonstration Project Year 25-Durability Report by Bureau of Reclamation on the same test segments cited in the other documents). A note about evaporation. While the EA widely cites unlined canal seepage as the primary mechanism of irrigation water loss in the Arnold main canal at a cited 33% of total canal water volume, evaporation is also acknowledged as a contributing component to total loss but a very small one. “As canal water is exposed to the atmosphere at the surface, loss due to evaporation is obvious. It is of course true that in most of the cases evaporation loss is not significant. It may range from 0.25 to 1% of the total canal discharge” (Losses in Canals, Types and its Measurement, Shreyasi Sen) For all of canal lining's benefits, it does not solve evaporation, though the shade from a healthy tree canopy along the open canal reduces it. A multi-solution approach? It seems worth exploring a multi-solution approach to improving habitat in the upper Deschutes by preventing seepage and evaporation and also maintaining the established canal corridor ecosystem by piping in places where property owners do not object and where established trees are minimal and line or leave the canal untouched in more residential and non-contested areas along the length of the main canal. While this solution might seem like an ideal compromise, it was not offered, ever, as a part of the Infrastructure Modernization investigative process, nor is it currently an option at this time given the forced-march, all-or-nothing decision to be made between the piping alternative and the no action alternative. Also, such a multi-solution approach to this complex problem would require AID to communicate with its patrons and with non-patron property owners to collaborate in seeking a workable best-case, and AID does not seem willing (nor have they ever, in my experience) to engage in any honest way with these stakeholder</p>	<p>Please see the response to Comment ID 115.09 regarding an alternative with sections of canal lining and piping. Benefits related to pressurization have been removed from the NEE. Please see the response to Comment ID 37.62 regarding why pressurization benefits were removed and for information about patron connection to the pipeline. Regarding canal lining, please see the response to Comment ID 29.04.</p>

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		<p>groups. My sense is that property owners opposed to the current piping alternative would welcome a step back and fresh look at other collaborative solutions. Irrigators' system infrastructure functionality. Most of the agricultural irrigators in the project area are using an on-property pond(s) filled by headgates and weirs off the main canal or its laterals. The ponds hold the water that the irrigator will pump to acreage most commonly via above-ground hand-line, K-line, wheel line, or pivot delivery systems and also many utilize buried line, either with fixed risers or pop-up style risers. Irrigators are deeply invested in these systems and they are effective ways of delivering their allotted water with minimal waste. The proposed piping alternative offers promises of a pressurized system that would provide savings in pump electricity used but provides virtually no details about how such a system would function and how an irrigator would have to convert their current infrastructure to this new system. Many irrigators are skeptical that AID's small amount of 14-foot differential from canal start to canal end would generate enough head pressure to push water to all irrigators as promised. This represents a huge unknown and a vast gamble to take with irrigator's crops and money. As a small-acreage irrigator myself I can say that I have no faith that the piped delivery system will even work as well as the current unlined canal delivery system. The open-canal lining alternatives explored here provide irrigators with a system they know and have developed a delivery infrastructure around and do not require any new on-property investment in new equipment to convert to a system of unknown performance. In conclusion, it should be stated that while the Environmental Assessment estimated costs for a 1" shotcrete cover over a geomembrane as its canal lining alternative, none of the shotcrete contractors I contacted recommended a 1" cover for proper longevity. All suggested a 3" (or more) shotcrete layer regardless of whether it was over a geomembrane or by itself. Given that caveat, the preferred alternatives for durability, irrigation system functionality, cost and minimal seepage for maintaining established trees, vegetation and wells in the project area based on these findings are geotextile-grout-filled-mattress linings and at least 3" thick shotcrete linings.</p>	
218.18	ALT	<p>COST COMPARISONS OF CANAL LINING METHODS, ELLING (see spreadsheet of same name) (sources: EA Appendix D3, table D-27; Western Environmental Liner, BTL Liners, Synthetex, Utah Concrete, Conco, Flatline Concrete Pumping; by _____ July 2021) Geotextile-Grout-Filled-Mattress, 2" thick \$10,022,980 Geotextile-Grout-Filled-Mattress, 4" thick \$11,928,578 Shotcrete 3" thick (low) \$7,560,000 Shotcrete 3" thick (high) \$17,328,897 Shotcrete 1" thick w/ Geomembrane (low) \$9,043,111 Shotcrete 1" thick w/ Geomembrane (high) \$16,783,470 EA: Shotcrete 1" thick w/ Geomembrane \$26,792,120</p>	<p>The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04.</p>
218.19	ALT	<p>PRICING SOURCES BTL Liners, Jared Santoro, Vice-President of Sales 3451 SW Empire Dr., Prineville, OR 97754 USA E: jared@btlliners.com C: (541) 447-0712 Conco, Micah Silberman, Project Executive SPD 7025 N Leadbetter Road Portland, OR 97203 USA E: msilberman@conconow.com C: 206.396.5456 Flatline Concrete Pumping, Doug McGee, Owner 21085 Knott Rd, Bend, OR 97702 USA (currently provides shotcrete services for AID) (541) 480-8446 Synthetex, Robert Creel, Director of</p>	<p>The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04.</p>

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		North American Sales & Marketing 5550 Triangle Parkway, Suite 220, Peachtree Corners, GA 30092 USA E: rcreel@synthetex.com (770) 399-5051, (800) 225-0023 Utah Concrete, Tyler Huff, Owner 1272 E 1470 N, Payson, UT 84651 USA E: hufft92@gmail.com C: (775) 385-5608 Western Environmental Liner, Jacob Finklea, Account Manager 8121 W. Harrison St., Tolleson, AZ 85353 USA E: jfinklea@westernliner.com C: (480) 745-4666	
218.20	WAS	<p>NEGATIVE IMPACT OF PIPING ON THE HISTORIC FLUME ADDENDUM Project Area Tour Video: https://cloudstorage.ontheflysoftware.com/s/r3FoJxFpyyBKtqM My understanding of the Wild and Scenic River Act is that no federal agency may "assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which [a designated] river was established." I would think that the proposed re-design of the Arnold Irrigation District Flume would qualify as one such act that would have a direct and adverse effect on the Deschutes river. My understanding of the Act is that to accomplish its goals, the federal government may place restrictions on development for federal projects to preserve the natural path of the rivers. Without any regard for the project's detriment to the scenic beauty and historical value with which residents of Bend, Oregon place on the flume, the risk of this proposed project placing tons of construction material into the right channel of the river at Lava Island Falls is very high. In addition to the risk of altering the natural channel of the river and directly and negatively affecting a stretch of world-class experts-only whitewater boating, the risk of introducing sediments from loose construction fill into the river through runoff is very real, all along the 4900-foot project area that is immediately at the edge of the eastern river canyon. Please view the linked video to better understand the specifics of this proposed project. This section of the flume's roadway is quite wide, but the amount of material required (as far as we can tell from the single paragraph devoted to the flume's re-design) will be massive. The banks down to the river are quite steep all along the project area. The opposite side of the river has a popular walking trail that runs across from the project area along its full length. The proposed plan would build up a platform of engineered fill for a HDPE pipe to sit upon, at the same elevation as the bottom of the water carrying flume structure now. Then additional fill would be piled into the area to bring the grade for a county spec dirt road up to a point four feet above the top of the pipe. This fill material burial mound will be visible from the other side of the river where the popular River Trail runs along its full length—for lack of more detailed construction details one envisions an earthen dam running 4900' long within the Deschutes Wild and Scenic River Area. The above and this rendering are provided particularly for scale—envision the road grade at the very top of this photo, four feet above the top of the replacement pipe. Envision the amount of fill material it will take to accomplish this—how will this material be kept from entering the right channel of Lava Island Falls? The right channel is visible here. There is much less room for this amount of fill upriver of this location—please watch the video that is linked at the top of this addendum. This massive shoulder will be plainly visible all along the east bank from the River Trail</p>	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.

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		<p>on the opposite side. This photo above would be one of an infinite number of viewpoints (at the Wild and Scenic River interpretive sign on the popular River Trail) of the 4900' earthen dam-like structure. Approving any part of the proposed piping project is a mistake, but this would be a very expensive mistake.</p>	
218.21	GEN	<p>While much of the opposition to AID's plan for the flume has to do with its potential environmental damage and offence of the WSRA, property owners are heavily burdened by this taking of property. The hillside will no doubt be cut back well into the owner's yard, killing trees on both sides of the flume and blocking both views of the river and access to the river for property owners whose land passes to the other side of the flume—currently there are many spots with enough clearance to pass underneath.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
218.22	WAS	<p>This photo above is how the flume looks beyond the top of Lava Island Falls, visible from the take-out boat ramp just above the rapids. This is a high traffic take-out with thousands of rafting participants ending their river experience there each summer. This planned eyesore will be on display for many visitors to Bend's Scenic River Area. This is the image the EA provides as an example for how the water diverted from the top of Lava Island Falls would look for the first 450-feet before it meets the buried pipe earthen dam-like structure. I am fairly certain that it would fail the scenic beauty test listed in OAR 736-040-0030; Improvements and Changes in Use of Related Adjacent Lands; "(2) Upon receipt of such notice, the Commission shall determine if the proposal would impair the natural beauty of the scenic waterway substantially." Speaking of state and federal protections for the Wild and Scenic upper Deschutes river, the EA mentions a state regulation pertaining to Oregon Scenic Waterways and they cite this statutory verbiage in the EA at 4.12 Wild and Scenic Rivers: "The AID diversion is located on the Deschutes River at RM 174.5. This section of the Deschutes River is classified as a Scenic River Area. Within this area, all new structures, improvements, and development shall comply with the Land Management Rules as described in OAR 736-40-035 and OAR 736-40-040(1)(b)(B)" This stated Oregon Administrative Rule (OAR) language was not included in the EA but is as follows: "Natural River Areas may include an occasional lightly traveled road, airstrip, habitation or other kind of improvement already established, provided the effects are limited to the immediate vicinity;" The EA's intent with this OAR reference was to cherry-pick a segment that might ostensibly give AID license to produce a mile-long earthen dam-like structure on the edge of a river canyon in an Oregon Scenic Waterway because they stuck a road on top of it. What they probably should have also included was this: OAR 736-040-0030 Improvements and Changes in Use of Related Adjacent Lands (1) Except as provided in section (5) of this rule, OAR 736-040-0035 and 736-040-0045 through 736-040-0075, no person shall make any improvement or change in the existing use of related adjacent land without first giving written notification to the Commission of the intent to make an improvement or change in land use. The proposed improvement or change in land use shall not be made or work started sooner than one year after such notice unless the Commission has given its written approval of the proposal. (See</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on Wild and Scenic Rivers.</p>

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		<p>notification procedures in OAR 736-040-0080.) (2) Upon receipt of such notice, the Commission shall determine if the proposal would impair the natural beauty of the scenic waterway substantially.(3) If the proposed improvement or change of land use would not impair the natural beauty substantially, the Commission shall give written notice to the owner of the related adjacent land that he may proceed immediately with the proposal as described in his notification to the Commission.(4) Should the Commission determine that the proposal, if carried out, would impair the natural beauty of the scenic waterway substantially, or otherwise violate the provisions of the Act or these rules and regulations, it will so notify the owner of the related adjacent land in writing. No steps shall be taken by the applicant to carry out such proposal until at least one year after the original notice to the Commission unless agreement with the Commission is sooner reached. (See OAR 736-040-0080.)(5) In connection with existing use of related adjacent land, farmers, ranchers and residents may modify existing structures or construct or place such subsidiary and lesser structures adjacent thereto, except residences or guest houses, as are usual and necessary to their existing use without prior notice to the Commission, provided that such modification or construction will not violate OAR 736-040-0035(7)(a) and (b) and will be in harmony with the natural beauty of the scenic waterway.(6) Repair and maintenance of existing facilities and structures in a manner compatible with these rules and regulations do not require notification to the Commission.</p>	
218.23	WILD	<p>Has AID provided such written notice to the State Parks and Recreation Commission requesting to make these changes? Where is the documentation of any approval granted by the Commission. As a function of the whole Modernization Project, it would seem that the flume portion of the proposed action would need to receive approval from said Commission before the proposed action could move on as a whole. It's hard to imagine how a plan to build a road four feet higher than the top of the flume (pictured above where it approaches the diversion, out of sight in the distance) was ever approved through the Environmental Assessment process. And it's pretty hard to believe that this poorly imagined plan has made it this far through the approval process. I have a feeling a lot of people hired to produce the EA document have never been here or even understand what they are proposing will be done to the flume and this portion of the Wild and Scenic Deschutes river. To the NRCS—please see through the misinformation, misdirection and omission of this Draft EA and smartly separate your agency from the sort of willful ignorance this EA engages in. There is significant negative impact created by the proposal's planned handling of the flume that, at the very least, requires an Environmental Impact Statement to force AID and the DBBC to explain exactly how they'll accomplish this project without breaking the law as it relates to the Wild and Scenic Rivers Act and the Oregon Scenic Waterway Act.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on Wild and Scenic Rivers. See the response to Comment ID 94.02 regarding the need for an EIS.</p>
219.01	PROP	<p>I have lived in Bend my whole life, grew up in Deachutes Riverwoods and bought my own house 8 years ago here off [ADDRESS]. One of the main things I love about my property is that it backs up along the canal. This will drastically affect my property value along with many other things. Wild life depend on</p>	<p>Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see Section 6.11.2 in the Plan-EA for</p>

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		the canal for water. In the summer evenings the canal allows my property and my house to cool off efficiently. It is my beautiful view every day. Covering this up will ruin all of that. I am very against this and feel like we should leave it as it is.	information regarding effects on wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife.
220.01	FIRE	Piping the Arnold canal will lead to diminished property and astatic values on [ADDRESS]. As well as, increased fire danger from dying, stressed out trees.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. Please see the response to Comment ID 218.13 regarding property value.
221.01	GEN	I am a resident of Deschutes River Woods and I fully support your actions to put the canal underground. We must do everything possible to save every drop of water. Thank you.	Thank you for your comment.
222.01	ALT	I am writing to express my concern with Arnold Irrigation District (AID) attempt to enclose the canal with metal piping. I believe that this project is financially, ethically, and environmentally detrimental to the residents of the irrigation district, the entire population of the city of Bend, and its surrounding neighbors. There is not enough information available to the landowners and parties that are directly affected by this project, and AID has neglected to offer any alternatives to this proposal.	Please see Appendix D.2 and Section 5.2 in the Plan-EA for a discussion of the alternatives that were considered.
222.02	COST	The AID piping project will seize \$43 million in taxpayer dollars to fund this endeavor, monies that AID should not have the legal right to use. It is not the fiscal responsibility of the taxpayers in Bend and its surrounding neighbors to fund a project for a private sector entity and aid in its financial gain.	Thank you for your comment. See Sections 8.6 and 8.9 and Appendix D.1 of the Plan-EA for information on costs of the project. See Section 1.4 of the Plan-EA for information on program authorities.
222.03	PROP	Even if AID has mitigation plans in place to aid the landowners whose properties will be affected, the financial burden will ultimately fall on the landowners and taxpayers. Property assessments should be conducted to determine how much the piping project will devalue landowner's properties.	Please see the response to Comment ID 218.13.
222.04	VEG	This destructive construction project will destroy and decimate native vegetation, while uprooting and killing thousands of mature ponderosa pines if the canal is piped.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and vegetation.
222.05	WILD	This project will displace the wildlife that have depended on the water and wreak havoc on the current natural habitats, certainly altering migration patterns and forcing wildlife to cross at high traffic/ fast speed roads (Hwy 97), creating situations that can result in catastrophic outcomes.	Please see Section 6.11.2 in the Plan-EA for a discussion about water resources available to animals after piping would occur and about barriers to terrestrial migratory patterns.
222.06	ESA	This project does not seem to align with the threatened species conservation effort as AID has proposed but instead one that will cause irreversible damage and harm.	Thank you for your comment. Please see Section 6.11.2 of the Plan-EA for information regarding effects on wildlife resources. Effects on federally listed threatened and endangered species and state-listed species are discussed in

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			<p>Sections 6.9.2 and 6.11.2 in the Plan-EA. Effects on federally listed species are also considered in the Biological Assessment developed for the project. USFWS concurred with the NRCS determination that the project may affect, but is not likely to adversely affect, the Oregon spotted frog (Letter of Concurrence 2022-0062518-S7; received by NRCS August 1, 2022).</p>
222.07	FIRE	<p>Piping the canal will result in the complete loss of access to water that is crucial for protection and defense against wildfire. The lack of water will increase the fuel sources and decrease the chances of fire mitigation. Countless homes will be placed in jeopardy, especially in areas that are particularly susceptible to wildfire.</p>	<p>Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.</p>
222.08	WAS	<p>The Deschutes River will be negatively impacted by the AID piping project. The Wild and Scenic River Act was created to preserve rivers with outstanding natural, cultural, and recreational values in a free-flowing condition. The Act also grants protections against actions that might alter the natural flow of rivers and introduce sediment or pollutants to them. It also promotes the public participation in developing goals for river protection.</p>	<p>The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.</p>
222.09	PUB	<p>It is irresponsible and a disservice for AID to start this piping project without taking the proper, legal channels to inform the public of the environmental consequences that will occur.</p>	<p>Please see the response to Comment ID 150.04.</p>
222.1	ALT	<p>An environmental impact statement should be presented to the public, as the natural path of the waterway will be altered at the existing flume at Lava Island Falls, presenting adverse consequences to the Deschutes River. Please consider another alternative than piping the canal. This project needs further evaluation.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 94.02 regarding the need for an EIS. See Section 5.2 and Appendix D.2 in the Plan-EA for a discussion of alternatives that were considered during the planning process.</p>
223.01	GEN	<p>As someone who has watched central Oregon evolve and grow from the rural agriculture and timber community it was in the early 1970's to the trendy destination area it has become today, it pains me to see the lack of respect for the long term residents and history that was created here before many had even heard about Bend, Oregon. Before the breweries, the ski shops, the bike trails, the big name band concerts, trendy restaurants, hotels and art galleries generations of families worked this land to produce crops, livestock and timber. You may not agree with what they had to do, but you should consider their labors and sacrifices before condemning them as "entitled", or writing them off as "sentimental fools". The connection these individuals have to this area is as real as the blood, sweat and tears shed creating this area that many have moved here to enjoy. Yes, there is a drought, the snow pack and the glacial melt that</p>	<p>Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources and Section 6.6.2 for information regarding effects on vegetation. Please see Section 4.4 of the Plan-EA for more information regarding property values.</p>

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		feeds the Deschutes river has been drastically affected. Piping the canal will have an effect on the plants and wild life that have come to depend on is as a water source over the last 100+ years, as well as the people who invested millions of dollars and countless hours of labor to buy, build or develop homes along the historic Arnold canal.	
223.02	ALT	That said, I believe that an environmental impact study as well as an economic impact study is not only necessary, but also a moral obligation at this point.	Please see the response to Comment ID 94.02.
223.03	WAT	My questions to my fellow Central Oregon residents are as follows:. If we are so water conscious, why are we still watering golf courses with potable water?. What is the water loss per day on these golf courses?. Why is there not a large public push for xeriscaping instead of water hungry lawns that are watered multiple times a day with potable water? (Yes, many private homes, apartment complexes, schools, medical complexes, and other business all are guilty of this.). Why are we not using grey water for irrigation as a community? With the current population of Bend, I am certain that we are generating enough grey water for this task. The truth of the matter is that we live in a DESERT and our population / water demand is quickly outpacing our water supply. Changes do need to be made to address our drought, but please make changes that respect the ecology, economy, and heritage of this high desert. Thank you for the opportunity to share my thoughts	Thank you for your comment. During the formulation of alternatives, an on-farm efficiency upgrades alternative was eliminated from further analysis because AID lacks the authority or responsibility to carry out, operate, and maintain on-farm infrastructure owned and operated by AID patrons. Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered, which includes on-farm efficiency upgrades.
224.01	GEN	PIPE IT !	Thank you for your comment.
225.01	WAS	The flume certainly should be classified as a historic landmark in the State Scenic Waterways and in the Deschutes County Landscape Management Zone. It is technically illegal to remove any tree or shrubbery in this area by residents or anyone, for that matter. A major portion of this land is Deschutes National Forest and it belongs to us all. This is about keeping our Wild and Scenic Waterways wild and scenic for our future generations.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.
225.02	SOIL	Introducing soil with potential noxious weeds and disturbing the natural landscape is an environmental disaster in the making. This is not only morally unacceptable it is criminal. Arnold Irrigation District brought gravel in approximately 10 plus years ago to maintain a “road” along the flume and. . yes now there are noxious weeds growing in our National Forest. At that time Arnold Irrigation District “mowed” the brush next to the flume, killing many native trees and shrubs, and just shoved them off down the slope towards the river. There that brush has remained, at the time creating a fire hazard and a scaring eyesore. Really, the incompetence has already been proved years ago with blatant disregard for our public lands and beautiful Scenic Waterway. It is ludicrous to assume that hauling in enough soil to bury the flume would not create a permanent impact on this wild and native river corridor.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation. Please see Section 6.6.2 of the Plan-EA for further information regarding the project's effects on vegetation, including noxious weeds.
225.03	CUL	The flume can and should be maintained, restored and respected. Really, putting parts of it on display! This is not about property owners and their so called “view”. This is about State, County and Federal laws that prohibit the destruction of our protected waterways and public land. Is is imperative that this important, historic, native area be maintained with the dignity it deserves. “Buildings decay and	The flume has been removed from the project. Please see the response to Comment ID 12.01.

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		Monuments crumble, but Mt Katahdin in all its glory and splendor shall remain the mountain of the people of Maine forever and ever” JP Baxter, Baxter State Park. It’s time we stand up for, and protect what is left of our Deschutes River corridor and the amazing historic flume that has stood the test of time. The cost to restore the flume would be minimal compared to the ridiculous proposed plan.	
226.01	ALT	I am writing to please implore you to consider exploring the other alternatives to piping the canal. Living on the canal has been a very important part of our family’s life experience here. From listening to the calm of the water, to watching the wildlife and the beautiful environment that has been cultivated as a result of the water flowing through are just a few of the benefits of having a canal in our backyard. Not to mention it was a primary reason for the purchase of our property. We understand the reasoning behind wanting to pipe the canal as we all want to save water, but it seems to us that lining the canal would be a really viable alternative. We realize there is still some water loss due to evaporation, but all of the benefits of keeping it not piped would continue to exist there by making the lining of the canal the better overall approach for all considerations: property values, wildlife habit, environmental preservation, a fire deterrent, well preservation, and so much more. The canals are a part of the fabric of Central Oregon. Their importance to the people here cannot be overstated. Please do what’s right for the greater good and not just look at this with a singular focus. We are counting on you to represent the interests of generations to come. Thank you for your consideration.	Please see Appendix D.2 and Section 5.2 in the Plan-EA for a discussion of the alternatives that were considered. The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA.
227.01	WILD	We have lived on this property for 20 years. When we bought our home over 20 years ago we knew part of the value of our property came from being on the canal. We have a few concerns about the impact of this project.1. The negative impact on the wildlife that depends on the canal for water. The wildlife depends on this water source and has for generations. Has there been any studies on what this will do to their habitat, safety and exactly which species will suffer from the loss of the access to water? Have alternatives to this harmful action been put into the planning?	See the response to Comment ID 65.01. Please see Section 4.11 in the Plan-EA for a discussion of wildlife present in the project’s planning area and Section 6.11.2 in the Plan-EA for a discussion of the anticipated effects on wildlife. Please see Section 5.2 in the Plan-EA and Section D.2 of the Plan-EA’s Appendix for a discussion of alternatives considered and eliminated from detailed study.
227.02	PROP	2. The drop in value to our home and property. The canal has been used as a selling point to the homeowners that have the canal on their property.	Please see the response to Comment ID 218.13.
227.03	CONS	3. In the past when Arnold Irrigation has done work on the canal they have damaged our property. They have discarded rocks, boulders, and huge tree stumps. They have also damaged plants and healthy trees growing on our property. We are very concerned about the damage and mess they will leave behind in this project.	Please see Section 8.3 of the Plan-EA regarding best management practices that would be applied during and after construction to avoid and minimize effects on vegetation and trees.
227.04	RIGH T	4. We are concerned about the unfair gain of property homeowners on one side of the canal will have once this is completed. I was told because the access road is closer to our property that will stay in place but the other homeowners will be able to extend theirs to their rightful place where the canal lies.	Please see Section 6.2.2 of the Plan-EA regarding effects of the project on property ownership and easements.

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227.05	SAFE	5. The project turning the easement into a walking trail. Other areas have had issues after a canal has been filled with non-owners of the property using it as a trail and trespassing on private property. When we last spoke to AI they told us this project would be 5 to 7 years away and there would be time for public comment. We are saddened that this is being rushed through and we were not notified but from a neighbor. We would appreciate a call or returned email answering our concerns.	Please see the response to Comment ID 32.03 regarding trespassing after the proposed project. For information about the opportunities for public comment during the project's NEPA process, please see the response to Comment ID 53.04.
228.01	WILD	I think that piping the canal is a poor decision and does not take into account the wishes of the land owners who pay for the canal. Piping the canal will be detrimental to the wildlife, the ecological environment around the canal, will destroy 1000's of natural habitats and will disturb the migratory patterns of animals who have already been pushed out of their natural habitats by the housing and construction boom in other areas of Bend.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
228.02	CONS	Secondary to these major concerns, there is also the fact that Arnold irrigation has shown consistently that they have no respect for the properties on the canal as they destroy portions of my property every year. I cannot imagine the mess and the damage that they will leave in the wake of this project.	Please see Section 8.3 of the Plan-EA regarding best management practices that would be applied during and after construction to avoid and minimize effects on environmental and social resources.
229.01	WILD	Please save this canal, and do not bury it in a pipeline. There is an entire ecosystem that depends on it for a source of water. I see the deer drink from it often. It is also home to ducks, geese, and frogs. That should be reason enough to preserve the current canal.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
229.02	PROP	However, if it is not, here is another. It adds a peaceful scenic view from the backyard and adds to the property's value. There must be another way than to replace the canal with a pipeline. Please save the Anold Canal.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see Section 6.7.2 of the Plan-EA regarding effects on visual resources.
230.01	PUB	I respectfully ask that more time and education is needed for the residents of Bend to understand this Pipeline and compare the pros and cons. I and many many others residents have only recently heard anything about this plan. More Facts are necessary to make the correct decision.	Please see the response to Comment ID 39.11.
231.01	NEE	I have read the draft watershed plan assessment for the AID improvement project. I support piping of river diverted water for agricultural uses to improve efficiency, safety and return water to in stream use. Shifting rural land uses have dramatically reduced the agricultural acreage along the AID canal. Using diverted river water for non agricultural uses (lawns) should have a different rate structure and not be subsidized by taxpayers. The historic agricultural use of AID diverted water is only utilized by around 30%of the current users according to the document. Is the ROI worth the cost to the taxpayers?	Under PL 83-566, a project must contain agricultural-related benefits that account for at least 20 percent of the total benefits of the project. The agricultural benefits in AID's proposed project account for more than 20 percent of the total benefits. Please see the NEE in Appendix D.1 of the Plan-EA for further information regarding the benefits compared with the costs of the proposed project.
231.02	CONS	There are a number of issues to be raised with the vagueness and incorrect statements of the scoping document. One of the main concerns is the proliferation of noxious weeds along the AID access roads	Disturbed areas would be planted with a native seed mix appropriate to the habitat and would be certified

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		<p>from the head gate, all along the flume and most of the main canal. AID has been a poor steward of the land along their ROW for at least 20 years. Their practice of mowing in the fall has only encouraged the dramatic spread of both knapweed & Dalmatian toadflax by spreading seeds in a reckless fashion. It seems appropriate for them to control the weeds prior to any construction in order to mitigate the already massive noxious weed Seed bank that they have encouraged to spread by decades of poor management. Many of these noxious weeds are already dropping seeds into the Deschutes River above lava island falls.</p>	<p>weed-free. Revegetation practices would follow NRCS' Oregon and Washington Guide for Conservation Seedings and Plantings. Please see Sections 8.3.6 and 8.3.7 of the Plan-EA regarding best management practices that would be applied during and after construction to avoid noxious weeds.</p>
231.03	CUL	<p>In the document they indicate that they plan to construct an elevated pipe in the Newberry monument. Just across the river from this location are caves where 4000 year old sandals were discovered by archeologists. It is difficult to believe that there was no use by local residents of that time across the river where the elevated pipe is to be constructed that may be of anthropological importance. Based on AID's past management practices careful oversight of this improvement should be required.</p>	<p>The flume has been removed from the proposed project. Please see the response to Comment ID 12.01. If archaeological resources are inadvertently discovered during construction of the proposed project, an Inadvertent Discovery Plan would be followed. The Discovery Plan is briefly described in Section 6.1.2 in the Plan-EA and is now included in Appendix E.</p>
231.04	VEG	<p>Their past practices of fall mowing to control noxious weeds. Cutting down shrubbery and trees in the scenic waterway/ landscape management combining zone and tossing the debris over the bank visible to all seem contrary to their mission statement. AID's lack of good stewardship to the land needs to be assessed and resolved before they begin this project.</p>	<p>Please see Section 6.6.2.2 of the Plan-EA for a description of the approach to control noxious weeds. Section 8.3.6 lists measures that would be followed to avoid introduction of invasive plants and noxious weeds, including using certified weed-free seed mix. Please contact the District with any concerns about current maintenance practices.</p>
231.05	PROP	<p>AID states they plan to bury the pipe along the bank and cover it with soil. All this land adjacent to their ROW along the current flume is now residential. Burying the pipe will have the potential to disrupt the rear property pins on every lot where the AID ROW encroaches on these lots. Reestablishing the location of the property pins should be the responsibility of AID if this project moves forward.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see Section 6.2.2. of the Plan-EA regarding effects on property ownership and easements.</p>
231.06	CONS	<p>AID proposes to grade and reseed the disturbed areas along the buried pipe. In areas along the scenic waterway and everywhere else where there are residential properties adjoining their ROW, AID should install temporary irrigation to mitigate years of dust and poor germination results from a dry land sowing of seed. Given their past history and current practice of noxious weed mismanagement, at least a decade of noxious weed control will be required to get their current ROW to look as good as the BMP employed by COID in their excellent pipe conversion rehab.</p>	<p>Disturbed areas would be planted with a native seed mix appropriate to the habitat and would be certified weed-free. Please see Sections 8.3.6 and 8.3.7 of the Plan-EA regarding best management practices that would be applied during and after construction to avoid noxious weeds.</p>
232.01	PUB	<p>The flume is on an easement through our property. I have copied the letter from our neighbor [NAME] and [NAME]. We agree with all points of his well</p>	<p>The flume has been removed from the project. Please see the response to Comment ID 12.01. See</p>

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		<p>written requests. We request there be a postponement of all actions by Arnold Irrigation District and the proposed flume removal until the proper environmental impact studies are conducted and the results published for the public to see and comment on. This is a federally protected waterway and it belongs to everyone.</p>	<p>Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.</p>
233.01	WILD	<p>I am commenting on the piping of the Arnold Irrigation Canal. In response to the piping of the Arnold Canal I'm writing to express my disappointment. As a life long Bendite I simply find this ridiculous. My husband and I and bought our house based on the setting. We enjoy watching all the wildlife that the canal brings. With piping of the canal habitat will be lost for deer, ducks, geese in addition to many other species of birds and the riparian area surrounding the canal will be destroyed.</p>	<p>Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding the effects on wildlife resources. Please see Section 6.10 of the Plan-EA for more information about effects on riparian areas. See Section 8.3 of the Plan-EA for more information regarding post-construction reseeded.</p>
233.02	PROP	<p>As piping will decrease our Property value in addition to turning our backyard to dust.</p>	<p>Please see the response to Comment ID 218.13.</p>
234.01	ALT	<p>I vehemently oppose the piping of the Arnold Irrigation Canal for a number of reasons I will list here:First let me say that I am well aware of the drought situation and the need to conserve water in the canal. These options would not only solve the problem, but would also be more cost effective than piping the canal. For example, there is the option to gunnite the canal. A method of applying concrete at a high velocity primarily on a vertical or overhead surface. The impact created by the application consolidates the concrete. Although the cured properties of shotcrete are similar to those of conventional cast-in-place concrete, the nature of the placement process results in excellent bond with most substrates, and rapid or instant capabilities, particularly on complex forms or shapes such as irrigation canals. This process has been widely and successfully used in many states experiencing serious drought conditions to conserve water. Arnold Irrigation has successfully used shotcrete (gunnite) and grout-filled mattress style canal lining in sections of the canal. These sections incur less seepage and evaporation and have been in place for over 30 years. Roughly 60 to 80%of the water that is lost in unlined irrigation canals can be saved by a hard-surface lining. According to a study performed by DB Krantz, an expert in canal lining, a surface lining, such as concrete, brick or plastic on the canal prevents the growth of plants and discourages hole-making by rats or termites, and so the maintenance of a lined canal can be easier and quicker than that of an unlined canal. Moreover, the higher velocity that can safely be allowed in the lined canal prevents the small particles of soil carried in the water from settling out, accumulating and causing siltation. The bed and sides of lined canals are more stable than those of unlined canals and are thus less susceptible to erosion. If cement, gravel and sand are relatively cheap and locally available, concrete lining is a good choice. If it is properly constructed and maintained it would last for many years, which offsets the initial cost. Local Contractors, who are knowledgeable in this process could be used to implement the installation of these liners, not only saving money, but boosting the local economy. This is certainly preferable to subbing the work to a multi-billion dollar California piping corporation.</p>	<p>Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.</p>

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		Irrigation canal liners can also be made from geomembranes like reinforced polyethylene (RPE) or reinforced polypropylene (RPP) can also help prevent water loss and preserve our water supply. RPE and RPP irrigation canal liners provide a barrier between the water being transported for irrigation and the ground. Again, local contractors could be used to implement the installation of these liners. These solutions are not even being considered at this time. I feel they are well worth looking into. They are certainly preferable to the high cost and destruction of piping the canal. One of these solutions would be certainly more amenable to homeowners and irrigation patrons and would circumvent the problems that will be exacerbated by piping the canal.	
234.02	VEG	Loss of carbon emissions from trees and other plant life	Carbon emissions related to irrigation pumping are considered in the economic analysis; however, the emissions effect from vegetation changes was considered to be negligible. Please see Appendix D.1 of the Plan-EA for the NEE analysis.
234.03	WILD	Loss of natural and wildlife habitat	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding the effects on wildlife resources.
234.04	SAFE	Loss of privacy	Thank you for your comment. Please see the response to Comment ID 32.03.
234.05	VIS	Loss of aesthetics	Please see Section 6.7.2 of the Plan-EA regarding effects on visual resources.
234.06	PROP	Loss of property value	Please see the response to Comment ID 218.13.
234.07	WILD	Many species of wildlife make their home in Deschutes River Woods year-round. It would be a shame to drive them away from their natural habitat. These animals depend on the canal environment for food, water, and shelter. Piping this historic 115 year old canal would displace these animals once more encroaching upon and forcing them from their territory. These animals follow their instinctive natural seasonal migration patterns and they should not be displaced.	Please see Section 6.11.2 in the Plan-EA for information regarding the effects on wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources.
234.08	FIRE	Vegetation and trees along the canal would dry up and become tinder for wildfires.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
234.09	WAT	More than a few wells will likely go dry. Property owners would incur huge costs in having their wells redrilled.	Please see Section 6.8.2.3 of the Plan-EA and the response to Comment ID 433.38 for information about the effects on groundwater.
234.1	COST	With regard to EA submitted by Arnold Irrigation, I don't think their cost estimate to fulfill this project is correct in its projections. It does not, for example, take into consideration the costs the irrigation district will absorb in legal fees resulting from the loss of property value from the over 400 property	Regarding legal fees, please see the response to Comment ID 24.02.

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		owners along the canal. There will be right of way problems with the increase of the easement into our yards. There will also be additional expense to taxpayers to fund this project. The federal government will only be providing part of the funding needed to complete the piping project.	<p>To the extent possible, construction would be located entirely within the District's existing ROW and easements.</p> <p>See Section 8.7.6 in the Plan-EA for details on how the District would expect to fund match funding for the project.</p>
234.11	CONS	Then, for those of us who own homes along the canal, we will be subjected to 7 years of construction, disruption of our way of life, and lack of privacy in the wake of this project.	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. The proposed project would be constructed in four phases. Construction of all four phases would be completed in 6 years.
234.12	CUL	As far as the historic flume proposal, it is absolutely ridiculous. This flume has existed for over 100 years. The AI plan calls for the flume to be buried, not only breaking the agreement to not go below the floor of the canal, but creating a huge dam-like structure (eyesore) that could possibly redirect the right channel of the river near Lava Island Falls.	The flume has been removed from the proposed project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Deschutes Wild and Scenic River.
234.13	ALT	In closing, I urge Arnold Irrigation, its board of directors, our local wildlife conservationists, legislators, commissioners, and council to halt the progression of this project, at least until further studies are undertaken to ensure the proper redevelopment of the canal infrastructure. There are so many variables that need further investigation before this project is just pushed through with no regard for the damage it will ultimately wreak upon our central Oregon environment. Slow down and let facts, not conjecture and misinformation be the impetus for this project.	Thank you for your comment. This Plan-EA has been prepared to meet NEPA requirements as well as program and environmental review requirements specific to NRCS federal investments in water resources projects.
235.01	PROP	Please Do NOT pipe the canal!!! It's a beautiful piece of our landscape that adds value to our property	Please see the response to Comment ID 218.13.
236.01	RIGHT	I am adding to my previous comments due to discovering some things within the so-called right of way claimed by Arnold Irrigation district. We have lived at [ADDRESS] since 1996. In 2006, Deschutes County issued our building permit to create an addition to our house. A measurement of 50 feet from the canal comes to within 2 feet of our house. Our concrete irrigation pond which has been on the property for decades before we got here is completely within the 50 foot right of way. There are two Central Electric Coop power poles within 25 feet of the canal on our property. Why has Arnold Irrigation allowed these structures to be within their right of way for all these years? I am attaching pictures of a green line my husband drew to illustrate where the right of way falls on our property.	The District has allowed the establishment of vegetation and structures within their easements and ROW as long as the vegetation and structures do not interfere with operation and maintenance of District infrastructure. More information regarding District policy on the encroachment of easements can be found in their District User Handbook (AID 2012). Please contact the District regarding property-specific easement questions. Clarifying text regarding the dimensions of land that would be disturbed during construction has been added to Section 5.3.2 of the Plan-EA.

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			Reference: Arnold Irrigation District. (2012). Arnold Irrigation District User Handbook: District Regulations and Operating Procedures. Accessed on February 8, 2022. arnoldirrigationdistrict.com/files/25a9d2fe8/User_Handbook.pdf
236.02	WILD	Besides the obvious potential for devastating destruction to our property, we are hugely concerned about cutting off the water supply for the deer, geese, ducks, owls, eagles and other birds will force them to find water elsewhere. I dread waking up and not hearing a sound of birds chirping.	Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources. Please see Section 8.3 of the Plan-EA for more information about construction BMPs.
236.03	ALT	Having seen the aftermath of piping Swalley and Tumalo canals, Arnold Irrigation should learn from residents in Swalley and Tumalo districts seeing wells dry up and trees dying from lack of water, further injuring landowners for years to come. Please stop refusing to look into lining the canal. Lining the canal is a viable way to reduce seepage by at least 70% (According to irrigation districts in Brownsville, Bayview, and El Paso Texas, all of whom have used canal lining dating back to 2009, there is a 94% reduction of seepage.) Using the lining alternative allows enough ground water to keep trees alive and wells functioning, as well as allowing wildlife to get water as they have for over 100 years.	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04. Please see Section 6.8.2 of the Plan-EA for a description of the proposed project's effects on groundwater.
236.04	PROP	In addition to the above concerns here are some other issues that the EA was woefully deficient: 1) EA fails to consider devastation of property value, visual aesthetic and established riparian ecosystem (including wildlife & wells)	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see Sections 6.7.2, 6.10.2, and 6.8.2.3 of the Plan-EA for a description of the proposed project's effects on visual and riparian area resources and groundwater.
236.05	ALT	2) Failure of the EA to provide a fair analysis of the canal lining alternative; estimates are inflated	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04.
236.06	WAS	3) The EA's plan for the historic flume will destroy an iconic landmark within the Deschutes Wild and Scenic Area	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
236.07	RIGHT	4) Failure of AID to maintain easement and right-of-way and placing excessive burden on servient property	Please see the response to Comment ID 236.01 regarding the maintenance of AID's easement and ROW.

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236.08	BNFT	5) AID's failure to adhere to its specified charter (to not profit but serve its patrons and lands)	Please contact the District directly for information about its charter.
236.09	COST	6) Property Line obliteration via piping and costs to re-establish are not included in EA cost/benefit analysis	There would be no change to land ownership or existing ROWs and easements as a result of the proposed project. See Section 6.2.2 of the Plan-EA for land use information.
236.1	COST	7) Cost/Benefit analysis performed by AID et al and published in EA is intentionally incomplete	Please see Appendix D.1 of the Plan-EA for discussion of the costs and benefits of the project.
236.11	SAFE	8) EA uses an intentionally fabricated risk to public safety to coerce piping support	Please see Section 4.3 of the Plan-EA for discussion of the risks to public safety within the project area.
236.12	SYS	9) The EA claim of value-added from piping's pressurized delivery system is not supported	Benefits related to pressurization have been removed from the NEE due to the removal of the flume from the project.
236.13	FIRE	10) The plan creates an increased risk of wildfire Piping the canal is just a bad idea, period!	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
237.01	WILD	<p>Please assist in stopping what I can only characterize as a boondoggle. As your constituent I need to call to your attention the fact that, rather than charging their own customers or paying out of their own pockets for a piping project, big business is instead attempting to place the burden on the taxpayers by misappropriating and pocketing millions (over \$27,000,000) of tax dollars for something totally unnecessary. Our community of Bend is in a fight to stop this.</p> <p>If you are not aware, our local Arnold Irrigation District (AID), justifiably concerned about seepage, is attempting to ram through a proposal to rip out a 120 year old riparian ecosystem around our irrigation canal and replace it with pipe and several miles of gravel, concrete and fescue—destroying 100' swaths of maturely developed private property in the process. It should be no surprise that the cursory "environmental study" justifying this boondoggle was authored and supported by a pipe manufacturing company out of California.</p> <p>I will summarize four reasons why we ask for your support:</p> <p>First, contrary to their self-serving "environmental study," this century-old established ecosystem supports a surprising number of seasonal species as a safe environment to raise their young (please see attached photos as an example.) Even Bald Eagles frequent the canal, as well as the permanent resident</p>	<p>Effects on federally listed threatened and endangered species and state-listed species are discussed in Sections 6.9.2 and 6.11.2 in the Plan-EA. Effects on federally listed species are also considered in the Biological Assessment developed for the project. USFWS concurred with the NRCS determination that the project may affect, but is not likely to adversely affect, the Oregon spotted frog (Letter of Concurrence 2022-0062518-S7; received by NRCS August 1, 2022). With respect to birds, the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) are managed and enforced by USFWS. Coordination with USFWS regarding construction timeline and species covered by MBTA and BGEPA has occurred (Sections 4.11.2 and 6.11.2.1). Prior to implementation, site-specific clearance surveys would be completed by USFWS (Section 6.11.2.1), and any additional consultation regarding birds covered under MBTA and BGEPA</p>

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		<p>(and endangered) spotted frogs, and a multitude of ducks and other birds, rodents, lizards, raccoons, and deer that are sustained by the water of the canal and in turn support the predators (owls, hawks, eagles, etc.) hunting and feeding around the canal. Removing the water of the canal and replacing it with pipe will devastate this ecosystem, yet Arnold Irrigation District will not even consider the sensible and cost effective alternative of simply lining the canal to stop the seepage they are so concerned about. Obviously, they will not be able to access those millions of taxpayer dollars if they do.</p>	<p>would occur as needed. See Sections 6.11.2, 7.1, 8.3.8, and 8.5.3 of the Plan-EA.</p> <p>ODFW anticipates that canal lining would increase the incidence that wildlife are injured or die as a result of interacting with the canal. Due to the nature of the canal liner, the ability of animals to find traction and holds to assist with their exit of the canals (as they might in earthen canals) would be reduced and would increase the likelihood of canal entrapment (A. Walch, ODFW Wildlife Biologist, personal communication, September 17, 2021). Please see Section 5.2 in the Plan-EA and Appendix D.2 for a discussion of alternatives considered and eliminated from detailed study.</p>
237.02	VEG	<p>Second, sustainability. The water of the canal has sustained a multitude of grasses, bushes, and trees in a 'greenbelt' through the area. If the water is removed it will have a fatal impact on this flora. As Bend continues to grow exponentially, we continue to suffer the loss of flora to development as the "unavoidable consequence of growth." This canal has nurtured the vegetation through our driest months, which are getting even drier, for over 100 years. The proposed pipe is not unavoidable, but in fact very avoidable by lining the canal, which will continue to sustain the flora.</p>	<p>Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and vegetation. Canal lining would also decrease the seepage that is referred to in this comment. Please see updated language in Section 5.2.1 of the Plan-EA regarding how canal lining would decrease canal seepage.</p>
237.03	Gen	<p>Third, the beauty of Central Oregon. This canal, and several others like it, are part of the fabric of life in our city. Stripping the land of plants and trees, killing off fauna, unnecessarily destroying private property and covering the ground with miles of 50-100' swaths of gravel, concrete and fescue reduces our beautiful community to something more like Los Angeles. This will in fact affect the whole community, as it diminishes the essential beauty and enjoyment of the outdoors that draws people to visit, and others to live here, buy homes, raise families and start businesses that provide jobs and prosperity. This disrespect for a fundamental element of our community is not necessary, and the canal should not be piped, it should be lined.</p>	<p>Please see Section 6 of the Plan-EA for a discussion of the proposed project's effects on different resources. See Section 5.2.1 of the Plan-EA for a discussion of canal lining.</p>
237.04	FIRE	<p>Fourth, and extremely important and concerning, is fire safety. The canal provides a source of water for homeowners and fire department tanker trucks to draw water from in the event of a wildfire. With the marked increase in large wildfire activity in recent years, and more anticipated, we should be endeavoring to increase, not decrease, our ability to fight these fires. Removing this supply of water increases the risk to our homes and the surrounding forest, as the area the canal flows through has few, if any, hydrants for the fire crews to tap into. Piping instead of lining the canal increases the risk of catastrophic fire damage.</p>	<p>Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.</p>

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237.05	GEN	<p>The alternative solution to the loss of water, which is at the core of this debate, is simply lining the canal. Any water 'saved' by piping has been targeted for sale further downstream, proving that this proposal is not about 'saving water' but about expanding profits. The water will be used somewhere, and we should use it where it provides the most benefits to the most people and the most wildlife and flora by preserving the thriving ecosystem, capturing CO2 where it is generated, helping protect our homes and property from devastating wildfires and enhancing the natural beauty of our community.</p> <p>I have also attached a couple photos showing the area of our property AID intends to destroy. I realize these demonstrate a personal concern, but there are hundreds of homes lining the canal whose property will suffer the same unnecessary fate.</p> <p>Thank you for whatever efforts you are able to make on our behalf by stopping this boondoggle and helping preserve the beauty of Oregon.</p>	<p>Please see Section 5.2. of the Plan-EA for a discussion of canal lining. See the NEE in Appendix D.1 for a discussion of benefits resulting from the proposed project. Updated language regarding wildfires has been added to Section 6.3 of the Plan-EA.</p>
238.01	GEN	<p>While I support piping the canals I feel that agriculture must change from water-hungry crops (like alfalfa and hay) to feed livestock. We need to curtail unnecessary water uses as well as reduce evaporation and seepage.</p>	<p>Thank you for your comment. Please see Appendix D.2.5 of the Plan-EA for more information.</p>
239.01	VEG	<p>I am writing to voice my opposition to Arnold's proposal of piping the 13 mile long canal that starts diverting water from the Deschutes River by the Lava Island Falls, weaves through Deschutes River Woods, Scholes and Woodside village community and ends approximately by Horse butte.</p> <p>I believe the intention is good with the drought season, people are anxious to save as much water as possible for irrigation by reducing seepage but the solution proposed - replacing the canal with metal pipe is not only radical and wasteful of taxpayers' dollars but also has enduring environmental effect that would change the landscape of our community.</p> <p>As a property owner in Deschutes river woods, I distinctly remember when I purchased the property, I researched in detail about the canal easement on my property, the easement specifically states that Arnold has right of way of 50 ft total width for maintenance of a canal on my property, not a pipe. According to the Black's law dictionary, A canal is defined as an artificial ditch or trench in the earth, for confining water to a defined channel, to be used for purposes of transportation. The meaning of this word, when applied to artificial passages for water, is a trench or excavation in the earth... it includes also the banks, and has reference rather to the excavation or channel as a receptacle for the water. The fact that Arnold irrigation do not own the land the canal sits on restrict their rights to what is written in the easement document. By changing it to a pipe, it fundamentally alter our rights as property owners and become an eminent domain issue. There are also other logistic issues notably missing the Arnold draft plan as to whose responsibility it is to cut down all the trees (which will be dead in 2-3 years) and remove all the dead vegetation that grew all along the canal, neither do they discuss the new equipment change necessary for patrons who are receiving the irrigation water in a pressurized pipe which is very different</p>	<p>Please see the response to Comment ID 163.01 regarding the District's use of their easements. Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and tree removal.</p>

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		than a gentle canal. All these seems to be financial responsibility born so far by the homeowners about the canal in the case of Tumalo district irrigation, which has their piping project started a few years ago.	
239.02	WILD	There is also the decimating impact on wildlife along the canal which has been developed for over 100 years since the canal was built.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
239.03	FIRE	If homeowners are unable to remove dead vegetation/ trees (a significant cost for some of us) along the canal - a massive amount of bio matter especially in the deschutes river woods area (see picture attached), piping not only take away an emergency fire break and backup source of water to put out fire but will literally convert our backyard into a fire hazard zone with dried dead trees.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
239.04	WAS	Another potential disastrous effect is replacing the historical flume at the beginning of the canal. The proposed draft plan is to replace the current flume with an elevated pipe back filled to prop up the pipe to the current flume elevation on the steep bank of the Upper Deschutes. This mile-long burial mount would potentially violate the Wild and Scenic River Act due to the very real possibility of sediments or pollutants from the mount being dumped into the river channel right by Lava Island Falls.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
239.05	ALT	We believe there is a compromise that will make bring more water to the farmers without ruinous effects to the ecosystem as well as all the 430 residents whose properties about this canal. Lining the canal using 3-5" shotcrete or grout-filled-mattress style lining stops 70%of seepage. This will increase water being transported further downstream while able to maintain the ecosystem along the canal in much more economical budget. At the very least, there are aspects this project has not considered and needs further evaluation.	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04. Please see Section 6.8.2 of the Plan-EA for a description of the proposed project's effects on groundwater.
240.01	RIGH T	The legal easement:1. Recent Oregon case law indicates that piping projects relying on easements may not dig beneath the existing canal bed nor devalue the properties through which they pass. The Farmers Conservation Alliance, author of this Environmental Assessment, is certainly aware of the case, Swalley Irrigation District v Alvis, having cited it in a preceding environmental assessment in support of an irrigation district's ability to pipe. However, in so doing the Farmers Conservation Alliance inexplicably failed to mention the important limitations imposed by this case, thereby conveying (whether intentionally or otherwise) the false impression that an irrigation district's legal right to pipe is absolute and unfettered. It is not. Thus it would appear to be of public service to rectify this omission by presenting extracts from the case so that the broader audience may judge for themselves. From the first instance judgement of Aiken J: "conversion of the canal to a buried pipeline will not unlawfully burden the property rights of defendants who own such lands, PROVIDED IT DOES NOT EXTEND BELOW THE BOTTOM OF THE EXISTING CANAL"; and from a combination of the headnote to the appeal decision and the appeal decision itself: "conversion of existing canal into pressurized pipeline did not exceed scope of irrigation district's right of way, despite removal of aesthetic benefits provided by open canal, WHERE CONVERSION DID NOT INCREASE BURDEN ON LANDOWNERS'	Please see the response to Comment ID 218.13 regarding the project's effects on property value. The proposed project would be installed pursuant to the District's right-of-way and easements.

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		<p>PROPERTY, OR DEVALUE PROPERTIES" ... "here, the landowners have not presented evidence establishing that their property will be devalued by the proposed conversion." (The capitalization is not in the originals.) The property owners within the AID need not look far for evidence of devaluation - in Appendix D, you have already conceded its likelihood. Given your evident awareness of this case, and given that this project will both dig beneath the canal bed and devalue properties in apparent violation of the law as it stands today, please explain clearly and unequivocally how you were able to reach the conclusion that the project is legally permissible. Please provide details of the written opinion(s) of legal counsel which you obtained in order to support such conclusion (or if you consider yourselves by the terms of such an opinion unable to disclose its details, please confirm its existence and general import). Alternatively, In the absence of any such opinion, please state whether you failed to seek such an opinion (which, given the plain language of precedent case law would appear to be not only negligent, but indeed wilfully reckless) or whether you sought such an opinion but no reputable counsel would provide it. Unless you are adducing a legal opinion to justify your position, please disclose the name and legal qualifications of the individual(s) at the Farmers Conservation Alliance, AID or Natural Resources Conservation Service responsible for making the determination of legality.</p>	
240.02	GEN	<p>2. Please agree or disagree with the following proposition and provide reasoning therefor: "A private company with its own capital at risk would never undertake this piping project given the potential future liability for an impermissible expansion of the easement. A public or quasi-public entity, on the other hand, can choose to proceed without regard to the law of the land, safe in the knowledge that any future liability would be funded by patrons and taxpayers."</p>	Thank you for your comment.
240.03	RIGH T	<p>PL 83-566- Easement Condition 3. Under PL 83-566, the Secretary of Agriculture requires as an express condition to the provision of Federal funding that the local organization acquire the easements needed in connection with the proposed project. Oregon case law as it stands today does not allow an irrigation district to dig beneath the existing canal bed nor devalue servient properties, and since this project by its own admission does both, this would on its face appear to preclude Federal funding. Accordingly, with reference to the law in Oregon as it is today (and not as you may wish it to be at some future point), please explain clearly and unequivocally, for the benefit of the taxpaying public who fund the US Department of Agriculture, the legal analysis and written opinion from counsel (if any) which enabled the Natural Resources Conservation Service to advise the Secretary of Agriculture (or his or her delegate) that AID has the easements needed for this piping project.</p>	Please see the response to Comment ID 163.01.
240.04	GEN	<p>Farmers Conservation Alliance⁴. The origins of the Farmers Conservation Alliance lie within the irrigation districts, and as with an irrigation district it exists to defend the interests of a specific set of private individuals. Whilst it is keen to advertise its environmental credentials, its official stated purpose in its most recently available IRS Form 990 for charities is "to develop resources solutions for rural</p>	Please reach out to NRCS-OR with any questions regarding NRCS contracting protocols. Farmers Conservation Alliance does not have any pecuniary or other interest in the outcome of the Plan-EA.

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		<p>communitiesn - there is no mention of conservation or the environment. Its taxonomy code is 'Agricultural Programs'. According to its web site, it has strong ties with project consultants and engineers; half of its board are farmers; it retains advisers from irrigation districts. According to available public records, it pays its executive director and its chief irrigation adviser in excess of \$150,000 per annum; in 2017 it paid \$235,000 to Black Rock Consulting, a local company which provided project consultancy services in relation to various environmental assessments for piping projects and which also builds pipelines; in 2019, it paid an Idaho engineering firm over \$500,000, and over \$1,000,000 to an infrastructure construction company; it receives huge sums from the Government in the form of grants. Given these deep links to the irrigation districts, the piping industry and the Government, and given the torrent of taxpayers' money that appears to cascade freely into the pockets of the Farmers Conservation Alliance and private for-profit firms, it would seem that the Farmers Conservation Alliance is in no way suited to produce a neutral, impartial environmental assessment. One would naturally expect the interests of farmers, irrigation districts and piping contractors to be favoured. Accordingly: (i) please detail the safeguards, polices, and procedures in place at the Farmers Conservation Alliance to ensure that the determination of preferred alternatives is not in any way skewed toward the selection of piping projects - alternatively, please confirm on the record if in fact there are no such safeguards, polices, or procedures in place; (ii) please state how many environmental assessments in Oregon authored by the Farmers Conservation Alliance included a piping alternative for full consideration, and please state whether such piping alternative was ever rejected or was in fact chosen as the preferred alternative each and every time; (iii) for all environmental assessments authored by the Farmers Conservation Alliance, please disclose whether any income of the Farmers Conservation Alliance is or was directly or indirectly contingent upon the selection of a piping project as the preferred alternative.</p>	<p>Please see Section 8.1 of the Plan-EA regarding why the Preferred Alternative was selected.</p>
240.05	VEG	<p>Tree survival analysis5. It is claimed that, with irrigation, 70 to 80% of trees not otherwise felled will survive the piping project. The only support cited for this claim is "prior experience with piping projects" This figure and phrase is repeated word for word in the environmental assessments for several other piping projects (Central Oregon, Lone Pine, Swalley and Tumalo), which suggests an unfortunate lack of any real field work specific to the project area and its particular topography, geology and hydrology. It is vital for property owners who may lose a number of valuable and cherished trees to be assured that the appropriate due diligence has been performed and that a random number has not been plucked from the ether. Therefore please provide details of (1) the site visits to the AID project area, if any, and the name of the arborist or other suitably qualified scientist who undertook them; and (2) the original studies which comprise the "prior experience" referenced in various environmental assessments and the name of the arborist or other suitably qualified scientist who undertook them. If on the other hand you undertook no scientific studies but have based the 70 to 80% rate on anecdotal tales from irrigation district</p>	<p>Language regarding the tree survival estimate has been updated and a reference has been added to Section 6.6.2 of the Plan-EA. Referencing Tumalo's experience is relevant to the proposed project due to the nearby geography and construction techniques that would be used for the proposed project. Property owners can water trees and vegetation within their easement with water they have a legal right to, either irrigation water delivered by the District if they are a patron or water from a domestic source. Please see Section 6.6.2 of the Plan-EA for updated language regarding the project's effects on trees.</p>

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		employees, please - out of respect for the affected residents who may end up losing many more trees than the Environmental Assessment forecasts - be honest and say so on the record.	
240.06	NEE	PL 83-566 - Cost-Benefit Ratio ⁶ . If you can dollarize the benefit of reduced North Unit Irrigation District agricultural damage, reduced O&M, avoided damage from infrastructure failure, pumping cost savings, instream flow value and support to the spotted frog, you can certainly dollarize the cost of lost trees, lost carbon savings, patron hook up costs and property devaluation.(a) Trees: please explain clearly and unequivocally why cost of loss of trees has not been included in the cost-benefit analysis required by PL 83-566. Federal case law indicates that such costs should be included (Burkey v Ellis). Please do not deflect the question with a spurious claim that loss of trees is not a quantifiable cost - as any qualified arborist would tell you, there are various acknowledged methods for economic valuation. Zero cannot be your default cost for anything which requires a modicum of work to quantify, unless your true intent is to disregard reality in producing your cost-benefit analysis.	Per DM 9500-0013, "The PR&G state that Federal investments in water resources as a whole should strive to maximize public benefits, with appropriate consideration of costs." Where possible, the National Economic Efficiency Analysis has quantified and monetized benefits and costs or identified why the costs have not been included and has instead qualified the benefits of costs. The District would install the proposed project pursuant to their rights-of-way and easements. As discussed in Section 5.3.2 of the Plan-EA, construction of the project may require the removal of individual trees within the District's easements and right-of-way. The Plan-EA's analysis has not been conducted at the level to identify the specific trees, and the cost of tree removal has been incorporated into the installation contingency cost of the proposed project. Updated language clarifying the inclusion of this cost has been added to the NEE in Appendix D.1. Sections 4.6 and 6.6 in the Plan-EA have been updated with additional discussion of the proposed project's effects on trees.
240.07	NEE	(b) Lost carbon savings: why is there no social cost of carbon line item for the loss of the carbon storage capacity of the trees that will be felled or die as a result of the piping project?	Please see the response to Comment ID 240.06.
240.08	NEE	(c) Patrons' hook up costs: will patrons incur costs in connecting to the piped system and if so why are such costs not included in the calculation?	Please see the response to Comment ID 37.62.
241.01	GEN	I receive my irrigation water from Arnold Irrigation via Roats water. I support Arnold Irrigation's plans to pipe their canal.	Thank you for your comment.
242.01	GEN	My name is [NAME] and I work for the [COMPANY] in Bend, Oregon. We get our water from Arnold Irrigation;and for the last several years we have in-stream leased the majority our water. We support the piping of canals because the piping saves water due to evaporation and seepage, improves wildlife habitat in the Deschutes River and can it deliver pressurized water that can reduce or eliminate the cost of irrigating.	Thank you for your comment.

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243.01	ALT	I, Ruby Swanson, property owner on Arnold Irrigation district, Bend OR request/ demand the development of an INDEPENDENT “hard look” consulting EIS by the NEPA standards. I also request and demand that the independent EIS be made public to patrons and property owners on or near the AID canals. Clearly the existing EIS was not done specifically for Central Oregon AID or other CO irrigation districts.	Please see the response to Comment ID 94.02.
243.02	PROP	The EA shows property depreciation at ZERO. Of course the property values will be devalued by approx 10%along with all the properties close to the canal.	Please see the response to Comment ID 218.13.
243.03	WILD	Specifically where is this saved/ conserved water going to go back to the river to save spotted frogs, fish, wildlife etc?	Please see Section 6.8.2.2 in the Plan-EA for information about effects on water resources. See Sections 6.9.2 and 6.11.2 for effects on fish and aquatic resources and wildlife.
243.04	ENRG	Is there going to be pressurized pumps to generate electricity? And if so would not the hydraulic or pressurized pumps need the ‘SAVED WATER’ to run the equipment properly? And for that matter does it show actual data that water is going to be conserved? Where is the actual data showing the leaks? Or is that fabricated also.	No, the proposed project would not generate electricity. Benefits related to pressurization have been removed from the NEE. A water loss assessment was performed in AID in 2016. For information, please see Appendix E.4 of the Plan-EA.
243.05	BNFT	Is the pipe for the public or for private user benefit? Will the legal costs be passed on to the patrons fee? Is AID going to “gift” this water right? Or is it for private developers? I doubt seriously this conserved water will go back to the river.	The purpose of this project is to improve water conservation in District-owned infrastructure, improve water supply management and delivery reliability to District patrons, and improve public safety on up to 11.9 miles of the District-owned Main Canal. See the response to Comment ID 24.02 regarding legal fees. Please see Section 6.8 in the Plan-EA for information about effects on water resources after the project.
243.06	GEN	Furthermore, the HDPE pipe is a toxic material and the seams are not guaranteed especially under any water pressure That is why an INDEPENDENT CONSULTING EIS BE EXECUTED IMMEDIATELY AND the project NOT BE ALLOWED TO PROCEED. Thank you for reading my comments. Hope you can help us.	Please see the response to Comment ID 94.02.
244.01	WILD	I am writing to let you know that I am not in favor of putting the canal underground. It will seriously take away from the natural beauty that we have a in Deschutes Riverwoods. The wildlife that enjoys and counts on for survival will perish without the canal. Thank you for giving my two cents in consideration	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding the effects on wildlife resources.

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245.01	WAS	<p>I am writing this email to express my objections to the plans of the Arnold Irrigation District (AID) to pipe the canal and replace (and bury) the flume that comprises the first mile of the irrigation canal adjacent to the Deschutes River. My fiancée Rachel and I live at 18806 Choctaw Road, on the Deschutes River rim. The flume runs behind our house and portions of our house and property are within the purported easement of the AID. We are currently remodeling the property and had to go through an extensive permitting process because of the Deschutes’ designation as part of the National Wild and Scenic Rivers System. This is a paragraph from the Bureau of Land Management website: The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection. AID’s plan is to replace the existing flume with an above-ground pipe system and then bury the whole thing with fill dirt that will be trucked in to cover the new raised pipe. The existing earthen dam will extend several feet above the existing level of the flume and become a dirt road. There seems to be no consideration given to the effect of years’ of construction on the aesthetic appearance of the final product (the giant earthen dam), the impacts of this construction on trees within and adjacent to, the 50 foot easement, the impacts on homeowners that live along the flume and canal system, or the effects of the construction on the health of the Deschutes River itself. This earthen dam will create a huge eyesore that will be visible from the river and from the Deschutes River trail on the opposite side of the river. There is no mention of how AID will prevent the fill dirt from eroding into the Deschutes itself, as the flume is cut into the hillside along steep portions of the river rim. We currently have a small cluster of mature Ponderosa pines and subalpine fir between our house and the flume (within the 50 foot easement) that shade our house from mid- to late afternoon sun. Should these trees die, our home will be much more exposed to the afternoon sun and keeping the house cool in the summer will be much more challenging. The loss of these trees would also significantly affect the view from our house for many years to come. Not to mention the effect of having a raised dirt road for AID traffic in our backyard, immediately behind our house. The flume was built in the early 1900s, making it an important part of Central Oregon history. Removing it and replacing it with a raised dirt road will adversely affect homeowner property values and create a disruptive construction site that will likely be active for several months (for a given segment) or even years.</p>	<p>The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.</p>
245.02	PUB	<p>AID has quietly tried to push this plan through, without adequate notification to the residents of Bend that will be affected by this project. How is it that I have to go through an extensive permitting process for my home remodel and have limitations on any construction within 50 feet of the river rim when AID can push through a plan, without any environmental review, that will result in significant disruption of</p>	<p>Please see the response to Comment ID 39.11 regarding an extension of the comment period. Please see the response to Comment ID 94.02 regarding the need for an EIS.</p>

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		<p>the terrain, visible to all of those enjoying this scenic and wild waterway? It is hard to imagine that AID could complete construction of a buried pipe within the Wild and Scenic River system without significant damage to the environment and the mature trees that line the canal and current access road. I am requesting that the period for public comment be extended to allow all interested parties to evaluate the project, viable options and costs of each, as well as to have an environmental impact study to assess all of the possible and likely effects of AID's ill-considered plans. All available options for water preservation, including lining the canal, should be considered and evaluated by affected citizens and environmental groups. Even beyond the flume, in the portions of canal that work their way through Deschutes River Woods toward Eastern Bend, burying the canal will adversely affect all animal life and nearby trees that have become accustomed to the canals as a water source. Anyone living along the canal will be affected by the construction, loss of trees near the existing canal, and the change in aesthetics that will result from this poorly thought out plan.</p>	
246.01	GEN	<p>Water is our most precious resource so PLEASE do all you can to help conserve it by installing enclosed piping wherever possible.</p>	<p>Thank you for your comment.</p>
247.01	PUB	<p>The 151 members of Sunriver Anglers (SRA) primarily reside along or near the Upper Deschutes River above Benham Falls. All have vested interests in both a healthier Upper Deschutes and more certainty of supply for junior rights holder farmers in North Unit Irrigation District (NUID). In addition to shared fishing experiences, community education, and recruitment of the next generation of angler-advocates, conservation is a key component of our mission. Consistent with that, Sunriver Anglers have organized and hosted several Round Table Discussions and Q&As with key water users, agencies, and NGOs about the Upper Deschutes Habitat Conservation Plan (HCP), water conservation, flow restoration, and water quality. SRA has also had a seat at the table and actively participated in the Upper Deschutes Basin Study Work Group (BSWG) and is a charter member of the Deschutes Basin Water Collaborative (DBWC) and its Technical Committee. Per our comments below, Sunriver Anglers cannot support either approval or funding of the Arnold Irrigation District (AID) draft Modernization Plan and Environmental Assessment (EA). In order to insure that the public benefit is commensurate with the approximately \$42M Federal and State project funding, we urge the the Natural Resource Conservation Service (NRCS) to protect the public interest by (1) sending both draft documents back to AID for project and data clarification, and (2) re-opening a 90 day public comment period once the revised drafts drafts are submitted and reviewed.</p>	<p>Please see the response to Comment ID 39.11 regarding an extension of the comment period. The Final Plan-EA is provided for public review; however, there is not a subsequent public comment period per the Watershed Program Manual and NRCS Environmental Compliance Handbook.</p>
247.02	WAT	<p>Specifically: 1. The draft plan could harm North Unit Irrigation District (NUID). NUID currently diverts 40 cfs of water that AID cannot divert due to capacity limitations. Because of that, AID asserts that it will voluntarily reduce its 150 cfs water right to 120 cfs. That leaves 10 cfs that is currently available to NUID farmers unaccounted for and potentially lost to NUID.</p>	<p>See updated text in Section 6.8.2.1 of the Plan-EA regarding the proposed projects effects on NUID as well as AID's beginning diversion rate.</p>

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247.03	WAT	2. The draft plan leaves open the possibility that AID could account for conserved water by labeling some of the above 40 cfs as “conserved water”. That would simply be “paper” water with no additional real “wet” water left permanently protected in-stream. That’s not out of the realm of possibility given the history of “paper water” transactions in the basin. Under this scenario, NUID would be harmed by no longer having access to the full 40 cfs referenced above. AID’s next draft plan must specify that real, “wet” water shall be conserved permanently in-stream above the 40 cfs that is currently bypassed and available for NUID diversion. Ideally, AID would reduce its right by the 40 cfs.	Please see updated language in Section 6.8.2.1 of the Plan-EA related to water rights and the protection of water instream.
247.04	WAT	3. All conserved water paid for with public \$\$ must be conserved “permanently in-stream” to provide Upper Deschutes, non-irrigation season, Winter flows from Wickiup Reservoir. The “perpetual leasing” described by both AID and NUID is not “permanent”. If it were, there’d be no problem entering into a legally binding, permanent in-stream transfer agreement. Also, AID’s draft plan relies on agreements with NUID to put conserved Winter water permanently in-stream. What assurances are there that NUID will sign off on those inter-district agreements? What would those agreements look like? Would they be contractual agreements to be adjudicated by the courts? Would they be binding, statutory agreements with the State of Oregon or a Public Trust? How would those agreements be enforced? It seems obvious that approval and funding of the AID drafts should be withheld until a repeatable, legal pathway to truly permanent in-stream protection is agreed to by all stakeholders and codified in rules or statute.	Please see updated language in Section 6.8.2.1 of the Plan-EA related to the protection of water instream. Please see the response to Comment ID 207.03 related to the District's obligation to ensure that the instream benefits described in Section 6.8.2 in the Plan-EA are realized following completion of the proposed project.
247.05	WAT	4. In the face of climate change, it’s possible that NUID will suffer years without enough storage to meet water transfer/ Winter flow agreements. What provisions are available to provide the permanent in-stream flows in those years? Does AID have Crane Prairie or Wickiup storage rights that could be held as “collateral” to supplement NUID shortfalls? Hopefully, leasing, temporary transfers, and water marketing programs could provide security for Winter flows in the future, but those aren’t the guaranteed permanent flows required by the public interest. The public is funding supply certainty for IDs in exchange for permanent Winter flows, period.	Hydrologic modeling projected the frequency and magnitude of AID and NUID's water supply following the implementation of the HCP (AID et al. 2020) and these projections were used for analyses in the Plan-EA. See Section 6.8.2.1 of the Plan-EA for updated language. The Plan-EA used relevant, available information to evaluate the potential effects of the proposed project on water resources. At the time of the Plan-EA development, the tools available to evaluate the effects of climate change on water resources do not accurately model the complex surface and groundwater interactions present in the Deschutes Basin. Given these limitations, the Plan-EA did not project whether, how often, or to what extent climate change would affect water resources in the Deschutes River. AID, NUID, and OWRD would work together throughout the

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			lifetime of the proposed project to ensure that the terms of the agreement are met.
247.06	WAT	5. AID also asserts the the ability to divert up to 120 cfs “for water rights administration”. The historical AID peak diversions, corrected for canal improvements, is 98 cfs, and not all diversions are “peak” flows. The additional 22 cfs appears to give AID a way to increase diversions above their historical use over the last 15 years, or to bring additional acreage under irrigation. Is that even allowed under Oregon water law? Given the dire water situation in the basin as a whole, it seems inappropriate at best, and the public certainly should not be paying for or enabling increased diversions. Also, when the AID improvements are complete, 32.5 cfs of water will have been conserved. Subtracting that from the 98 cfs historical peak diversion, AID will only need to divert 65.5 cfs to deliver the current quantity of water to patrons. AID’s modernization plan should be based on that being the peak diversion for a fully pressurized system. This is not addressed in AID’s drafts. In summary, the AID draft modernization plan lacks the plan detail and supporting data to warrant approval and funding at this time. We urge NRCs to return the drafts to AID for further clarification, and to require a 90 day public comment period re those clarified drafts.	Please see Section 6.8.2.1 of the Plan-EA for an updated discussion of water rights, historic diversion rates, and pre-project operational maximum diversion rates. Neither the District nor its patrons will apply for new water rights to irrigate new lands as part of the project. Regarding an extension of the public comment period, please see the response to Comment ID 39.11.
248.01	ALT	Do not allow the pipe project to be approved. There is a better alternative that is a small fraction of the cost and does not have a negative impact on our environment and ecosystem. Please use a liner and abandon the pipe folly. We cannot afford to ruin our environment and the reason Bend is so special	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.
249.01	GEN	Thank you so much for your time and effort in preparing the Environmental Assessment (EA) for the Arnold Irrigation District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment. I am not paid and only represent myself and am submitting the following comments on the EA. Replacing open canals with piping is a good idea and one that I support. The Deschutes River needs all the water it can get to remain functional for fish and frogs.	Thank you for your comment.
249.02	CUL	NEPA documents are all about informing the decision maker and disclosing impacts to the public. Because you have not completed your cultural resource surveys, the document is deficient in both informing and disclosing impacts. You should put this project on hold until these surveys have been completed.	Please see the response to Comment ID 49.05.
249.03	PURP	You mention that “people have walked on the elevated section of the flume (C. Wills, personal communication, December 12, 2019). Yet you intend to continue to have an elevated section of the canal such that this public safety issue still remains and should not be included in part of the purpose and need for updating your system.	The flume has been removed from the project. Please see the response to Comment ID 12.01.
249.04	SAFE	Elevated sections of the flume also pose a target for vandals to attack. Please reduce the amount of elevated flume/ piping to make this project more scenic and to reduce vandalism (not to your advantage).	The flume has been removed from the project. Please see the response to Comment ID 12.01.
249.05	VEG	Please retain all large old trees in the right-of way as you place the new piping. These trees are biological legacies that cannot be replace in the short-term. If you cannot do this, then I suggest that you have irreversible and irretrievable impacts that must be discussed in an Environmental Impact Statement.	Please see Section 6.6.2 of the Plan-EA regarding effects on trees. See the response to Comment ID 94.02 regarding the need for an EIS.

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249.06	WAS	You state that: “The flume is located adjacent to a reach of the Deschutes River that is classified as a Scenic River Area (see Section 4.12)” yet actual discussion of effects to the Scenic River from your project is lacking. You do not appear to discuss the Outstanding values that resulted in a Scenic river designation. Effects to the Scenic River are also irreversible and irretrievable, meaning that you need to address them in an Environmental Impact Statement. Thank-you for this opportunity to comment on this Environmental Assessment.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
250.01	CONS	Just to put on the record we are apposed to piping the canal. The destruction of our neighborhood, our roads, heavy loaders, rock trucks, dirt and dust for years. Finished product a dirt and gravel road replacing beautiful water in our canal.	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. The proposed project would be constructed in four phases. Construction of all the phases would be completed in 6 years.
250.02	PROP	My wife and I have lived on the canal for 20 years, we bought this property because of the of the canal feature and all the wildlife that it draws. For years I have invested in my landscape, moving mountains of rock left from original canal dig, now making my property useful.	Thank you for your comment.
250.03	CUL	The flume, canal is historical and should continue to operate as is.	The flume has been removed from the proposed project. Please see the response to Comment ID 12.01.
251.01	GEN	Please register my vote for NO Privatization of our canal watersno pipelines	Thank you for your comment.
252.01	GEN	Live on the canal. I sure don’t want it piped. It’s a disgrace the way people move in here and try to take over and change stuff. I’ve been in Bend my whole life. [ADDRESS]. Have the canal in my backyard. Do not want it piped. We have deer that drink out of it, rabbits, wildlife. What are they going to do?I think it’s a stupid idea, someone’s got their head up their butt .	Please see Section 6.11.2 of the Plan-EA regarding the project's effects on wildlife.
253.01	WAT	Totally opposed to the project. Lived in that area for 50 years. I just don’t think it’s the right move for anybody, for the wildlife, for anything. For what is going to be saved by piping (water), it’s not going to make a difference, it’s not going to fill Wickiup back up by any means.They need to start letting water out of Crane Prairie and going out Wickiup like they used to do instead of keeping Crane Prairie full and draining Wickiup to zero. I have property up at Wickiup, own acreage up there, have gotten used to going w/o water. I would rather have the water left in the canal than have a trickle more water in Wickiup.	The management of Wickiup and Crane Prairie reservoir levels and basin-wide water resource management plans are beyond the scope of this project. Please see Section 2 of the Plan-EA for a discussion of the purpose and need, Section 3 of the Plan-EA for a discussion of the scope of the Plan-EA, and Section 5 for a discussion of alternatives.
254.01	ALT	I am writing to express my opposition to the Arnold Irrigation District’s plan to pipe in the canal. This would impact MANY along this stretch of the water. Not only is it costly and no alternatives have been presented, but the pipe they are proposing to use contains nonylphenol which is toxic to aquatic life and would be also use to water farm animals, farms and crops, etc. The impact on the health of this region has not been considered or studied. The EA has failed to look at all option, including lining the canal which is far less expensive than what they are proposing.	Please see Appendix D.2 and Section 5.2 in the Plan-EA for a discussion of the alternatives that were considered, which includes canal lining. A wide variety of materials are available for piping. At the time of project implementation, the specific

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			<p>pipng material would be selected by the NRC S State Conservationist and the sponsoring local organization based on a number of considerations. See Section 3.3 of Appendix D.3 of the Plan-EA for more discussion of pipe material.</p>
254.02	WILD	<p>In addition, the canal has been here for 115 years with no problems for MANY years and is a source of seasonal water for wildlife including bald eagles, golden eagles, and a multitude of other animals in this region.</p>	<p>Thank you for your comment. Please see Section 6.11 of the Plan-EA for information about the effects on wildlife.</p>
254.03	CUL	<p>Another area of concern is the historic flume being covered up — how is this even okay?</p>	<p>The flume has been removed from the proposed project. Please see the response to Comment ID 12.01.</p>
254.04	GEN	<p>So many things to look at —cost (exorbitant, in my opinion), loss of wildlife and vegetation, toxic piping used, massive decline in property values, trouble with existing wells and lastly, AID is partnered with a \$3.5 billion dollar California company that is hellbent on installing their toxic piping. If we haven't noticed by now, we should NOT be partnering with California or their ways. Their State is in a free fall decline, and why would we partner with a company that is not owned and operated by an Oregonian company who values the land and this state. We do not have the same principles or values as California or their companies.</p>	<p>Please see the following sections in the Plan-EA for discussions of cost (Section 8.3 in the Plan-EA and D.3 of the appendix), wildlife (Section 6.11.2), vegetation (Section 6.6.2), and wells (Section 6.8.2.3). Please see the response to Comment ID 218.13 regarding property values. The Plan-EA has been prepared on behalf of the Natural Resources Conservation Service by Farmers Conservation Alliance, a 501(c)(3) based in Hood River, Oregon.</p>
254.05	FIRE	<p>Lastly, with the ongoing issue of the homeless backing many properties in SE Bend — the issue of fires is a big one. The lack of water will make this area more vulnerable, and since no agency will deal with the hundreds of people camping past the 14 day rule in our national forests (illegally doing campfires, large amounts of car & RV fires, etc.) taking away this water from the region is only adding to the problem. Please reconsider this project which will only harm our area. The damage it will do far outweighs the benefit.</p>	<p>Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.</p>
255.01	MET H	<p>I am writing to comment on the Arnold Irrigation District's Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment (Draft EA). As a homeowner living adjacent to the existing flume, I am in support of piping the Main Line canal in order to reduce water loss. However, I am concerned about the inadequacy of the analysis regarding the disturbance and visual effects of the piping alternative, especially the proposal to bury the majority of pipe proposed to replace the current flume within the State Scenic Corridor of the Deschutes River. The inadequacies of the analysis are enough to require an Environmental Impact Statement and/or the development and analysis of a less intrusive alternative for the flume section of the Main Line canal. The Draft EA has a glaring lack of details</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>

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		<p>associated with burying approximately 4,945 feet of new pipe at the same elevation as the existing flume. The document incorrectly characterizes the flume by stating that after the first 450 feet “the remaining sections of flume sit on the ground surface” (Draft EA, p. 25). While closer to the ground than the first 450 feet, none of the flume metal along this stretch actually sits on the ground, ranging from a few inches to multiple feet above ground. The top of the flume is at least six feet above ground throughout this stretch.</p>	
255.02	SYS	<p>Along with this mischaracterization, the analysis fails to include an estimate of the amount and source of fill proposed to bury nearly 5,000 feet of new pipe with “a minimum of three to four feet of engineered backfill” to support a new maintenance road (Draft EA p. 47). There is no detailed schematic for the final profile of the maintenance road and support berm and the public is left to assume that the area would be “restored to near-prior contours” (Draft EA, p. 64), which is far less detail than needed to adequately address the short and long term effects of the proposed construction. The public is left to assume that the existing maintenance road would likely be used as a base to support the massive amount of fill needed to bury the pipe and build up a new maintenance road. How much fill would be needed? Although the document fails to include an actual elevation of the new road surface, it can be surmised from the proposed 4 or 5 foot pipe diameters and the stated depth of the new maintenance road fill that this could be up to six feet above the current height of the flume. Rough calculations to bury the pipe and create a new road on top (5,000 feet long X 10 feet high X 20 feet wide at the base) approximates 1,000,000 ft³ of material, which equals 37,000 yd³ or up to 2,500 dump truck loads of 15 yd³ each. Given this approximation, the document inadequately describes the extent of short term disturbance effects during construction, saying only that “construction would be done during the non-irrigation season and primarily on a weekday. . .therefore minimizing temporary effects” (Draft EA, p. 64).</p>	<p>The text that you refer to from the Plan-EA on page 47 has been removed since the flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
255.03	WILD	<p>The document also inadequately addresses the long-term visual effects of the buried pipeline on homeowners above the constructed berm and new maintenance road. There is no analysis of the effects of the elevated berm and maintenance road from private property above the project. As proposed, the berm required to bury the pipeline and support a new maintenance road would likely be up to six feet higher and ten to fifteen feet wider than the existing flume and is likely to impede the view of the river from most of the properties adjacent to the flume, potentially affecting property values. The analysis also fails to acknowledge that the buried pipeline and new maintenance road would also increase visual and audible disturbance to homeowners in the long-term from maintenance vehicles driving some fifteen to twenty feet higher up the slope than on the existing maintenance road. Although the analysis minimally addresses the visual effects of these actions from the viewpoint of river users (Draft EA, p. 65), it fails to acknowledge that the newly constructed horizontal lines of the berm would be above the existing lines of the flume and more readily visible from the river and river trail. It also fails to acknowledge that the new berm would create a larger non-forested area within a naturally forested reach of a designated State Scenic</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on Wild and Scenic Rivers.</p>

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		Waterway that would affect the special attributes identified under Section 12A of the Wild and Scenic Rivers Act.	
255.04	ALT	The Draft EA also fails to consider and analyze a valid range of alternatives to the proposed action, dismissing lining canals as too expensive and short term while neglecting to include an unburied pipe alternative for the entirety of the flume portion of the project. Although the piping alternative would remove the first 450 feet of the existing flume and replace it with an elevated pipeline similar to that pictured in the document (Draft EA, Figure 6-3, p. 65), the Draft EA misleadingly represents the concept of a buried pipeline for the flume section by only including pictures of flat areas of the Tumalo Irrigation District’s Feed Canals after piping (Draft EA, Figures 6-1 and 6-2, p. 62). An alternative in which the entirety of the pipe replacing the existing flume is left exposed and elevated like that proposed for the first 450 feet should be included in the analysis so that costs and disturbance effects can be compared to the proposed action.	Please see Appendix D.2 of the Plan-EA for a description of how potential alternatives were analyzed, selected for further evaluation in the Plan-EA, or eliminated from further evaluation in the Plan-EA. The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
255.05	RIGHT	The document also fails to reveal the ownership of the land underneath the flume, claiming only that Arnold Irrigation District has a Right of Way (ROW) with the US Forest Service for the first 0.3 miles through the Newberry National Monument (Draft EA, p. 20) and an ROW that is 60 feet from the centerline on the westerly side and 40 feet on the easterly side for the remaining 0.7 miles under the Carey Act. The ownership of the land underneath the entirety of the flume by AID, or lack thereof, should be confirmed and surveyed before any actions take place.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see Section 4.2.1 of the Plan-EA regarding the District’s easements and ROW.
255.06	WAS	The analysis also inadequately addresses the responsibilities of AID and the project to meet the Outstandingly Remarkable Values of a designated State Scenic Waterway, saying only that “due to the similar design of the new aerial pipe to the existing flume, the unobtrusive appearance of the buried sections (emphasis added), and because the maintenance road would be set back from the river at a higher elevation and partially screened by vegetation, the visual effect along the flume section of the project is considered minor. (Draft EA p. 65). Although the document says that the “project would meet the Wild and Scenic Land Management Rules as described in OAR 736-40-035 and OAR 736-40-040(1)(b)(B)” (Draft EA p. 79) and concludes that the “project would have no effect on the Wild and Scenic or State Scenic designations” (Draft EA p. 79), it fails to provide evidence that the new construction of an artificial berm with an elevated maintenance road would meet the standards and guidelines within the Wild and Scenic Management Plan for the Outstandingly Remarkable values identified for this section of the river corridor.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on Wild and Scenic Rivers.
255.07	CUL	Finally, the document references the possibility that the “District’s conveyance system, . . . is a possible historic property.” (Draft EA p. 83) but makes no assessment of the historical status of the flume. It says only that “cumulative impacts. . . by future actions such as new piping would be analyzed in light of the conveyance system NRHP eligibility status.” (Draft EA p. 83). In this case, the new piping is part of the piping alternative being analyzed and should be addressed in the direct effects section, which should	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Sections 4.1 and 6.1.2 of the Plan-EA for updated language regarding cultural resources.

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		include the required assessment process to determine the eligibility of the flume for the National Register of Historic Places as authorized under the Historic Preservation act of 1966. This process should be completed before the project is approved under the National Environmental Policy Act.	
255.08	ALT	In summary, the analysis of AID’s Infrastructure Modernization Project is inadequate under the guise of an Environmental Analysis and should be re-issued as an Environmental Impact Statement to clearly display the effects of the project. The Draft EA fails to provide an adequate range of design alternatives; fails to adequately analyze the effects of burying 4,945 feet of buried pipe replacing the flume; fails to show how the project meets the intent of the Scenic Waterway classification description in OAR 736-40-040(1)(b)(B); and neglects to include and analyze the option of an unburied pipe for the entirety of the flume. At a minimum, an additional alternative considering an unburied pipeline replacement for the entirety of the flume section should be added and analyzed for this project. This could include leaving the existing structural components of the flume, either minus the existing metal flume “canal” or with the new pipe nested within the metal flume, if the flume is determined to be eligible for the National Register of Historic Places. It could also include the removal of the entire flume infrastructure if it is determined not eligible for the NRHP and replacing it with a supported pipe as is proposed for the first 450 feet.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Regarding the need for an EIS, please see the response to Comment ID 94.02.
256.01	WAT	Please consider the effects of the replacing water to our aquifer. The loss of water to our wildlife the negative effects to the home owners on the canal.	Please see Section 6.8.2.3 in the Plan-EA regarding effects on groundwater.
257.01	BNFT	I think having the main canal piped is a great idea & should have been done years ago. We paid out of your pocket to install 4" speed seal pipeing, about 1/4 mile years ago on the M/M lateral. I would request that instead of the district pocketing the water assessments & not being able to deliver water, those funds should be put in its entirety towards our portion of the costs to pipe the main canal. After all of your not delivering water your operation expenses should be very low & man power down.	District assessments fund operation and maintenance of the irrigation infrastructure, including staff, equipment, fuel, materials, small piping projects on occasion, improvements to the system, and other activities. Expenses related to District operation and maintenance do not go away in low-water years.
258.01	PUB	<p>We have just recently purchased property immediately adjacent to the Arnold Irrigation district flume above the Deschutes River and are deeply concerned with the scope and impact of this project. Furthermore, we, nor the previous owner it would appear, were ever formally notified or fully informed as to the scope of this project prior to the sale of the property. In fact, notification of impacted landowners along the Arnold Flume area appears to have been spotty to nonexistent over most of the last two years. Residents we have talked to have either NOT been notified or have not been fully informed of the scope of this project. A few received post cards only days before the virtual meeting back in June with little time to act and review.</p> <p>Clearly, the public needs more time to consider what is a very complex proposal with multiple impacts. We strongly encourage the Arnold Irrigation District to extend the comment period again, to at least</p>	Please see the responses to Comment IDs 39.01 and 39.11.

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		August 28, 2021 or beyond, but we are submitting these written comments now to meet the current deadline.	
258.02	RES	We find it nearly impossible that the U.S. Department of Agriculture’s Natural Resource Conservation Service (NRCS) could possibly issue a Finding of No Significant Impact (FONSI) for the project as it is stated today. There are clearly impacts cited that are either downplayed, not stated at all, or glossed over. The science, engineering, hydrology assessments and specific details in many areas in the Environmental Assessment (EA) are either missing or inadequate. The mere location of this project alone—particularly the section along the Wild and Scenic Deschutes River - should play a far more critical role in determining environmental impact. The EA is deficient in this regard.	The flume has been removed from the proposed action; therefore, the project area does not overlap with the Wild and Scenic Area. Please see the response to Comment ID 12.01. The effects sections of the Plan-EA have been updated accordingly.
258.03	GEN	Ironically, the Watershed Protection and Flood Prevention program, administered by NRCS and authorized by Public Law 83-566, is designed to aid watershed projects “that help solve natural resource and related economic problems in a specific watershed.” While we understand the need to protect the water resource and deliver water to Arnold Irrigation District (AID) patrons in an efficient way, we find many aspects of the EA to be counter-productive to the goal of aiding all aspects and values of the watershed.	Thank you for your comment.
258.04	PUB	Clearly, this project - especially the proposed single solution for the historic flume - demands further research and more alternatives. This project needs more public engagement, a full Environmental Impact Statement (EIS), and new, reasonable alternatives. At a minimum, the flume should be removed for consideration until and unless a full EIS can be conducted that fully analyzes impacts and presents new alternatives for the highly sensitive location along the Deschutes River.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See the response to Comment ID 94.02 regarding the need for an EIS. Please see the response to Comment ID 1.01 describing the public outreach that occurred. Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered.
258.05	PUB	To residents and visitors of Central Oregon, the conservation of the Deschutes River including its outstanding scenic, recreational, and cultural values, is of paramount importance. It has come to represent the remarkable beauty of the region’s entire ecosystem. We do not want this project, the district and its patrons, to be known as the force that destroyed some of these unique values for the broader community. Our comments and concerns span several areas of the EA. These are generally centered around but are not exclusive to: watershed protection, erosion and sediment control, water quality, fish and wildlife habitat, scenic impact, cultural resources, property values, overall effects, and more. Bottom line: This project needs a full EIS. The flume alternatives are inadequate, the public needs more time for input and discussion.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See the response to Comment ID 94.02 regarding the need for an EIS.
258.06	GEN	1. The EAs is far too limited in its scope. This project, especially the flume and the area immediately parallel to the Deschutes River demands a more holistic, in depth approach to potential impacts. This location alone demands that an EIS must be completed.	The flume has been removed from the proposed action. Please see the response to Comment

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		a. The EA falls far below the standard that should be required particularly in the area along the Deschutes River.	ID 12.01. See the response to Comment ID 94.02 regarding the need for an EIS.
258.07	RES	2. An EIS is the only way to consider effects and impacts in every section of the analysis, including surface and ground water impacts, air quality, infrastructure, wildlife, and much more. These are given only passing reference in the EA, almost as if pulled from another template on another project.	Please see the response to Comment ID 94.02.
258.08	PUB	3. The AID has not been fully transparent with the public regarding the project; fast tracking meetings, providing short notice or no notice at all, and not fully identifying potential impacts to the watershed or the risks presented by the project to the overall conservation values of the region.	Please see the response to Comment ID 1.01 regarding public participation.
258.09	CUL	4. The EA fails to assess the potential historical significance of the Arnold Flume itself. There is only passing reference to a future 'could consult' with the State Historical Preservation Office at some future date. An assessment of the flume's eligibility for listing on the National Register should be completed before making a final determination on this section.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Sections 4.1 and 6.1.2 of the Plan-EA for updated language regarding cultural resources.
258.10	WAS	5. The EA fails to assess the effects and full impact of the proposal on the designated Scenic River Area along Deschutes River, especially from the extensive construction project identified in the alternatives, along with all other existing and reasonably foreseeable impacts.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on Wild and Scenic Rivers.
258.11	ALT	6. The Arnold flume lies within a unique geographical area and should be considered separately from the rest of the project.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
258.12	CONS	7. Due to the multi-year phasing, as stated in the EA, specific details associated with the engineering design and construction activities required to implement the proposed action are not identified. Specifically, around the flume: without engineering drawings or schematics for how this above ground massive 'buried' pipe structure with a road on top of it will look from either side of the river, and how far it will encroach into whatever ROW may exist, it is impossible to make an accurate assessment of the full impact here. Clearly it is a significant construction effort that demands further analysis. Critical questions need to be addressed in a full EIS. What will the impact be on the landscape, the river? How specifically, lot by lot, will it impact bordering property owners and property values?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 94.02 regarding the need for an EIS. Please see the response to Comment ID 218.13 regarding the project's effects on property value.
258.13	WAS	8. The millions of tons of imported "engineered fill" in the stated flume alternative would be a significant eyesore from both sides of the river, including as seen from the world class Deschutes River Trail and recreation areas in the Deschutes National Forest on the west side. Aside from a very clear impact to the scenic natural beauty of the Wild and Scenic River, it has potential to cause significant and permanent environmental impact on water quality, wildlife, and vegetation.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

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258.14	WAS	9. The EA simply does not adequately address the overall impact to one of Oregon’s quintessential scenic waterways.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on Wild and Scenic Rivers.
258.15	ALT	10. The EA fails to consider, and appears to have dismissed, a reasonable range of alternatives that might accomplish the stated purpose and need of the proposed action. Nowhere does the EA address the potential for alternatives to the flume, including just lining that section, replacing it with a metal flume, using Geo-form linings, heat and weather resistant rubber polymer linings (EPDM), or burying pipe at the existing grade of the service road today. This section as stated is inadequate and a full range of alternatives have not been presented.	Please see Appendix D.2 of the Plan-EA for a description of how potential alternatives were analyzed, selected for further evaluation in the Plan-EA, or eliminated from further evaluation in the Plan-EA. The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
258.16	PUB	11. Overall, this is a very complex and detailed proposal that the average consumer, homeowner, farmer, even some land use experts may find difficult to decipher and understand. The district has simply not given enough time for a full review, fully explored the environmental impacts along the river section, and have held only one recent meeting on short notice. They have not adequately explained the project to the impacted residents or the surrounding community. This is unacceptable for a project of this scope. We urge you to stop, go back and conduct a thorough review, and engage the public in a more meaningful way as required by law, and proceed with a full EIS. Or default to no action on the flume until a better solution can be identified.	Please see the response to Comment ID 94.02 regarding the need for an EIS. Please see the response to Comment ID 39.11 regarding the extension of the public comment period.
258.17	RIGHT	12. Most of the land adjacent to the project area is privately owned. The district claims the right of way extends 50 feet on each side of the canal but acknowledges there have been changes over the years to make easements more realistic. And yet, it is entirely unclear what these changes are, how it relates to the flume area, and what the facts are given the foundational rights stated under Carey Desert Land Act were put in place nearly 130 years ago. AID has not provided the specific historic and legal justifications for the claimed 50 feet ROW beyond citing the Carey Act. More detail and attention need to be given to ROW including changes. Some areas of the canal today are 25 foot ROW from the high water mark. We question the district’s claim of 50 feet on each side in perpetuity for the entire length until further legal justification is provided. Where is the legal basis/ documentation?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. For information about the Carey Act, please see the response to Comment ID 39.02. For discussion about individual easement documents, please see the response to Comment ID 39.18.
258.18	PROP	13. The EA acknowledges that there will be a loss of property value if the canal is piped, and further states that the amount was not quantifiable for a lack of property value information. Have you heard of the Internet? The Deschutes County Tax Assessor’s office? This is simply not believable, or accurate. Further evidence of the attempt to gloss over critical details, fast track this with limited public input, and the overall inadequacy of this EA.	Please see the response to Comment ID 218.13.

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258.19	PUB	14. We question whether AID has adequately ensured that all interested or affected parties have been notified during this project. While some environmental and river advocacy groups are listed as having received the EA, other groups appear to have been left off the list. Why?	The Draft Plan-EA was available at this website: oregonwatershedplans.org/arnold-id beginning June 8, 2021. The Plan-EA remained available at that website throughout the public comment period and is still available there. The public comment period was also extended to July 23, 2021. Notice of the Plan-EA was distributed to agencies and organizations with known interest in water issues in Central Oregon. Please see the response to Comment ID 39.09 about notification that occurred.
258.20	GEN	15. The role of the Farmers Conservation Alliance and it's subcontractor is a bit unclear here. What is the nature of the relationship with AID, and/or the vested interest of the FCA in this project over the long term? No contract details are provided. The EA appears to be almost like a template, very similar to other EA's for local irrigation districts that the FCA has participated in.	FCA was contracted by NRCS to develop this Plan-EA. FCA subcontracted with Highland Economics to support the development of the National Economic Efficiency Analysis. Please see the response to Comment ID 240.04 for additional discussion. Federal guidance (e.g., the National Watershed Program Manual and Handbook) determines the structure of and sections in each Watershed Plan-EA developed under PL 83-566.
258.21	ALT	16. Lastly, the flume, while aging, does not appear to be leaking significant amounts of water. Why not remove it from the project and allow for further study and consideration of alternatives with less impact?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
258.22	ALT	The Arnold Flume While we understand the need to reduce water loss along the canal, we are very concerned about the replacement plan as stated in the EA for the flume section. This section is light on details, and the solution potentially damaging to the steep bank along the river, impacting water flows, scenic values, trees, property values, and more. Again, we strongly urge the district to reconsider the treatment and plan for this flume section.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
258.23	CUL	The EA talks about the aging infrastructure of the canal, how its than 100 years old, etc, but this is misleading and inaccurate. A major reconstruction of the Flume occurred in the early 1950's when the original wood flume was replaced with the existing semi-circular steel flume. Additional repair work on the major reconstruction of the Flume in 1948-49 was done in 1953.	Thank you for the information. The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Sections 4.1 and 6.1.2 of the Plan-EA for updated language regarding cultural resources.

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258.24	CUL	<p>Historical Significance The flume itself and indeed the formation of the Arnold Canal District itself has historical significance to the Deschutes River Basin and Central Oregon. The Flume is a unique structure and artifact that must be studied and assessed for eligibility of listing on the National Register. We note a passing reference that AID “would consult” in the future, in an undefined timeframe and manner, with the Oregon State Historical Preservation Office (SHPO). Why hasn’t this already been done? What assurances do we have that anything other than a pro forma check will be made? Why not do a complete assessment now? It is important to note that The Deschutes National Forest even highlights the history of the canal from a viewpoint along the Deschutes River Trail that has the flume in full view. Its doubtful such treatment and interest would apply to a massive pipe and bermed road/ dam like project that would be nothing short of a visual eyesore from that same location, along that same trail, and visible from homes along both sides of the river. The district has clearly failed to invest and adequately maintain the flume despite its age. Why not? The EA is again inadequate when it comes to exploring restoration and/ or lining alternatives that could enhance the scenic value and historical significance of the area. There is nothing in the EA that addresses lining alternatives in the flume, only the existing open canal. Why not think about saving the old flume in place, and bury the new pipe under the existing road? It would maintain the scenic nature of the area and maintain an important part of the canal’s history and role in the region? Think of the potential stories it would tell, all centered around the importance of water, farmers, the canal district itself, and water delivery in the region over more than 100 years.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Sections 4.1 and 6.1.2 of the Plan-EA for updated language regarding cultural resources.</p>
258.25	WILD	<p>4.11 Wildlife Resources The EA notes that various species are “tolerant to disturbance”, but that should not be a license to ignore the impacts. There may not be official ‘migratory’ species but there are steady and regular routes used by multiple species in the impacted area that are not adequately addressed. Ironically, this section notes that ‘early coordination’ w a USFWS biologist dates to November of 2019, long before residents in the impacted area seem to have been made aware of this project or any consults with USFWS in any meaningful or open way.</p>	<p>Language has been added in Section 4.11.2 of the Plan-EA clarifying that avian species, some of which are protected under the Migratory Bird Treaty Act (MBTA) or the Bald and Golden Eagle Protection Act (BGEPA), have the potential to occur in the project area. Appendix E.6, Table E-15 in the Plan-EA, provides a list of those avian species. These lists have been generated through conversation with ODFW, USFWS, and online resources. The effects on these species are described in Section 6.11.2 in the Plan-EA. The NEPA process for Arnold’s Watershed Plan-EA began in the spring of 2019. A scoping meeting occurred on April 17, 2019, held at Elk Meadow Elementary School in Bend (see Section 3.2). The public had an opportunity to comment on the scoping document from April 3, 2019 through May 15, 2019. Early coordination with</p>

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			USFWS biologists occurred after the NEPA process had begun. Coordination was done in accordance with NWPM 501.0(C), Preparation of the Watershed Project Plan, where "NRCS may coordinate input from other agencies and groups in the formulation of the plan" and Public Law 83-566 Section 12 (see NWPM 502.21(A)(5)).
258.26	WAS	<p>4.12 Wild and Scenic Rivers The overall goals of the Wild and Scenic River Management Plans (USDA 1996 and U.S Department of Interior 1992) are to maintain the current character of the river area and provide long-term protection and enhancement of its ORVs.</p> <p>"Maintain the current character of the river area?" We certainly hope so. A large earthen dam and a new road several feet above the existing flume are clearly counter these goals and any such grandiose scheme must be studied further for effects and impacts. This is an area of the river that is still largely primitive, with shorelines largely undeveloped and inaccessible by roads open to the public. Please do not ruin it.</p>	The flume has been removed from the proposed action; please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Deschutes Wild and Scenic River.
258.27	REC	<p>5.10 Recreation The EA states that "There are very few recreational opportunities on and adjacent to AID facilities." This is misleading. The Arnold Diversion and flume are clearly visible to recreationists floating, paddling, hiking and/or swimming in and around the Deschutes River and hiking on the Deschutes River Trail. The Deschutes National Forest even highlights the flume's history in an interpretive area along the Deschutes River Trail which is an outstanding resource for local citizens and visitors year around. The flume is an important part of the landscape, and the history of the region.</p>	Please see the response to Comment ID 258.26.
258.28	ALT	<p>5.3.2 Piping Alternative (Future with Federal Investment) <i>"The first 450 feet of the existing aerial flume below the district's diversion would be removed and replaced by pipe supports that would hold an elevated pipe. The new supports and pipe would be approximately the same height as the existing aerial flume. The remaining 4,945 feet of flume would be removed, and a pipe would be buried. Because this section of pipe must be level with the aerial section, the pipe would be buried above the existing landscape elevation and would hug the hillside. The buried pipe would be covered with a minimum of 3 to 4 feet of engineered backfill. A new maintenance road would be built on top of the buried pipe."</i> Again, this is basically building a large dam, and a new road, inside the federally protected Wild and Scenic River area which is also designated as a State Scenic Waterway. How can that be possible? How can an EA possibly be sufficient for a project of this scope and scale? Why not repair and try and upgrade the flume, buy another 10 years at least while you work with the community on a longer-term solution? Why not bury the whole thing? A raised pipe elevation above the existing landscape and covered with additional fill would not only be an eyesore in this scenic section of the river, but it would also significantly impact property values in this</p>	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding the Wild and Scenic River designation.

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		<p>area. There is little to no discussion of alternatives including full burial of the new pipe under the existing grade of the existing service road. Why can't the district explore a less impactful option here? Potentially even more cost effective one. We do not know because there is no analysis, no attempt to explore multiple alternatives in the EA. Why can't the flume be removed, a ditch constructed, and pipe buried below the existing grade? Or elevate the pipe for the first 450 then drop down to below existing grade?</p>	
258.29	RES	<p><i>"Construction of the Piping Alternative would include mobilization and staging of construction equipment, delivery of pipe to construction areas, excavation of trenches, construction of supports along 450 feet of the existing aerial flume, fusing of pipelines, placement of pipe, compaction of backfill, and restoration and reseedling of the disturbed areas. Pipe installation would require storage areas for pipe, construction equipment, and other materials. Areas that have been previously disturbed and are accessible through existing access routes would be used when possible."</i> This is incredibly invasive to the native landscape in the river corridor. Yet there are no clearly stated or identified tree removal plans or mitigation (only that there were no other alternatives which is vague and undefined), no treatment of potential impacts from sediment and construction debris along the steep bank and in the river, no clear plan for where the construction materials would be staged, no traffic volume studies, impact to local roads from heavy trucks for multiple years, and more. This alternative should be dead on arrival. At a minimum, further study and a full Environmental Impact Statement should be completed to address this and so many other deficiencies in the EA.</p>	<p>The flume has been removed from the proposed action; please see the response to Comment ID 12.01. See the response to Comment ID 94.02 regarding the need for an EIS.</p>
258.30	CUL	<p>6.1.1 Cultural Resources: No Action (Future without Federal Investment) <i>The District's ongoing O&M activities are not expected to affect historic or archaeological resources because these activities are expected to occur in previously disturbed areas</i> Given the flume's proximity to the river, lava island, and known fishing areas and cultural sites, we find this to be inadequate and lacking in detail.</p>	<p>The flume has been removed from the proposed action; please see the response to Comment ID 12.01. See Sections 4.1 and 6.1.2 of the Plan-EA for updated language regarding cultural resources.</p>
258.31	PUB	<p>Public Announcements We note that not one single step here includes any direct outreach to affected property owners. Clearly, these listed items in the EA represent a check the box exercise that most likely meets the requirements for notification but is wholly insufficient for a project of this scope and scale, particularly inside the Wild and Scenic River corridor. Also note that publication in the Bend Bulletin, which requires a subscription, may no longer be classified as adequate under 'public notice.' So in order to have known about this project, impacted property owners would have had to stumble on the NRCS website (highly unlikely), gone to the district website (even less so), or know one of the district patrons who got a postcard. This is a clear effort to avoid public comment in the Impacted areas. • NRCS public notice (April 3, 2019) https://www.nrcs.usda.gov/wps/portal/nrcs/detail/or/newsroom/pnotice/?cid=nrcseprd1450046 • Bend Bulletin—three public notices (April 3, April 10, April 17, 2019) • District website notice (April 3, 2019) • Postcard to District patrons (April 3, 2019) • NRCS news release (April 3, 2019)</p>	<p>Please see the response to Comment ID 39.09.</p>

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		https://www.nrcs.usda.gov/wps/portal/nrcs/detail/or/newsroom/releases/?cid=NRCSEP RD1450047 Public Involvement We	
258.32	ALT	SummaryWe understand that the piping alternative would enhance the district's patrons, but the potential impact of removing the flume as stated and building a giant mound of dirt with a new road on top of it, would have far reaching consequences not only for adjacent property owners but for the greater Central Oregon community and all the values the community holds dear. Values and scenery and features that millions of visitors come here to see and spend money to experience. We urge you to remove the flume from the project and take time to consider other, more reasonable, less impactful alternatives that do not ruin the exceptional values that benefit the entire community.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
259.01	VEG	All the trees you see in these photos will be lost, cut down and destroyed if the AID piping plan is implemented. Several of these trees are over 200 yrs old. The beauty of this ecosystem will be destroyed.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees.
259.02	PROP	It is insane to pipe rather than use a liner system that has been proven in other districts (Rio Grande River) to be up to 94%effective at reducing canal seepage. How would you, the readers of these comments, feel if it was your land that would be treated this way. I've lived here at [ADDRESS] in SE Bend for over 25 yrs. Raised our family with my wife and built a future here in Bend. the crowning jewels of our lifes work are in the land, trees, security and privacy of our home and this project will wipe that out. This property is our single most important investment and our future is here. It is in danger of being destroyed for the sake of capitalizing on government money when a better solution is clearly evident.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see Section 5.2 of the Plan-EA for updated information on the Canal Lining Alternative. Please see Sections 6.3.2 and 6.6.2 of the Plan-EA for more information regarding the proposed project's effects on public safety and trees, respectively.
259.03	PUB	Why has no employee of AID or it's partners never visited us or our neighbors about this plan in person; to explain their plan? Where is the integrity to inform the patrons and other land owners bordering the canal? SOMEONE should have personally contacted each land owner affected. We are all citizens that are taxpayers. They should have made sure this was understood. Its called going the extra mile and it is what Americans do. Not try to slide something through for there own gain.	Please see the response to Comment ID 39.09.
260.01	GEN	Concerned about deferred maintenance in the district, though this is a great way to address a lot of it.	Effects on operation and maintenance are discussed in Section 8.8 of the Plan-EA and in Section 3.1.4 of the NEE in Appendix D.1. Please contact the District regarding any questions regarding deferred maintenance.
260.02	COST	Concerned about project mgmt/ oversight of such a large project, \$42M. Concerned about cost overruns, what if costs more, how would the difference be paid for? Haven't seen evidence of bids, other than this is what we think it will cost. Is that Arnold's estimate?	Installation costs, which include construction management/ general contractor costs, have been updated and are shown in Appendix D.3 of the Plan-EA. Project costs were estimated by FCA and approved by NRCS and AID.

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			If estimated project costs exceed what is shown in the Plan-EA, NRCS would follow program guidance and reevaluate the existing plan using current procedures as identified in the Watershed Program Manual.
260.03	CONS	Who will be held responsible, who will manage this project? Doesn't have confidence in Arnold's limited staff to manage such a big project. Wants to make sure experienced project managers will be there for the project so that it doesn't go over budget or waste taxpayer funds. He is an AID patron. Been here for 20 years. When you have plenty of water management doesn't matter as much, but when water gets scarce, you have to manage it very well. He used to manage large projects. Our growing season at 4000 ft is only 75 days, don't need water in April and Sept when they run it, but do need it in Aug when it can get cut off. Concerned about sending the water down the river to other districts.	AID would be responsible for construction contracting and implementation, among other tasks. Please see Section 8.7.3 of the Plan-EA for further discussion of NRCS and District responsibilities.
261.01	WAS	My name is [NAME] and I would like to be put on the record for opposing the current plan to remove the flume. A few things bother me: 1. The destruction and environmental impact that will be caused is unacceptable on the Deschutes Scenic River. How wide of swath of deforestation will be necessary to put in the pipe AND a road?	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
261.02	BNFT	2. You say 430+ properties will be affected (permanently and negatively impacted) while 195 properties mainly in Jefferson County will benefit. And at the cost of 42.8 million dollars and who is paying for that? It doesn't seem like a fair deal locally.	Please see Sections 8.6 and 8.7 of the Plan-EA for information on costs and financing of the project. Please see the NEE in Appendix D.1 of the Plan-EA for further information regarding the benefits compared with the costs of the proposed project.
261.03	WAT	3. You quote 32.5 cubic ft of water per second could be saved, but why don't we address ALL OF THE SMALL HOBBYFARMSTHAT ARE WATERING CONTINUOUSLYOUT IN THE MIDDLE OF THE DESERT FOR THEIR GREENLAWNS THAT DON'T PRODUCE ANYTHING BUT GOOD LOOKS? How much water could be saved by having them and the golf courses, etc. held to a different standard and protocol?	Please see Section 5 of the Plan-EA for a discussion of the alternatives considered under this Plan-EA. AID is obligated to deliver water to its patrons based on patrons' water rights. A water right certificate issued by the State of Oregon covers the legal authorized rate and duty for all acres irrigated. While the water right certificate does reflect different acres of type of use (e.g., quasi-municipal or irrigation), there is no provision to deliver one acre of surface irrigation water right differently than another acre as long as it is beneficially used. Hence, AID cannot preferentially deliver water based on type of use.
261.04	CUL	4. You say you'll respect the historical value of the flume by sticking a piece of it at your property. Oh boy. What about respecting the wildlife, the ancient human artifacts that have been found along the	The flume has been removed from the proposed project. Please see the response to Comment

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		flume area, and the people that have built their homes and cared for the river along the flume? I think there needs to be more consideration and alternatives than Do nothing OR this one solution you are promoting.	ID 12.01. Please see Appendix D.2 for a list of alternatives that have been considered during the planning process.
262.01	WAT	DON'T PIPE THE CANAL!!! Stop blaming the water loss on open canals and look at yourselves and the crummy way you manage them! Perhaps instead of telling those with water rights that they have to use it all every year or lose it, let them water according to what's needed. They pay for it, not you and if you cut off water to farmers you don't get food either. Here's another option, STOP draining Wickiup Reservoir dry to provide year round full flow water to the water park in the Old Mill District. That is absolutely NOT a necessary use of precious water.	Thank you for your comment. Please see Section 5 of the Plan-EA for a discussion of the alternatives considered under this Plan-EA. Water is released from Wickiup Reservoir in the winter to meet the terms of the Deschutes Basin Habitat Conservation Plan (AID et al. 2020) rather than for the water park in the Old Mill District. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more information about considered alternatives.
262.02	BNFT	Also, can't help but notice the section of canal you are looking to pipe in DRW is a heavily treed section which means an awful lot of board feet that YOU stand to profit off of and not the person whose land you are ripping the trees off of.	The Main Canal was chosen as the project area because it experiences high water loss, causes water delivery and operation inefficiencies, and poses a risk to public safety. Disturbance to existing mature trees due to construction would be minimized to the extent possible. Trees growing along the edge of the open canal would be removed only if they posed a safety risk to crews working within the project area. Please see Sections 2, 5.3, and 6.6 for information about the purpose and need of the project, construction details, and project effects on vegetation, respectively.
262.03	CUL	That canal is over 100 years old and is a historical landmark and must be treated as such.	Please see the response to Comment ID 49.05.
262.04	GEN	This over a century old water source is a generationally known water supply for millions of animals and if you're claiming to help the planet, then do those animals not count as part of the planet? Stop pretending and lying to the people. We know this is all being done for your financial gain and not for the good of the land, animals, people or water	Please see Section 6.11.2 of the Plan-EA for a discussion of the project's effects on wildlife.
263.01	ALT	The Plan-EA provides no alternative options and that is shameful. I've reviewed many plan drafts that include 3 or 4 different options aside from the "No Action" alternative. Why is there no consideration to only pipe part of the canal where water is diverted out of the Deschutes River - where arguably a significant portion of water loss occurs?	Please see Appendix D.2 and Section 5.2 in the Plan-EA for a discussion of the alternatives that were considered. Your comment about piping the part of the canal where water is diverted was understood to relate to

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			AID's flume. The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
263.02	FIRE	Although piping the canal would completely change the aesthetics and home values of the area, as homeowners I think we personally are more concerned with the added fire danger this will cause for DRW. Has any data been collected on the canal as a fire break? For most of the canal it is the only fire break between multiple properties and losing this poses significant risk to our area that only has one main road in and out.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
263.03	COST	I'd also like to know what plans are in place for the repayment of the significant loans that will have to occur to cover the cost of this project. Do you intend to pass that cost on to customers through rate increases? How significant? If so, this is adding serious insult to injury in my opinion. Arnold Irrigation District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment (Draft Plan-EA) should not be approved. Many are opposed for good reason and unanswered questions remain.	Please see the response to Comment ID 24.04.
264.01	GEN	I am writing today to address my concerns with the proposed pipeline project by the Arnold Irrigation District (AID) along the Deschutes River. This project would be a severe eyesore to property as well as potentially devastating to the environment and local ecosystem.	Please see Section 6.7.2 of the Plan-EA for effects on visual resources. Please see Sections 6.1 through 6.11 of the Plan-EA for discussion of the effects on a variety of environmental, social, and cultural resources.
264.02	VEG	This project as it is proposed would be a death warrant for hundreds of mature ponderosa pine trees, and it could also heavily disturb the behaviors of wildlife native to the area.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and Section 6.11.2 of the Plan-EA regarding effects on wildlife.
264.03	ALT	While I understand the desire of AID to develop a better system to reduce seepage and improve reservoir levels, there absolutely must be a more environmentally friendly way. I insist that AID be held accountable for their plan and be required to perform an Environmental Impact Assessment prior to any work being done. Without proper planning and accountability, this pipe project will have long term consequences to homeowners adjacent to the flume, plants and animals in the vicinity, and the Deschutes River itself. There are better ways, including a canal lining, and we ask that you take the time to discover them.	Please see the response to Comment ID 94.02 regarding the need for an EIS. The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04.
265.01	WAT	The Deschutes Redbands Chapter of Trout Unlimited (Chapter) appreciates the opportunity to offer its comments regarding Arnold Irrigation District's (District) draft watershed plan-environmental assessment for infrastructure modernization. TU's mission is to conserve, protect and restore North America's coldwater fisheries and their watersheds. Our national organization has 300,000 folks committed to coldwater fisheries. Our local Chapter has 620 members whose efforts are focused on the Deschutes Basin. The Deschutes River has been and continues to be our priority in the basin.	Please see Section 2.1.3 of the Plan-EA for a discussion about the collaborative effort the Deschutes Basin irrigation districts are making to meet the target flow requirements set forth in the HCP and enhance habitat along the Deschutes River.

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		<p>Accordingly, the proposed improvements to the District’s irrigation system through the projects identified in the watershed plan represent a positive step toward increased efficiency that can and should translate to improved flows in the Deschutes River. Having said this, we do have concerns about some vagaries in the watershed plan that should be addressed prior to a final decision on this funding request.1. The project proposes to pipe 13.2 miles of the District’s Main Canal from the Deschutes diversion to Horse Butte Road. Currently, the District’s Main Canal system consists of 12.2 miles of open canal and 1 mile of open flume. Piping of this open system is estimated to save about 10,500-acre feet of water annually which the District proposes to allocate to North Unit Irrigation District (NUID) for use during its irrigation season. In return, NUID will commit to releasing that same amount of water from Wickiup Reservoir to the Deschutes during the winter. We would like to see further detail developed regarding the contract language between the two districts that would bind them to this arrangement going forward. This is an enormous public investment via PL 83-566 funding (\$27,862,000) and we want to have ironclad assurances that conserved water resulting from these infrastructure improvements will be permanently returned in-stream.</p>	<p>The flume has been removed from the project. Please see the responses to Comment IDs 12.01 and 207.03.</p>
265.02	COST	<p>2. The watershed plan proposes infrastructure improvements providing direct irrigation system benefits to all of the only 149 patrons within the District. The simple math is staggering when PL 83-566 funding (\$27,862,000) is added to other non-federal funding sources such as DEQ Clean Water State Revolving Fund (\$14,897,000) for a total project cost of \$42,759,000. This equates to \$286,973 per patron or \$4,072 per acre foot of conserved water or \$3,239,318 per mile of new pipe. In terms of direct financial responsibility, the District and its 149 patrons would be required to service the debt for any money borrowed from the State Revolving Fund at an estimated interest rate of 2.5%with an annual fee of .5% for the remaining loan balance. In terms of a financial prospectus on these patron impacts, Section 8.7.6 (Financing) of the watershed plan only states that, “These financing charges are not included in the National Economic Efficiency (NEE) analysis. The District does not anticipate changing per acre annual rates or the overall base assessment fee because of any capital improvement project that is fully funded through grants”. This begs the unanswered question of quantifying the likely financial burden on the District and ultimately its patrons in financing the remaining total project costs. As stated in Section 8.7.6, “The District is responsible for the remaining 35%of costs, including funds that are not eligible under the National Watershed Program (project administration and technical assistance)”. It would seem that a more specific financing plan, including likely patron per acre annual rates and/ or base assessment fee impacts, is warranted to assure that the project can be fully understood and financed.</p>	<p>Please see Section 8.9 of the Plan-EA for updated project costs. See Section 8.7.6 of the Plan-EA for updated text regarding how the District would fund its required match funding for the project. The District would strive to fully fund the match funding through grants to the extent possible. All patrons in the District would benefit from the project; the fact sheet in the Plan-EA has been updated from 149 patrons to 646 patrons. Increased irrigation water delivery reliability would benefit all patrons in AID. Please see the NEE in Appendix D.1 for discussion of all of the benefits of the proposed project.</p>
265.03	WAT	<p>3. The public benefit resulting from this project is in large part a function of the conserved water resulting from piping being returned instream. .permanently. In our view there can be no equivocation on this. However, the watershed plan states in Section 6.8.2.1 (pg. 67) that, “Oregon statute allows for NUID’s storage rights to be permanently transferred instream (ORS 537.348). However, OAR’s need</p>	<p>Please see updated language in Section 6.8.2.1 of the Plan-EA and in Appendix E-4.</p>

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		<p>further clarity to allow these storage rights to be permanently transferred instream. An agreement would be established specifying that these instream leases would be renewed in perpetuity or until the state of Oregon provided the clarity needed for a permanent change”. This language is not definitive and falls short of the guarantee that the public’s investment in this project will result in conserved water being returned permanently instream. We suggest that the comments submitted by Michael Tripp (Chapter Board member) on this issue be carefully reviewed.</p>	
265.04	WAT	<p>As a final point related to this section of the watershed plan, the use of the term “target” in reference to the minimum winter flow regime from Wickiup Reservoir established in the Habitat Conservation Plan is unacceptable. The Habitat Conservation Plan does not use the term “target” but states that flows “will be” implemented to meet these required minimums. Therefore, the current minimum winter flow of 100 cfs and the January 2028 minimum winter flow of 300 cfs are mandates established in the adopted and legally binding Habitat Conservation Plan. Our Chapter has been very much involved with the irrigation districts through the multi-year Deschutes Basin Habitat Conservation Plan process. This collaboration has given us a better understanding of the challenges being faced by the irrigation districts and has also enabled the districts to see the vital importance of healthy rivers to our community, beyond agriculture. We have also been supportive of PL 83-566 and the funding this law provides for irrigation system improvements and on-farm efficiency. The public investment for the District’s project and the other irrigation districts’ watershed modernization plans is huge. While we cautiously support this level of public investment, we are committed to ensuring that public moneys spent to conserve water result in this conserved water being permanently returned to our public rivers, streams and creeks within the Deschutes Basin.</p>	<p>The Plan-EA has been updated throughout to remove references to the flow rates identified in the HCP as "targets." AID is one of the eight irrigation districts of the Deschutes Basin and the City of Prineville (the applicants) that have together developed and submitted the Deschutes Basin Habitat Conservation Plan (AID et al. 2020) to the U.S. Fish and Wildlife Service and National Marine Fisheries Service, which includes irrigation activity conservation measures. The conservation measures include streamflow rates in the Deschutes River and its tributaries that the applicants must meet to benefit the ESA-listed species. To meet the requirements set forth in the HCP, the applicants must identify mechanisms that would enable them to keep water instream, including the proposed project. Please see Section 6.8.2 of the Plan-EA for an updated discussion of water rights, diversion rates, and the protection of water instream. Effects on federally listed species are also considered in the Biological Assessment developed for the project. Effects of the project on the Oregon spotted frog are the focus of the biological assessment, and USFWS concurred with the NRCS determination that the project may affect, but is not likely to adversely affect the species (Letter of Concurrence 2022-0062518-S7; received by NRCS August 1, 2022). See Section 6.9.2 in the Plan-EA.</p>

Comment ID	Topic Code	Comment	Response
			Reference: Arnold Irrigation District (AID), Central Oregon Irrigation District (COID), Lone Pine Irrigation District (LPID), North Unit Irrigation District (NUID), Ochoco Irrigation District (OID), Swalley Irrigation District (SID), Three Sisters Irrigation District (TSID), Tumalo Irrigation District (TID), City of Prineville. (2020). Deschutes Basin Habitat Conservation Plan (HCP). Retrieved from: fws.gov/Oregonfwo/articles.cfm?id=149489716
266.01	COST	I am a resident of Woodside Ranch in Bend and want to express my opposition to the current plan. I believe there are alternative measures that could be undertaken at less cost to the taxpayers.	Thank you for your comment. Please see Section 5.2 and Appendix D.2 of the Plan-EA for discussion of the alternatives that were considered.
266.02	WILD	The impact to wildlife in this area will be tragic as well as to the vegetation.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources and Section 6.6.2 of the Plan-EA for information regarding the effects on vegetation.
266.03	ALT	It seems that all things have not been considered and like always the money is there for the plan so rather than look at other ways of saving water just go with what served Arnold and not those affected. I am very disappointed and think it is short sided.	Please see Appendix D.2 and Section 5.2 in the Plan-EA for a discussion of the alternatives that were considered.
267.01	PROP	Please do NOT pipe the canal! It's a beautiful piece of our landscape and we believe its beauty adds a lot of value to our property. Thank you	Please see the response to Comment ID 218.13.
268.01	RIGHT	I just found out about this plan to replace the flume running through my property with a buried pipe at the same level as the current flume. What?! I write this letter to strongly protest this proposal! Here are a few of my concerns: 1. I do not believe AID has the necessary easements to legally execute this plan on my property.	The flume has been removed from the proposed action. Please the response to Comment ID. 12.01. See the response to Comment ID 163.01 regarding the District's use of their easements.
268.02	VEG	2. Where in the plan is the deforesting of the future dead trees that will die after this proposal would be enacted?	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and tree removal.
268.03	VEG	3. Noxious weed control is missing from the plan. Why?	Please see Section 6.6.2.2 of the Plan-EA regarding the project's effects on noxious weeds. Section 8.3.6 lists measures that would be followed to avoid introduction of invasive plants and noxious weeds, including using certified weed-free seed mix.

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268.04	FIRE	4. Increased fire danger because of the massive number of dying trees and vegetation.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
268.05	ALT	5. Where is the needed Environmental Impact Study? I believe this plan is ill-conceived and I will be fighting it aggressively!	Please see the response to Comment ID 94.02.
269.01	VEG	My husband and I have lived on our property for 24 years - we purchased this piece specifically for the beautiful old growth ponderosas. There are 10 trees that average approximately 50-60 inches in diameter and over 100 feet tall. Any discussion of removing these trees will be met with resistance. The atrocity that was committed at the corner of 15th and Reed Market by the developer and the City of Bend is beyond reproach - beautiful old growth trees cut down needlessly due to poor planning and greed.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and tree removal.
269.02	WAT	We have been questioning decisions that have been made by Arnold Irrigation during the last couple years. If you know before the irrigation season begins that we're going to be very short of water, why is the canal run at the highest level for the first two months? Wouldn't it be wise to restrict flow from the beginning to hopefully have available water further into the season? And, another question for the second year in a row: what happens to the money we paid in March (\$1642) for 6 months of water - we received 3 months at best- never any mention of refunding that money to us?	AID's general operations and assessments in specific years are dependent on multiple factors, including available live flow in the Deschutes River and storage water in Crane Prairie Reservoir. Please contact the District for more information regarding how they determine assessments throughout the irrigation season. Refer to Appendix E-4 for more information on water rights, seepage, flow, and water savings according to month.
269.03	BNFT	The article in yesterday's Bulletin suggests that the majority of the water will go to the North Unit for farming. What happens to those of us on the main canal - we're already buying hay and water for our cows? Some of the money we paid to you in March would help us cover these unexpected costs. Property owners along the main canal will surely be the big losers in your proposed piping - once again - last in line for water!	Please see the NEE in Appendix D.1 of the Plan-EA for information regarding the benefits of the proposed project. Please see Section 6.8.2 in the Plan-EA for information about the effects on water rights and surface water hydrology after the project.
270.01	WAT	I was shocked to learn that there has been no environmental impact study underlying the proposed Arnold Irrigation Project. I do question the value of any water saving. It seems possible that seepage may help maintain the water table in a high desert environment with a dense and expanding population. Replacing any water lost to the water company costs nothing as it results from increased river flow. Is the water of greater value downstream? There has been no scientific study of the impact to Deschutes County. It is critical that a more complete study be done.	Please see the response to Comment ID 94.02 regarding the need for an Environmental Impact Statement. Please see Section 4.8.5 of the Plan-EA for a discussion of groundwater resources and Section 6.8.2.3 of the Plan-EA regarding the effects on groundwater resources. Following requirements for Watershed Plan-Environmental Assessments, this Plan-EA considered available, relevant environmental studies to determine the effects of the proposed action on various resources.

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271.01	GEN	My name is [NAME] and I work for the [COMPANY] in Bend, Oregon. We get our water from Arnold Irrigation; and for the last several years we have in-stream leased the majority our water. We support the piping of canals because the piping saves water due to evaporation and seepage, improves wildlife habitat in the Deschutes River and can it deliver pressurized water that can reduce or eliminate the cost of irrigating.	Thank you for your comment. Pressurization benefits would no longer be a benefit of the project; please see the NEE in Appendix D.1 of the Plan-EA for updated language.
272.01	WAT	Arnold Irrigation District EA Comments 1. Please add to the project summary information, the irrigation rate and duty rates for water rights managed under the Irrigation District. This would help landowners understand the relationship between the proposed project and the water they are actually receiving. What is the amount of water each gets on a per acre basis?	Please see Section 4.8 of the Plan-EA for information about the rates and duty associated with water rights held by the District. The rate and duty diverted and delivered to each parcel varies within and between years.
272.02	WAT	2. Sec 4.8.2, pg. 27 Why is water storage in Wickiup reduced be 75,017 acre-feet. On year 13?	This statement references water supply projections provided in the Deschutes Basin Habitat Conservation Plan (AID et al. 2020). Clarifying language has been added in Section 4.8.2. Please refer to Appendix E-4 for more information on water rights, seepage, flow, and water savings.
272.03	WAT	3. Please clarify who is requiring the Deschutes River min. flow of 100 cfs and eventually 300 cfs. Are these numbers coming from the State of Oregon? See Sec E 12 E 15 pg. 30 k	The instream flow requirements in the Deschutes River are set forth by the Deschutes Basin Habitat Conservation Plan (AID et al. 2020). AID is one of the eight irrigation districts of the Deschutes Basin and the City of Prineville (the applicants) that have together developed and submitted the HCP to the U.S. Fish and Wildlife Service and National Marine Fisheries Service, which includes irrigation activity conservation measures. The conservation measures include streamflow rates in the Deschutes River and its tributaries that the applicants must meet to benefit the ESA-listed species. To meet the requirements set forth in the HCP, the applicants must identify mechanisms that would enable them to keep water instream, including the proposed project. Please see Section 6.8.2 of the Plan-EA for an updated discussion of water rights, diversion rates, and the protection of water instream. Appendix E.4.8 presents a summary of the operation measures set

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			<p>forth by the Deschutes Basin Habitat Conservation Plan. Clarification has been included in Section 4.8.3 in the Plan-EA. Effects on federally listed threatened and endangered species and state-listed species are discussed in Sections 6.9.2 and 6.11.2 in the Plan-EA. Effects on federally listed species are also considered in the Biological Assessment developed for the project to satisfy Section 7 of the Endangered Species Act. USFWS concurred with the NRCS determination that the project may affect, but is not likely to adversely affect, the Oregon spotted frog (Letter of Concurrence 2022-0062518-S7; received by NRCS August 1, 2022).</p> <p>Reference: Arnold Irrigation District (AID), Central Oregon Irrigation District (COID), Lone Pine Irrigation District (LPID), North Unit Irrigation District (NUID), Ochoco Irrigation District (OID), Swalley Irrigation District (SID), Three Sisters Irrigation District (TSID), Tumalo Irrigation District (TID), City of Prineville. (2020). Deschutes Basin Habitat Conservation Plan (HCP). Retrieved from: fws.gov/Oregonfwo/articles.cfm?id=149489716</p>
272.04	FISH	4. Pg. 32, ODFW request was for 250 cfs, why is the target 300 cfs?	The instream flow target of 300 cfs is based on the requirements of the HCP beginning no later than Year 8 of HCP implementation. See Section 6.8.2.1 in the Plan-EA and Appendix E.4.8 for details.
272.05	VEG	5. I believe the major objection to replacing the canal with a pipeline, is the loss of the trees that have grown up along the canal. They provide a visual backdrop along the canal and a substantial amount of habitat, particularly for birds. If a method can be developed which would support the existing trees, much of the objection to the proposed pipeline would disappear. Sec 6.6 indicates this possibility is available to owners along the proposed pipeline. fig 6-1 6-2 Could a couple of cfs of the saved water be retained for owners along the pipe route to use for tree watering? Then they would not have to diminish the water they have for irrigating crops.	Water rights would not change as a result of the project. Property owners can water trees and vegetation within their easement with water they have a legal right to, either irrigation water delivered by the District if they are a patron or water from a domestic source.

Arnold Irrigation District Infrastructure Modernization Project
 Final Watershed Plan- Environmental Assessment Appendix A: Comments and Responses

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272.06	WAT	6. In the presentation, there was mentioned a 125 cfs District Pre project diversion. Where did this number come from? Is the 25 cfs reduction subtracted from this number or the 150 cfs AID total water right?	Please see updated language in Section 6.8.2.1 of the Plan-EA.
272.07	SYS	7. Will private gates be allowed across the Easement route for boundaries between private owners?	See the District's User Handbook (AID 2012) for information about what is and is not allowed within the District's ROW and easements. Please contact the District regarding property specific easement questions. Reference: Arnold Irrigation District. (2012). Arnold Irrigation District User Handbook: District Regulations and Operating Procedures. Accessed on February 8, 2022. arnoldirrigationdistrict.com/files/25a9d2fe8/UserHandbook.pdf
272.08	SYS	8. Pipe grade. . .sec 6.7.2 pg. 64 concerned about the top of the pipe being at grade. Does this mean it has no cover? Worried about damage; trucks turning on it. What does "at grade" mean?	Section 6.7.2 of the Plan-EA has been updated; please see the updated text. The pipe would be buried, and the depth of cover would adhere to NRCS practice standards.
272.09	MET H	9. 2.1.4 5 cfs is not a velocity. Make correction.	Please see Section 2.1.4 of the Plan-EA for updated language.
272.1	MET H	10. What analysis of need to increase water deliver to maintain the ability to grow crops in the face of declining natural precipitation due to climate change has been considered?	Please see Section 3.1.1 of the NEE in Appendix D.1 of the Plan-EA for a quantitative analysis of water shortages related to crops.
272.11	SYS	11. Is AID going to put fencing along both sides of the new pipeline alinement, and not just across at major road access points?	No fences would be installed as part of the project. Please see updated text in Section 5.3.2 of the Plan-EA.
273.01	PUB	Hello Arnold Irrigation District team- I am reaching out about the proposed burial of the flume, running parallel to the Deschutes River by Lava Island Falls and want to share my vehement opposition to this plan! Has there been an environmental feasibility study conducted for this project? If so, has it been made public and where can a copy be found for concerned citizens? I Have not seen this shared and the information out there would show that this is going to be a complete abomination in the Deschutes wild and scenic area that has absolutely no plan or consideration for how to protect the wild terrain, the wildlife of the are and the river itself below the monstrosity being engineered there. How will this preserve the habitat on this stretch of the Deschutes River? We are already dealing with numerous issues in the	A Watershed Plan-Environmental Assessment (Plan-EA) was prepared for the proposed project. The Draft Plan-EA was published on oregonwatershedplans.org on June 8, 2021, and a copy was also made available at the Deschutes Public Library. Since the Draft Plan-EA was published, the flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See

Comment ID	Topic Code	Comment	Response
		watershed, impacting both irrigation, the fisheries, other wildlife and the surrounding forest areas.How will erosion be prevented? How will you ensure there is no dumping sediment and chemicals into the river system? There have to be other solutions your team can consider at this time that won't cause so much havoc for an already stressed ecosystem. Please advise as to where any public information can be obtained regarding the environmental impacts of this project. In the meantime, and without a very public and transparent plan for how all of these critical and very delicate environmental factors will be protected to the utmost, I cannot over-stress enough my extreme opposition to this project.	Section 6.12.2 of the Plan-EA for updated language regarding effects on the Deschutes Wild and Scenic River.
274.01	PUB	Hello Arnold Irrigation District team- I am reaching out about the proposed burial of the flume, running parallel to the Deschutes River by Lava Island Falls and want to share my opposition to this plan.Has there been an environmental feasibility study conducted for this project? If so, has it been made public and where can a copy be found for concerned citizens?How will this preserve the habitat on this stretch of the Deschutes River? We are already dealing with numerous issues in the watershed, impacting both irrigation, the fisheries, other wildlife and the surrounding forest areas. How will erosion be prevented, dumping sediment and chemicals into the river system?There have to be other solutions your team can consider at this time that won't cause so much havoc for an already stressed ecosystem.Please advise as to where any public information can be obtained regarding the environmental impacts of this project.	Please see the response to Comment ID 273.01. Please see Appendix D.2 of the Plan-EA for a list of alternatives that were considered during the formulation process.
275.01	CONS	Blucor Contracting- Since Est. 1989' ACI-346 & 346R CIPCP Alternative option Diameters of Construction are... 48" 54" 60" 66" 72" 78" 84" 90" 96" 108" 114" 120" Working or Operating psi at 100 psi plus. No waiting for pipe to be manufactured and delivered start right away..ACI-346 & 346R CIPCP process. Competitively priced vs Steel, HDPE, and FRP . Thank you.. Respectfully, Jeffery Raleigh Blucor Contracting- Since Est. 1989'	Thank you for your comment.
276.01	ALT	Hi, I have the canal in my backyard and am against piping it. Instead of protecting a waterway piping would eliminate a waterway. If water conservation is desired over ecology why not pipe the Deschutes from Wickiup all the way through Bend? There was a lining experiment along Knott road about 20 years ago, what were the results?	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA, which includes discussion of the canal lining that Reclamation installed near Knott Road. Please see the response to Comment ID 29.04.

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277.01	VEG	We fully support piping of the Arnold Irrigation District main canal, as outlined in the Arnold Irrigation District Infrastructure Modernization Project Draft Watershed Plan - Environmental Assessment. Because trees, other vegetation, and wildlife were all present long before the canal was built and there are many abandoned canals in the area in and near which trees and wildlife continue to thrive, arguments of negative environmental consequences of piping are invalid.	Thank you for your comment.
277.02	PROP	Property values continue to increase rapidly across Central Oregon regardless of access to canals or other features, the argument that piping will decrease property values seems weak as well. Nothing, other than economic recession seems to have a negative impact on property values in Central Oregon. Piping will not cause a recession. In our opinion, canal piping cannot happen soon enough. We'd like to all the AID canals and ditches piped as soon as possible. I can only improve our water delivery and consistency.	Thank you for your comment.
278.01	ALT	As a resident of Deschutes River Woods, I vehemently oppose the piping of the historic canal. There needs to be a full Environmental Study on the local impacts to Wildlife, Trees and Vegetation. Lining of the Canal is a much cheaper, sensible solution.	Please see the response to Comment ID 94.02 regarding the need for an EIS. The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04.
278.02	CUL	The Flume is a treasured piece of our local history that should not be destroyed.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
278.03	CONS	The impact on residents along miles of canal having construction, equipment and disruption for years is unacceptable.	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. The proposed project would be constructed in four phases. Construction of all the phases would be completed in 6 years.
278.04	PROP	Property values will be affected by this poorly planned project. No regard for the private properties along the canal.	Please see the response to Comment ID 218.13.
278.05	BNFT	The list for the benefits of the canal being open for the last 115 years stands for itself. The ones using the irrigation water are few compared to all the ones that allow the easement to go through our properties. This should benefit everyone, not just the few that have the irrigation rights. Just because Arnold would get Federal money to do this project is not a good enough reason to proceed. It is much more of a local issue. This canal does not pass through uninhabited areas and was intended to be a benefit to the residents of DRW. A solution for everyone should be sought and lining the canal seems to be the right choice!! Just like we are seeing dams coming down now all over the West to return water flows to their natural state, I can foresee any pipe will eventually be deemed a 'bad idea'.	AID's Main Canal was constructed to transport irrigation water. For information about the District's use of their easement, see the response to Comment ID 163.01. Regarding canal lining, please see the response to Comment ID 29.04.

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279.01	ALT	PLEASE STOP the piping of the Arnold canal. This issue of water loss and conservation in Central Oregon is a complex issue and requires meticulous attention to many details beyond merely considering to pipe or not to pipe. There are many solutions to be considered around the water conservation issue that do include water loss from the canals but is not exclusive to such loss.	Please see the response to Comment ID 79.01.
279.02	WILD	The beauty and ecosystem of this canal is truly extraordinary and offers refuge to deer, beavers, wild duck, wild geese, bald eagles, raptors of all kinds and a myriad of native trees, grasses and flowers perennials. It offers shade and a refuge for not just our homes but for all the living beings that reside in and around it.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding the effects on wildlife resources and Section 6.6.2 of the Plan-EA for information about the effects on vegetation.
280.01	WILD	I believe that piping the canal will be harmful to the wildlife of the area. The trees that will be removed will be a loss of habitat for many birds. This project will industrialize what is now a scenic and purposeful stretch of the canal.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding the effects on wildlife resources.
280.02	VIS	The property owners along this stretch of proposed piping will be adversely affected also. The extreme change in the look of the landscape is not only financially detrimental but emotionally upsetting. Lining the canal is an option!	Please see Section 6.7 of the Plan-EA for updated language regarding the proposed project's effects on visual resources.
281.01	WILD	I have lived in Bend since 1983. I do not agree with the pipeline project. Please protect the wildlife and curb the growth by selling to developers who don't care about trails and open wildlife habitats.	Thank you for your comment. Please see Section 6.11 of the Plan-EA for more information about the effects on wildlife.
282.01	ALT	Why can't you leave the few miles of Deschutes river woods open for the wildlife, trees, just the beauty of it.	Please see the response to Comment ID 32.02 for discussion of an alternative that includes a mix of open and piped sections.
282.02	GEN	We pay taxes for water front property, and didn't mind giving the share our land so others can use the water, when we can enjoy it ourself. But to destroy, cover up the canal, cut down the tree, and have the the wildlife go elsewhere, is wrong just so you can send the water to other people to water there lawn that is unmetered. The canal is wide in front of my property and takes up about a third of my land.If you need to pipe it on the other side of 97 hwy that's fine. In Deschutes river woods land owners property should be left open.	Please see Sections 6.6.2 and 6.11.2 of the Plan-EA for information regarding effects on trees and wildlife. See Section 6.8.2 for a discussion of how water saved from the project would be used. An alternative of piping with sections of open canal was added to the Plan-EA in Appendix D.2.
283.01	PROP	The plan to pipe Arnold irrigation canal is very upsetting to me and I am very concerned about many issues regarding the proposed plan. The "50' right of way" that Arnold claims to have on either side of the canal would cause extensive damage to my property if the canal were piped. By the way, when purchasing our properties and for as long as we have lived in our homes. My neighbors and I have never heard that 50 feet from the canal belongs to Arnold.Many things would be destroyed on my property. My fence would be gone and I would have no way to contain my dogs or keep them safe. I have no where to take them and I have no one to come to my house to care for them. They have access to their back yard when I am at work. I don't have the option of coming home during my work day to let them out to do	Construction would not occur across the full width of the District's easement or right-of-way. Clarifying language regarding the area that would be disturbed by construction has been added to Section 5.3.2 of the Plan-EA.

Comment ID	Topic Code	Comment	Response
		their business. My fence keeps them safely contained in their yard. My lawn, landscaping and sprinkler system would also be destroyed. My sand filter for my septic system is not far from my back fence, that too would be damaged! All of this property damage adds up to thousands of dollars that I can not afford to pay for again! I'm completely stressed and worried about the safety of my dogs and all of the damage to my property!	
283.02	WILD	This is also the home to an abundance of wildlife that relies on the canal's water source. Mallards also nest along the canal.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
283.03	VEG	The native vegetation and old growth ponderosas have relied on this water source for decades. Piping the canal would have a huge impact on the environment in the future.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees.
283.04	FIRE	There are over 6,000 people living in DRW! If a wildfire started in our neighborhood it would be catastrophic! It would wipeout this neighborhood and beyond. We do not have any fire hydrants in DRW. The canal would provide water needed for the fire crew to fight the fire. Piping this canal would put this neighborhood in extreme danger if a fire broke out. The canal is a valuable water source that would help save lives, homes, wildlife and help fire from spreading farther out of control.	Please see the response to Comment ID 74.03.
283.05	WAT	I know of several home owners in DRW that their wells are dry. The canal only runs during summer months. Evaporation is only around 3% There is not a lot of seepage and any seepage is not wasting water. It provides vital ground water. There are other alternatives!! Do the right thing and base this decision on your values and morals. Protect and preserve our environment, wildlife, properties and community. Please see attached photos I forgot to mention. I am planning to put a green house in the back corner of my yard next spring. If this project moves forward. I would have no idea when I could start growing my food source. Thank you	<p>Please see Section 6.8.2.3 in the Plan-EA regarding effects on groundwater.</p> <p>Please see Appendix E.4.1 in the Plan-EA for more information regarding the water loss study that was completed for the Main Canal.</p> <p>Please see Appendix D.2 and Section 5.2 in the Plan-EA for discussion of the alternatives that were analyzed.</p> <p>All of the material that was submitted with this comment was reviewed and taken into consideration.</p>
284.01	RIGHT	I am a homeowner and resident in Deschutes River Woods in Bend Oregon. Arnold Irrigation Canal Sits directly behind my property on the other side of my fence line. Attached to this email you will find images of my property and it's proximity to the Arnold Irrigation Canal. **My main concern of this canal being piped, is the possibility that I will lose up to 50 FEET of my property. Which interferes with my 900 sq ft detached garage , 2 sheds, and parking on my property.	Please see the response to Comment ID 283.01.
284.02	PROP	It may also devalue my property should I choose to sell in future. - Will Arnold irrigation pay for damages if there are any on my property? IF Arnold Irrigation agrees to pay to repair damages on my	Please see the response to Comment ID 218.13 regarding property value. Please see Section 5.3.2 of

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		property , if there will be any, AND will not consume 50 feet of my property, THEN - I could be swayed to agree to the pipe being constructed.	the Plan-EA for updated language regarding the dimensions of land that would be disturbed during construction of the proposed project.
285.01	RIGH T	I am strongly opposed to the Arnold Irrigation District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment preferred alternative ("Proposal") for a variety of reasons. It not only threatens to seize property rights from me that neither Arnold Irrigation District ("AID"), the Deschutes Basin Board of Control, United States Department of Agriculture, the Natural Resources Conservation Service – or ostensibly other parties who would benefit economically such as piping and construction companies – ("Other Organizations") own, but the proposal also adversely impacts the public safety, environment, and property values of the Community of Deschutes River Woods ("Community of DRW"). Specific rights from my property were sold to AID in the form of an easement that allows a "canal" or "flume", no wider than 50 feet total, to cross my property. In common English, a "pipe" is not a "canal" or "flume"; with a "canal" open to the environment, not closed. In Black's Law Dictionary, a canal is defined as "an artificial ditch or trench in the earth, for confining water to a defined channel, to be used for purposes of transportation". If the seller of the easement intended to convey the right to AID to use another method, including methods that don't expose the water to the surrounding environment such as a 'pipe', the easement would have stated that, or at least included language similar to "or through other means", which it does not. The easement is specific in its language, and the language is unambiguous. This Proposal threatens to seize property rights from me that neither AID or Other Organizations own. I will do whatever I can legally do to protect my property rights, including considering legal action, protest, publicity, and physical barriers to entry for unrightful operations. This is not China or Venezuela or Zimbabwe, where written law, conveyances, and private property rights are not respected and routinely violated by more powerful or big-money interests. Neither AID or Other Organizations own the right to put a pipe across my land without either purchasing the right, assuming I am willing to sell it, or through a governmental eminent domain action that includes proper due process and fair-market value compensation.	Please see the response to Comment ID 163.01. Please see Section 6.2.2 of the Plan-EA regarding effects on easements and property ownership.
285.02	FIRE	The Proposal would have, however, a much larger effect than just on property rights. It would adversely impact the entire Community of DRW in a variety of ways. The Community of DRW encompasses a forested, semi-rural, low-lying area outside of Bend extremely vulnerable to catastrophic wildfire danger. It is full of dry trees, brush, and other fuels, and as a low lying area that funnels up from the abutting Deschutes River canyon, it is particularly vulnerable to wind conditions that exacerbate catastrophic wildfire. With extreme drought conditions forecast to become the norm due to climate change, the canal, a water source open to the environment and weaving through the Community of DRW, could be a critical source of water in the event of a catastrophic wildfire affecting the entire Community of DRW that overwhelms the capacity of its residential fire hydrant and residential water sources. Entire towns in	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.

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		both Oregon and California have been entirely destroyed by wildfire in the last few years alone, the Community of DRW is similarly vulnerable, and the canal serves as a critical, emergency wild-fire fighting water lifeline in the case of a catastrophic emergency.	
285.03	PROP	In fact, the canal, as an open-faced water feature, is central to the Community of DRW. It is the very 'spine' of the community and its environment. It has been a central fixture of the environment for over 100 years and of the Community of DRW since its inception. Primary roads in the Community of DRW are routed based on the path of the canal. Properties are aligned with the canal. Many structures built along the canal were purposely positioned relative to the canal in order to view or hear the water, experience its cooling effect on the local environment during summer months, be near the more verdant plants and wildlife that thrive near the canal, and for many other reasons. Having a source of open, flowing water passing through an arid, desert community such as the Community of DRW, where it is a central feature, significantly contributes to both the quiet enjoyment and property values of adjoining properties as well as the community as a whole.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Additional ecosystem services addressing aesthetic and spiritual values and potential temperature regulating services have been added. See Sections 4.8.6, 5.4, 6.8.1.5, and 6.8.2.4 in the Plan-EA.
285.04	WILD	And as a source of open, flowing water in an arid desert area, it also affects the environment as a whole. The Community of DRW inhabits a micro-ecosystem distinct from Bend itself. It is a heavily forested, low-lying, extremely dry desert area that has relied on water from the canal, particularly during the summer months, for over 100 years – a century. From old, established trees and a variety of native plants and grasses, to a myriad of animal wildlife including migratory birds, wild fowl, owls, squirrels, chipmunks, hares, dragonflies, butterflies, and others, a myriad of life has long depended on the canal as a source of water and food, for its proximate cooling effect, and maybe even a source of pleasure just like the area's human inhabitants. Converting the canal to a pipe, where the water is no longer exposed to the environment, in an established area that has long since adapted to the presence of the canal, would have a huge, detrimental impact on the environment of the entire area encompassing the Community of DRW.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources and Section 6.6.2 of the Plan-EA for information regarding effects on vegetation. Additional ecosystem services addressing aesthetic and spiritual values and potential temperature regulating services have been added. See Sections 4.8.6, 5.4, 6.8.1.5, and 6.8.2.4 in the Plan-EA.
285.05	RIGHT	Arnold Irrigation does not own the rights on my property to replace the canal with a pipe.	Please see the response to Comment ID 163.01.
285.06	PROP	Further, the canal, open to the environment, adds significant value to my property, all the other properties it goes through, and the Community as a whole. It impacts our public safety, our community, and our environment. Converting it to a pipe would adversely impact the very character of the Community of DRW. I respectfully ask that the proposal be reconsidered and an alternative pursued that does not violate our property rights, respects the character of our community, and continues to support the safety and health of our community.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see Section 6.3.2 of the Plan-EA for a discussion about effects on public safety and other sections in Section 6 that discuss other effects on a variety of environmental resources.
286.01	GEN	I am a Bend resident but I do not live by the canals and flume you are proposing to pipe. I am concerned about the environmental impact of this project. Human beings are not the only residents of this space, and I want to see you create a plan that minimizes the impact on this ecosystem of plants, animals, and earth. It is time for us to find a sustainable way to meet our needs without destroying natural habitat.	Please see Section 8.3 of the Plan-EA for a description of minimization, avoidance, and mitigation measures associated with the project. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more

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		Our future generations depend on us finding ways to exist without harming the ecosystems we dwell in. Many species, not just ours, depend on larger shift in how we handle matters like this. You may feel this project has minor impact compared to others, but change must start somewhere, and it must start now. I challenge you to be part of this needed change.	information regarding the considered alternatives. Please see Section 2 of the Plan-EA for information about the purpose and need for the project.
287.01	GEN	Piping thru our neighborhood, which has been built around and along the canal, is absolutely the worst solution to the issue! Solve the ‘use it or lose it’ issue with the water rights, irresponsible water use, pipe the miles of canal that run thru uninhabited semi-arid areas and look at other, less expensive alternatives. You will ruin neighborhoods that are uniquely ‘Bend’ when there are better alternatives! Property values, ground water levels, trees & vegetation and wildlife habitat (100+ generations of wildlife have been raised along this canal!) will all be degraded or destroyed by this project.(Look back at Sisters. . before & after their canals were piped! No one who remembers thinks its better now)	Please see Section 5 of the Plan-EA for more information regarding alternatives that were considered during the planning process. See the following sections in the Plan-EA for information regarding the effects of the project on groundwater levels (Section 6.8.2), vegetation (Section 6.6.2), and wildlife (Section 6.11.2). Please see the response to Comment ID 218.13 regarding the proposed project’s effects on property value.
287.02	BNFT	Who benefits besides the Arnold Irrigation District?	Benefits of the project are discussed in Section 3 of the NEE in Appendix D.1 of the Plan-EA.
287.03	ALT	There are better alternatives to increase the Deschutes river flow! Do the required studies to learn exactly how much piping will really save. It should be absolutely the last resort and we are not there yet. Do the research! Please listen to the people! Do not let this get railroaded thru without fully understanding the consequences. A few will profit and many will be hurt.	Thank you for your comment. Please see Appendix E.4.1 for information about water loss studies in the Main Canal.
287.04	ALT	https://knovhov.com/solar-panels-over-canal-in-india/ India has a creative solution that almost eliminates evaporation & increases the efficiency of the solar panels by cooling.	Solar panels over the Main Canal would not meet any of the purposes of the project. Water losses would still occur through seepage, water supply management and delivery reliability would not be improved, and public safety would remain an issue. Therefore, solar panels over the Main Canal would not meet NRCS PR&G alternative formulation criteria (USDA 2017) and are not considered in the Plan-EA. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more information regarding the considered alternatives.
288.01	WAT	I know of several home owners in DRW that their wells are dry. The canal only runs during summer months. Evaporation is only around 3% There is not a lot of seepage and any seepage is not wasting water. It provides vital ground water. There are other alternatives!! Do the right thing and base this	Please see Section 6.8.2.3 in the Plan-EA regarding effects on groundwater.

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		<p>decision on your values and morals. Protect and preserve our environment, wildlife, properties and community. Please see attached photos I forgot to mention. I am planning to put a green house in the back corner of my yard next spring. If this project moves forward. I would have no idea when I could start growing my food source. Thank you</p>	<p>Please see Appendix E.4.1 in the Plan-EA for more information regarding the water loss study that was completed for the Main Canal.</p> <p>Please see Appendix D.2 and Section 5.2 in the Plan-EA for discussion of the alternatives that were analyzed.</p> <p>All of the material that was submitted with this comment was reviewed and taken into consideration.</p>
289.01	GEN	<p>Stop Arnold Canal Piping!When we moved to Bend 20 ½ years ago, one of the most beautiful and unique attractions of the area was being able to see all the Mountains and the River and all the beautiful water from all over town. This beauty cannot be found just anywhere and is very unique and historical to this area. Slowly the water and the attraction and history of Bend are being put in a pipe with ugly mounds of dirt left.It is not that we are not interested in conserving water it is that there are so many issues with this project that are not addressed, not considered, and blown over as “not important” because you have 1 goal only, no matter what the consequences to wildlife, personal property, safety and historical value. You say you address them in your Plan-EA but many of these issues, the important ones to the people who must live with this decision, are not addressed or considered. And the amount of money you propose to spend on this disrupting project is absolutely absurd. This is a very small canal in an elaborate Central Oregon Canal system. There are much bigger canal systems to worry about then this one. This money could be used for so much other good that actually serves people not your own agenda.</p>	<p>Thank you for your comment.</p>
289.02	SAFE	<p>Section 2 Purpose and Need In section 2.1.4 you list “Risks to Public Safety”. No one can deny that an open canal could represent a risk, but so can driving your car every day, getting on an airplane or boat. But as you stated yourself, there has not been an incident on this AID canal and there have certainly been fewer deaths in canals then the amount of deaths from car accidents in Central Oregon. We have raised our kids in a backyard that runs directly up to the canal with no fences or guards against the canal, teaching them at a young age about water safety, the dangers of moving water and have never once had an issue with safety ourselves.</p>	<p>Thank you for your comment. Please see Section 6.3.2 in the Plan-EA for discussion of the effects on public safety and the response to Comment ID 37.12.</p>
289.03	FIRE	<p>What you don’t mention in your Plan-EA is the safety risk you are putting everyone at by piping this canal against fire. Central Oregon is a very flammable area. This canal is a fire defense for everyone living near it. In fact we had a fire a couple years ago in DRW at a house across the canal from us. It spread quickly and hot, burning up the neighbor’s fence next to it, burning trees and even throwing embers onto the canal road. Luckily for us, even though some embers did fly across the canal there was minimal</p>	<p>Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. Please see Section 4.3 of the Plan-EA for discussion of existing risks to public safety within the project area.</p>

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		damage to anyone across the canal from the fire because of the canal. In a fire, having this defensible body of water could save our property and even our lives. So to use “Risks to Public Safety” as 1 of your arguments to pipe the canal is not a legitimate point. Section 4.3 Public Safety. Again not a legitimate argument. See above.	
289.04	CUL	Section 4 Affected Environments. In Section 4.1 Cultural Resources the Plan EA states “There are no National Register-listed historic properties within the project area”. Although this may be true today, we all know the historical significance of the Central Oregon Canals and the flume that runs off the river.	Please see the response to Comment ID 49.05.
289.05	RIGHT	Section 4.2.1 Land Ownership & 4.2.2 Land Use. These are probably one of the hottest, most controversial areas of this project. For me personally and all of my immediate neighbors on my street, the canal IS OUR BACKYARD. It isn’t in some far off field or in the back forty of my property. It isn’t in pasture land or undeveloped land covered in juniper. It IS OUR BACKYARD. I only have 0.5 acre of property that I own and the canal runs completely through the edge. My property line goes to the other side of the canal and the canal is level with my backyard. For you to “threaten” that you have 50 feet ROW on each side, in my neighborhood that will go right up to peoples backdoor on each side in some places. Not only are you destroying our property but you are destroying our lives in the homes we have lived in and worked for years and years. The landscaping we have worked so hard to build and develop. We, as many neighbors do, have chairs that sit by the canal to enjoy the peace, wildlife and coolness that comes off the water. Most do not have air conditioning. We sit next to the water to survive from the heat in our houses as it is much cooler under the trees next to the water. This is a safety issue so that we do not overheat in our homes.	Please see the response to Comment ID 283.01. See Section 4.2.1 of the Plan-EA for information about AID's ROW and easements.
289.06	VEG	This pipe will destroy plant life, trees and vegetation on MY property, some that have taken years and years to grow. Some will not survive without the water of the canal running next to it or from the water seepage it obtains.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and vegetation.
289.07	PROP	And the value of my property will plunge greatly when you look out my back door and see an ugly pipe or dirt pile instead of the serene canal of water. AT MINIMUM, DUE NOT PIPE RESIDENTIAL AREAS OF DRW.	Please see the response to Comment ID 218.13. Please see Appendix D.2.6 of the Plan-EA for more information regarding a hybrid piping/ lining alternative.
289.08	ALT	Section 4.7.1 Visual Resources the Plan EA states “The western side of the project area passes through residential developments in DRW (Figure 4-3); while the eastern side of the project area passes through agricultural and undeveloped lands.” So pipe the eastern side of the project and find a different solution or leave alone the western side of the project. Why does it have to be all or nothing? Why can it not be a combination or different things that will satisfy and meet needs of all? Also in this section it states “Some residents believe that the canal view enhances the scenic quality of their backyard.” Those of us who live on the canal don’t think it enhances the scenic quality, we KNOW it does. No one who is involved in	Please see the response to Comment ID 32.02 for discussion of an alternative that includes a mix of open and piped sections.

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		this Plan EA must live on a canal of any kind or they would not be on board with this plan. We are real people who live here.	
289.09	WILD	Section 4.11 Wildlife Resources. In 4.11.1 the Plan EA mentions all the many wildlife that live in our area, many of whom rely on the canal as source of water and to cool off. But to say “. . .canals sometimes results in wildlife injury or death if the animal falls into the open canal and is unable to find its way out” is no different than any body of water including the river, lakes and ponds along with other streams. I do not see any mention of ducks in your Plan EA. Ducks and birds are the number 1 wildlife in our backyard. Over the years, as our kids have been growing, they have come to name all the ducks and swear they are the same ones that return each year. They have learned and watched as ducklings grow. Ducks spend much of their lives in the water. Ducks usually go back to the same place year after year and lay their eggs in the same place where they were hatched. Without water from the canal, I fear we will completely loose our duck population in our area.	Clarifying language has been added in Section 4.11 of the Plan-EA to include ducks, and language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources.
289.1	WAS	Section 4.12 Wild and Scenic River. The flume obviously lies where it can be seen by the River and by walkers along the river. There is very little in this Plan EA that address what or how you plan on protecting the Scenic area without disrupting the view and the land it lies on, when trying to replace this flume. Not to mention the soil and vegetation that will be disrupted while trying to do this. How do you propose to do this without disrupting the river or causing debris to go into the river? A pipe is much more less scenic and trying to replace it could have lots of damaging effects to the scenic and natural area not to mention it could be a complete eye sore and quite unnatural looking.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
289.11	ALT	These just list a few concerns with your Plan EA. Safety is not one of them except when it comes to fires and then you are putting me and my property at risk. Damage and destruction to my property both in the process of piping and what it will do to it both esthetically and financially to my property is one of my major concerns with an ugly pipe or mound of dirt. Also destroying historic flume, disruption to the scenic Deschutes River in the process of replacing the flume, the effects on wildlife are also other concerns. Ultimately my number one concern is not pipe the canal that runs through my backyard. Whether that be doing nothing at all or a combination of piping some areas and leaving residential areas alone as an alternative. Please consider alternatives resources or no piping as an alternative.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 32.02 for discussion of an alternative that includes a mix of open and piped sections.
290.01	GEN	This is totally unacceptable and it is clearly a money grab. How can you do this to your community and still sleep at night? Do not do this to our community, the wildlife and the people. You don't want to explore alternatives- that is not in your interests. Shame!!!	Please see Section 5 of the Plan-EA for more information on alternatives that were considered during the planning process. Please see Section 6.11 of the Plan-EA for more information about effects on wildlife.
291.01	ALT	I request the National Resource Conservation Service require an Environmental Impact Statement before the 13 mile/ flume piping project is approved.	Please see the response to Comment ID 94.02.

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292.01	PROP	We are not in favor of your proposed pipeline. The canal is directly behind our shop on our property and putting in a pipeline will decrease our property value.	Please see the response to Comment ID 218.13.
292.02	GEN	Also, I do not understand why now this is an issue, the canal has been there for a very long time.	Please see Section 2 of the Plan-EA for more information regarding the purpose and need of the project.
292.03	WILD	It is a huge water source for a lot of wildlife.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
292.04	GEN	It is against the law to do and we feel it should not be done.	Please see the response to Comment ID 163.01.
293.01	PROP	I have property located along the Arnold Irrigation Canal. I moved here in the year 1996 and built three homes along the canal which was the selling point of the property. Having the canal gives an increase in the homes values.	Please see the response to Comment ID 218.13.
293.02	VEG	I have planted trees in 1997 along the canal which are now mature trees. If the canal gets covered I will LOSE those trees. The trees are in the Salicaceae Family which require water. The trees are located on one of the curves of the canal which helps with preventing erosion of that slope of the canal. All the plant material will be lost which helps with the worlds Greenhouse Effect.	Please see the response to Comment ID 71.01 regarding the conditions for removing trees. Please see the response to Comment ID 37.45 about watering trees after project completion.
293.03	WAT	I understand that Arnold is trying to prevent less water loss by covering the canal. I realize by covering the canal it will provide more water for the Homestead Irrigation Right users. However, maybe if the Irrigation Users rights get changed that will also help. From my understanding, if the user doesn't use their allowed amount of water for that property, they lose that irrigation right. I have known Irrigation Users just to waste the water so they don't loose their irrigation rights. That is ridiculous. You want to prevent water seepage and evaporation loss from the open canal and cover the canal. Well, maybe there should be a change on the water rights of the people's usage and that a long would probably amount to the same amount of water loss through seepage and evaporation. Changing that old policy would reduce the useless amount of water waste and people would actually use the amount they need. The canal only runs six months out of the year. If the irrigation user's policy would get changed maybe there would be enough water. That a long would save tremendous amount of water waste and save money not having to cover the canal.	In Oregon, water resources are broadly governed by provisions of the Oregon Revised Statutes and associated Oregon Administrative Rules. The statutory provisions dealing with water often include general legislative purposes related to the use and management of water resources. Amendments and changes to either statute or rule are not an authorized purpose under the PL 83-566 program and therefore are beyond the scope of this Plan-EA.
293.04	WILD	Over the years that I have been here, I do see an abundant amount of wildlife. I do believe the generation's of the different species of animals do rely on the canal's source of water. I love knowing the animals have a nice safe place to rest, eat and have the canal as a source of water. I'm an animal lover and I find it very upsetting that if the canal gets covered I will no longer get the enjoyment of watching all the animals that come to my yard. My whole yard is landscaped and is an oasis for all the wildlife I see. The herd of deer come yearly and stay in the yard for most part of the days. I leave my gates open so they can go from the front yard to the back yard where the canal is located. Most people out here don't want the	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.

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		deer but I believe having the canal in my back yard along with a variety of plant material for them to graze on gives them a safe place to come to. I also believe the deer realize that this is a safe place to come.	
293.05	ALT	I think, if anything happens, the canal being lined with an impervious material would be the MIDDLE GROUND for everyone. Arnold gets less water loss from the canal without upsetting the public, trees are saved, house values won't be affected, everybody still gets the esthetic values of the open water and the wildlife migration stays the same. Look into changing the Irrigation Users Rights. Please consider all the ramifications of what will happen if the canal gets piped and not lined. Thank You for reading and hopefully understanding my concerns.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the responses to Comment IDs 29.03 and 29.04. Changing irrigation users rights is beyond the scope of this Plan-EA.
294.01	WILD	Hello from Raccoon Cove! A friendly little place along the Arnold Canal. A few of my friends have come by and expressed concern over rumors that some humans were plotting to destroy their homes/ feeding areas/ offspring rearing areas. I thought you humans might like to meet some of them in their lovely habitat along the Arnold Canal. Meet the Buck brothers. They love hanging out at the cove with their friends, nibbling on all the lovely plants and flowers, resting in the shade of the trees. In the spring, whole groups of deer take refuge along the canal, resting with young ones under the trees. The Goose family loves to drop by so we can watch the kids growing up! The Dragonfly family adores hanging out in the trees by the water, flitting from plant to plant and watching the other neighbors! How we would miss the Ducks, and all their ducklings, darting here and there around mom and racing each other. The canal is home to so many of my wildlife friends, and we are all quite disturbed to think that this paradise may be destroyed! People try to tell us that "property values are not affected by the canal". That may be true ON PAPER. But it isn't really about the property's financial value. There is more to value than money. How can you put a price on what I just showed you? Water is a natural resource with unique value. Water is a right for all; nature provides it freely with the rains and snows. The wildlife and people along the canal have lived together for decades. How can you honestly think it is ok to deny all living things of the water and biome that has been theirs for generations? I understand that there are issues that arise throughout the years, and some complete piping may be suitable in more remote areas, but I cannot believe that the only answer is to destroy this habitat by burying the water. I have heard proposals for lining the canal. That sounds like a responsible solution for the areas like this one frequented by wildlife in the city. Please consider other options and maintain our peaceful existence along the canal.<images included in submitted comment>	Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Canal lining was considered as an alternative in the Plan-EA. Please see the response to Comment ID 29.04 and Section 5.2 of the Plan-EA.
295.01	GEN	My name is [NAME]. I live at [ADDRESS], and I pay a LOT to have the canal water- I do not want to suffer the damage from the loss of the canal being piped. I have sent you pictures from 2 email addresses: [EMAIL], and [EMAIL].	Thank you for your comment.
295.02	WILD	These photos are a small percentage of some of the hundreds of various wildlife that rely on the canal just out my back door. These are just a few that I see every day, every season, and every year. And there is so much more that I don't take the time to take pictures of. We have several dozen wild geese and ducks that	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.

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		nest and hatch here every year. We have a good size herd of deer here, that raise 2-5 fawn every year. There is an eagle, coyotes, racoons, rockchucks, cranes, squirrels, woodpeckers, lots of frogs, lots of birds, and so much more. Plus, the animals I raise that use the canal for food and water, of which I pay more per acre than anyone I have l known.	
295.03	VEG	I have also include a few pictures of some of the vegetation that will die without the water they have lived on for generations as it has ran past the roots and over the same path for all these many many years. Now, all of a sudden these very old trees will no longer have the water they always have relied on to live. Without this water source these trees will die.	Property owners can water trees and vegetation within their easement with water they have a legal right to, either irrigation water delivered by the District if they are a patron or water from a domestic source. Please see Section 6.6 of the Plan-EA for more information about effects on vegetation.
295.04	PROP	I specifically bought this land because of the water running through my property, the trees that have grown up all around it, and the rights to use the canal. Now without the canal, I will loose this huge value to my family and to my property.	Please see the response to Comment ID 218.13.
295.05	VEG	Plus the biggest problem will be that if all these many trees die, my family, my home, and our belongings will be in danger from dead falling trees.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and tree removal.
295.06	FIRE	Wildfires will be a much greater danger as well, without the canal.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
295.07	GEN	So, who is going to provide compensation for all of this danger to life and all the property damage? (see photos in attachments)	Please see the response to Comment ID 218.13 regarding property value. Please see Section 5.3.2 of the Plan-EA for updated language regarding the dimensions of land that would potentially be disturbed during construction of the proposed project.
296.01	GEN	The canal has always been part of the beauty of living in Central Oregon. Don't pipe the canal! There have to be other options.	Please see Section 5 of the Plan-EA for a discussion of alternatives that were considered during the planning process.
297.01	PROP	I am writing in regards to my concerns on the proposed installation of a pipeline and removal of the historic flume along the upper Deschutes River. I understand the need for water conservation, especially in these times of severe drought. I have seen plans of the project and understand measures needed to produce a contained pipe along the length of the canal. As a homeowner in this area, I'm naturally concerned about what this transformation will do to my immediate property as far as destruction of the current landscape through this Wild and Scenic River corridor. Will it devalue my property?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regarding property value.

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297.02	VIS	Will it disrupt my and my neighbors' views and those of others walking along the DRT on the other side of the river?	Please see Section 6.7.2 of the Plan-EA regarding effects on visual resources.
297.03	VEG	How many mature trees and shrubs will be uprooted?	Please see updated language in Section 6.6.2 of the Plan-EA regarding the project's removal of trees and vegetation.
297.04	WILD	How much will this harm the natural habitat for wildlife?	Please see Section 6.11.2 in the Plan-EA.
297.05	ALT	Has there been an EIS study done to actually determine effects of this construction on current flora and fauna?	Please see Sections 6.6 and 6.11 of the Plan-EA regarding effects on vegetation and wildlife. See the response to Comment ID 94.02 regarding the need for an EIS.
297.06	SYS	I've seen sketches of the proposed 4-5' elevated piping that would replace the current flume. While certainly not as "quaint" or "historic" as the current flume, it's minimalist structure seems like it wouldn't be too intrusive. What I do question is why must the whole thing then be buried under feet of fill with a road built on top? (Even better - why couldn't this piping be placed directly into the current flume? It looks to be about 7' in diameter). The amount of fill needed seems unfathomable. Will the steep hillside created then be replanted with flora? Even if so, with such a steep angle, it's inevitable that some of this will leach into the Deschutes - possibly even altering the current waterway. Destroying the current, usable maintenance roadway, only to build another one on top of the buried piping, seems questionable and costly. I am not opposing the creation of a contained pipeline, but am questioning if a proper EIS has been done on (at least) this section of the wild and scenic corridor. I'd like to see if other solutions can be visited before a beautiful, natural section of the Deschutes is permanently defaced.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See the response to Comment ID 94.02 regarding the need for an EIS.
298.01	WILD	We are very concerned about the proposed pipeline and the environmental impact it has on our community. The falls, the birds and deer and other wildlife that drink from it would all be severely impacted.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
298.02	RIGHT	And the property owners losing their land for this and the scars on the land.	The proposed project would have no effect on land ownership. Please see Section 6.2.2 of the Plan-EA for further discussion.
298.03	ALT	The trees and other native habitats for wildlife too. To say nothing of the aesthetic beauty & relaxing qualities of water flowing. Please at least have an Environmental study before you begin this. We do not agree with piping the beautiful canals. Getting a lining would be much more logical.	Please see the response to Comment ID 94.02 regarding the need for an EIS. Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04.
299.01	PROP	Both of my parents have properties on the canal. I grew up in this community. This canal piping project is a reductionistic approach to a problem. It will destroy properties people have put their sweat, blood, and tears into. It will reduce property values with no compensation to the residents.	Please see the response to Comment ID 218.13.

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299.02	WILD	It will destroy a wildlife habit and ecosystem that has been here for over a century. And there have been no proper studies done to determine if there are any endangered species or plant life. There are other options for what is claimed to be the problem, water loss. This “solution” is going to create more harm than good. This needs to be addressed as a whole.	Federally listed or protected animal species are identified in Sections 4.9.2 and 4.9.3 (Fish and Aquatic Resources) and Sections 4.11.2, 4.11.3, and 4.11.4 (Wildlife Resources) in the Plan-EA. The effects of the project on these federally listed or protected species are identified in the equivalent sections in Section 6, Environmental Consequences. Special status plant species are identified in Section 4.6.2 in the Plan-EA.
300.01	FIRE	There are other alternatives to do this. I think the canal would be a great asset if we had a fire in this area. The Deschutes river might be helpful west of the canal for fire fighting & the canal would be great to fight fire in DRW plus Hwy.97 could be a great fire break.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
300.02	ALT	Please do not start piping the canal until we have more information on the effect of the pipe lining project.	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA, which includes discussion of the existing canal lining in AID. Please see the response to Comment ID 29.04.
301.01	GEN	My parents live on the canal and I lived for 20 years and I would hate to see it get piped, It’s beautiful and wildlife animals need the canal. My parents are really worried about their property and what could happen if it gets piped. Please don’t pipe the canal!	Please see Sections 6.11.2 and 6.2.2 of the Plan-EA for information regarding the project’s effects on wildlife and land ownership. Please see the response to Comment ID 218.13 regarding property value.
302.01	WAS	We have been the co-owners of [ADDRESS] for more than forty years. Our property directly abuts the Arnold Irrigation Canal and would be greatly affected by the proposed changes. We are most definitely concerned about water and the efficiency with which it is conserved and maintained. There is no argument about that as a driving force, but at what cost? We have several objections to the proposed plan:1, The proposed plan would significantly impact vegetation, wildlife and aesthetics along the canal next to our property. Trees would have to be removed or would die from lack of water and wildlife dependent upon the water would be devastated. Additionally, the plan for the historic flume would be in direct opposition to the Wild and Scenic Rivers Act (WSRA) and the Oregon Scenic Waterway Act.	Please see Section 6.6 for information about the effects on vegetation. Please see Section 6.7 for information about the effects on visual resources. Please see Section 6.11 for information about the effects on wildlife. The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
302.02	ALT	2. It does not appear that there has been a complete EIS done on a project of this size and scope as to the possible environmental, residential, monetary, noise of construction, pollution of the river, quality of life, etc impact.	Please see the response to Comment ID 94.02.

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302.03	FIRE	3. In this fire prone area, the open canal is an effective barrier against fire and gives easy access to a ready supply of water.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
302.04	CONS	4. This project would continue over many years, subjecting owners along the canal to years of dust, equipment noise, encroachment onto their property, decreased quality of life, and much reduced property values.	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline and Section 5.3.2 for construction details. The proposed project would be constructed in four phases. Construction of all the phases would be completed in 6 years.
302.05	RIGHT	5. Part of our residence is well within the “50 feet” of the construction site. I don’t believe the irrigation district has an easement that far into our property. Our bedroom is less than 50 feet from the canal. How would this be addressed?	Please see the response to Comment ID 283.01.
302.06	PROP	6. This property was purchased at a premium for its access to the existing open canal. Piping the canal would reduce its value as much as \$100,000 - \$450,000 according to some professional estimates. How would we be compensated?	Please see the response to Comment ID 218.13.
302.07	ALT	7. There are various alternatives to piping the water which do not appear to have been adequately addressed or presented to those concerned. According to our research, it seems that a concrete lining is a viable alternative with its 70%recovery of water and comparable price. This would allow the canal to remain open, but still address the issue of water seepage. Another solution would be to pipe the water in areas which would not be impacted and leave it open in impacted areas. I have not seen a complete exploration of these alternatives. These solutions could address both the issues of water seepage and the concerns of property owners and community residents.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04. Please see the response to Comment ID 32.02 for discussion of an alternative that includes a mix of open and piped sections.
303.01	PROP	I am a resident of Bend, and am writing to express my strong OPPOSITION to Arnold Irrigation District’s (AID’s) proposed plan to replace its existing FLUME and CANAL with an UNDERGROUND PIPE. AID has indicated it has legal easements on all privately owned property. This is questionable, the REDUCTION IN PROPERTY VALUES is not right,and while I am not a property owner, I think they should be compensated for their losses if you proceed with this AWFUL PROPOSAL.	Please see the response to Comment ID 218.13 regarding the proposed project’s effects on property value. Please see Section 8.4 of the Plan-EA for more information regarding easements.
303.02	WAS	Part of this proposal runs through the WILD and SCENIC DESCHUTES RIVER AREA. I don’t feel that AID has a right to impose such a DESTRUCTIVE change to the NATURAL BEAUTY of the scenic waterway. The maintenance ROAD sits high and is UGLY. The aesthetic impact along the river, hiking trails, picnic areas and river rim are significant.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
303.03	CONS U	Has it been APPROVED by the STATE PARKS & RECREATION COMMISSION?	Please see the response to Comment ID 143.02.

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303.04	VEG	TREES will be REMOVED or KILLED by the damage – which affects the scenic beauty and ecology of the Deschutes River corridor. Construction DAMAGE to the FRAGILE ECOLOGICAL ENVIRONMENT which is used by OSPREY, a protected species, the WHITE-HEADED WOODPECKER, FISH, CANADA GOOSE, FROGS, OWLS, DUCKS, DEER and even COUGARS! Why are we imposing deadly changes on God’s creatures?	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and vegetation and Section 6.11.2 for effects on wildlife.
303.05	ALT	LINING the canal would be cheaper and conserve the natural, irreplaceable beauty of the Deschutes River corridor. Canal lining has NOT failed on China Hat Road and Hwy 97 – it is in great shape and esthetically pleasing. Evaporation is minor, which can be further reduced by shade from trees. Cheaper pricing is good for everyone. Please, please conserve Bend’s beauty with the trees and God’s creatures. Wickiup will fill up with lining the canal, versus the total destruction of the canal! I really enjoy the beauty of the canal and want that beauty preserved. It is what makes Bend, Bend!	Updated language and costs regarding the Canal Lining Alternative have been added to Section 5.2 of the Plan-EA, including discussion of the existing canal lining near China Hat Road.
304.01	GEN	As a long time resident of Bend, I am very discouraged and upset to have learned about the proposed piping of your canal system along the Deschutes River. This is a section of the scenic river and forest that my family and I love to hike, run, and kayak. We believe that the damage done by piping would be both visually and environmentally disastrous and irreversible. Please consider other options to protect this beautiful section of Central Oregon	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
305.01	GEN	Our property address is [ADDRESS] in Woodside Ranch. Our property backs up to the Arnold Canal. Please see the attached photos. Our house is located very close to the canal. Our main concern is loss of the beautiful trees and also our property value. We also feel this canal is one of the beautiful, unique features of Bend and it would be a shame to cover it.	Please see Section 6.6.2 of the Plan-EA regarding the effects of the project on trees. Please see the response to Comment ID 218.13 regarding the proposed project’s effects on property value.
306.01	WILD	Please help save our canal and our property. We have lived in our home for the last 23 years we have raise two kids here and throughout the years we have seen many families of wildlife that include deer ducks and geese using the canal as away of life and survival. We are proud of the area we live in and Chose this location because of all it had to offer please help save our canal thank you. This is where we have lived For the past 23 years. We have raised our children here. Since living here we have seen many families of deer geese and ducks raising their young using the canal for water and survival please save our property and canal not just for us but for the wildlife that does come through it throughout the year.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife.
307.01	CONS	I am a property owner along the Arnold Irrigation Canal. My concerns about the Arnold Irrigation Project are regarding potential damage to my property (landscape, trees, driveway, home) during the construction process, and anything resulting from the installation of the water pipe, such as the loss of trees and landscape. I would like to know who pays for any damage caused by heavy equipment, and construction work, possibly making unsightly changes to the landscape.	Please see the response to Comment ID 283.01.
307.02	PROP	I want to make clear that our easement for right of way is 25 feet from center of canal, as called out on our property taxmap (NOT 50 feet). We will not allow any equipment, vehicles, workers, etc., beyond	Please see the responses to Comment IDs 283.01 and 218.13.

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		this point. I am not necessarily opposed to the project, if it saves water, helps farmers and is environmentally better. My concerns are with property damage and devaluation of our property.	
307.03	CONS	Can you reassure me that Arnold Irrigation, it's workers and any contractors will respect our property and not cause damage?	Please see the responses to Comment IDs 283.01 and 307.01.
307.04	ALT	I also hope enough environmental impact studies have been conducted regarding this project.	Please see the response to Comment ID 94.02 regarding the need for an EIS.
308.01	PROP	My name is [NAME] and I live along the flume at [ADDRESS]., just up from your flume access point. While my family and I understand the need to be water smart, like others, we are concerned about the impact of the piping project. We ask that you take every precaution that you can to preserve the beauty of our area. Like others, we are concerned about property values. We built our home in 2013, and from the design of the house to the selection of the furniture, everything was made with the view of the river in mind. We positioned the house on the lot to take maximum advantage of our surroundings, including the flume. We hope that you will work with and respect area homeowners to preserve the beauty of the area and our enjoyment of the river. Having what sounds like a large berm and road in our back yard does not sound at all attractive and will be a significant change from what we have currently. We sincerely hope that the 4 steps we take into our home before having view of the beautiful river, are not obscured by the berm and road in the future. We chose to buy our land and to build here, our forever home, because of the environment. Please, be cautious and aware of the changes being forced on our lives.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
308.02	SYS	An additional concern is the construction of the berm. I apologize, but I have not been able to find examples of how the berm would be built in the available materials. Is it expected that the area on the east side of the berm would be built up, changing the grade of our back yards? We have an understanding that that is the case, that the grade of our back yard would be brought up to the road level and would continue over the top of the new berm before heading down to the river. Would you please be so kind as to explain what the plan is for this area?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
309.01	PROP	My name is [NAME] and I live at [ADDRESS]. Our house backs up to the canal and we are pretty upset about the possibility of piping. Piping the canal will impact the value of my property. I asked about this at a public meeting located at Elk Meadow Elementary and still have not heard any information regarding this topic. Truth be told, I do worry about water (especially during dry times like these), however, I feel like a great compromise would be to line the canal. Water savings, habitat for the animals not lost, and the riparian zone not totally destroyed.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Regarding the Canal Lining Alternative, please see the response to Comment ID 29.04.
310.01	GEN	Such planning should have considered a lot deeper than this plan...	Please see Section 1.4 of the Plan-EA for more information regarding the decision framework underlying the Plan-EA.
311.01	WILD	I, [NAME], live on the canal in Deschutes river woods. [ADDRESS]. My response to the canal project is a negative one.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information

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		It will be disrupting the lives of many, including habitat for many species of wildlife. Animals and plant life as well.	regarding effects on wildlife resources and Section 6.6.2 for information regarding effects on vegetation.
311.02	PROP	Not to mention the destruction of property and value. I sincerely disagree with your assessment to continue this project.	Please see the response to Comment ID 218.13.
312.01	WILD	We own property at [ADDRESS] and bought 20 years ago because of the canal and have watched generations of ducks and deer call the area surrounding the canal home. To pipe the canal would be displacing entire generations of animals that call this place home.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
313.01	PUB	Please do not start the construction of the Arnold pipe until there is further discussion. Those who live along the canal should be in on a design that best fits the needs of the entire community.	Construction would not move forward until a Final Watershed Plan-Environmental Assessment is authorized by NRCS and final designs are completed. Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. The proposed project would be constructed in four phases. Construction of all the phases would be completed in 6 years.
314.01	PUB	<p>I am writing to formally register my comments to Arnold Irrigation District's (AID's) proposed plan to pipe the canal, as the legal owner of the property located [ADDRESS].</p> <p>Attached is my official comment to submit, along with photos.</p> <p>By this letter, we also formally request an extension of the public comment period until such time as the questions and concerns listed herein, as well as those submitted by other concerned parties, have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID's responses.</p> <p>Please let me know if you have any questions for me, or answers to my questions.</p> <p>I hope that our comments are heard and considered, along with many other concerned citizens.</p>	Please see the response to Comment ID 39.11 regarding an extension of the comment period.
315.01	ALT	I am strongly against the piping of the Arnold District canal in my neighborhood for just some of these reasons, I purchased my property on rutted dusty road because of the canal when I could have have a corner lot with asphalt to property line. My property value would likely drop \$50,000 I would not gain access to my easement property after piping. Massive ponderosa pines on canal edge rely on this to stay alive, the fire danger in DRW is already great, this would make it much worse. The canal give firefighters a closer water access to firefighters as some are likely thousands of feet from a fire hydrant. We want to keep people's wells functioning. Waterfowl, deer, birds and many other forms of wildlife depend on this water source to survive. Please reconsider this project or at least consider modifying the plan to accommodate all parties. Maybe a smaller pipe below while allowing water to flow above. Lining the canal instead of piping, or a combination. Line some areas and pipe others.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see Section 6.11 of the Plan-EA regarding the project's effects on wildlife. Regarding an alternative of having a smaller pipe below the canal, see the response to Comment ID 63.04. Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA. Please

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			see the response to Comment ID 32.02 for discussion of an alternative with piped sections and open canal.
316.01	VEG	I am the owner of [ADDRESS] Bend Oregon. I oppose the piping project. Arnold canal runs through approximately 300 yards of my beautiful property which has an irrigation sprinkler system and a fence within few feet of the canal. I have over 80 trees on my 5.46 acres. Many trees run along the canal. The trees would be cut down if piping occurs.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees. Please see Section 8.3 of the Plan-EA for more information about construction BMPs.
316.02	WILD	Bald eagles, owls, and hawks nest in these trees. Scores of deer, geese, and ducks exist because of their access to the canal water. The proposal of a piped canal would greatly impact the wildlife.	Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife.
316.03	VEG	Also the beauty of my property with the loss of trees adjacent to the canal and the lack of a water source would kill many more trees.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and vegetation.
316.04	FIRE	Most important the canal provides a water source in the event of a fire.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
316.05	PROP	Also my property value would be reduced.	Please see the response to Comment ID 218.13.
316.06	WILD	Animals would die because of the destruction created by placing piping.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
316.07	CONS	If they pipe it will effect my emotional and physical state. The reason I bought this piece of property at the end of the road adjacent to the National Forest was because I live a tranquil and peaceful lifestyle. I am losing sleep over how disruptive this piping project will be to me and my surrounding neighborhood. Major haul vehicles and heavy equipment on our gravel road on Rimfire Road and on my property will totally disrupt my life and take away value from my property and surrounding neighborhood. Please save our canal. Pipe in areas that do not effect personal health and property value. A better solution in to line the canal.	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. The proposed project would be constructed in four phases. Construction of all the phases would be completed in 6 years. Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
317.01	WAT	As property owners directly adjacent to the Arnold Irrigation Canal and holders of water rights, in Deschutes River Woods, we adamantly oppose piping this canal. Despite the reasoning for piping the canal (water loss to evaporation and seepage) it is in the public's trust and interest to allow this water to flow as is. Water seepage and evaporation naturally occur in river/ watershed systems, recognizing that this is a man-made water feature now on the landscape. Water is not being lost. The water that Arnold Irrigation claims to be losing is recharging our groundwater systems and circulating in its natural water cycle. What I see Arnold Irrigation doing is trying to increase their net water storage, which ultimately increases their profits by reducing the amount of water that is lost in its natural course of the water cycle.	Please see Section 4.8.5 of the Plan-EA for a discussion of groundwater resources and Section 6.8.2.3 of the Plan-EA for information about the effects on groundwater.

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317.02	VEG	Although the ditch in of itself is man-made, ~ 100 years ago, it has since naturalized as a feature on this landscape that has created habitat not only for an abundance of wildlife, but for riparian vegetation. If this canal is piped, we will lose our riparian vegetation and habitat that is now established along this canal system(s). The world is already experiencing a net loss of such habitats and being rare in Central Oregon, among a naturally drier climate, inadvertently you're imposing greater environmental impacts and a net a loss of habitat and ecosystem diversity. Not to mention the amount of disturbance on the landscape that will result with the use of heavy machinery, soil compaction, removal of vegetation, spread and introduction of non-native/ noxious plant species, increase of wildfire danger and the noise over the duration of time it will take to construct the pipe will be significant for years to come.	Please see Section 6.11.2 of the Plan-EA regarding the project's effects on wildlife. Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and vegetation. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. Please see Section 8.3 of the Plan-EA for more information about construction BMPs.
317.03	ALT	Additionally, how come lining the canal was not considered in your alternatives as presented in the Environmental Assessment (EA)? I find that the EA is skewed and has truly not considered all plausible alternatives. I ask that you and your specialists, revisit this and take into consideration ALL plausible alternatives to ensure you're EA will hold up in court and to the National Environmental Policy Act. I ask, what is the benefit beyond water loss, which you're not really losing? How will this area be restored to maintain our groundwater supplies, property values, habitat? How will we as property owners be compensated, when we too will be negatively impacted? My property will no longer host Alder's, Willows, Dogwoods, and the number of Aspen's it does if this system is piped. Nor will I, my grandchildren and future generations be able to enjoy or appreciate the diversity and wildness of this area and the private properties that align the canal. These are my tax dollars and this is NOT how I would like to see them utilized. Please consider all alternatives to piping these canal systems and make the right choice not just what will benefit agriculture, but all values both intrinsic and tangible!	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA, including how the Canal Lining Alternative would or would not meet the purpose and need of the project. Please see the response to Comment ID 29.04. For details about effects of the project on groundwater, vegetation, and wildlife, see Sections 6.8.2.3, 6.6.2, and 6.11.2 in the Plan-EA, respectively. For information on property value, see the response to Comment ID 218.13. See Section 5.1 and Appendix D.2 of the Plan-EA for discussion of the alternatives that were considered.
318.01	GEN	As a long term resident 1990, I would not like to see miles of dirt brought in to bury the pipeline . I think it will be disastrous to the surrounding scenic area and a disruption to the already fragile environment and wildlife. Please put this on hold until other ways to contain the water are brought to the people of Bend since this pipeline if very visible to all who venture the area.	Please see Sections 6.7 and 6.11 of the Plan-EA regarding effects on visual resources and wildlife.
319.01	FIRE	There are a number of reasons I am against Arnold irrigation piping the canal.It will kill all the tress along the canal making my backyard a fire hazard zone.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
319.02	WILD	It will destroy all the wildlife in the surroundings who depend on the water source from the canal	Thank you for your comment. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources.
319.03	WAT	There is no assurance that piping the canal and building a road over the flume will not impact the flow or not contaminate the water.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

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			Best management practices would be applied during and after construction of the proposed action to avoid and minimize effects on environmental and social resources. Please see Section 8.3 in the Plan-EA for information on these best management practices.
319.04	PROP	It will cause property damage as well as lowering property value	Please see the response to Comment ID 218.13.
319.05	ALT	Piping the canal will help few and harm many. There are alternatives which are better and cost less.	Please see Appendix D.2 and Section 5.2 of the Plan-EA for discussion of the alternatives that were considered.
320.01	GEN	We live on the canal as our property backs up to it. We strongly disagree with the piping of this canal. Leave it the way it is.	Thank you for your comment.
321.01	PROP	I am 100%against building this pipe. Do not want my property to be devalued and depreciate over something that does not need to be done	Please see the response to Comment ID 218.13.
321.02	VEG	I do not want my trees, my vegetation, or my property to destroyed.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and vegetation. Section 8.3.6 lists measures that would be followed to avoid introduction of invasive plants and noxious weeds, including using certified weed-free seed mix.
321.03	COST	And don't want to pay for it either. This is ridiculous, stop it now. I wanted to call in and voice my opinion.	Thank you for your comment.
322.01	GEN	We are WSR residents and strongly oppose covering the canal at the expense of tax payers and the impact on our environment, the wildlife, the value of our properties., Please consider ANOTHER option!!!!!!!!!!!!!!	Thank you for your comment. Please see Appendix D.2 and Sections 5.2 through 5.4 of the Plan-EA for more information regarding considered alternatives.
323.01	CUL	I am the property owner at [ADDRESS]. I am writing to voice my opposition to the piping of the Arnold Canal. The property is currently vacant, with plans to build a single family residence at some point in the future. The wood flume is an historic structure and the loss of it would be very disappointing. Sitting on the rear of the property and watching the water flow through the wood flume as it curves it's path is very pleasing.	The flume has been removed from the proposed project. Please see the response to Comment ID 12.01.
323.02	WAS	The lower end of Lava Island Falls is visible through the trees, very Central Oregon and it appears that the large fill dirt berm needed to keep the pipe's current elevation and put 4' of dirt on top for a road would block that view. It's hard to see how adding the proposed amount of fill dirt to bury the pipe could be allowed under the wild and scenic river regulations.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.

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323.03	SYS	Without creative contouring and replanting native vegetation, which grows very slow, there's no way a large earthen berm can look natural. Then to put a road on top seems very unnatural. The conditions to be met for building a home there come with some restrictions. Would a barren berm meet those restrictions?	The flume has been removed from the project. Please see the response to Comment ID 12.01.
323.04	ALT	The wood flume actually runs a relatively short distance, and yes, I can see some seepage from the flume. But clearly it would be easier and cheaper to patch leaks in the flume during the off season as opposed to the piping project. Further downstream, the canal should be lined and left open through the DRW neighborhoods for their enjoyment and wildlife that use the canal water there. Conserving water for fish habitat is important, but we should consider other habitat/ ecosystems. This water has more value than just irrigating crops. If any piping should be done it's out in the open expanses of land East of HWY97. Simply put, it seems to me that the gain of piping the flume and canal in the neighborhoods is not worth the loss.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA. Please see the response to Comment ID 14.01 for discussion of why AID has the need to modernize the Main Canal.
324.01	WILD	I respectfully request that you do not pipe Arnold Canal for 4 main reasons. First, this century-old established ecosystem supports a surprising number of seasonal species as a safe environment to raise young. I have personally watched ducks and geese in the canal caring for their young as they grew from chicks to young adults. We've even spotted Bald Eagles next to the canal. I'm not a biologist but do not believe a degree is necessary to imagine the additional insects, frogs, rodents, lizards, and small birds that are sustained by the water of the canal and in turn support the Great Horned owls, Red-tailed hawks, Gross hawks, and Coyotes we have also personally seen hunting and feeding around the canal. Removing the water of the canal will devastate this ecosystem as it can not simply up and move to the main Deschutes river and resume life as usual - that area is already populated appropriate to its available water. Piping the canal will kill this mature ecosystem.	Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
324.02	VEG	Second, sustainability. The water of the canal has sustained grasses, bushes, and trees in a 'greenbelt' through the area. If the water is removed it will have a significant impact, perhaps fatal, on this flora of southeast Bend. The loss of additional well-established carbon sinks in our area should not even be a consideration, particularly as the city continues to grow and add more pollution to our area in the form of vehicles and industry. We continue to suffer the loss of flora to development as the "unavoidable consequence of growth". This canal has nurtured the vegetation through our driest months for 100 years and the proposed pipe is not unavoidable, but in fact very, very avoidable. Piping the canal will damage the sustainability of our region.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and vegetation.
324.03	FIRE	Third, fire safety. The canal provides a source of water for homeowners and fire department tanker trucks to draw water from in the event of a wildfire. With the marked increase in large wildfire activity in recent years we should be endeavoring to increase, not decrease, our ability to fight these fires. With a \$50 submersible pump, an extension cord, and a hose I have prepared myself to use the water in the canal to help extinguish embers and dampen surrounding vegetation to inhibit the spread of fires. Removing this	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.

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		supply of water increases the risk to our homes, as the area the canal flows through has few, if any, hydrants for the fire crews to tap into. Piping the canal increases the risk of catastrophic fire damage.	
324.04	GEN	Fourth, the beauty of Central Oregon. The canal, and others like it, are part of the fabric of life in Bend. They provide the essential water for the plants and animals that helped transform this land from high desert scrub to the vibrant natural community we all love. Stripping the land of plants and trees, killing off animals, and covering the ground with miles of 50-100' swaths of gravel and concrete reduces our beautiful community to something more like Los Angeles. This Californication of Bend will affect the whole community as it diminishes the essential beauty and enjoyment of the outdoors that draws people to visit, and others to live here, buy homes and raise families, and start businesses that provide jobs and prosperity. This disrespect for a fundamental element of our community is not necessary, and the canal should not be piped. There are more than these 4 reasons to not pipe the canal, just as there is more than the 1 solution to the loss of water which is at the core of this debate. In fact, I argue that the water in the canal is not 'lost' at all, but a necessary injection of lifeblood into Bend. Any water 'saved' by piping has been targeted for sale further downstream, proving that this proposal is not about 'saving water' but about 'expanding profits.' The water will be used somewhere. We should use it where it provides the most benefits to the most people and the most wildlife, by preserving the thriving ecosystems, capturing CO2 where it is generated, helping protect our homes and property from devastating wildfires, and enhancing the natural beauty of our community. Please do the right thing and do not pipe the canal.	Please see Section 5.3.2 regarding the dimensions of land that would be affected by the project. See Section 6.8.2 of the Plan-EA for a description of what would occur with conserved water from the project. See the NEE in Appendix D.1 for an analysis that looked at the costs and benefits of the project.
325.01	GEN	The Arnold Irrigation District's (AID) proposal to use PL83-566 Grants from the USDA/NRCS for piping and pressurizing the main canal systems to conserve water is in keeping with the Deschutes Basin Board of Control's decision to meet the requirements of the HCP. The Deschutes River has been degraded as habitat for trout and other species by uneven flows, low flows in the middle Deschutes and even dewatering with the stranding of fish. AIDs 35-65% water losses in the main canals will require piping to reduce the seepage and pressurizing to enable better management. If the project includes better management and "on-farm" conservation measures, we support the piping and pressurizing option. We still have several concerns with this particular watershed plan.	On-farm conservation measures are not included as part of the Preferred Alternative. Please see Sections 8.1 and 8.2 of the Plan-EA for a description of the Preferred Alternative. See Appendix D.2 of the Plan-EA for discussion of an on-farm efficiency upgrade alternative.
325.02	IRA	1. The FCA and Blackrock's boiler-plate assessment of the district's plan found no issues of conflict with the piping alternative. This is misleading. AID's district is partially urbanized, sometimes with its consent. Those practicing real agriculture may now be a minority of their district users. Drought conditions have identified many poor practices by Irrigation districts that are no longer sustainable but are supposedly justified by long term practice, an inability or unwillingness to improve management or barriers in the legal system. On farm conservation and modern agricultural practices by holders of irrigation rights have not been incentivized or required.	The District and NRCS agree that water conservation through piping district infrastructure is one of various potential water management tools. See Section 8.1 for explanation on why the Piping Alternative was selected as the Preferred Alternative. See Appendix D.2 of the Plan-EA for alternatives that were considered during formulation and ultimately eliminated from detailed study.

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325.03	VEG	<p>o The project’s effects on landowners overlooks entirely the portions of the canal that transect old urbanized subdivisions where the canal is closely lined with 100 year old Ponderosa Pines, willows, and other plants that will be removed during excavation. Much worse, many plants will die years after the project due to root disturbance or loss of available water and require removed. These trees provide cooling in summer, protection in winter, sequester carbon to protect the planet and provide habitat for birds, insects and mammals. Loss if these benefits will significantly affect the quality of human and natural environments. To dismiss these issues as being of no significance is a mistake on the part of FCA and Blackrock and angers the owners of the properties, including some patrons of AID. It should be noted here that there is ongoing litigation fostered by ignoring these consequences within the Tumalo Irrigation district for impacts and damage created by piping.</p>	<p>Please see the response to Comment ID 71.01 regarding the conditions for removing trees. Please see the response to Comment ID 37.45 about watering trees after project completion.</p>
325.04	WILD	<p>The plan assumes that any wildlife using the seasonal environment created by the open Irrigation ditches with their old growth Ponderosa and vegetation will be able to move elsewhere. The only other similar habitat would be the Deschutes River itself. AID and DBBC should consult with Fish and Wildlife and the Department of Forestry before the plan has been approved in order to mitigate harms by better planning. Later correction may not be possible.</p>	<p>Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources. See Section 7.1 of the Plan-EA for a list of agency consultation and communication. See Sections 8.5.2 and 8.5.3 of the Plan-EA for details about state and federal consultation and compliance. Effects on federally listed threatened and endangered species and state-listed species are discussed in Sections 6.9.2 and 6.11.2 in the Plan-EA. Effects on federally listed species are also considered in the Biological Assessment developed for the project. USFWS concurred with the NRCS determination that the project may affect, but is not likely to adversely affect, the Oregon spotted frog (Letter of Concurrence 2022-0062518-S7; received by NRCS August 1, 2022). With respect to birds, the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) are managed and enforced by USFWS. Coordination with USFWS regarding construction timeline and species covered by MBTA and BGEPA has occurred (Sections 4.11.2 and 6.11.2.1). Prior to implementation, site-specific clearance surveys for bald and golden eagles would be completed by USFWS (Section 6.11.2.1), and any additional consultation regarding birds covered</p>

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			under MBTA and BGEPA would occur as needed. See Sections 6.11.2, 7.1, 8.3.8, and 8.5.3 of the Plan-EA.
325.05	PUB	o FCA’s approach to the public presentation of this plan failed to use the opportunity to educate the public and address concerns directly. Rather it minimized, ignored or obfuscated by making verbal referrals to general sections of the written plan the concerns of the residents about the damage to their property or the environment. There was absolutely no mention of remedy through easement provisions Community relations have been harmed by the approach.	The purpose of the public meeting on June 23, 2021, was to provide information about the Plan-EA and the proposed project and to gather public comments. Please see the response to Comment ID 1.01 for more information regarding public participation. Please see the response to Comment ID 364.01 regarding easements.
325.06	PUB	2. The National Environmental Policy Act requires that any project that significantly affects the quality of the human environment and natural environment individually or cumulatively must receive attention. Identifying these early in the draft planning stage could reassure the irrigators, homeowners, and other concerned citizens that their fears have been heard, studied and measures will be taken to mitigate the harms. AID Draft EA Watershed Plan Powell - 22 June 2021 page 2	This Plan-EA has been prepared to meet NEPA requirements as well as program and environmental review requirements specific to NRCS federal investments in water resources projects. For information about the opportunities that existed for public comment during the project’s NEPA process, please see the response to Comment ID 53.04.
325.07	WAT	3. AID proposes certain transfers or leasing of water to another entity as a result of water conserved by piping. That water may not be theirs with which to make a disposition. All of the Deschutes Basin districts had some or all of their origins as a result of the Cary Act. All were given public lands with inchoate water rights of a specific duty/ acre. That duty had early minor adjustments in some parts of the basin. All districts found delivery of that duty water impossible with the leakage and obstructions within the hand/ horse hewn main and major lateral canals. Additional water adjudications (decreed water) were granted, particularly by Judge TEJ Duffy and the State Engineer, to compensate for the estimated leakage and allow water delivery to the parcels at the end of the canal’s system. It is important to remember that this additional diversion right was carefully documented as being separate from the water duty appurtenant to the lands under the Carey Act, and were solely for the leakage and canal obstructions impeding delivery. Even before the 1920s, over appropriation of the waters of the Deschutes River was recognized. As the main canal and laterals are piped, water leakage disappears and obstructions vanish. The extra appropriations of decreed water for leakage were not granted as appurtenant to district land and are not longer justified for diversion. The disposition of that water should lie with OWRD, not a district. AID’s total diversion right is 150 cfs; but it historically had accommodated only 120 cfs in its system. The plan is not clear about that 30 cfs difference, unless that is the so-called “saved” water it proposes for the NUID and Wickiup exchanges.	Please see updated language in Section 6.8.2.1 related to the effects on water rights and diversion rates. Please see the portion of the response to Comment ID 207.4 related to carry water.

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325.08	GEN	<p>4. Management of the water in the Deschutes basin is being studied and becoming better understood. Modernization of practices is needed to meet the challenges of the 21st Century. The stress of 70 years of increasingly severe drought and climate change is bringing the many archaic agricultural, legal and management practices into stark relief. There is nothing in this plan, except for the mantra of conserved water from pipes, to tie AIDs future practices to this currently evolving reality. Despite initial grants of public lands, despite the use of public funds to create storage, and despite the “free” use of public waters in Oregon, districts and farmers have had a difficult lift to meet fiscal demands. With a new request for public funding, there has to be a commitment to a philosophical change in how to manage, conserve and, especially, share a diminishing resource. Such a commitment is missing in this proposal. Water, in some way, is the backbone of all species. In Deschutes County, it is an essential habitat or resource for an iconic fishery, other aquatic species, wildlife, economic opportunities, livelihoods and community - supporting an environment that makes our region desirable. The Deschutes Basin Working Group is attempting to collate all that is known about our basin and its water, seeking a consensus on better practices for the Deschutes Basin that will allow our increasingly precious supply of water support the environment, agriculture, cities and people. Like what has been discovered in a similar process in the Yakima Basin, it involves the realization that the 20th Century laws and practices that allowed the creation of the Irrigation districts to encourage settlement are now creating management problems. Beneficial uses need to be redefined. The valuable and well managed agriculture of North Unit Irrigation District needs to be recognized and supported despite the squabbling over “Junior Water Rights”. Any “conserved” water from piping and pressurizing the canals no longer needed to assure delivery to the private laterals should be rededicated to the Deschutes River Basin rather than legally compartmentalized and allocated by multiple “plans” to certain Irrigation districts for the purposes of “leasing” or bloating their allotment. It will require that old laws and practices be re-evaluated and modified with new management principles based on science, community need, and cooperation to conserve and protect our water and the many species and people dependent on it.</p>	<p>Please see the response to Comment ID 325.02 regarding the alternatives that were considered. Please see Section 6.8.2 of the Plan-EA and the NEE in Appendix D.1 for more information regarding how water conserved by the project would support agriculture in NUID. In Oregon, water resources are broadly governed by provisions of the Oregon Revised Statutes and associated administrative regulations. The statutory provisions dealing with water often include general legislative purposes related to the use and management of water resources. Amendments and changes to Oregon water law are beyond the scope of this Plan-EA, as they would not be eligible for PL 83-566 funds.</p>
326.01	PROP	<p>I am one of the 2 owners of the property located at [ADDRESS] in Bend. Our property which has been in our family for approximately 40 years adjoins the Arnold Irrigation canal. One of the primary reasons we paid a premium for our property was its adjacency to the canal. Our family owns water rights from the canal and for years has used those rights to water our small pasture land and to graze domestic animals on the property. Recently we heard of the District's plan to replace the open natural flowing canal with an underground pipeline. I am opposed to the current plan to replace the open canal with a pipeline. I certainly understand the need to reduce the loss of precious water to evaporation and leakage through the bottom of the unlined canal. However the canal in its current more natural state provides scenic and economic benefits for our property in the form of increased property value to our property, and the survival of the large Ponderosa pines adjacent to the canal on our property.</p>	<p>Please see the response to Comment ID 218.13 regarding the proposed project’s effects on property value. Please see updated language in Section 6.6.2 of the Plan-EA regarding effects on trees.</p>

Comment ID	Topic Code	Comment	Response
326.02	ALT	I believe there must be better options that would address the need to reduce water losses to seepage and evaporation while still preserving the amenity that adjacent owners have enjoyed all these years. Options that I believe should be further evaluated would include lining of the canal adjacent to existing residential properties. Such an option would substantially reduce the water loss to seepage being experienced with the current unlined canal while allowing the adjacent property owners to continue to enjoy the current visual and economic benefits of the open running canal. This option could also be combined with piping of the canal where it runs through rural areas. The combination of lining in residential areas and piping in rural areas would significantly reduce water loss while also reducing the economic impacts to the property owners adjacent to the canal. I appreciate the very real need to find additional water to protect our wonderful fish and wildlife in Central Oregon and provide additional water for agricultural users. The District is to be commended for searching for ways to reduce water losses. However I believe there are better options to meet the goals of wildlife protection, increased water availability and protect the economic benefits of the adjacent owners who have long enjoyed and have paid for when they bought their property and in the form of increased property tax they have paid due to their location next to the natural open running canal. I urge you to give further serious evaluation and consideration to creative solutions such as I have described as a part of your environmental assessment and as a part of your decision making process.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA and the response to Comment ID 29.04. Please see the response to Comment ID 32.02 for discussion of an alternative with a mix of piped and lined sections. See Appendix D.1 of the Plan-EA for information about the costs and benefits of the project.
327.01	ALT	I live on the canal and do not use the water. I then have no say? My concerns are valid and I would like to have a chance to have an honest dialogue about alternatives to total piping of all of the Arnold Canal. There are areas that can be piped in open fields where it would be practical. The main COID canal has some open canals and some piped done in a very considerate way.	Please see the response to Comment ID 14.01 for discussion of why AID needs to modernize the Main Canal. In addition, see the response to Comment ID 32.02 for discussion of an alternative with a mix of piped and lined sections.
327.02	ALT	After 20 years of living at [ADDRESS], I have watched the canal fill and empty. I have watched deer, rabbits, ducks, geese, squirrels, raptors, coyotes, and song birds use the canal as a life source of water. The trees on the canal have been watered there and stand tall providing shelter and coolness in the summertime. The main concern on this branch is environmental impact and I haven't seen a report from AID on that subject.	Please see Section 6.11.2 of the Plan-EA regarding the project's effects on wildlife. Please see Section 6.6.2 of the Plan-EA regarding the project's effects on vegetation.
327.03	CUL	Destroying the historic flume doesn't make any sense. It would be so disruptive and seepage can't be a problem there to any degree.	The flume has been removed from the proposed project. Please see the response to Comment ID 12.01.
327.04	WAS	It can't be legal in the natural forest to destroy the land alongside the river The river itself seeps, that is what happens.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.

Comment ID	Topic Code	Comment	Response
327.05	PROP	In conversation with the people involved with piping in Tumalo, they have told me they think it has spoiled their land and they had to redrill their wells. I can't imagine what the construction would do to the trees on the edge and what it would do to the property value. Of course, I am very worried about that.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see updated language in Sections 6.6.2 and 6.8.2.3 of the Plan-EA regarding effects on trees and groundwater.
327.06	GEN	Our paperwork with the title and deed shows that the canal has been there for 100+ years. Why would I think it would go away? The Bureau of Reclamation in California has miles of open but lined canals in the farmland of California. It is hotter and drier there than here. Not very convincing arguments from you folks.	Thank you for your comment. Please see Section 5.2 of the Plan-EA for updated language and costs regarding the Canal Lining Alternative.
327.07	ALT	What has been done to mitigate the water waste of hobby farmers that waste water? Maybe you have done some research on that. Why can't the laws about senior water rights be changed and just straight out analyze how it could be more efficient? Use that money to update the system delivery in a more creative way.	Upgrading on-farm infrastructure was considered as an alternative during formulation in the Plan-EA; see Appendix D.2 of the Plan-EA. Changes to Oregon water law are not an authorized purpose under the PL 83-566 program and therefore are beyond the scope of this Plan-EA.
328.01	GEN	I find it absolutely ridiculous that you guys are trying to pipe this canal. Greed over all else right???? You guys are everything that's wrong with this world. Shame on you!	Thank you for your comment.
329.01	ALT	We are writing you with our concerns about the canal piping project. PLEASE consider other options instead of piping. Please line the canal.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
329.02	WILD	How horrible of you to go through residential areas and destroy the beauty of the canal and all of the wildlife.	Thank you for your comment.
329.03	WAT	And we don't understand how all the people who have water rights with no farm or livestock - have their water running all day because they have to use it. What a waste! Why not allow them to conserve during drought times. I read a response from someone who had these water rights say "I pay \$5600 a year and if I want to water my weeds I will". That makes no sense!	Thank you for your comment. Please see the response to Comment ID 327.07.
329.04	VEG	At our property we take care of the canal. We keep weeds down and put bark chips on the road to keep dust down when your trucks go down the road. It looks nice. We also have old beautiful ponderosa pines that one of your employees informed us that you can take them down!	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and tree removal.
329.05	PUB	The last thing I want to mention is how uninformed we feel. Your communication with your customers is awful. For instance, will the pipe be completely buried or will it be a huge mound with dirt on top and a road? Will everything be cleaned up and trees replanted? Will you be taking trees down? Will you be using both sides of the canal or just the side with the road on it? Please let us know your plans! So again, please reconsider different options. Please line the canal and I believe everyone would be supportive of this plan. Thank you for reading this. We hope it doesn't end up in trash.	The Plan-EA has been updated in several sections. For an updated description of the proposed project, including the contour of the pipe and how trees would be affected, please see Section 5.3 of the Plan-EA. For an updated description of the Canal Lining Alternative, please see Section 5.2 of the Plan-EA.

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330.01	WILD	The Arnold Canal is a neighborhood treasure that has been there for over 100 years. The aesthetic and audible nature of the water adds immeasurably to the enjoyment of the backyard of the property and it supports and enhances the local wildlife. It is part of the ecosystem. Our front and backyard are open, not fenced. I witness the almost daily movement of deer from the front to the rear of our property. There, they drink from the canal and cross to an opening on the other side. Often returning during the evening in the opposite direction. There are also many duck pairs that frequent the area. The resident woodpecker also seems to like the trees along the canal. These are just examples of the more visible species. I agree with the desire to conserve water to assist fish populations, but we should not destroy one ecosystem to enhance another.	Thank you for your comment. Please see Section 6.11 of the Plan-EA for more information regarding the effects on wildlife.
330.02	FIRE	With the increased fire behavior in the Pacific NW and the pine forests being particularly vulnerable, the open canal is a water source for homeowners or professional fire crews to use to protect the houses in the area. There is no guarantee that the fire hydrants in the area will be able to keep up with the demands of a large scale fire event.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
330.03	ALT	In reading about some of the options available to help conserve water in the Arnold canal. One option seemed like the best to suit all concerned parties needs. That option is the shotcrete lining. If the goal is to reduce seepage and this reduces it by 70% that is a significant improvement. Plus, it appears that the cost and install time is 20%- 35%of piping. This way the canal could remain open. The way the local area depends on this water in multiple ways, it is too valuable to remove and everybody associated with it gets a piece of what they desire. A good compromise is where everybody gets something.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
330.04	PROP	Interestingly, the deed to the property shows no canal or easement on the survey. The property line goes back 270' to the neighbor's property line. There is mention of the canal in an appendix, but nothing specific. If there is a degradation of the property in the form of removal of a valuable asset, it seems there should be some compensation.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.
331.01	WAT	Just a follow up with more remarks regarding the piping of the canal that were opposing:Most of us I assume are definitely for water conservation. I'm curious where the seepage goes that is such a concern? Does it not go back into our water table? So then, is this a loss or ultimately a reusable resource in another avaneue? Is it true that the water evaporation is only 1-4%? Have we not gotten relatively normal snowfall that contributes to our water for several years now? Do we not receive what was evaporated water from other areas back here from the other side of the mountains, etc. Don't give me the political, one-sided narrative that supports your dollars and agenda. . give us the facts. . because it'll effect and impact your life and city too.	As noted in your comment, seepage from canals and laterals in AID contributes to recharge of the underlying aquifer. Please see Section 4.8.2.3 of the Plan-EA for a discussion of groundwater resources and Section 6.8.2.3 for a discussion of the potential effects of the project to groundwater resources. Generally, evaporation is part of the hydrologic cycle that contributes to precipitation, including snowfall, across geographic areas. Evaporation generally contributes to water losses from canals in the Deschutes Basin, with evaporation rates varying throughout the basin (USGS 2001). However, the

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			<p>two site-specific water loss studies completed for AID calculated losses in the Main Canal from both seepage and evaporation but do not differentiate between what loss is a result of evaporation versus seepage. Overall, this project would have no effect on overall evaporation rates in the region.</p> <p>Reference: Gannett, M.W., Lite, K.E., Jr., Morgan, D.S. & Collins, C.A. (2001). Ground-water hydrology of the upper Deschutes Basin, Oregon: U.S. Geological Survey Water-Resources Investigations Report 00-4162, p. 77.</p>
331.02	ALT	Piping is not the only alternative; it's the only one that seems to be offered, and if this is the case, then the "bullying" is a concern.	Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered.
331.03	VEG	We're all also considering the wildlife, habitat, vegetation, thousands of mature trees that will be removed and replaced [by noxious weeds (see the results of the TID piping in my friend's backyard that's now a dusty, noxious weed mess with no more healthy animal migration, trees and vegetation that it used to have). And the grass proposed to be put over the piping in my backyard..are you going to water and maintain that? And you're going to paid for this..am I right?	Please see the response to Comment ID 71.01 regarding the conditions for removing trees. Please see the response to Comment ID 37.45 about watering trees after project completion.
331.04	PUB	The timing of notifying the public about the piping is unjust and unfair..but probably strategically planned. It also does not seem to have been enough effort and research put into alternative options that are much less expensive and cause much less damage both to our earth, environment, as well as our home values (I assume those of us along the canal are going to reimbursed by you should the piping go in, and our property values go down?). Trust me, if all of you who are making the decisions, lived where we do, and you had the canal in your backyard..you wouldn't have the perspective and agenda you do. Come sit in my backyard with me, drink a cup of coffee early morn or a beer in the afternoon, and just be still and listen to the birds chirping, ducks quacking..and the birds flying in to their airport (AKA canal), this is amazing! Not to mention the eagles over heard (and in my trees), ducks and ducklings, geese and goslings, hawks, great horned owls (in my own trees), deer, elk, bobcats, cougars, foxes, as well as mature trees that are hundreds (perhaps thousands) of years old, that most will be eliminated with piping. In addition, how would you feel with (I think it's) 50 feet of the your property along the canal drastically changing (you care when it's your backyard and your equity).	Please see the responses to Comment IDs 39.09 and 39.11.
331.05	WAS	There hasn't been a fair analysis of alternatives, it'll destroy historic property, the proposed "engineered fill" could/probably will dump into the Deschutes River and alter the right channel of Lava Island Falls	Please see Section 6.6 of the Plan-EA for information about the effects on vegetation. Please see Section 6.7

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		(perhaps even eliminating it all together when you bring in your big equipment and have to dig into the sides of the hills, when you end up having to make wider roads to work on and install your huge piping. .go hike it for yourself and take a look. .it’s your “backyard” too you’re messing up). And to top it off, the proposed piping project breaks the law with regard to the Wild and Scenic River Act (WSRA) and the Oregon Scenic Waterway Act. These are just a few things to highlight, so you know we all want to conserve water, save the fish, etc. .but it’s so much bigger and more than this, as well as a lot of politics and dollars involved that is not benefiting the homeowners and the greater public that you’re supposed to be serving as a not-for-profit.	for information about the effects on visual resources. Please see Section 6.11 for information about the effects on wildlife. The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
331.06	WAT	There’s a concern about potential tax hikes, and you still have another existing problem with the water at the end of the canal being put back in the river, that is not being pumped to the upper Deschutes where it’s apparently needed. .and if we’re talking about the upper Deschutes that’s such a concern, then maybe focus on that, because piping doesn’t fix this problem either . . □	Please see Section 2 for a discussion of the purpose and need for action and Section 5 for a discussion of the alternatives. See Section 6.8.2 related to the effects on water resources.
331.07	WILD	I leave you with this video I took, that’s like hundreds of photos and videos I take in my backyard of nature, trees, wildlife, thanks to the canal. .I heard some noise out back the other day in the canal the other (very hot) day as I was working in our garden (more than the usual and wonderful noises one hears when they back the canal in their backyard), only to capture the tail end of this deer literally playing and splashing in the water to cool down. If the canal is piped, although these animals are migratory, most of these trees and the wildlife along the canals that we get to experience all over our neighborhood (not just in the yards that have canals), but the owls, eagles, ducks, geese, deer, foxes, mature trees and plants, etc. .will be no more. The reasons we all live, play and work here in Bend/ Central Oregon is because of things like this. These deer will not becoming here to our neighborhood to cool down in the water, have a drink, have their kids, play and enjoy the area they’ve been having generations of their own in, prior to all of us moving here. .oiling is not the only nor best solution. Thanks for considering our concerns, opinions, laws, wildlife, and quite literally, your and my “backyards” for today and future generations.	Thank you for your comment. Please see Sections 6.11 and 6.6 of the Plan-EA for discussion of the effects on wildlife and vegetation. See Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered.
332.01	GEN	I am writing with concern to the piping going on in Bend. I understand that the steps have been taken to undergo the project of piping the canal in and around Bend. Please take into consideration my concerns with this project and the folks of Bend.	Thank you for your comment. Please see the responses to Comment IDs 332.02 through 332.04.
332.02	WILD	This canal provides a plethora of nutrients, homes, and resources to the surrounding wildlife of Bend and directly affects the ecosystems of our city.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
332.03	MET H	I do understand that evaporation is a concern, however the amount of evaporation does not show to be significant with the research I have done.	Please see Appendix E.4.1 in the Plan-EA for more information regarding the water loss study that was completed for the Main Canal.

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332.04	ALT	I do NOT support the piping of the canal- a much better approach would be to simply line the canal. Please listen to the people of Bend rather than following the money of large companies that would like to line their pockets with the profits of this agenda.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
333.01	WAS	I would like to make a comment in support of lining the canal instead of piping it. 1)AID’s proposed piping project breaks the law with regard to the Wild and Scenic River Act (WSRA) and the Oregon Scenic Waterway Act.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers. Please see Section 5.2 of the Plan-EA for a discussion of the Canal Lining Alternative.
333.02	COST	2) The piping alternative is too costly (in so many ways) for the benefits it provides and other better alternatives have not been given fair consideration. Please halt the piping of the canal and investigate other alternatives.	Please see Appendix D.1 of the Plan-EA for an analysis of the costs and benefits of the proposed project. See Section 5 and Appendix D.2 of the Plan-EA for alternatives that were initially considered and the rationale for why they were eliminated from further analysis.
334.01	ALT	Please do NOT pipe the canal! However, please line it!	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
335.01	WILD	Our property on the historic Arnold Irrigation Canal is designated as a Wildlife Habitat Conservation Management Plan. This plan, is partially dependent upon the canal. As stewards of this land, we take our responsibility very seriously. My husband and I have worked diligently for 30 years on our 20 acres to provide habitat for wildlife with the least amount of disturbance from human-kind. Our property fronts over 1500 feet of Arnold Irrigation Canal and creates a haven for many types of birds, fowl, mammals and amphibians. It’s also home to many second-growth pines, many that grow along the canal and would be cut to make room for not just piping but for massive equipment to be brought in, further destroying the wildlife habitat. This should not be a decision that is all or nothing. There are options for compromise that could greatly reduce water loss through leakage. The flora and fauna depend on this historic and beautiful canal, as it has been here for many of their and our generations. Removing it would be devastating. Piping it would change the entire ecosystem of our area – and certainly not for the better. Looking back in five or 10 years from now would be a sad, sad story and there would be no going back. I implore you to please rethink this massive and most devastating project. Please don’t pipe the canal!	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Please see Section 6.6.2.1 in the Plan-EA for a discussion of general construction practices in the District’s ROW with respect to existing vegetation and mature trees, and see Section 8.3 of the Plan-EA for minimization, avoidance, and compensatory mitigation measures.
336.01	GEN	I’ve heard lots of arguments to not pipe the canal but in my point of view none are vald. Saving the water from seepage benefits so many more people than a few that are afraid of lowering property values, afraid trees will die and wildlife will somehow not figure out how to get water. I hope you will pipe the canal to	Thank you for your comment.

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		benefit thousands or maybe millions of people that use the river and farmers so we will continue to be able to eat.I'm in favor of piping the canal.	
337.01	GEN	<p>I'm putting my .02 in on this subject. I wholeheartedly support and applaud your canal piping plans. I get upset when I hear homeowners near the canal (that is empty much of the year) complain about the "damage" that piping with cause to the environment.</p> <p>The fact is, these peoples' desires should not outstrip the greater good to all of Central Oregon, that piping will provide in saving lost water. Current climate shows that water savings are even more important today than just a few years ago. Piping projects need to move forward as soon as possible.</p>	Thank you for your comment.
338.01	PUB	<p>We are writing to formally register our strong objection to Arnold Irrigation District's (AID's) proposed plan to replace its existing flume with a pipe "buried above the existing landscape elevation", as the legal owners of the property located [ADDRESS]. The existing canal runs through our property. By this letter, we also formally request an extension of the public comment period until such time as the questions and concerns listed herein, as well as those submitted by other concerned parties, have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID's responses.</p>	Please see the response to Comment ID 39.11.
338.02	WILD	<p>If implemented, AID's proposed plan to replace the flume with a buried pipe would permanently deface the scenic natural beauty of our property and of approximately one mile of the Upper Deschutes River corridor. This corridor, including the location of the proposed flume replacement, is designated under the federal Wild and Scenic River Act due to its "Outstandingly Remarkable Values: Geologic, Fishery, Vegetation, Wildlife, Cultural, Scenic and Recreation." It is also designated as an Oregon State Scenic Waterway. The corridor is legally documented, preserved and protected under the 1996 Upper Deschutes Wild and Scenic River and State Scenic Waterways Comprehensive Management Plan. The existing flume is a rustic wood structure located in an area of stunning natural beauty enjoyed each year by thousands of hikers, kayakers, photographers, fishermen, picnickers, tourists and homeowners. It is unconscionable that AID would for its own business purposes propose a replacement plan that would disfigure this treasured section of river and willfully disregard the interests of so many of its fellow citizens. For many Central Oregonians, the Deschutes River represents the heart and soul of our community and underlies the unique character for which Bend is known. We are not opposed to AID's general objective of improving its infrastructure and reducing water loss from seepage; we are however strongly opposed to AID's plan to replace the existing one-mile-long flume with a pipe "buried" above the existing landscape elevation and topped with a service road. The flume runs adjacent to the river and AID's proposed replacement would not only clash violently with the natural environment but would be highly visible to everyone wishing to enjoy the scenery – from nearly every vantage point: the Deschutes River hiking trail, the river itself, the picnic area, and the river rim.AID's proposal for replacing the flume is just one part of a much larger project described in its document, Arnold Irrigation District</p>	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on Wild and Scenic Rivers.

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		<p>Infrastructure Modernization Project - Draft Watershed Plan Environmental Assessment, dated June 8, 2021. Section 5.3.2 of this document states: <i>The first 450 feet of the existing aerial flume below the district's diversion would be removed and replaced by pipe supports that would hold an elevated pipe. The new supports and pipe would be approximately the same height as the existing aerial flume. The remaining 4,945 feet of flume would be removed, and a pipe would be buried. Because this section of pipe must be level with the aerial section, the pipe would be buried above the existing landscape elevation and would hug the hillside. The buried pipe would be covered with a minimum of 3 to 4 feet of engineered backfill. A new maintenance road would be built on top of the buried pipe.</i> What this would mean in practice is that a new raised roadway would be constructed along approximately one mile of one of the most scenic portions of the Deschutes River. The road would sit atop an 8- to 19-foot-high bed of "engineered backfill", (based on the 1-to-10-foot height of the existing flume above the ground, plus the 4-to-5-foot diameter of the pipe, plus another 3 to 4 feet of fill on top of the pipe). This would likely require thousands of dump truck loads of "fill" to be trucked in and built up on top of the present terrain. From any point lower than the road surface, (hiking trail, river, picnic area, etc.), one would see the massive sloped side of the artificial "burial mound" facing out toward the river. From any point higher, one would look down on an elevated maintenance road snaking along the edge of the scenic river corridor.</p>	
338.03	RIGH T	<p>AID's Plan ignores or fails to adequately address many critical questions and concerns about its proposed flume replacement including: AID's legal authority to conduct such a massive construction project on other's private property; visual appearance of the completed project; transparency with regulatory agencies; environmental impact; and public notification and disclosure. It is impossible for regulatory agencies, property owners, and concerned citizens to fully evaluate and comment on the proposed Plan until these questions and concerns are fully and accurately addressed. We therefore request a thorough written response to each of the following questions and concerns as well as to those submitted by other concerned parties. 1. AID claims to have legal easements on all privately owned property on which its existing flume and canal system is located and that these easements grant it legal authority to replace the flume and canal system with a buried pipe on these same privately owned properties. AID has yet to provide a copy of the specific easement that describes AID's rights, responsibilities, and limitations on our specific property but have so far received only a general referral to the Right of Way Act of 1891 and the Cary Act of 1894, (both of which concern use of public lands and do not mention easements on private property). If there is a legitimate legal question as to AID's right to operate its business on privately owned properties belonging to other parties, this question must be resolved before proceeding with further discussion of infrastructure improvement. To resolve the question of easements once and for all, we request that AID provide each private property owner on whose property AID's flume and canal system currently exists, or whose property would be affected by the proposed flume and canal piping project, with the following documentation: a. Provide documentation proving that AID actually</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. For information about the Carey Act, please see the response to Comment ID 39.02. For discussion about individual easement documents, please see the response to Comment ID 39.18.</p>

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		<p>does have a current legal easement to use each of these specific privately owned properties. This documentation should show the original granting and terms of each easement and the legal transfer of the easement to the current property owner. b. Provide documentation proving that if these easements were originally granted as a Right of Way on public lands and those lands later became privately owned properties that the Right of Way was legally converted into an easement allowing AID to use the now private land. c. If the easements are proven to be legal, we request that AID provide to each affected property owner documentation showing the specific terms, conditions, and limitations of their particular easement, including: the length of the easement period, (if perpetual, where is this stated and what happens if AID goes out of business); the limitations of the easement, (what does it allow AID to do on privately owned property and what does it prohibit AID from doing); and does the easement specifically grant AID the right to use privately owned property with no monetary compensation to the property owner.</p>	
338.04	PUB	<p>2. It is imperative that all relevant regulatory and management agencies and all affected private property owners be notified of AID’s proposed Plan because each will be directly and significantly impacted by the Plan. Some of these parties are still unaware of AID’s proposed plan. To ensure that all concerned parties are informed of the Plan and have the opportunity to comment on it during the public comment period, we request that each of these parties be notified by registered mail.</p>	<p>Please see the response to Comment ID 39.09.</p>
338.05	SYS	<p>3. For regulatory and management agencies with responsibility for the Upper Deschutes River Corridor, affected private property owners, and the general public to visualize and fully comprehend the aesthetic impact of AID’s plan to replace the flume with a pipe “buried above the existing landscape elevation”, it is essential that AID prepare a detailed written description of what the proposed flume replacement would actually look like when completed, including drawings and/ or other visual representations of the completed project as viewed from multiple points along the river, the hiking trail, the picnic area, and the river rim. We request that such a written description be prepared and made accessible on-line to all parties listed above.</p> <p>a. After the written description specified above has been provided to and reviewed by all relevant regulatory and management agencies, we request that a copy of their written responses, including all written approvals and disapprovals, be made accessible on-line to all parties listed above.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
338.06	VEG	<p>4. Many mature trees would necessarily be removed or killed by AID’s proposed plan to replace the flume with a buried pipe. This would dramatically affect the scenic beauty and ecology of the Deschutes River corridor. a. What are the average and maximum distances on each side of the proposed roadway where all existing trees would be removed? b. What is the total estimated number of trees larger than 3 inches in diameter that would be removed or killed by the project? c. Will AID replant native trees to replace those removed and killed? If so, will this be done on a tree for tree basis?</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>

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338.07	WILD	5. The proposed flume replacement would require a lengthy and massive construction project using heavy equipment in a fragile ecological environment used by osprey for annual nesting. The osprey is a protected species. What measures would AID employ to ensure this species is not harmed by the construction?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
338.08	SYS	6. The proposed flume replacement calls for a 4-to-5-foot pipe to be buried in “engineered backfill”. This backfill would be clearly visible from most vantage points and would dramatically impact the scenic beauty and ecology of the Deschutes River corridor. a. What would the “engineered backfill” consist of and what would it look like visually? b. What would be the slope and maximum height of the backfill on the side facing the river? c. Would native trees be planted on the sloped side of the backfill facing the river? d. What measures would prevent erosion of the sloped sides of the backfill and what would these measures look like visually? e. What measures would AID employ to ensure the backfill material and any topsoil used are free of noxious and invasive seeds? f. Is it AID’s intention to completely fill in the area between the road bed and the adjacent terrain on the inland side of the road so that no low areas are created which would be subject to pooling? g. If the answer to Question (f) is yes, this would require large amounts of “fill” material that would encroach far inland onto private property in some areas. Has AID received written permission for this encroachment? And how will AID compensate the property owners for this encroachment? h. If the answer to Question (f) is no, what measures would AID employ to prevent pooling on the inland side of the backfill and what would these measures look like visually?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
338.09	SYS	7. The proposed flume replacement calls for a “maintenance road” to be constructed on top of the burial mound and run along the entire length of the buried pipe. This road would likely sit approximately 8 to 19 feet higher than the current terrain and would therefore be clearly visible from most vantage points around both sides of the river rim. The proposed road would be highly detrimental to the scenic beauty and ecology of the Deschutes River corridor. a. How wide would the “maintenance road” be? b. How wide would the entire “flat” area on top of the burial mound be, (including road, shoulders, and adjacent ground)? c. How would the road and its shoulders be surfaced? (Asphalt, gravel, dirt, etc.)	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
338.10	PROP	8. Many homeowners on both sides of the river, and in Deschutes River Woods, have selected and purchased their property primarily, if not solely, for the scenic beauty of the Deschutes River Corridor, and the canal, and this natural beauty is a major factor in the aesthetic and monetary value of their property. Replacing the flume with a buried pipe and elevated roadway would significantly detract from both the aesthetic and monetary value of their property. a. Does AID intend to compensate these homeowners for the property devaluation it causes? b. If so, how will the dollar amount of the devaluation be calculated and how will it be paid?	Please see the response to Comment ID 218.13.
338.11	ALT	9. According to AID’s Plan, the primary reasons for replacing the existing flume with a buried pipe are that it would reduce AID’s maintenance costs and that it would need to be replaced in 15 to 20 years anyway due to its age. The estimate of its remaining life appears to be based on a 1995 “Steele”	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.

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		<p>engineering report; however, a copy of this report is not included in AID’s Plan. ALL outdoor structures will deteriorate over time unless properly maintained. However, if well-constructed and properly maintained, most structures will last hundreds of years and we earnestly request that AID give serious consideration to this option. The cost of maintenance is simply a cost of doing business and in our opinion is not justification for inflicting permanent damage on the irreplaceable natural beauty of the Deschutes River corridor. However, if for some reason the preservation and maintenance of the existing flume is not feasible, we respectfully request that AID propose an alternative that would not harm the Deschutes River corridor and those who love it. Our concerns stated above, reflect more of an objective point of view to the proposal. Just questions that should be asked, and answered, before the project should ever be considered to move forward.</p>	
338.12	GEN	<p>As a homeowner, tax-paying US Citizen, full time working parents of 2 children, we want to share with you the love we have in our home and property, and the devastation that would come to us if this pipe project were approved. We have worked hard in our lives to be able to buy a home to raise our family in. We have put blood and sweat into the equity of our home, to teach our kids how to work hard to earn the dream of owning a home, AND building it into your dream. We have raised garden beds, and sown seeds together on this land. We watch the geese, ducks and deer return to the same place along the canal every year to lay eggs and raise their young. We have a sanctuary along the canal where the natural ecosystem thrives and flourishes, where we can find peace and solitude on our property to enjoy life and be thankful. It is a huge part of the quality of our lives. The scenery of our backyard is similar to a park, and it is one of the main reasons we purchased this home. (see attached photos)If the piping project goes through as currently proposed, we will not only lose the visual sanctuary and place of peace we call home, we will lose a HUGE amount of value in our property.<images included in original comment></p>	<p>Thank you for your comment. Please see the response to Comment ID 218.13 regard the proposed project's effects on property value.</p>
338.13	FIRE	<p>We are also EXTREMELY CONCERNED about the fire danger that would be created with a winding corridor of dead trees, left by the devastation of piping this portion of the canal, and the devastation to the natural ecosystems and wildlife. Deschutes River Woods is already a high-risk community for lethal, devastating forest fires, with only one main exit out of the area. For AID to consciously decide to move forward with such a negligent decision, is completely irresponsible.</p>	<p>Updated language regarding the project's effects on wildfire risk can be found in Sections 4.3 and 6.3.2 of the Plan-EA.</p>
338.14	PUB	<p>We hereby request that the public comment period be extended until all of the above questions and concerns, as well as those submitted by other concerned parties, have been thoroughly addressed and all concerned parties have had sufficient time to review and comment on AID’s responses.</p>	<p>Please see the response to Comment ID 39.11.</p>
339.01	PROP	<p>Arnold Irrigation District EA Comments 1. Please add some more explanation on the Property Value Decrease caused by the piping of the canal. I do not understand where a 30% decrease is coming from. If this is an inaccurate figure, please analyze and provide a more complete discussion on the effect of the proposed action on property values. Losses to esthetic values need to be addressed more in the document.</p>	<p>Please see the response to Comment ID 218.13 regarding the proposed project’s effects on property value. Please see updated language in Section 6.7.2 of the Plan-EA regarding effects on visual resources.</p>

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339.02	WAT	2. Please add to the project summary information, the irrigation rate and duty rates for water rights managed under the Irrigation District. This would help landowners understand the relationship between the proposed project and the water they are actually receiving. What is the amount of water each gets on a per acre basis?	Please see the response to Comment ID 272.01.
339.03	WAT	3. Sec 4.8.2, pg. 27 Why is water storage in Wickiup reduced by 75,017 acre-feet. On year 13?	Please see the response to Comment ID 272.02.
339.04	WAT	4. Please add some more explanation of why the saved water from the piping project is being passed on to the North Unit. Why is this water not just being saved in Crane or Wickiup Res for use in shortage situations?	See Section 6.8.2.1 of the Plan-EA for updated language regarding the effects of the proposed project on water resources and the NEE in Appendix D.1 of the Plan-EA for a discussion of the benefits that would occur as a result of AID passing water to NUID.
339.05	WAT	5. Please clarify who is requiring the Deschutes River min. flow of 100 cfs and eventually 300 cfs. Are these numbers coming from the State of Oregon? See Sec E 12 E 15 pg. 30 k	Please see the response to Comment ID 272.03.
339.06	FISH	6. Pg. 32, ODFW request was for 250 cfs, why is the target 300 cfs?	Please see the response to Comment ID 272.04.
339.07	ALT	7. I recommend you complete your analysis of the canal lining option, because it is the one that is raising the most questions. Make it clear why this one was eliminated. See Sec. D48 cost is the primary factor. Sec 5.2.1 pg. 45	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04.
339.08	VEG	8. I believe the major objection to replacing the canal with a pipeline, is the loss of the trees that have grown up along the canal. They provide a visual backdrop along the canal and a substantial amount of habitat, particularly for birds. If a method can be developed which would support the existing trees, much of the objection to the proposed pipeline would disappear. Sec 6.6 indicates this possibility is available to owners along the proposed pipeline. fig 6-1 6-2 Could a couple of cfs of the saved water be retained for owners along the pipe route to use for tree watering? Then they would not have to diminish the water they have for irrigating crops.	Property owners can water trees and vegetation within their easement with water they have a legal right to, either irrigation water delivered by the District if they are a patron or water from a domestic source. Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees.
339.09	WAT	9. In the presentation, there was mentioned a 125 cfs District Pre project diversion. Where did this number come from? Is the 25 cfs reduction subtracted from this number or the 150 cfs AID total water right?	Please see updated language in Section 6.8.2.1 of the Plan-EA regarding water rights and diversion rates.
339.1	SYS	10. Will private gates be allowed across the Easement route for boundaries between private owners?	Please see the response to Comment ID 272.07.
339.11	SYS	11. Pipe grade...sec 6.7.2 pg. 64 concerned about the top of the pipe being at grade. Does this mean it has no cover? Worried about damage; trucks turning on it. What does "at grade" mean?	Section 6.7.2 of the Plan-EA has been updated; please see the updated text. The pipe would be buried and the depth of cover would adhere to NRCS practice standards.
339.12	MET H	12. 2.1.4 5 cfs is not a velocity. Make correction.	Please see Section 2.1.4 of the Plan-EA for updated language.

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339.13	METH	13. What analysis of need to increase water delivery to maintain the ability to grow crops in the face of declining natural precipitation due to climate change? Has this been considered?	Please see Section 3.1.1 of the NEE in Appendix D.1 of the Plan-EA for a quantitative analysis of water shortages related to crops.
340.01	WILD	We are writing to you to voice our very strong objection to closed piping of the Arnold Canal. There are alternatives! This historic canal is not only a beautiful piece of landscape abutted to our property (thereby increasing the value) but it also supports a large number of wildlife. Our names are [NAME] and we own property along the canal. [ADDRESS]. As we mentioned, this canal has history and has become a relied upon source of water for many generations of wildlife. As homeowners of 15 years, we have watched mated pairs of ducks raise their young in and along the canal year after year and the deer travel along the canal behind our home dependent upon the plant life and water to survive. Stopping for water at the lazy stretch of the canal is a daily on their travels, we could set our clocks by the same 5 we see every evening. They have come to rely on it. Just beyond the canal, behind our property, is also a piece of land that has become a haven for the wildlife. The area is inaccessible for building so, despite all of the invasion as humans we have brought into their homes, this is the one area that remains safe for them. Losing the proximity to water in that area would further drive the deer populations into the rapidly expanding housing developments thus forcing their migration routes to alter. A piped canal means that the Deschutes River becomes the closest accessible water source for them shy of the random landscaped ornamental water feature. This drives deer populations across HWY 97 increasing motorists risk as well. It also increases the deer populations along the river in the town creating a whole new issue for the public parks. Of course as homeowners we are deeply concerned about the impact this will have on the value of our property but as humans we must have stewardship of the land and animals that inhabit it. Humans created this canal, built homes where they once fed, and forever altered their natural habitat. The wildlife have since come to rely on the man made canal to survive despite the reduction in land. They have adapted it and it would be irresponsible stewardship for us to further destroy what they have adapted to. There are alternatives to closed piping! There is still time to consider the way in which you both meet your needs and those of the wildlife. Utilize an alternative that meets both! Thank You for taking the time to consider our objections.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife. Please see Section 5 and Appendix D.2 of the Plan-EA for discussion about alternatives considered and eliminated from the study. Please see the response to Comment ID 218.13 regarding property value.
341.01	GEN	Hi we are [NAME], we would like to see the canal Piped and in the future we would like to see all of the canals piped.	Thank you for your comment.
342.01	CUL	We live on [ADDRESS], above the flume on Lava Island Falls. We live 50' above the flume, and there is approximately 300' of the flume in our view. Please consider that the flume is not a danger to the public, as are the canals. The flume is in a secluded no public access area. The water loss is much less from the flume versus water loss from the canals. The flume is an historic landmark and should not be removed.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
342.02	WAS	This area of the Deschutes river is a wild and scenic waterway and should not be disturbed. It is one of the few areas in central Oregon where different species of fir trees grow.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See

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			Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
342.03	ALT	The required environmental study should address the damage this project will do to this area. An inspection of the flume indicates the need for some minor repairs. This would eliminate some water loss. This project seems like a terrible way to waste tax dollars.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see Section 6 of the Plan-EA for discussion of the environmental consequences of the proposed action on a variety of resources.
343.01	ALT	Please don't pipe the canal, please line it instead. Thank you.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
344.01	WAS	I live along the scenic river corridor just a couple blocks from the flume. I enjoy the historical flume and how it carries water to a select few properties for irrigation. I am defiantly against the piping of the canal for various reasons that I feel Arnold Irrigation is completely disregarding. First off, we love along the scenic river corridor. I am limited with what color I can paint my house, limits with tree removal, or changing how the landscape can viewed across the river. Your company should be bound by the same limitations, especially for almost a mile stretch along the Deschutes River. Your current plan will completely destroy that section of river.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
344.02	GEN	Aside from the obvious property and environmental destruction to pipe the entire canal, how does all that all money spent making a mere 3% of evaporation savings?	Please see the NEE in Appendix D.1 of the Plan-EA for more information regarding costs and benefits of the project.
344.03	CUL	Also, since the flume was built in the 1920s, I would think there is some historical significance to it that should be taken into consideration.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
344.04	WILD	And then there's the wildlife along the way that rely on the canal as a water source, from chipmunks and birds, to deer and cougar. Please reconsider your current exceptionally destructive plan and line the canal instead.	Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife. Please see the response to Comment ID 237.01.
345.01	ALT	I'm a resident of DRW and I am asking that you please line the canal rather than pipe it. Thank you.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
346.01	GEN	I agree with the proposed canal protection plan put forward by the Arnold Irrigation District. The ongoing loss of water is unsustainable and piping the canal will help protect and preserve water. Recent events, both wildfires and drought, look to be ongoing threats to this region, adding to the need to protect water resources. Add to these the projected growth in Central Oregon and the imperative is clear.	Thank you for your comment.

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347.01	GEN	I'm writing in regards to the potential piping of the canal through the Deschutes River Woods neighborhood in Bend. Please do not pipe but rather, line the canal instead, in order to keep the value and peaceful landscape the canal brings to the area for each of the surrounding houses.	Thank you for your comment. Please see Section 5.2 of the Plan-EA for a discussion of the Canal Lining Alternative.
348.01	PROP	We live at [ADDRESS] in southeast Bend. We have lived here for over 30 years. The back of our property backs up to the Arnold Irrigation canal, which for us, creates a natural buffer between our yard and the 3 rd Tee box of the Mountain High Golf Course. The piping of the canal for us and our neighbors, will not only open up our property to meandering golfers, but will take away the natural habitat for wildlife (ducks, geese, deer), and will drastically affect our property value.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Please see the response to Comment ID 32.03 for privacy concerns.
348.02	SAFE	We have spent years adapting our property to take advantage of the natural scenic beauty that the canal affords us, and if it is covered up, we will in all likelihood end up with a fence to keep out unwanted trespassers.	Thank you for your comment. Please see the response to Comment ID 32.03 regarding trespassers after the proposed project. The District would work with landowners to determine what can be allowed in the easement.
348.03	COST	Spending 42 million dollars for a 13 mile stretch of a rather insignificant stretch of canal seems like the taxpayers aren't getting much in return for their investment.	Thank you for your comment. Please see Appendix D of the Plan-EA for the economic analysis of the project, including updated project costs due to removal of the flume from the project.
348.04	ALT	If nothing else, wouldn't it make sense to pipe the larger canals first? We are all in favor of doing what we can to conserve our resources, but at some point I think that prioritizing and looking for less costly alternatives would be prudent. A section of the canal has been lined south of China Hat road for years, and it is still in good shape. Why can't that be aviable, less expensive alternative. Sometimes it seems like our government is out to just spend OUR money!! Reconsideration of this project, due to the, impact on neighboring properties and wildlife would be wise and appreciated by many.	Please see the response to Comment ID 14.01 for discussion of why AID identified a need to modernize the Main Canal. The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA, which includes discussion of existing canal lining near China Hat Road. See Sections 6.7 and 6.11 of the Plan-EA for information about the effects on visual resources and wildlife.
349.01	GEN	Do not enclose the Arnold Irrigation Canal with metal pipe. This is not just a rural issue. The Arnold Canal courses through the Woodside Ranch and Deschutes River Woods neighborhoods—but the proposed piping project will impact all citizens of Deschutes County, not just a few residents whose property abuts the canal. AID has erroneously framed the proposed 13-mile piping project as a fish and threatened species habitat conservation effort. It emphatically is not.	Please see Section 6.4.2 of the Plan-EA for information regarding the regional economic effects of the project. See Section 6.6.2 of the Plan-EA for discussion of the proposed project's effects on trees. The District was involved in the development of the Deschutes Basin Habitat Conservation Plan; please see Sections 2.1.3, 4.8, 4.9, and 4.11 for more information regarding the Habitat Conservation

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		Attached are photos of my yard along the canal on Pine Vista Drive. I will continue to protest the loss of those trees and the ecosystem the canal provides.	Plan and endangered and threatened species. Please see Sections 6.9.2 and 6.11.2 of the Plan-EA for more information regarding the effects of the proposed project on fish and aquatic species, wildlife, and endangered and threatened species. Effects on federally listed species are also considered in the project's Biological Assessment developed for consultation with USFWS under Section 7 of the Endangered Species Act.
349.02	VEG	This destructive construction project will choke out trees and vegetation.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees.
349.03	WILD	It will displace wildlife that has depended on the canal for water, habitat, and travel for a century. It will force new and unknown migration patterns. Deer will resort to crossing Hwy 97 to get to the Deschutes River, creating a high speed traffic hazard.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding impacts to wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife.
349.04	FIRE	It will place homes in jeopardy. Piping the Arnold Canal will expose Oregonians to the ravages of wildfire. After the canal is buried there would be no access to water to defend nearby homes and subdivisions where there are few or no fire hydrants. Dead and dying vegetation plus heavy equipment creates increased fire danger as well. Part of the AID canal runs through a transition zone between wilderness and development that has proven particularly susceptible to catastrophic wildfire events. Residents living in this zone have been instructed to reduce unnecessary fuel sources and take all steps possible to mitigate the hazard. Replacing an effective fire break—a body of water the size and length of the canal—with combustible vegetation is irresponsible and potentially deadly.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
349.05	ALT	Worst of all: no alternatives to this piping project were considered. The all-or-nothing plan does not consider buffering or lining the canal, partial piping, or any other course of action. Deschutes County residents want to reduce canal seepage and keep more water in Wickiup reservoir. We want to improve habitat in the upper Deschutes. But we also want to keep thousands of trees alive along the 13-mile stretch of the main canal. We want to protect wildlife that uses the canal corridor for water, habitat and travel. We want to protect homes from wildfire. These goals can be achieved with something other than burying water in an expensive metal pipe. The pipe is the wrong solution. It is too costly, in so many ways, for the benefits it provides. There will be too much collateral damage to ecosystems and real people, all at an outrageous expense to taxpayers. Other, better alternatives have not been given fair consideration. This project needs further evaluation.	Please see Appendix D.2 and Section 5.2 of the Plan-EA for discussion of the alternatives that were considered. For information about effects of the proposed action on vegetation and wildlife, see Sections 6.6 and 6.11 of the Plan-EA. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.

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			See the NEE in Appendix D.1 for discussion of the costs and benefits of the project.
350.01	ALT	Hello everyone agrees that the canal should not be piped! I don't think so to! Don't pipe the canal, line the canal instead!	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
351.01	WILD	My husband and I live along the canal in Deschutes River Woods. My husband has lived on this property for 24 years. We have both watched an abundance of wildlife use the canal. What is the proposal for wildlife access to the water if they no longer have access to the canal water they have used for so many years.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife.
351.02	ALT	The drought issues that Oregon has are far beyond what piping a canal would resolve. We need to look at water management along with water usage by property owners who are "entitled" to water. Flooded fields in April and May with the water running to the sides of paved roads is unacceptable. How would piping the canal fix that issue. I would also like answers on why there is water in the canal in February, or throughout the winter months. Golf courses must be a drain on the water coming from our reservoirs, I believe they should have to pay for watering their greens, just like I have to pay to water my lawn. What they do should not be considered irrigation or a need for irrigation water. Or maybe drill their own well. There are so many other options which I believe should seriously be considered before you just jump the gun and pipe all our canals. However, if you will not look into the other options then I think you owe it to the property owners and more than anything all the wildlife that use the canals as refuge and for a water source to replace it with ponds or some other source that is comparable and easy for the wildlife to use.	Upgrading on-farm infrastructure was considered as an alternative during formulation in the Plan-EA; see Appendix D.2 of the Plan-EA. The timing of when AID diverts water into their system is based on their water rights certificates. See Section 4.8.1 of the Plan-EA for more information. See Section 6.11 for discussion of the effects of the proposed action on wildlife.
352.01	PROP	I am adamantly against the piping of Arnold Canal. I live at [ADDRESS], the canal runs through my backyard and is abutted on both sides by my property. I feel that piping the canal along this section, will increase the burden on property owners and devalue properties. How can Arnold Irrigation increase the burden on private property owners?	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. The District would install the proposed project pursuant to their right-of-way and easements.
352.02	SYS	As a residential home owner, I have irrigation rights and a irrigation system. How is Arnold Irrigation going to pay, implement, and incorporate the potentially new pipe system into my existing system?	Please see the response to Comment ID 37.62.
352.03	PROP	If construction of the pipe happens instead of lining the canal, or some other option not yet considered, property owners should be allowed time to document proof of value lost via piping.*Property owners should have the right to a pre-pipe and post-pipe property value analysis.	Construction of the proposed project could not begin unless the Plan-EA was authorized. Please see Section 8.7.2 of the Plan-EA for the expected construction timeline of the proposed project if it were to be authorized. Property owners can pursue a property value analysis at any time they desire. Please

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			see the response to Comment ID 218.13 regarding the proposed project's effects on property value.
352.04	RIGHT	-Where is Arnold Irrigation's legal documentation stating the size of easements pertaining to individual property owners? A lot of structures and houses are within 50 feet!	Please see the response to Comment ID 39.18 regarding legal documentation. Clarifying language regarding the expected dimensions of areas that would be disturbed by construction has been added to Section 5.3.2 of the Plan-EA.
352.05	WILD	I feel that piping the canal along this section, which is approximately 1+ miles from where it is diverted from the Deschutes River near Lava Falls, will cause reprehensible environmental damage. My property borders on the Deschutes National Forest and the canal provides water for Trees, Vegetation, and Wild Life. The canal and swath of woods that border, are a haven for migrating and residential birds, such as the pair of White Headed woodpeckers that frequent the ponderosa trees in my backyard. What about the wild life that rely on this corridor for their survival?	Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Please see Section 6.6.2.1 of the Plan-EA for a discussion of general construction practices in the District's ROW with respect to existing vegetation and mature trees, and see Section 8.3 of the Plan-EA for minimization, avoidance, and compensatory mitigation measures.
352.06	ALT	Time should be allowed for a proper Environmental Impact Statement. I am not opposed to change, but this project is short sighted, and only benefits a few people without considering all the impacts to OUR natural resources and OUR environment.	Please see Section 6 of the Plan-EA for a discussion of the effects of the project on a variety of resources. See the response to Comment ID 94.02 regarding the need for an EIS.
353.01	GEN	I agree with the proposed plan to replace open ditch type canals with secure piping. The time had come to recognize the need to rethink water preservation.	Thank you for your comment.
354.01	VIS	The benefits of lining the canal are more than efficiency . . .Aesthetics are also important in our locale. .We are not Southern California . . .We are Oregon!!!Leave "pipes" to the bong crowd. . .	Please see Section 6.7.2 of the Plan-EA for effects on visual resources. Please see Section 5.2 of the Plan-EA for a discussion of the Canal Lining Alternative.
355.01	GEN	I applaud those who have through careful studies decided that it is in the best interest for all residence to cover much of the exposed canal. We have come to a time due to climate change that changes that effect us all have to be made for the greater good. Fortunately this one is really of a minor nature and affects the beautification of most properties.	Thank you for your comment.
356.01	ALT	Do not pipe the canal. Please line it instead.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
357.01	ALT	Being a life long Bendite, please DO NOT PIPE THE CANAL LINE IT! The environmental impact is severe on the trees, plants, animals, calmness of the beauty it gives. LINE THE CANAL—WE THE PEOPLE ARE THE MAJORITY! LINE THE CANAL!!	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.

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358.01	WILD	Please do not pipe the canal. Many animals rely on it as their water and food source as well as habitat. The more we interfere the harder they have to work to survive.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife.
358.02	VIS	Residents along it's path enjoy the tranquility and beauty. Piping will take away so much of this.	Please see Section 6.7.2 of the Plan-EA for effects on visual resources.
358.03	ALT	Please line it instead to help with water conservation. It is a shame that residents have to pay the price for Bend's preferential treatment of golf courses and breweries in times of water crisis.	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
359.01	ALT	I'm writing to encourage you to line the canal verses piping it!	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
360.01	GEN	Do not do this to our community! Stop this from happening. This is a dreadful waste of money and will cause material harm to this community.	Thank you for your comment.
361.01	GEN	Pipe it! A canal is not a river view. At worst, it is a potential hazard for small children. If it saves water it is worth it.	Thank you for your comment.
362.01	GEN	I've lived in bend for 42 years. I'm very unhappy you're thinking of removing the flume by deschutes river woods. This is Bend's history, and a short segment of the piping. I live in downtown bend, so I don't have any property affected by the piping. Old things should be saved and preserved. When I moved here all those years ago, the city had just torn down the old pilot butte inn, what a crime.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
362.02	VEG	Also, the story on z21 showed a VERYLARGE tree on the neighbor's land. Killing trees like that and others is not the answer. I'm all for saving water for the deschutes, I'm just not sure I agree with how you are doing it.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees.
362.03	COST	I have heard that Arnold irrigation received federal funding and that it was earmarked for piping.	PL 83-566 construction funding would not be available to AID until a Finding of No Significant Impact were issued and the Final Plan-EA were authorized. See Section 8.7.6 of the Plan-EA for information on the proportion of funding from PL 83-566 and from AID.
362.04	WAT	And what are you doing about water wasted in Culver?	Water conservation projects in areas outside of the planning area of this Plan-EA are beyond the scope of

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			this project because AID does not control water use outside the district.
363.01	WAT	Has any consideration been given to amending the policy of “use it or lose it”? I wonder how many are wasting water by irrigating fields of weeds, just to retain their rights for the future.	Please see the response to Comment ID 293.03. Changes to Oregon water law are not an authorized purpose under the PL 83-566 program and therefore are beyond the scope of this Plan-EA.
364.01	SAFE	Once the canal has been covered, can we as property owners fence in our property (next to and over the canal)? We would ensure full access to Arnold with large gates for trucks/equipment. As it is now, we have people walking next to our current fence tormenting our dogs, allowing their dogs to come to our fence and fence fight, and picking our flowers etc. It does concern me with several of the questions around public access to this area.	Easements would not change as a result of the project; see Section 6.2.2 of the Plan-EA for more information. See the District's website for the User Handbook, which includes District regulations and operating procedures. Please reach out to the District directly to determine what is allowed in your specific easement.
365.01	WAT	I’m worried about the canal being piped. We are on a well, and I’m wondering that if it’s piped, what will that do to our aquifer?	Effects on groundwater were analyzed at the basin level and evaluated based on data from a 2013 study by the U.S. Geological Survey. This study estimated the effects on groundwater recharge of changes in climate (reduced precipitation), groundwater pumping, and canal lining and piping. The study focused on the Deschutes River Basin and used data from the period 1997 to 2008 (Gannett and Lite 2013). An important caveat to using the data and findings from this study is that the effects of piping AID canals may be different from previous canal lining and piping projects that have occurred throughout the basin. Please see Section 6.8.2.3 of the Plan-EA and Appendix D.2.3.1 for a discussion of the effects on groundwater. Reference: Gannett, Marshall W. & Lite, Kenneth E. (2013). Analysis of 1997–2008 Groundwater Level Changes in the Upper Deschutes Basin, Central Oregon. U.S. Geological Survey Scientific Investigations Report 2013-5092, 34.
365.02	PROP	Also, our property values will go down, (as was told to us by a realtor).	Please see the response to Comment ID 218.13.

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365.03	WILD	The wildlife calls our canals home, and have for years! This is a very bad plan in my opinion!	Thank you for your comment. Please see Section 6.11 of the Plan-EA for more information regarding effects on wildlife.
366.01	GEN	Thank you so much for the draft plan to pipe the canal. Though I live along the canal and enjoy the flowing water, I think it's clear that we'd be better served by conserving our water as much as possible as droughts worsen.	Thank you for your comment.
367.01	GEN	I would not like to see the canal in the Deschutes River Woods area piped. It will destroy wildlife habitat, decrease property values, affect quality of life, and certainly make Deschutes River Woods more of a tinderbox than it already is.	Please see Section 6.11.2 in the Plan-EA regarding wildlife habitat and updated language in Section 6.3 of the Plan-EA regarding effects on wildfire risk. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.
367.02	CUL	This part of the canal should be declared historic as this particular irrigation district was created over 100 years ago.	Please see the response to Comment ID 49.05.
367.03	ALT	I would submit that guniting the canal in residential areas and piping in agricultural areas is a good compromise.	Please see the response to Comment ID 32.02.
367.04	SAFE	Also, I would like to add my opinion as to creating a public walking trail where the canal would be piped. This is a terrible idea. I do not want people walking through my backyard. I purchased my property here for the privacy and the serene beauty the canal setting provides. This would also compromise security. Trespassing such as this also upsets the pets and wildlife who make their homes along the canal area.	Please see the response to Comment ID 32.03.
368.01	CONS	My construction experience in Bend leads me to wonder if they can dig a trench without dynamite blasting. If water is escaping thru rock fissures the blast could also travel thru those fissures and damage nearby structures and trees. The work done in the early '80s to build the Bend sewer would give an estimate of the percentage, by linear foot of trench, of neighboring properties that were damaged (typically foundation cracking). I think these costs updated to present day should be included in the cost estimate for the project. It is reasonable to require the District to research this issue. It is possible the City of Bend has archived the costs associated with the sewer construction project. Its possible the Bulletin archives at the library has stories of such house damages. Addendum to previous comment:I am opposed to piping the canal adjacent to residential areas	Prior to construction, the contractor selected would work with NRCS and AID to determine the method of excavation. Based on the depth of the existing canal, estimated pipe size, and subsurface material, it is anticipated that in limited sections, the canal would need to be deepened to accommodate burying the pipe so it is fully buried.
369.01	WILD	There are a lot of animals that use the canal. See it everyday.	Thank you for your comment. Please see Section 6.11 of the Plan-EA for more information regarding effects on wildlife.
370.01	PUB	Extend the public comment period. I strongly oppose the proposed canal piping project. Most patrons are not aware of the economic and environmental impacts.	Please see the response to Comment ID 39.11.

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371.01	WILD	During the zoom meeting, several items discussed caught my attention and requires more discussion. First, and most importantly the study that was done saying wildlife “will adapt” to their water supply being cut off in the heat of the summer. This is not sufficient. Those canals have been there for over 100 years, and you cannot just pipe their water supply. To pipe with no plan to provide water for wildlife is unconscionable and unacceptable. Again, wildlife has depended on the canal water supply for generations, and you must plan to provide water to them. I suggest there be a watering hole every mile or two at the minimum. Also, since we will be saving so much money on operating costs (per what was said in the zoom call), there should be no issue in spending a little money to protect wildlife. Water for wildlife is a must.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife.
371.02	BNFT	Second, if this piping project is going to save so much on operations and maintenance cost in the future, I am assuming we will have lower rates in the future years if this project goes thru. I would like confirmation of that. Mostly though, there needs to be water provided for wildlife. I would like to know how I can track both these issues and further comment if needed.	Lower assessment rates in the future are not anticipated. Please see the response to Comment ID 257.01 for more information about district assessment fees. Please see Sections 6.11.2 and 6.9.2 in the Plan-EA for information about the effects on wildlife and on fish and aquatic resources, respectively, from the proposed project.
372.01	WILD	This has been our home and view for the last 23 years. It would be a big loss not to have this anymore. This waterway is important to the land and wildlife it attracts. I know the deer drink from it as do the ducks and geese. Please do not take our canal away from us and the wildlife it brings in.	Thank you for your comment. Please see Sections 6.11 and 6.7 of the Plan-EA for more information about effects on wildlife and visual resources.
373.01	PROP	I do support all efforts at effectively and efficiently managing critical water resources within the Deschutes basin. My concerns relative to the draft are: 1- The language of the draft does not specifically address the cost burdens and cost ownership of removal and remediation of private landowners property assets e.g. landscaping features, security fencing, and property damage. This needs to be addressed as part of the overall environmental economics to minimize the economic burden of the easement trusts with private landowners.	The District would install the proposed project pursuant to their easements and right-of-way. To the extent practicable, the District would work with the landowners prior to beginning construction to minimize damage when possible.
373.02	WAT	2- The draft does not present a contingency for reduced water availability in the future. Wickiup reservoirs current fill status is an indicator of the need to address further reductions in water usage that the draft does not consider or offer.	Please see the response to Comment IDs 247.05 and 134.01.
373.03	PROP	3- The current easement language references distance from a canal edge. There is no easement language proposed in the draft that addresses the easement distance from the centerline, or edge, of a buried pipe that would guide private property owners and Title companies legal property descriptions.	Land ownership and easements would not change as a result of the proposed action. Please see Section 6.2.2 of the Plan-EA for further information.

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373.04	FIRE	4--The Rural Fire District #2 is already challenged by NFPA standards for response times. Loosing pump access to the open canal for wildfire suppression puts a considerable additional burden on their response options and increases both public and private landowners risk for catastrophic fire loss. The draft proposal needs to address access for fire suppression.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
374.01	CONS	First and foremost, I am in support of the piping project. However I am concerned with the projected timeline. Seven years to pipe 13 miles of canal seems exceedingly slow. Our current and ongoing drought needs a rapid response. Seem like the schedule could be expedited given our early and reoccurring shut offs.	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. AID and NRCS developed the timeline based on what could reasonably be constructed during each non-irrigation season.
374.02	CONS U	Another concern is the disruption of wild bird nesting habitat. Most of the trees along the main canal are ponderosa pine. These trees provide nesting habitat for resident eagle and hawk populations. Eagles nest in January/ February while Redtail Hawk nest in March/ April. This timeline coincides with the proposed construction schedule. The Migratory Bird Act prohibits the removal of trees containing nests. Violation of this act is a federal offense. I strongly suggest bringing ODFW into this project as a consultant. Thank you for the opportunity to comment.	The Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) are managed and enforced by USFWS. Coordination with USFWS regarding construction timeline and species covered by MBTA and BGEPA has occurred (Sections 4.11.2 and 6.11.2.1). Prior to implementation, site-specific clearance surveys would be completed by USFWS (Section 6.11.2.1), and any additional consultation regarding birds covered under MBTA and BGEPA would occur as needed. See Sections 6.11.2, 7.1, 8.3.8, and 8.5.3 of the Plan-EA for information about wildlife and birds covered under MBTA and BGEPA, coordination information with USFWS, mitigation with respect to wildlife, and details about consultation with the Services for species listed under the Endangered Species Act (ESA). Coordination with ODFW has occurred and would continue as needed. See Section 6.11.2 and 7.1 of the Plan-EA.
375.01	GEN	It is imperative that this plan move forward. The drought is real, and it is not written in anyone's land/ title documents that the own he right to see canal water. Every drop of water is precious.	Thank you for your comment.
375.02	SYS	Additionally, all new construction landscaping in Deschutes County (and existing landscaping where possible) should need to be xeriscaped.	Thank you for your comment.
376.01	WILD	The Canal brings so much wildlife to the area it would a set back in the reproduction of many species if the canal is piped.	Thank you for your comment. The Plan-EA analyses wildlife at the population level. Please see

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			Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
377.01	GEN	The last two years having our water shut off early while still being rationed and watching our fields turn in to dirt I would have to agree with the piping. If we can save over 10,000 football fields at a foot deep of water annually I would say pipe it.	Thank you for your comment.
378.01	RIGH T	<p>The legal easement</p> <p>1. Recent Oregon case law indicates that piping projects relying on easements may not dig beneath the existing canal bed nor devalue the properties through which they pass. The Farmers Conservation Alliance, author of this Environmental Assessment, is certainly aware of the case, <i>Swalley Irrigation District v Alvis</i>, having cited it in a preceding environmental assessment in support of an irrigation district’s ability to pipe. However, in so doing the Farmers Conservation Alliance inexplicably failed to mention the important limitations imposed by this case, thereby conveying (whether intentionally or otherwise) the false impression that an irrigation district’s legal right to pipe is absolute and unfettered. It is not. Thus it would appear to be of public service to rectify this omission by presenting extracts from the case so that the broader audience may judge for themselves. From the first instance judgement of Aiken J: “conversion of the canal to a buried pipeline will not unlawfully burden the property rights of defendants who own such lands, PROVIDED IT DOES NOT EXTEND BELOW THE BOTTOM OF THE EXISTING CANAL”; and from a combination of the headnote to the appeal decision and the appeal decision itself: “conversion of existing canal into pressurized pipeline did not exceed scope of irrigation district’s right of way, despite removal of aesthetic benefits provided by open canal, WHERE CONVERSION DID NOT INCREASE BURDEN ON LANDOWNERS’ PROPERTY, OR DEVALUE PROPERTIES” ... “here, the landowners have not presented evidence establishing that their property will be devalued by the proposed conversion.” (The capitalization is not in the originals.) The property owners within the AID need not look far for evidence of devaluation – in Appendix D, you have already conceded its likelihood.</p> <p>Given your evident awareness of this case, and given that this project will both dig beneath the canal bed and devalue properties in apparent violation of the law as it stands today, please explain clearly and unequivocally how you were able to reach the conclusion that the project is legally permissible. Please provide details of the written opinion(s) of legal counsel which you obtained in order to support such conclusion (or if you consider yourselves by the terms of such an opinion unable to disclose its details, please confirm its existence and general import). Alternatively, In the absence of any such opinion, please state whether you failed to seek such an opinion (which, given the plain language of precedent case law would appear to be not only negligent, but indeed wilfully reckless) or whether you sought such an opinion but no reputable counsel would provide it. Unless you are adducing a legal opinion to justify</p>	Please see the response to Comment ID 163.01.

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		your position, please disclose the name and legal qualifications of the individual(s) at the Farmers Conservation Alliance, AID or Natural Resources Conservation Service responsible for making the determination of legality.	
378.02	COST	2. Please agree or disagree with the following proposition and provide reasoning therefor: “A private company with its own capital at risk would never undertake this piping project given the potential future liability for an impermissible expansion of the easement. A public or quasi-public entity, on the other hand, can choose to proceed without regard to the law of the land, safe in the knowledge that any future liability would be funded by patrons and taxpayers.”	Please see Section 8.4 of the Plan-EA for updated information on AID's easements.
378.03	RIGHT	PL 83-566 – Easement Condition 3. Under PL 83-566, the Secretary of Agriculture requires as an express condition to the provision of Federal funding that the local organization acquire the easements needed in connection with the proposed project. Oregon case law as it stands today does not allow an irrigation district to dig beneath the existing canal bed nor devalue servient properties, and since this project by its own admission does both, this would on its face appear to preclude Federal funding. Accordingly, with reference to the law in Oregon as it is today (and not as you may wish it to be at some future point), please explain clearly and unequivocally, for the benefit of the taxpaying public who fund the US Department of Agriculture, the legal analysis and written opinion from counsel (if any) which enabled the Natural Resources Conservation Service to advise the Secretary of Agriculture (or his or her delegate) that AID has the easements needed for this piping project.	Please see the response to Comment ID 163.01.
378.04	GEN	Farmers Conservation Alliance 4. The origins of the Farmers Conservation Alliance lie within the irrigation districts, and as with an irrigation district it exists to defend the interests of a specific set of private individuals. Whilst it is keen to advertise its environmental credentials, its official stated purpose in its most recently available IRS Form 990 for charities is “to develop resources solutions for rural communities” – there is no mention of conservation or the environment. Its taxonomy code is ‘Agricultural Programs’. According to its web site, it has strong ties with project consultants and engineers; half of its board are farmers; it retains advisers from irrigation districts. According to available public records, it pays its executive director and its chief irrigation adviser in excess of \$150,000 per annum; in 2017 it paid \$235,000 to Black Rock Consulting, a local company which provided project consultancy services in relation to various environmental assessments for piping projects and which also builds pipelines; in 2019, it paid an Idaho engineering firm over \$500,000, and over \$1,000,000 to an infrastructure construction company; it receives huge sums from the Government in the form of grants. Given these deep links to the irrigation districts, the piping industry and the Government, and given the torrent of taxpayers’ money that appears to cascade freely into the pockets of the Farmers Conservation Alliance and private for-profit firms, it would seem that the Farmers Conservation Alliance is in no way suited to produce a neutral, impartial environmental assessment. One would naturally expect the interests of farmers, irrigation districts and piping contractors to be favoured. Accordingly: (i) please	Please see the response to Comment ID 240.04.

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		<p>detail the safeguards, polices, and procedures in place at the Farmers Conservation Alliance to ensure that the determination of preferred alternatives is not in any way skewed toward the selection of piping projects – alternatively, please confirm on the record if in fact there are no such safeguards, polices, or procedures in place; (ii) please state how many environmental assessments in Oregon authored by the Farmers Conservation Alliance included a piping alternative for full consideration, and please state whether such piping alternative was ever rejected or was in fact chosen as the preferred alternative each and every time; (iii) for all environmental assessments authored by the Farmers Conservation Alliance, please disclose whether any income of the Farmers Conservation Alliance is or was directly or indirectly contingent upon the selection of a piping project as the preferred alternative.</p>	
378.05	VEG	<p>Tree survival analysis 5. It is claimed that, with irrigation, 70 to 80%of trees not otherwise felled will survive the piping project. The only support cited for this claim is “prior experience with piping projects”. This figure and phrase is repeated word for word in the environmental assessments for several other piping projects (Central Oregon, Lone Pine, Swalley and Tumalo), which suggests an unfortunate lack of any real field work specific to the project area and its particular topography, geology and hydrology. It is vital for property owners who may lose a number of valuable and cherished trees to be assured that the appropriate due diligence has been performed and that a random number has not been plucked from the ether. Therefore please provide details of (1) the site visits to the AID project area, if any, and the name of the arborist or other suitably qualified scientist who undertook them; and (2) the original studies which comprise the “prior experience” referenced in various environmental assessments and the name of the arborist or other suitably qualified scientist who undertook them. If on the other hand you undertook no scientific studies but have based the 70 to 80%rate on anecdotal tales from irrigation district employees, please – out of respect for the affected residents who may end up losing many more trees than the Environmental Assessment forecasts - be honest and say so on the record.</p>	Please see the response to Comment ID 240.05.
378.06	NEE	<p>PL 83-566 – Cost-Benefit Ratio 6. If you can dollarize the benefit of reduced North Unit Irrigation District agricultural damage, reduced O&M, avoided damage from infrastructure failure, pumping cost savings, instream flow value and support to the spotted frog, you can certainly dollarize the cost of lost trees, lost carbon savings, patron hook up costs and property devaluation. (a) Trees: please explain clearly and unequivocally why cost of loss of trees has not been included in the cost-benefit analysis required by PL 83-566. Federal case law indicates that such costs should be included (Burkey v Ellis). Please do not deflect the question with a spurious claim that loss of trees is not a quantifiable cost - as any qualified arborist would tell you, there are various acknowledged methods for economic valuation. Zero cannot be your default cost for anything which requires a modicum of work to quantify, unless your true intent is to disregard reality in producing your cost-benefit analysis.</p>	Please see the response to Comment ID 240.06.
378.07	NEE	<p>(b) Lost carbon savings: why is there no social cost of carbon line item for the loss of the carbon storage capacity of the trees that will be felled or die as a result of the piping project?</p>	Please see the response to Comment ID 240.06.

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378.08	COST	(c) Patrons' hook up costs: will patrons incur costs in connecting to the piped system and if so why are such costs not included in the calculation?	Please see the response to Comment ID 37.62.
378.09	PROP	(d) Property devaluation: Appendix D cites a 2017 study which indicates that nearby canals increase residential property values by between 10%and 30% Inverted, this gives a clear objective basis upon which to quantify the devaluation incurred if a canal feature were to be removed. Yet astonishingly, on the very same page, it is claimed that property devaluation caused by the piping project cannot be quantified due to lack of available data. The data is certainly available for the affected tax lots, but the Farmers Conservation Alliance has simply chosen not to collect it. Devaluation is eminently quantifiable with some basic effort. Notwithstanding this dereliction of duty, one can at least expect a sensible estimate utilizing the aforementioned 2017 study to be included for the purposes of the cost-benefit analysis mandated by PL 83-566 - but on the contrary we find a zero entry. It is frankly indefensible to ignore something which you admit in your own words to be "a likely cost", a cost which will run into millions in the aggregate. It is clearly a major concern to the 125 residents who voiced concern during the scoping meeting, and who fear that hundreds of thousands of dollars will be wiped off the value of their homes. Accordingly please use the studies cited and available residential property values to produce a dollar figure for estimated property devaluation which at least bears some passing resemblance to reality, and include it in the PL 83-566 cost-benefit analysis. A pattern appears to emerge whereby you exert yourselves to turn speculative benefits into quantifiable savings but show only disdain when it comes to producing dollar figures for real world costs. Only a full and frank response to these questions can dispel the suspicion that you have deliberately managed the inclusions and exclusions to engineer a positive cost-benefit ratio, without which you could not receive Federal funding under PL 83-566; that you twist the facts to fit that pre-ordained positive result, instead of simply and honestly researching and tabulating all costs and benefits and seeing which turns out to be the greater at the end of the day. Please do not attempt to evade this question by claiming that you may not include private costs in the calculation – you have already included private benefits and thus you must forgo any such argument. Please respect the spirit of the legal process under the National Environmental Protection Act and provide plain honest answers to these simple questions.	Please see the response to Comment ID 218.13.
378.1	ALT	Dismissal of alternatives 7. In Appendix D it is stated as follows: "on-farm upgrades and piping private laterals are not within the scope of actions that AID can entertain as the project sponsor under PL 83-566 because AID lacks the authority or responsibility to carry out, operate, and maintain on-farm infrastructure owned and operated by AID patrons". This seems a perverse and manifestly incorrect interpretation of the statute, a view echoed by WaterWatch in Comment 22.04 to the Tumalo Irrigation District Environmental Assessment: "We.. were told that PL 566 did not allow for the funding of on-farm efficiencies... We have studied the Act and have found no such restrictions in the law; to the contrary, both the Act as well as the Watershed Plan PL-566 Handbook appear to contemplate that the	PL 83-566 defines a local organization as "any State, political subdivision thereof, soil or water conservation district, flood prevention or control district, or combinations thereof, or any other agency having authority under State law to carry out, maintain and operate the works of improvement" (16 U.S.C. Section 1002). Additionally, the National Watershed Program Manual states, "Project sponsors

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		<p>sponsoring entity will help individual farmers on private lands.” Where PL 83-566 could be interpreted more broadly, it would seem generally advantageous to consider these additional alternatives. The only possible reason I can discern for your wilfully narrow reading of PL 83-566 is that you wish to minimize the number of alternatives in play so as to increase the chances of achieving your pre-ordained goal of selecting the piping project as the preferred alternative. What other possible motive could there be? In any event, please inform the public whether you have received written opinion from counsel to support your reading of the law, and if so please provide details thereof. If you consider yourselves unable to provide details of any such opinion, please explain why and at a minimum confirm the existence thereof. Unless you are adducing a legal opinion to justify your position, please disclose the name and legal qualifications of the individual(s) at the Farmers Conservation Alliance, AID or Natural Resources Conservation Service responsible for making this interpretation.</p>	<p>must have the legal authority and resources to carry out, operate, and maintain works of improvement" (NRCS 2015a). During the formulation of alternatives, an on-farm efficiency upgrades alternative was eliminated from further analysis because AID lacks the authority or responsibility to carry out, operate, and maintain on-farm infrastructure owned and operated by AID patrons. Please see Appendix D.2 in the Plan-EA for further discussion. On-farm upgrades could be accomplished using the PL 83-566 program for other projects with different sponsors; however, since it's not within the specific authority of AID to carry out, maintain and operate on-farm infrastructure, it would not be possible for this project.</p>
378.11	IRA	<p>Agricultural land use 8. The Draft EA notes that the project will support agricultural land use. Elsewhere it states that the water provided allows lands to be maintained for agricultural production. However one recent study noted that “agriculture is simply not a driver of economic activity in this region, and has not been for at least two decades” (Bureau of Economic Analysis. (2019). CAGDP9 Real GDP by county and metropolitan area 1/ Deschutes County). Even the most casual observer will know that many irrigation district patrons in Deschutes County no longer rely on the land for a living, and that property prices in the local area often demonstrate that purchasers are not motivated by agricultural profitability or viability. Accordingly, please state the percentage of AID patrons for whom irrigated agriculture is their single or primary source of income. If you have not previously obtained this data point, please explain why not and provide an estimate.</p>	<p>The purpose of this project is to improve water conservation in District-owned infrastructure, improve water supply management and delivery reliability to District patrons, and improve public safety on up to 11.9 miles of the District-owned Main Canal. Please see Section 2 of the Plan-EA for further discussion of the purpose and need of the project. Please see the Table 4-1 in Section 4.2.2 for the different types of crops grown in AID. Additional language has been added to Section 4.2.2 describing agriculture in NUID that would also be supported through the project. See Section 3.1.1 of the NEE in Appendix D.1 for an analysis on how the project would support agricultural production.</p>
378.12	ALT	<p>9. Per an article by Tod Heisler of Central Oregon LandWatch appearing in the Bend Bulletin in April, 2020: “We have a water distribution problem — too much water available to properties that engage little in farming and not enough water to our large agricultural producers and to the Deschutes River. The best way to solve this distribution problem voluntarily is through water marketing.” With this comment in mind, please agree or disagree with the following proposition and provide detailed reasoning therefor: “The statutes of the 1890s which underpin the irrigation system in Central Oregon were designed to</p>	<p>Additional language regarding market-based incentives has been added to Section 2.3 of Appendix D.2 of the Plan-EA.</p>

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		<p>encourage settlement of the arid West by enabling subsistent or profitable agriculture. Accordingly, when considering the necessity of changes to this irrigation system today, only the needs of those patrons who still farm the land for their primary source of income should be considered. Patrons with unrelated primary incomes, hobby farmers and those who use water for decorative landscape purposes are not relevant to the purpose of the laws of the 1890s nor the aims of PL 83-566. By creation of a voluntary water market or buyback scheme the non-agricultural water used by the hobby farmers could be re-distributed to the farmers who actually derive their livelihoods from agriculture in a manner consistent with American free market forces and without spending taxpayer money. Although such schemes may not be eligible for funding under PL 83-566, as the holder of the right of way an irrigation district is not permitted to limit itself to PL 83-566 schemes nor is it free to choose the scheme most advantageous to itself – it must select the scheme which meets the purpose of the easement (which as noted above, is profitable irrigated agriculture (plus, as a permitted ancillary purpose, hydroelectric power generation), not irrigation for its own sake) whilst being least injurious to the properties through which the right of way runs. An irrigation district cannot know that a less invasive cooperative solution will not work unless and until it has first tried and failed to implement it.”</p>	
378.13	MET H	<p>100 years? 10. You have based your project analysis on a 100 year timeline, driven by the expected life of the physical materials used. However in so doing you appear to assume additionally that land use and irrigated agriculture in the area will remain at a constant level for the next 100 years. Please explain the methodology you used in arriving at this assumption - cursory analysis of local social and land use changes in the last few years would seem to indicate its fallacy.</p>	Please see the response to Comment ID 433.83.
379.01	GEN	<p>If there is anyway to expedite this project or expand the scope please make this happen. We are in a water crisis.</p>	Thank you for your comment.
380.01	GEN	<p>As a full time, self employed farmer within the Arnold irrigation district, I fully support the Draft watershed plan EA. Reduction in system losses should result in a more consistent water supply to the end user. Reliable water is integral to our business. After having our water shut off early in two back to back irrigation seasons, our farm business has been significantly affected. The costs to stay in business have skyrocketed as we have to buy in the feed that we once were able to produce. The second year's shut off has been even worse as the carry over affects of the drought have doubled. Without this piping project, I worry the district will no longer be able to support agriculture and we have actually considered moving out of the district just to stay in business.</p>	Thank you for your comment.
380.02	CONS	<p>My only negative comment about the project is that 7 years may be too late to keep the existing farmers like us in business.</p>	Please see Section 8.7.2 of the Plan-EA for an updated construction timeline. AID and NRCS developed the timeline based on what could reasonably be constructed during each non-irrigation season.

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381.01	WILD	We do not think it would be environmentally responsible to enclose the Arnold canal. There is so much wildlife and plant life that depend on it.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
381.02	VEG	We will lose many large trees if the water is depleted.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees.
381.03	FIRE	The other concern is the dryness it will produce and increase wildfire threat on our large neighborhood.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
382.01	WAT	Closing the irrigation canal from open ditch where a substantial part of the water is lost to evaporation is absolutely critical. As we reach record drought and heat conditions, conserving water in every way possible should be our community's number one priority.	Thank you for your comment.
382.02	FIRE	The concerns about fire by local homeowners are overblown - homeowners can and should create defensible spaces around their homes regardless of proximity to the canal or not. The vast majority of communities in Central Oregon are nowhere near irrigation canals and have successfully created defensible spaces around their homes; homes around the Arnold irrigation district are no different. In fact, Governor Brown has just signed into law a large wildfire bill that (among other things) provides funding to communities to fire harden their homes.	Thank you for your comment. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
383.01	GEN	I am opposed to the piping of the canal in Deschutes River Woods. The impact on flora and fauna as well as disruption to the underlying ground water system is not acceptable.	Please see the following sections in the Plan-EA regarding effects on vegetation (Section 6.6.2), wildlife (Section 6.11.2), and groundwater (Section 6.8.2).
383.02	FIRE	DRW is already at great fire risk due to drought and climate change. we do not need more impact. I know the opposing argument about water evaporation but do not think that issue warnets this type of response. While you are a water company and legally may have rights here this impacts the whole community and ecosystem and this is not good solution.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
384.01	GEN	I am submitting this comment in opposition of the Arnold Irrigation District Infrastructure Modernization Project. I feel that the negative impacts of this project to the local families, their properties, the local wildlife and vegetation, out weighs the enhanced water conservation.I do not support this project.	Please see the NEE in Appendix D.1 of the Plan-EA for a discussion of costs and benefits of the project. See Section 8.1 of the Plan-EA for more information regarding the rationale for selection of the Preferred Alternative.
385.01	PROP	I'm opposed to piping the Arnold canal. I believe it will cause significant and detrimental damage to the area and my property.	Please see updated language in Section 5.3.2 of the Plan-EA regarding the area that would be disturbed during construction of the proposed project.

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386.01	ALT	The plans as outlined for piping the canal are justified by limiting the amount of water lost to seepage. Seepage does not justify removing or modifying the flume. Rather than building a large embankment to pipe the flume it should be left as an open lined Channel with the structure rebuilt as needed.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
386.02	CUL	The flume is a unique and historical structure and should be maintained.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
386.03	WAS	Additionally, the Deschutes river is designated as a wild and scenic river and building a large embankment with a road on top will have a negative impact to the river.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
387.01	WAS	I am adamantly against Arnold Irrigations proposed plan to tear down the historic flume that runs along the Upper Deschutes River and build a horrendous dirt berm with a road on top. Besides removal of the historic flume being totally unnecessary, the project would negatively impact the Wild and Scenic Deschutes River corridor not only visually but would severely impact the environment and wildlife by removing many mature ponderosa pines and firs and creating a situation for the potential for massive erosion which would be due to the loss of vegetation and tree roots which hold the steep banks.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
387.02	FISH	That engineered dirt they plan to use would also leach into the river further endangering the brown trout as well as other species that depend upon the river for their life.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.9 of the Plan-EA for updated language regarding effects on fish and aquatic species.
387.03	PROP	Not only would the huge berm be upwards of 19' in height requiring millions of tons of engineered fill dirt to be brought in further endangering the environment, the river and the wildlife but it would destroy the property values of all the homes which overlook the river along that stretch of the Deschutes River. Instead of our view of the river, homes will be looking at the huge ugly berm with the road on top and in many cases, that berm may also be taking part of the landowners property, not to mention that most if not all of the mature trees in front of their homes will be removed to accommodate the hideous structure. There is absolutely no concern being given by Arnold to the devastation they will cause to the natural environment nor homeowners in their quest to gain many millions of dollars which will pour into their company in order to accomplish this ill thought out plan. There are many who are up in arms and who are contacting attorneys. Arnold needs to be prepared for many lawsuits and hope that they will have enough money to pay for all the damage they will cause to the environment, the river and the homeowners whose losses will be considerable.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.
387.04	WAS	Removal of the historic flume and replacing it with the ugliness of a huge dirt berm with a road on top as well as removal of all the mature trees in order to build their ugly structure will forever destroy the beauty of the Upper Deschutes River corridor and cause major damage to the integrity of the river. I do	The flume has been removed from the project. Please see the response to Comment ID 12.01. See

Comment ID	Topic Code	Comment	Response
		not understand how Arnold can be allowed to desecrate our beautiful river and run roughshod over the National and State designation of the Deschutes River as a Wild and Scenic River!	Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
387.05	ALT	I wanted to add to the comment I just sent that we REQUIRE that Arnold Irrigation MUST have an ENVIRONMENTAL IMPACT ASSESSMENT DONE PRIOR TO ANYWORK BEING DONE TO REMOVE THE HISTORIC FLUME!	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See the response to Comment ID 94.02 regarding the need for an EIS.
388.01	PROP	I have written before and greatly oppose destroying the canal and putting in a pipeline. The results are disastrous to us that live on the canal. First. frontage to water is like gold in Central Oregon and I paid extra just to be on the canal. I literally prayed for a property with water running through because I lived on and was raised on the Willamette River and it was my greatest desire to be on the water. When my realtor brought me to this property and I realized it had water, I knew it was a place for me and enjoyed these surroundings for 23 years. Following are consequences if you put in a pipe: 1. Loss of value to our property. People pay more for the water-front. Also the cost of decks, gazebos, fire pits etc that have been designed around the canal.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.
388.02	VEG	2. Loss of vegetation. Many plants, flowers, shrubs and trees etc designed around the canal will be lost or out of step with design.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees.
388.03	WILD	3. Loss of wildlife. Many live here in our area. Deer that roam here to water, Ducks and birds that return to give birth to new babies The rabbits, squirrels, chipmunks, etc that we all enjoy watching that drink from your canal. etc	Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
388.04	REC	4. Loss of beautiful scenery while you exercise. Walks along the canal and the joy of putting your feet in to cool off.	Please see the response to Comment ID 126.04.
388.05	CONS	5. Construction destruction and noise. I do not agree with getting rid of canals where there is already established housing that have already purchased and designed their land accordingly. Please reconsider what this would mean to those who live there and the losses involved	Please see Section 6.7.2 of the Plan-EA for discussion about the effects on visual resources. Please see Section 8.7.2 of the Plan-EA for an updated construction timeline.
389.01	GEN	I'm all in favor of reducing water use. Pipe this one, then pipe the one in my neighborhood next.	Thank you for your comment.
390.01	PROP	I'm apposed to the piping of canal for multiple reasons I have seen first hand of the destruction piping canals can do! My family owned a home on a canal in bend on high standard street this project left all the wild life and vegetation destroyed. Because of this my family sold their home at a loss and relocated.	Thank you for your comment. Please see Section 6.11 of the Plan-EA for more information regarding effects on wildlife. Please see Section 6.6 of the Plan-EA for more information regarding effects on vegetation.

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			Please see Section 4.4 of the Plan-EA for more information regarding property values.
390.02	WILD	The Arnold canal has been operating for over 100 years the wildlife that it supports is vast, I've witnessed elk, deer, beaver, geese, multiple varieties duck, frogs, quail, osprey, eagles, hawks, owls and coyotes. A large number of these utilize this canal to mate and raise their young and return year after year. I have attached just a few of the hundred's of photos I've taken over the past 18yrs I've lived on the canal. I am pro water conservation and know there are multiple ways to solve this problem that does not include inclosing a canal that dead ends out in the desert and doesn't return to the river.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Please also see Section 5 and Appendix D.2 in the Plan-EA for discussion about alternatives considered and eliminated from the study. Please see Section 6.8 of the Plan-EA for more information regarding the use of saved water.
391.01	GEN	The value of water clearly out weighs any alleged historic canal features. Get the canals piped asap as we need to execute water conservation measures immediately!!	Thank you for your comment.
392.01	GEN	Piping is the correct scientific answer. Please don't let people who think the canal is their personal waterway stop what's best for the regions water supply. Drought and water conservation affect the whole region. It shouldn't be about someone's view from their backyard. Thank you.	Thank you for your comment.
393.01	WILD	I am a homeowner in Deschutes River Woods and cannot overstate the amount of wildlife I see using the canal for water access during these scorching summer months. Deer, ducks, dogs — they all rely on that water. Furthermore, with the increase in fences going up around newly developed lots, there's an increasing lack of access to other resources these animals might otherwise use should their main water source be buried. I am firmly against the piping of the canal. Thank you.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife.
394.01	GEN	If it helps conserve water, it should be done. We live in a desert where water is a precious resource that should never be wasted.	Thank you for your comment.
395.01	GEN	I believe the decision to tap in to the canal water supply is practical, reasonable and makes perfect sense. It is obvious we are experiencing drought. To use the water that is available from the canal makes perfect sense. There are people who need this water more than shade. I commend this project and support it.	Thank you for your comment.
396.01	GEN	Since the purpose of the canal is to supply water to those with water rights, optimizing the water flow via piping AND good river/ reservoir management makes sense.	Thank you for your comment.
397.01	GEN	Central Oregon is in a drought. If piping water extends water to more folks, pipe it!	Thank you for your comment.
398.01	GEN	Piping the canal to save water for the all people is more important. Farmers have already have had their water reduced/ stopped and they provide food for people and animals. We are in a mega drought and the needs of the many are more important than the wants of a few.	Thank you for your comment.

Comment ID	Topic Code	Comment	Response
399.01	FIRE	Wouldn't an open canal be a water source for fire fighters if needed? That could be very helpful considering how our wildfire season is getting worse. Just a thought. Thank you.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
400.01	GEN	I support the piping of the irrigation canals. We cannot afford to waste precious resources maintaining a man made feature at the expense of the natural river. Water utilization has to be balanced and support natural resources, recreation and the economy. The space along the canals contributes to none of those things. The residents along the canals have enjoyed a publicly funded "water feature". I am sure they have enjoyed the water feature and the resulting impacts of nature. The biodiversity of the canals is not nearly as great as in the river. Piping will help keeping the natural Deschutes river ecosystem healthy which is the priority. The corridors will continue to support nature and be beautiful, just changed.	Thank you for your comment.
401.01	IRA	This has always been an irrigation project. Farmers need this water to grow their crops. It was disclosed years ago that all canals at some point would need to be piped to save precious water. The view from one's back yard will change, but owner's should have known when they bought. This is not a property owner's playground, it is a vital system to grow the food you eat.	Thank you for your comment.
402.01	GEN	I support piping the Arnold Irrigation districts canal and all canals in Central Oregon. Relying on century old technology in the face of 21st century climate change and population growth in the region is irresponsible. While I understand canal piping may impact homeowners, wildlife and others along the canal, the goal of public policy is not to ensure everyone wins and no one loses! The goal is to ensure that the benefits to society as a whole of any given public policy decision outweigh the costs to society. Given these canals leak up to 50% of the water we take out of the Deschutes River, this public policy decision should be an easy one. Piping will result in less water being taken out of the river and more water available to farmers.	Thank you for your comment.
402.02	WAT	USDA should also support a water bank in the Deschutes River Basin to create market signals for water conservation in these irrigation districts! Thank you!	Please see Appendix D.2 in the Plan-EA for a discussion of alternatives that were evaluated, including water markets.
403.01	GEN	1st choice: pipe them completely 2nd choice: line with cement i am aware the ecosystem has adapted to them but the time has come to deal with it. fwiw, the bigger issue is needing these desert farmers to be regulated to evolve their irrigation systems. the most water efficient on the market should be put in place.	Thank you for your comment. Please see Section 5.2 in the Plan-EA for updated language regarding the Canal Lining Alternative. Please see Appendix D.2 in the Plan-EA for a discussion of on-farm efficiency upgrades.
404.01	GEN	This is a great plan!	Thank you for your comment.
405.01	WILD	The trees, wildlife and water are needed. No one wants to see this disappear. It is beautiful. I have spent my life here and there is enough being ruined by growth and all the habitat being taken out. Please leave this along, Personally my entire family loves the natural area, water included.	Thank you for your comment.

Comment ID	Topic Code	Comment	Response
406.01	GEN	I fully support this plan! Using our limited water resources in the most efficient manner makes the most sense for all user groups. Open-air, unlined canals waste large amounts of water. This water is shared by many different irrigation districts, many up farther north where the climate is drier. If we intend to continue supporting large amounts of agriculture in the Deschutes corridor, we need to make decisions like these to ensure everyone has access to water and it is not being pulled from the river to disappear due to evaporation and seepage.	Thank you for your comment.
407.01	GEN	As a DRW resident I support the piping within reason. I hope you do everything you can, to keep things green down the canal route, and I feel bad for people nearby who feel like they are losing water access. However I also live near the Deschutes and I realize that keeping water in the river system will make things even greener, at least for the basin at large. Good luck in your decision.	Thank you for your comment.
408.01	WILD	I am writing to you today for the dire concern of piping the 100 plus year old canal here in deschutes river woods. This beautiful old historic canal has been a sanctuary for all that live around it, especially the animals..deer and their offspring..the geese..ducks quail..even otters and small fish. The deer and birds that roam out here in the woods and have their babies year after year depend on the valuable resource and survival of water..there is no other avenues for these creatures to find life sustaining water..every things gone and now the canal is sadly next.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife. Please see Sections 4.1 and 6.1 of the Plan-EA for more information about cultural resources.
408.02	GEN	How sad and ugly this beautiful area is going to be when you destroy it. Empty dirt mounds full of weeds ,because it is not maintained..torn down trees with precious eco life abundant in the stumps..destruction of beauty at its finest..it isn't always about money..and yes my house is way more beautiful and cooler because of the water..lets please have a different approach to this PLEASE..we all know it soley has to do with money..the amount of water wasted on "farming" is truly a joke and a really bad angle..we are not idiots! The water people buy from this canal is used for grass; both kinds weed and lawn..why don't you reduce that waste. Just because people live on property or farms does NOT mean they have farms that produce anything! Just lawns..its and archiac approach of disperement of water..thats where the water waste is, and the stupid rapids park! Now I'm no expert and I don't have the mighty and fancy way of saying things..but I will say this clearly..FOR THE LOVE OF GOD: PLEASE PLEASE PLEASE DON"T do this to this wonderful piece of history ..PLEASE DON"T PIPE THE CANAL	Patron water rights would not changes as a result of the proposed project. Please see Section 6.8.2.1 for more information regarding the proposed project's effects on water rights.
409.01	WILD	I do not want the canal to be piped underground. One of the main reasons my husband and I bought our property in Deschutes River Woods was because of the canal that runs along our property. We sit on our deck and enjoy watching the deer and ducks use the canal. The proposal states that it would help wildlife, but how would drying up the canal do that? It would displace the wildlife, not help them.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources, including water sources and migration.

Comment ID	Topic Code	Comment	Response
			Please see Appendix D.3.1 of the Plan-EA for more information about project benefits.
409.02	ALT	Also, the canal only runs for 5 months out of the year, so why spend all that money to pipe it for 7 months? If you do pipe it, would the canal be filled in? Or would you just leave it empty? Is there another part of the canal that does not pass through homes that could be piped ? Why can't you do that instead of taking away our enjoyment of the canal.	See Section 2 of the Plan-EA for discussion of the purpose and need of the project. See Section 5.3.2 of the Plan-EA for a description of the construction activities associated with the proposed action. Please see the response to Comment ID 32.02 for discussion of an alternative with a mix of piped and lined sections.
409.03	RIGHT	Lastly, my property extends to the other side of the canal, so technically that part of the canal is my property. I am assuming there is an easement on my property, so wouldn't you have to get my permission to change anything on that easement? I know if this situation were reversed I would have to get permission for any changes. Please leave the canal the way it is now.	Please see the response to Comment ID 163.01 regarding the District's use of their easement.
410.01	GEN	Pipe the canal.	Thank you for your comment.
411.01	RIGHT	Thank you for extending your public comment period in order to allow additional citizens to respond to the proposed changes to 13.2 miles of Arnold Irrigation Canal. I have recently heard from neighbors regarding your proposed changes and have since done my own research on this project. There are a number of questions/concerns that still persist regarding this project and how it would affect us personally, as well as us as stewards of maintaining our natural beauty (removal of trees and the National Environmental Policy Act) and history (100-year-old flume) of this area. It is my assumption that you have received a large number of comments regarding this already. Therefore, we will spend my comment opportunity focusing on the relationship we have with the Arnold Irrigation District (AID). Part of this historic flume crosses through our property - as part of an easement agreement in place. We believe we have been good stewards of the Irrigation Canal on our property - not tampering with, not creating any obstructions, and watching over it for potential damage for the AID. We do not, however, believe the AID has been as "neighborly" with us in terms of this proposed project. We wonder why the AID has not reached out to property owners with easements in order to communicate how the proposed changes will affect the canal - and thus our property. It is very disappointing. - There has been no information shared regarding how the changes in canal structure are going to change easement, right-of-way, or encroach on private property.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Land ownership and easements would not change as a result of the proposed action. Please see Section 6.2.2 of the Plan-EA for further information. Please see the response to Comment ID 1.01 regarding the public process and public outreach.
411.02	CONS	- Will trees or rock cliffs on our current property need to be removed in order for this project to continue as proposed?	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 5.3.2 of the Plan-EA for project construction details.

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411.03	SYS	- Will the new proposed canal be taller or wider than the existing structure?	The open Main Canal would be replaced with a pipeline that ranges from 48 to 63 inches in diameter. See Section 5.3.2 for more construction details and an updated map of where piping would occur.
411.04	RIGHT	- Is the AID taking advantage of current easement allowances in order to accomplish these proposed canal changes? - If the current proposed plan is approved, will there be need for work to be accessed or accomplished on private land? Have the homeowners given permission for their land to be accessed for this work? (No, they have not.)	Construction would occur within the District's easement and right-of-way. Land ownership and easements would not change as a result of the proposed action. Please see Section 6.2.2 of the Plan-EA for further information. Please see the response to Comment ID 163.01 regarding the District's use of their easement.
411.05	PUB	Again, there are many aspects to this proposal (including alternative options) that we could comment on but will choose at this time to limit our scope to property and easement language. In closing, we feel as though the AID has not approached this project with property owners (where the canal currently flows) at all in mind. There has been no engagement from AID with property owners this is both disheartening and not the right thing to do. There are many audiences to communicate with when planning and embarking on a project such as this (e.g. AID board, Deschutes Basin Board of Control, general community, farmers, property owners, etc.). It is unfortunate that AID has not made more of an effort to reach out and work with property owners. A listening session (share the project plan, answer questions and receive input) for example, with these various groups - including property owners - would be the right thing to do. Lack of clarity or uncertainty around how this project will affect homeowner property rights will no doubt lead to legal challenges and postponements to the ultimate goal of water conservation and maintaining adequate irrigation. Very few will argue with the goal of this project, but we are definitely calling into question the process used (including the lack of transparency with those directly affected) that accompanies these decisions.	Please see the response to Comment ID 39.09.
412.01	VEG	I am very concerned that the trees that have lined the canal for years will lose their water source and become a hazard to property. The all or nothing approach isn't the way to go to address the concerns.	Please see Section 6.6.2 of the Plan-EA regarding the project's effects on trees and tree removal.
413.01	PROP	Covering the canal poses many concerns. One, potential damage to property that lines the canal. Loss of property value to lose who live along the canal.	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value.
413.02	WILD	Two, damage to the habitat of animals (deer, frogs, duck, geese, owls, etc.).	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. See Sections 4.6 and 6.6.2 in the Plan-EA for information about vegetation.

Comment ID	Topic Code	Comment	Response
414.01	WILD	Piping the canal will destroy wild life and vegetation.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. See Sections 4.6 and 6.6.2 for information about vegetation.
414.02	FIRE	It will also cause a greater fire hazard then we already have.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
415.01	WILD	Please help us protect our home values and the wilds life that comes to our canal for water. We have lived here 23 years and have seen so many families of deer, geese, and ducks raising their babies near and in the canal. Pl are don't take this away.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.
416.01	CONS	I am concerned about the environmental impact of this plan and length of time of construction so close to my home.	Please see Section 6 of the Plan-EA regarding environmental consequences of the proposed project. Please see Section 8.7.2 of the Plan-EA for an updated construction timeline.
417.01	ALT	I have the canal in my backyard and am against piping it. Instead of protecting a waterway piping would eliminate a waterway. If water conservation is desired over ecology why not pipe the Deschutes from Wickiup all the way through Bend? There was a lining experiment along Knott road about 20 years ago, what were the results?	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA, which includes information about existing canal lining near Knott Road.
418.01	GEN	We are in a severe drought. Someone's personal enjoyment of a flume, or water that was never meant for enjoyment is a ridiculous argument. Pipe the water!	Thank you for your comment.
419.01	GEN	After viewing the Arnold Water District's data regarding water loss in the current system, I applaud the idea of piping the water. With more people arriving every day in this desert, we need to maximize every drop of water. Pipe it!	Thank you for your comment.
420.01	WAT	AID patrons have experienced multiple years of reduced service due to limited available storage. Are there opportunities, beyond the typical efficiencies described in the EA, to benefit AID patrons first using the conserved water in low storage years? In other words, can a portion of the flow being diverted to NUID as a result of the project be retained for AID patrons in low storage years?	Updated language regarding how water saved by the project would benefit AID patrons has been included in Section 6.8.2 in the Plan-EA. For information regarding why AID is passing the saved water to NUID, see the response to Comment ID 339.04.
420.02	COST	The Draft EA financing section (8.7.6) indicates 65%of the project costs would be paid for with NRCS PL 83-566 funds with the remaining 35%being the responsibility of the District through grants, loans, or assessments. This section anticipates financing costs, which would presumably be passed on to the patrons. However, these financing costs are not included in the NEE analysis. Footnote 18 on Page 50	Section 8.7.6 in the Plan-EA has been revised to clarify the District's financing plan. AID manages the System Modernization and Sustainability Fund (what you referred to as the "Arnold Piping Fund")

Comment ID	Topic Code	Comment	Response
		<p>anticipates 100%public or public-interest funding. It is not clear whether AID, and more specifically their patrons, will be funding any portion of this project through either loan financing or direct assessments. These two sections of the EA are not in alignment. Either AID patrons will be funding some portion of the project or they will not. AID has been collecting, through annual assessments, an assessment for the Arnold Piping Fund. Is this assessment funding the Project described in the EA (either the analysis of or implementation of) or benefits assumed within the EA? If so, will this assessment either be returned to the patrons (assuming 100%public or public-interest funding) or factored into the amount of water passed to NUID?</p>	<p>for any future project in the District that improves the management and conservation of water. The District would strive to fully fund the match funding for the proposed project through grants to the extent possible. If needed, AID could use System Modernization and Sustainable funds as match funding.</p>
421.01	PROP	<p>To whom it may concern: I am a home owner in Deschutes River Woods. My property line runs along the canal. We enjoy peaceful evenings along the canal around the fire pit and relax to the sounds of the water and wildlife. This year we have had fawns born along the bank of our property in the grasses, trees and brush that line the canal. We love to watch the birds such as ducks, geese, cranes and small birds enjoying waters and banks along our property. I appreciate the fact that there needs to be something done with our water systems to help the farmers as well as the Dechutes River. There has been a lot of in-depth reports in various capacities, however one big report that I would like to see done is the effect and compensation to the home owners who's property value is effected. As I have read there will be a 30% property value loss. On a conservative amount this will be a \$210,000 property loss for us alone. This is a very significant loss for us. I attended the spring 2019 meeting and listened to the June 2021 meeting. I feel the property value report needs to be run. I hear that lining the canal is not cost effective, however if you added the cost of all the property value loss involved in this report, the report would look a lot different. Research on home value and compensation needs to be completed before moving forward in any capacity. Another concern I have is that the majority of the trees on my property are within the 50 foot easement. These trees are shade for my yard and home which is part of our energy savings. I am assuming that the tall trees that have been in my yard for the past 50+/- years will not be replaced with older trees that will continue to provide privacy, shade and value for my home/property as well as a habitat for the animals. I feel this needs to be put into the home/property value as well. Thank you for taking the time to read this. I look forward to learning about the property value/ loss report.</p>	<p>Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see updated language in Section 6.6.2 of the Plan-EA regarding effects on trees.</p>
422.01	ALT	<p>We do not support the piping of Arnold canal by our property. I understand the need for water conservation. I believe a better solution is a lined open canal. Preserves the water thru ground losses but gives nature and neighbors the benefits of the water flow that has been central to the environment of these neighborhoods.</p>	<p>Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.</p>
423.01	COST	<p>I sent an email too Arnold, basically all money assessed for water they cannot deliver (2 years now) should be put toward piping the main canal & not padding their profit. I dont know how they can charge money for something they cannot deliver. How is his legal?</p>	<p>Please see the response to Comment ID 257.01 for information about district assessment fees. As a special district organized under ORS 545, AID cannot and does not make a profit. Please see</p>

Comment ID	Topic Code	Comment	Response
			Section 8.7.6 of the Plan-EA for discussion of how AID would fund its cost share of the project.
424.01	PROP	<p>The Arnold Irrigation District (AID) proposes to pipe the Arnold Irrigation Canal with metal pipe. Piping 13 miles of canal will cost \$43 million. One does not have to be a genius to realize this is an extraordinary waste of taxpayer money.</p> <p>Alternatives to piping, such as lining and conservation brought up by citizens were totally dismissed in the planning process. I find it difficult to comprehend why the only choices were to pipe the canal or leave it as it currently is. I really feel that as one who has much to lose, I was not listened to.</p> <p>I own property in Woodside Ranch, a neighborhood just outside the city limits of Bend. My husband and I purchased our home, in part because of the lovely trees and the canal. I realize that AID has an easement on my property that was recorded in 1910. As such, they are allowed to make use of that easement, and have access my property to do so. However, I will most likely sacrifice 17 large Ponderosa Pine trees that provide shade, as well as a place for owls, hawks, and eagles to perch and hunt. I wonder what sort of scar the pipe will leave on my property, and how this will affect the value of my property.</p>	Please see Sections 5.1 and 5.2 and Appendix D.2 of the Plan-EA for more information regarding alternatives that were considered during the planning process. Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see updated language in Section 6.6.2 and 6.11.2 of the Plan-EA regarding effects on trees and wildlife. Please see Section 5.3.2 of the Plan-EA for a description of construction methods.
424.02	FIRE	US Forest Service and Bureau of Land Management property are right is the backyard of Woodside Ranch. I have been told by the Oregon State Department of Forestry that in the event of a fire, they would take water from the canal, since the water provided for us by Roats Water does not have significant pressure to fight a fire. This is a serious concern to me and my neighbors.	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.
424.03	ALT	I feel that piping will cause irreversible damage to many and is an outrageous waste of money. Further evaluation needs to happen. Please reconsider what you are doing. It is the very least you can do	Thank you for your comment.
425.01	GEN	I fully support the piping project. We are experiencing severe drought in Central Oregon, yet the population continues to grow and new housing is being built all over town. Local farmers are suffering. Irrigation water is being shut off early. We cannot afford to continue to lose 39%of the water in the system due to seepage. The system needs this upgrade now. Thank you.	Thank you for your comment.
426.01	GEN	Please do not pipe the canals, please! they have been one of our unique loves in central oregon forever . we truly believe you want to do this piping for profit, not for the public good, not for the wildlife, not because you love farmers who grow food instead of marijuana, not because of evaporation or seepage, but because you want more profit. H2O corporation tankers and others buying our water for profit, then you want us to conserve and not water on top of inviting thousands of people to live in an infrastructure that cannot support them.why do the people who love the wildlife, the canals, the peace that is now seeping away have to submit to your proposals. Have you already made your decisions and grabbed your federal monies knowing you will do this no matter our comments or desire to keep the canals? we cannot imagine you taking part of our property we paid for your profit..we do not believe it is the right thing to do in any way, shape or form!	Please see Section 2 of the Plan-EA for information regarding the purpose and need of the project. Please see the response to Comment ID 1.01 for additional discussion about how the public was engaged in the project. Please see the NEE in Appendix D.1 for a discussion of costs and benefits of the proposed project.

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427.01	GEN	I am a farmer in Central Oregon and I support the piping project 100% We are trying to raise crops and livestock in the high desert. That is a challenge in itself. Sandy loom soil, drought and a short growing season due to late spring and early fall frost. Piping the irrigation canals will conserve our precious water so that everyone can reap the benefits. Farmers and ranchers can continue to make a living doing what they do best. Recreational people can enjoy watersports and fishing. Environmental people can feel good about preserving proper habitat for our fish and animals. The answer to all of this is balance so that everyone and everything can survive and co-habitat in the high desert.	Thank you for your comment.
428.01	WAS	I feel this project will be an environmental catastrophe! It is apparent there is zero care about the Wild and Scenic Deschutes river area by planning to remove the historic flume that has functioned since 1905 and pipe the canal.	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers.
429.01	WAT	I'm supportive of efforts taken to conserve watershed resources but don't see any conservation in the districts proposal. If the proposed piping is taking the same (approx) 90 cu ft per second claimed in public documents that is currently being taken thru the canal, but not losing the estimated amount thru leakage, evaporation, etc, there's no conservation. The districts proposition that the water not lost thru leakage and evaporation can then be released in winter, an amount which has been already been arbitrated, is not honestly presenting the kind of resource savings they are asking the public to fund. It appears the district is asking for public funds to increase the amount of water they can then charge junior water rights holders. The public should demand that the projected water losses be used to reduce the districts allocation so that amount is genuinely conserved and made available to assist in maintains the overall health if the Deschutes River Basin thru all seasons.	Please see updated language in Section 6.8.2.1 related to water rights and diversion rates.
430.01	WAT	Lot of expense with no obvious benefit in having a longer watering season. We should increase our storage if we are losing less water delivered. I don't believe Gunitite is more expensive since existing canal and headgates could be used. No one seems willing to share how much is actually lost to evaporation. I also do not believe that a pipe would not effect the aquifer and our wells.	Please see the NEE in Appendix D.1 in the Plan-EA for discussion of the benefits of the project. Please see Section 5.1 of the Plan-EA and Appendix D.2 for a discussion of alternatives, including an update related to additional storage. Please see Section 5.2.1 in the Plan-EA for updated text and cost for the Canal Lining Alternative. Please see the response to Comment ID 331.01 related to losses in the canal from seepage and evaporation. Please see Section 6.8.2.3 in the Plan-EA regarding the effects on groundwater.
431.01	GEN	For over 100 years the Arnold Irrigation District (AID) canal has been a resource for all residents of Deschutes County. The benefits of the canal accrue not only to the agricultural patrons of AID but also to a wider range of residents, wildlife and plants.AID proposes to pipe some 14 miles of canal "with the	Please see Section 6 of the Plan-EA for a discussion of the project's beneficial and adverse effects on a variety of resources, including wildlife, vegetation, and

Comment ID	Topic Code	Comment	Response
		<p>goal of addressing environmental needs for instream flows while still delivering enough water to district patrons". While this is an admirable position, close inspection of the Infrastructure Modernization Project Draft Watershed Plan- Environmental Assessment June 8, 2021 shows it is critically flawed in that it presents only information beneficial to AID. This project relies on \$27.9M of federal funding plus an additional \$14.9 from state and other sources. The total water losses that this project will address amount to 32.5 cfs, some of which MAY be returned to the Deschutes River. However, the Draft Plan states that any water saved will be transferred to COID raising doubts that the Deschutes will benefit at all or at best minimally. The canal benefits a much wider community than just the patrons of AID. Water loss to seepage is in fact not lost, it becomes ground water recharging wells and providing habitat for countless animals and plants. It's a diverse ecology that runs through miles of what would otherwise be desert. This diversity and habitat will be lost if the canal is piped. The vision of the Reclamation Projects was to encourage beneficial use of the land, not only for irrigators but for the entire community. Please consider everyone before approving or funding this project.</p>	<p>groundwater. Please see Section 6.8.2 for more information regarding how water would be used and the subsequent effects on water resources as a result of the project.</p>
431.02	GEN	<p>Comment is duplicate of comment #77</p>	<p>Please see the response to Comment ID 77.01.</p>
432.01	GEN	<p>We are fee simple property owners at [ADDRESS]. Our property is a [NUMBER] acre parcel with 546 feet abutting the Deschutes River and an elevated irrigation flume maintained by the Arnold Irrigation District (AID). The property is also one of the largest single parcels in Deschutes River Woods (Exhibit A). We purchased the property in [YEAR] and constructed a home in [YEAR]. We enjoy great Deschutes River views. The Draft Plan-EA (The Report) states that there are no areas of controversy and no issues to resolve. These statements are incorrect, as there are significant environmental and quality of life impacts to us, other property owners and the general public.</p>	<p>Please see the response to Comment ID 39.01.</p>
432.02	RIGHT	<p>Our property purchase was subject to an easement in favor of AID to operate and maintain irrigation ditches and canals (flume?). We assume that an easement document exists, however neither our title insurance company nor AID has been able to provide a copy. The Report cites right of way granted by the Carey Desert Land Act of 1894, but we believe the act pertains to right of way on public land and not easements on private land. We are not attorneys, but we think it is essential that The Report provide the specific legal authority AID has on private homeowner lands.</p>	<p>Please see the response to Comment ID 39.02.</p>
432.03	SAFE	<p>We strongly object to the removal of the historic flume structure. Replacing it with a buried piping system and road will negatively impact our peaceful enjoyment of the Deschutes River and the adjacent forest. It will also create a security risk by facilitating trespassing.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>
432.04	VEG	<p>The proposed piping plan calls for the removal of the flume and the installation of a buried pipe to be covered with tons of engineered backfill estimated at a minimum of 3-4 feet above the pipe. A road meeting Deschutes county standards is to be constructed and maintained on the top of this buried pipe. In order to accomplish this huge task, the required fill and road will undermine or kill many mature</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p>

Comment ID	Topic Code	Comment	Response
		Ponderosa Pine and White Fir trees that exist along the flume. The Report makes no effort to address these impacts or to describe what the project will look like.	
432.05	SYS	Regarding visual resources, Section 4.7.2 in The Report states that: "Below the diversion, the flume is elevated above the ground for the first 450 feet (Figure 4-4). The remaining sections of the flume sit on the ground surface." This is completely false; it does not sit on the ground. The flume support structure is on the ground, but the flume pipe is elevated. At our property the bottom of the metal pipe sections are at least 2 feet above the ground. See Exhibit B for an illustration. Also, other stretches of the flume are considerably higher above ground. Nowhere does the flume pipe sit on the ground. This omission in The Report will create a major complication as tons of base gravel will be needed just to bring the ground surface to the bottom of the replacement flume pipe. This fact may significantly impact construction and environmental mitigation costs, and could render the project infeasible. The Report fails to include any preliminary designs of burying the pipe along the path of the existing flume structure. While it is easy to envision a canal piping, it is difficult for us to imagine a huge dirt mound wedged between two steep grades, trees and rim rock. The Report only refers to an engineering analysis performed in 1995 that identified many significant challenges with the current flume. That was 26 years ago, and there now may be newer technologies and materials to consider for maintenance and repair. Unfortunately, The Report did not include a more current independent, professional engineering analysis of the flume structure nor did it include a copy of the 1995 report for public review.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
432.06	RIGHT	The Report acknowledges the Federal Wild and Scenic Waterways Act (enacted 1968), the Oregon Scenic Waterways Act (OAR 736-040 dated 1970), and the Landscape Management Combining-LM Zone Overlay, however The Report fails to acknowledge the Conservation Easement dated August 30, 2004 recorded on our property. This omission is important, as the easement prohibits the downing of trees within a specific area on our property except those that are dead or diseased. The potential tree loss caused by the project may constitute waste on our land.	Please see the response to Comment ID 39.06.
432.07	PROP	We are not opposed to seeking ways of conserving our water resources, protecting our fish and wildlife, and supplying our farmers and ranchers with irrigation. However, we are adamantly opposed to a piping plan that does not address the adverse impacts on our peaceful enjoyment of our property. No assessment of the impact on property values was conducted. The mere thought of an elevated gravel road running through our river view property within 30 feet of our home is disturbing, unconscionable and completely unfair. Another omission in The Report is evident in Appendix D: Change in Aesthetics and Associated Property Values. This section does not address the elevated flume at all. It only mentions the canals. It states that property owners "may experience adverse effects on property values and quality of life". The potential aesthetic cost to the affected residential landowners was not quantified.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 218.13 regard the proposed project's effects on property value.
432.08	RIGHT	It is significant to note that the easement enjoyed by AID on our property is approximately 54,600 square feet in area. The water that is transported through that easement earns income for AID. Yet, AID	Thank you for your comment.

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		does not pay any compensation for their easement use nor do they pay property taxes that include fire protection by Rural Fire District #2. We are paying for their fire protection. We understand that this use may be legally permitted, but now it doesn't seem equitable and fair given the adverse impacts this proposed project would have on our property.	
432.09	PUB	Our property's view of the flume is possibly one of the best in Deschutes River Woods. As one of the largest residential parcels adjacent to the flume, we find it deplorable that the individuals and organizations responsible for preparing this report did not contact us personally. It is evident that The Report contains errors, omissions, and it fails to address environmental mitigation issues that we have easily identified. This seems to indicate a lack of direct research and knowledge of property owner impacts. If The Report's intention was not to address these impacts on affected property owners, then the report did an excellent job.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 39.09. Please see Section 8.3 of the Plan-EA for a list of proposed minimization and mitigation measures.
432.1	SYS	The Report process spent countless hours and financial resources collecting and analyzing the water issues, but it spent very little on the flume structure itself. The report simply concludes that it's old and needs replacement. The Report says demolish the flume, lay a pipe, and cover with engineered backfill and a road. How is this going to be accomplished and what will it look like? To top things off, The Report states that the flume is the most important section in the proposed project as it supplies all the water to the canal system.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
432.11	SYS	In order for the general public and the organizations responsible for safeguarding our scenic waterways to understand the true impacts of this project, we request that you extend the comment period time to allow a re-evaluation of the flume replacement alternatives and include the following actions: 1. The Report should correct its characterization of the existing flume pipe being on the ground 450 feet after the diversion.	Please see the response to Comment ID 39.11.
432.12	CONS	2. The Report needs to address the specific areas along the flume's right of way that may be adversely impacted by the construction and loss of trees.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
432.13	RIGHT	3. The Report should acknowledge how the project will comply with the Conservation Easements where applicable.	Please see the response to Comment ID 39.06.
432.14	SOIL	4. The Report should address the mitigation of potential soil erosion.. and long term visual impacts of a huge earthen mound with a road to be constructed between steep terrain, trees, and rim rock.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
432.15	SAFE	5. The Report needs to address the security impact the proposed road would have on promoting easy trespassing (an existing problem along the flume).	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see the response to Comment ID 32.03 for

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			information about people walking along AID's maintenance road.
432.16	PROP	6. The Report needs to address the change in aesthetics and associated property values of the owners abutting the flume.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
432.17	SYS	7. The Report should include a preliminary construction design and cost analysis of the flume replacement project by an independent, professional engineer. This should be made available for public review, so we can better understand the physical and environmental impacts.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.
432.18	RIGHT	8. The Report needs to provide the individual easement documents on specific private property to be impacted by the proposed project construction. In the meantime, we invite you to visit our property and imagine the environmental impacts first hand. <images of property location and cross-sectional drawing included in comment>	Please see the response to Comment ID 39.18.
433.01	GEN	Please find the attached comments regarding the AID Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment. Please confirm your receipt of our response via an email reply.< comment also includes table of potentially impact wells, reference list, and 2 figures >	Please see the responses to Comment IDs 433.02 through 433.87.
433.02	GEN	Please accept these comments on the Draft Watershed Plan-Environmental Assessment the Farmers Conservation Alliance has prepared for the proposed Arnold Irrigation District (“AID” or “District”) Infrastructure Modernization Project (“Draft Plan-EA”). Because the Draft Plan- EA provides that it is designed both to comply with the obligations of the Natural Resources Conservation Service (“NRCS”) under the National Environmental Policy Act (“NEPA”) and its implementing regulations (40 C.F.R. Parts 1500-081 and 7 C.F.R. Part 650), and also to evaluate the District’s request for funding pursuant to the Federal Watershed Protection and Flood Prevention Act, Pub. L. No. 83-566, and thereby also must comply with the requirements of the regulatory guidance for that program, Draft Plan-EA at 7-8 & n.4, these comments encompass concerns and issues related to NEPA and the analysis NRCS is required to undertake in response to AID’s request for Pub. L. No. 83-566 federal funds. These comments are submitted on behalf of Papé Ranch and those who own it and reside there, whose family members have lived in central Oregon for multiple generations and who have a long, extensive, and successful record of efforts to effectively manage and conserve the extraordinary natural resources of the region to ensure they will not only persist, but be enhanced and allowed to thrive, for the benefit of future generations who will have the good fortune to be able to call this area their home.The overarching problem underlying the Draft Plan-EA is its overly narrow and effectively exclusive focus solely on the District’s preferences and its proposed piping project (“Proposal”) as originally developed. These flaws render the Draft Plan-EA legally invalid and inadequate across a whole range of issues, from its refusal to provide detailed	Thank you for your comments. Please see Comment IDs beginning with 433 for more detailed responses to the comments that were submitted in this letter. Please see Section 5.1 of the Plan-EA for more information on how the alternatives were formulated and Section 5.2 and Appendix D.2 regarding what alternatives were considered as well as explanations of why they were eliminated. Consideration of other piping projects occurring in the basin is included in Section 6.13.12 of the Plan-EA.

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		<p>consideration to various other reasonable alternatives that would better and substantially more cost-effectively serve the public interest, to a failure to look beyond the District to the Upper Deschutes Watershed (“UDW” or “Watershed”) as a whole. In short, this leads to an analysis in the Draft Plan EA-Plan that is too narrow, too shallow, too isolated, and too uncertain, which in turns leads it to analyze in detail only one action alternative (that then out of necessity becomes the “preferred” alternative) that is vastly too little, too slow, too expensive, and too rooted in the past, especially in light of the ongoing climactic changes and historic drought conditions the region is presently enduring, which the Draft Plan-EA only summarily addresses and fails to meaningfully account for. As a farmer from another district within the Watershed recently put it in testimony before the Oregon House of Representatives, they are witnessing nothing short of a “massive ecological and social disaster” without historical parallel outside the Dust Bowl era of the 1930s, which the recent multiple rounds of midseason cuts in water for North Unit’s patrons sadly readily substantiate.¹ The Ranch notes that the Draft Plan-EA correctly notes that it is subject to the pre-2020 version of the general implementing regulations promulgated by the Council on Environmental Quality (“CEQ”), which applies to all federal agencies, and so premises its comments on that version as well. See Draft Plan-EA at 8 n.3. Moreover, the analysis in the Draft Plan-EA effectively is written as though the District’s originally submitted Proposal is occurring in a vacuum, ignoring the fact that all of the other irrigation districts in the Basin are also undertaking similar piping projects. And thus, it is not just 13.2 miles of canal that is proposed for piping, but well more than 100 miles within the Basin over the next decade that will cost hundreds of millions of dollars to complete. Other than some cursory references to these other projects, the Draft Plan-EA essentially ignores the cumulative, sum-total impacts of these other projects, which is particularly ironic given that the analyses of environmental effects in the Plan-EAs for those other projects are to a considerable degree carbon copies of the Draft Plan-EA FCA also prepared for the District’s Proposal here. Nor does the Draft Plan-EA barely reference, let alone adequately account for or seek to build on the extensive analysis that has been done to address water conservation needs in the Basin, most glaringly the work associated with the Upper Deschutes Basin Study Work Group, even though NRCS and the District are members of that group and its explicit purpose was to provide “a wealth of information to help inform future water management in the Basin.” Nor does the Draft Plan-EA appear to even mention the word, “drought,” even though the Basin is in the midst of perhaps the worst one it has faced in a century and, quite likely, multiple centuries. Thus, time and present circumstance simply will not allow or call for a solution premised on trying to “pipe” the Basin out of the grave water conservation crisis it faces, particularly when full build-out will take a decade or more and the funding sources required to construct it are inherently uncertain and rely principally on federal monies in a time of historically high and exploding federal debt. These are no mere technical violations of NEPA implementing regulations, for they go to the heart of why water conservation is so critical, as well as why it must be done in the most strategic and cost-effective way possible, for the benefit not just of the District, but all residents and stakeholder groups in the Basin. The</p>	

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		<p>massive canal system that the irrigation districts have built up in the early portion of the 20th Century have effectively served as human-made tributaries of the Upper Deschutes for well more than 100 years now, and an entire ecosystem has grown up around, and grown to rely heavily upon, them -- not just humans, but all the flora and fauna in the region. Just because the canals were built by human toil instead of being carved out through natural means does not mean they are any less important to the species that inhabit the Basin; indeed, the same could be said of the reservoirs like Lake Billy Chinook that were created through human engineering. The importance of the canals is even more important because they criss-cross and bring a variety of hydrological benefits to an area that is arid and desert, and therefore has few natural water courses in the places where the canals run. It would be quite another thing if AID were seeking to engage in this kind of massively expensive upgrade to its irrigation canal system solely on its own dime, but when it is seeking to make U.S. taxpayers foot the bill for around two-thirds of this project that will cost tens of millions of dollars, and will largely completely revamp the hydrology, habitat, and visual and spiritual landscape that has been in place for nearly 100 years with substantial impacts on both wildlife and landowners, then NRCS quite frankly must do a better job to ensure it fully and fairly evaluates all reasonable alternatives to improve water conservation in the watershed and not just consider the singular alternative that the District has proposed and prefers. While it may work well for AID, NRCS has an obligation to ensure it works well for the public as a whole. Before turning to comments are organized into the following categories: (A) Structural and Foundational Flaws and Issues; (B) Analytical Inadequacies & Issues Related To Groundwater And Hydrological Effects; (C) Analytical Inadequacies & Issues Related to Interrelated Effects on Wetlands, Riparian Areas, Vegetation, & Wildlife; (D) Other NEPA Flaws and Issues in the Draft Plan-EA; (E) Process Issues and Concerns; (F) Inadequate Principles, Requirements, and Guidelines Analysis to Qualify for Funding under Public No. 83-566; and (G) Errata. In addition, the Papé Ranch would further advise that its comments are based in part on research, field work, and analysis performed by independent experts it retained to assist in its evaluation of this important proposal and its environmental effects, namely Bob Long, RG, LHG, CWRE, of CwM-H20, who contributed most specifically on groundwater and other hydrological effects and issues, and drafted Section B of these Comments; and Wendy Wente, Ph. D., a Senior Ecologist with Mason, Bruce, & Girard, Inc., who contributed most specifically on wetlands, wildlife, and vegetation effects and issues, and drafted Section C of these Comments.</p>	
433.03	PURP	<p>A. STRUCTURAL AND FOUNDATIONAL FLAWS & ISSUES1. The Purpose and Need is Legally and Conceptually Flawed in Multiple Respects.a. The Purpose & Need Is Erroneously Written Exclusively from the District’s Perspective. The Purpose and Need in the Draft Plan-EA is written wholly from the perspective of the District, but NEPA’s implementing regulations make plain that they need to reflect the federal government’s purposes and needs in financing a project under PL No. 83-566. See 40 CFR 1502.13 (P&N statement “shall briefly specify the underlying purpose and need</p>	<p>The Purpose and Need Statement in the Draft Plan-EA reflects the federal government's purposes and needs in financing a project under PL 83-566. The proposed project is eligible for funding under PL 83-566 requirements as an "Authorized Project Purpose (v), Agricultural Water Management." The</p>

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		<p>to which the agency is responding in proposing the alternatives including the proposed action”). Indeed, FCA openly conceded this point by defining the “Purpose and Need for the Project” as “why the District wants to do the Project” at the recent public meeting on the Draft Plan-EA. Pub. Mtg at 11:15-11:20 (emphasis supplied). Of itself, this is wholly inconsistent with NEPA and therefore, the Purpose and Need must be substantially reformulated for purposes of a Final EA-Plan.</p>	<p>Authorized Purposes can be found in 390-NWPM, Part 500, Subpart A, Section 500.3B (NRCS 2015a), which identifies that "Agricultural water management includes drainage, groundwater recharge, irrigation, water conservation, water quality improvement, and agricultural (including rural communities) water supply. Measures planned for these purposes are installed on nonfederal land by the SLO to benefit groups of landowners and communities. Measures on federal land will be installed and maintained in accordance with mutually satisfactory arrangements among the SLO, the land administering agency, and NRCS." Section 2 in the Plan-EA identifies the project purpose, which is to "improve water conservation in District-owned infrastructure, improve water supply management and delivery reliability to District patrons, and improve public safety on up to 11.9 miles of the District-owned Main Canal." These project purposes help define the range of reasonable alternatives to be considered in the EA and are authorized purposes under Agricultural Water Management (see above) and describe the "underlying purpose and need to which the agency is responding" (40 CFR 1502.13). The District identified a need to address water loss that occurs in District-owned infrastructure specifically along the District's Main Canal. This need was identified in the District's Request for Assistance letter to NRCS requesting planning and funding assistance through the PL 83-566 program. This need has also been included in Section 2 of the Plan-EA. NRCS responded to this Request for Assistance by beginning the planning process under NEPA. As the commenter describes, the need for the proposed project, identified by the District to address</p>

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			water loss in its infrastructure, was included in the Public Meeting for the Draft Plan-EA.
433.04	PURP	b. The Purpose & Need should acknowledge the broader interests in improving Upper Deschutes River streamflows and water conservation across the Basin. In its reformulation in the Final EA-Plan, the Purpose & Need should be informed in large measure by the much broader federal and public interests in water conservation within the Watershed and acknowledge the direct link of the bevy of ongoing and proposed piping projects in the UDB, including AID's, to the required streamflows set forth in the Deschutes Basin HCP, which provides that "[m]ost of the irrigation district Permittees will be able to accommodate the loss of water under the DBHCP due to ongoing and planned piping of canals to reduce seepage losses." DBHCP at 1-22. To fail to acknowledge that the increased streamflows required under the DBHCP are a key, and quite likely the primary, driver of the Proposed Action along with the rest of the extremely similar piping projects in the Basin is a gross and wholly unjustified oversight that also renders the Purpose and Need foundationally flawed.	Please see the response to Comment ID 433.03.
433.05	PURP	c. The Purpose and Need does not properly account for or build off of the congressional direction in the statutes providing the authority pursuant to which NRCS is acting, Pub. L. No. 83-566 and WRDA-07. Moreover, the Purpose and Need is also fatally flawed by not satisfactorily describing or considering the views of the Congress, expressed in NRCS's statutory authorization to fund the District's Proposed Action, most specifically Pub. L. No. 83-566, as well as in other related congressional direction. These underlying statutory aims should be expressly accounted for and inform the Purpose and Need of any federal proposed action for purposes of ensuring a sound NEPA analysis. Here, the congressional purposes are exceedingly broadly framed in relevant part to prevent "[e]rosion, floodwater, and sediment damages in the watersheds . . . of the United States," and to direct "the Federal Government [to] cooperate with States . . . and other local public agencies for the purpose of preventing such damages [and] of furthering the conservation, development, utilization, and disposal of water . . . and thereby of preserving, protecting, and improving the Nation's land and water resources and the quality of the environment." 16 U.S.C. § 1001. The statute accomplishes this policy in part by authorizing the Secretary of Agriculture to assist local organizations, in part by providing federal monies, in the preparation and implementation of plans for "works of improvement," which are in turn defined in relevant part as "any undertaking . . . the conservation, development, utilization, and disposal of water. 16 U.S.C. §§ 1002(2) & 1003(a)(4). It would be hard to imagine a more broadly scoped congressional direction in the realm of federal financing of water conservation projects.	Please see the response to Comment ID 433.03.
433.06	PURP	Moreover, as the Draft Plan-EA does cursorily reference, the other relevant congressional direction enacted more recently is Section 2031 of the Water Resource Development Act of 2007 ("WRDA-07"), Pub. L. No. 110-114. Draft Plan-EA at 9. In relevant part, that statutory section states that "[i]t is the policy of the United States that all water resources projects should reflect national priorities, encourage	The Plan-EA has been prepared in accordance with the Principles and Requirements (P&R) issued in March 2013 along with Interagency Guidelines and Agency Specific Procedures established in

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		<p>economic development, and protect the environment by seeking to maximize sustainable economic development . . . and protecting and restoring the functions of natural systems and mitigating any unavoidable damage to natural systems.” 42 U.S.C. § 1962- 3(a)(1) & (3). The Draft Plan-EA fails to acknowledge certain other elements of congressional direction in WRDA-07, however, namely that the Congress directs the Secretary of Agriculture to adopt revised “Principles and Guidelines” to use in “the formulation, evaluation, and implementation of water resources projects,” and that the revised version must expressly account for various specific considerations, including, in relevant part, “projects that use nonstructural approaches to water resources development and management; [t]he assessment and evaluation of the interaction of a project with other water resources projects and programs within a region or watershed, [and] “[t]he use of contemporary water resources paradigms, including integrated water resources management and adaptive management.” 42 U.S.C. § 1962-3(2) & (3)(C), (D), & (E).</p>	<p>DM 9500-013. These documents comprise the Principles, Requirements, and Guidelines. See Section 1.4 of the Plan-EA for more information regarding how the PR&Gs were incorporated into the Plan-EA.</p>
433.07	PURP	<p>Particularly when evaluated against this essentially wide-open field of statutory authorization under which NRCS is operating, it is virtually impossible to warrant the stringent strait-jacket reflected in the Purpose and Need on which the Draft Plan-EA is premised. In addition, insofar as the applicable congressional direction does provide more specific direction, namely as reflected in the considerations that must be taken into account by the Secretary in developing the revised Principles and Guidelines, the Draft Plan-EA fails even to cite or build into the Purpose and Need the most salient of such considerations, in particular the one calling for consideration of projects that use nonstructural approaches to water resources development and management.</p>	<p>The Principles and Requirements include a variety of requirements that supplement "a myriad of other laws, such as the National Environmental Policy Act (NEPA)." The Interagency Guidelines DM 9500-013 provide further information on how to incorporate these requirements. One such requirement is the "Nonstructural Approach" that says, "Full consideration and reporting on non-structural alternatives actions of plans should be an integral part in the evaluation of Federal investments in water resources." The nonstructural approach as identified in this text is intended to be used when developing alternatives rather than developing the purpose and need. Nonstructural alternatives, such as market-based approaches, were considered during the formulation of alternatives but were eliminated from further evaluation. Please see Appendix D.2 of the Plan-EA for more information on the nonstructural alternatives that were considered.</p>
433.08	PURP	<p>d. The Purpose and Need Wrongly Incorporates the Non-Statutory Principles, Requirements, and Guidelines into the Purpose and Need by Using Them to Determine Which Alternatives Warrant Consideration under NEPA. In addition, the Draft Plan-EA erroneously effectively incorporates NRCS’s Principles, Requirements, and Guidelines (“PR&Gs”) into its Purpose and Need by using it as a basis for determining which alternatives warrant consideration in detail under NEPA. But as NRCS’s</p>	<p>Please see Section 2 of the Plan-EA for clarifying language that has been added to further indicate a separation between the Federal Objective and Purpose and Need Statement.</p>

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		<p>own PR&G guidance states: “Under the PR&G, Federal investments are evaluated with respect to the Federal Objective and Guiding Principles. By contrast, under NEPA, the PR&G Federal Objective and Guiding Principles are not incorporated into the purpose and need contained in an EIS. The lead agency’s purpose and need for the proposed action frames the NEPA analysis, and is not part of the PR&G analysis. The Federal Objective may overlap the purpose and need, but the Federal Objective should be stated separately and not incorporated into the purpose and need statement in the EIS.” PR&Gs NRCS, Guidance for Conducting Analyses Under the Principles, Requirements, and Guidelines for Water And Land Related Resources Implementation Studies and Federal Water Resource Investments (DM 9500-013) at 6 (Jan. 5, 2017) (emphases supplied). Notwithstanding this clear regulatory guidance, the Draft Plan-EA runs wholly contrary to it by relying on the PR&Gs to justify failure to consider multiple alternatives in detail for NEPA purposes in the EA. Draft Plan-EA at 45 & D-42.</p>	
433.09	PURP	<p>e. The Purpose and Need is also extraordinarily, unduly, and improperly narrow insofar as FCA was only able to find one action alternative to satisfy it: the District’s Proposed Action. A Purpose and Need cannot be written in unreasonably narrow terms, a rebuttable presumption of which is created on the present record solely from the fact that FCA determined that only the Proposed Action was able to satisfy it in a cost-effective manner.² Draft Plan-EA at 45-46. By right upfront unnecessarily and unreasonably constraining the water conservation to be sought by the Purpose and Need to “District-owned infrastructure,” per the District’s bidding, NRCS pretty much guaranteed that only two alternatives would even tentatively be able to meet it: piping and lining. This was improper and must be redressed in the Final EA-Plan, which will have the salutary effect of opening up the range of alternatives to include others that are clearly reasonable and more cost-effective, including non-structural approaches that WRDA-07 expressly indicates the Congress wants the NRCS to consider in evaluating federal water resources projects.</p>	Please see the response to Comment ID 433.03.
433.10	GEN	<p>2. The “Proposed Action” Is Miscast Given That the Federal Decision Subject to Analysis Is Whether to Provide Nearly \$30 Million In Federal Assistance For AID’s Proposal. The Proposed Action is being funded pursuant to Pub. L. No. 83-566, which as noted above has an extremely broad scope and encompasses virtually any initiatives to improve water resource management or conservation. As a result, the decision for NRCS is whether the agency should make the requested “federal investment in a water resources project” to serve water conservation in the Basin, either pursuant to the proposal the District has put forward, or via any reasonable alternatives thereto, which is much broader than how the District has formulated its preferred outcome for which it seeks to make federal taxpayers pay the vast majority of the costs.</p>	The proposed action and alternatives were developed based on the guidance provided in Section 501.12 of the National Watershed Program Manual Title 390-500. See Section 5.1 of the Plan-EA for more information on how alternatives were formulated.
433.11	ALT	<p>3. The Draft Plan-EA Fails to Consider an Adequate Range of Alternatives in detail. The singular feature that is perhaps the most glaringly deficient in the Draft Plan-EA is its consideration of just two</p>	Please see Appendix D.2 of the Plan-EA for a description of how potential alternatives were

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		<p>alternatives in detail, and what the pair of those alternatives represent: Either pipe all of AID’s main canal precisely in accordance with the proposal AID submitted to NRCS for approval, or simply do nothing at all. This is wholly and facially inadequate, under both NEPA, which requires that all reasonable alternatives be given thoughtful and detailed consideration, and the PR&Gs, which have an even broader mandate for federal agencies to meaningfully consider a range alternatives that will best serve the public’s interests, values, and needs across the watershed in which a particular restoration or conservation project is proposed.</p>	<p>analyzed, selected for further evaluation in the Plan-EA, or eliminated from further evaluation in the Plan-EA. The No Action Alternative and the Piping Alternative met all NEPA and PR&G requirements and were selected for further evaluation in the Plan-EA.</p>
433.12	ALT	<p>NRCS wrongfully conflated the two separate frameworks for developing alternatives under both NEPA and WRDA-2007, the first of which turns on the Purpose and Need developed in accordance with NEPA’s implementing regulations and the latter of which needs to be handled consistent with the Principles and Requirements (“P&R”) and the PR&Gs. But the Draft Plan- EA misuses the PR&Gs for purposes of formulating and considering alternatives. As NRCS’s PR&Gs expressly state, “[t]he requirements for analyzing alternatives under the PR&G differ from the requirements for analyzing alternatives under NEPA, although both authorities ask agencies to consider a reasonable range of alternatives. The PR&G contain specific requirements for developing and analyzing alternatives, in contrast to the more general NEPA requirement that a lead agency consider a reasonable range of alternatives that may be narrower than those considered under PR&G (see 40 CFR 1502.14).” DM 9500-013 at 6. In this regard, Table 1 on p. 75 of PR&Gs also provides a comparison and differences of the key characteristics of a PR&G analysis and NEPA process.</p>	<p>Per DM 9500-013, "Unique requirements of the PR&G include ‘full consideration and reporting on nonstructural alternatives or plans’ (P&R, p. 11) and ‘an alternative plan, strategy, or action that is preferred by a local interest with oversight or implementation responsibilities’ (For more information, see P&R, p. 12). The PR&G also requires a transparent comparison of the effects of alternatives for their contribution to the Federal Objective and each of the Guiding Principles using an ecosystem services approach and including a discussion of tradeoffs in documentation provided in display and narrative form." These requirements were included in the formulation and analysis of alternatives in the Plan-EA. Please see Appendix D.2 for the description of structural and nonstructural alternatives that were considered during formulation. Each description of the alternative considered during formulation, as well as the alternatives moved forward for further analysis, identify whether the alternative would achieve the Federal Objective and Guiding Principles. Narrative description of ecosystem tradeoffs and display form can be found in Section 5 of the Plan-EA as well as Table 5-1. Table 5-1 also indicates if the alternative would be "locally preferred."</p>
433.13	ALT	<p>Moreover, even though the Deschutes Basin HCP is compelling the Districts to pursue enhanced water conservation that will enable them to meet the increased streamflow targets that are due to kick in in</p>	<p>The National Watershed Program Manual states, "Project sponsors must have the legal authority and</p>

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		<p>2028, the plan makes clear that piping is not a required component to achieve those targets. Indeed, it expressly states that “piping will not be required to fulfill the Permittees['] obligations under the DBHCP, and consequently piping is not part of the DBHCP.” HCP at 1-22. As a result, serious consideration needs to be given to alternatives other than piping, in particular those that are non-structural and much more cost-efficient. In this regard, and as explained in more detail below, the comprehensive Upper Deschutes River Basin Study that was a collaborative product of the Upper Deschutes River Basin Study Work Group (BSWG), of which both NRCS and AID are members, found that wholly non-structural market-based incentives were up to 12 times more cost-efficient than is piping. Upper Deschutes River Basin Study at iv. This come as no surprise to the federal government given that it has successfully employed market-based approaches in other realms with great success. G. Chan, et al., Nat. Bureau of Econ. Research, The SO2 Allowance Trading System and the Clean Air Act Amendments of 1990: Reflections on Twenty Years of Policy Innovation (Feb. 2012) (lead-in to abstract stating that “[t]he introduction of the U.S. SO2 allowance-trading program to address the threat of acid rain as part of the Clean Air Act Amendments of 1990 is a landmark event in the history of environmental regulation. The program was a great success by almost all measures”). Another advantage of this approach is that it can be implemented essentially immediately, and does not rely upon huge and uncertain funding sources and potential construction delays that could drag on for a decade or more. Frankly, as others have noted and the extant drought only adds an unfortunate exclamation point on, the Basin, and all of its various water-dependent stakeholders, including the District and its patrons, simply do not have a decade or more to wait to see even the relatively modest gains projected to occur in the Draft Plan-EA.</p>	<p>resources to carry out, operate, and maintain works of improvement" (NRCS 2015a). Many of the conservation tools considered during the Deschutes Basin Study process, including market-based incentives, would require the voluntary participation of patrons. Because the District has no statutory authority to carry out, operate, and maintain a water bank, it would not meet the requirements under the PL 83-566 program. Additional language regarding market-based incentives has been added to Section 2.3 of Appendix D.2 of the Plan-EA.</p>
433.14	ALT	<p>The Draft Plan-EA also utilizes a legally incorrect standard to determine whether to consider alternatives in detail. See Draft Plan-EA at 45 n.15. Moreover, NRCS’s own NEPA regulations require consideration of multiple action alternatives. 7 CFR § 650.4(e): “The interdisciplinary group considers structure and function of natural resource systems, complexity of problems, and the economic, social, and environmental effects of alternative actions” (emphasis supplied). The PR&G analysis is intended to complement and expand on or refine the NEPA analysis to ensure that, for the purposes of the PR&G, a) environmental effects disclosed are monetized and quantified to the extent possible; and b) alternatives considered adequately reflect the Federal Objective and Guiding Principles. PR&G Analysis Guidance at p. 5 (emphases supplied). The PR&G contain specific requirements for developing and analyzing alternatives, in contrast to the more general NEPA requirement that a lead agency consider a reasonable range of alternatives that may be narrower than those considered under PR&G (see 40 CFR 1502.14). Unique requirements of the PR&G include “full consideration and reporting on nonstructural alternatives or plans” (P&R, p. 11) and “an alternative plan, strategy, or action that is preferred by a local interest with oversight or implementation responsibilities” (For more information, see P&R, p. 12). The</p>	<p>Language has been updated in Section 5.1 to identify the guidance used for formulation and eliminating alternatives. Per the USDA's Guidance for Conducting Analysis under the Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies and Federal Water and Resource Investments (USDA 2017), "After preliminary consideration, agencies may remove from detailed study those alternatives that do not achieve the Federal Objective and Guiding Principles. In addition, alternatives that may at first appear reasonable but clearly become unreasonable because of cost, logistics, existing technology, social, or environmental reasons may also</p>

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		<p>P&R also state that “[a]ddressing the complex and often conflicting water resource needs of today and the future requires the formulation of a diverse range of solutions that need to be fully considered in the decision making process.” P&R at 3. After preliminary consideration, agencies may remove from detailed study those alternatives that do not achieve the Federal Objective and Guiding Principles. In addition, alternatives that may at first appear reasonable but clearly become unreasonable because of cost, logistics, existing technology, social, or environmental reasons may also be eliminated from further analysis. These alternatives should be briefly discussed to indicate that they were considered and the analysis should document the reason(s) why they were eliminated (e.g., they do not achieve the Federal Objective and Guiding Principles). PR&Gs at p. 18.</p>	<p>be eliminated from further analysis." Multiple alternatives, both structural and nonstructural, were considered during the formulation stage but were not carried forward for further analysis because they became unreasonable when evaluated against the four criteria laid out in this guidance, did not meet the purpose and need, or did not meet the Federal Objectives and Guiding Principles. See Appendix D.2 for further information.</p>
433.15	ALT	<p>4. In particular, NRCS needs to consider in detail one or more non-structural alternatives, including one that relies on the much more cost-efficient use of water-marketing principles in order to satisfy its obligations under both NEPA and Pub. L. No. 83-566. In consideration of the many competing demands for limited Federal resources, it is intended that Federal investments in water resources as a whole should strive to maximize public benefits, with appropriate consideration of costs. Public benefits encompass environmental, economic, and social goals, include monetary and non-monetary effects and allow for the consideration of both quantified and unquantified measures. P&R at 3 (emphases supplied). Moreover, Federal investments in water resources must incorporate several requirements, two of which are water use and non-structural approaches. P&R at 10-11 (Requirements E & F). And yet, the Draft Plan-EA only offers a scant and conclusory dismissal of an alternative it defines as “Fallowing Farm Fields” in Appendix D-2. Draft Plan-EA at D-43 (described as “a non- structural alternative that includes permanently transferring or temporarily leasing water rights from irrigated lands or otherwise not using water rights appurtenant to irrigated lands”). Giving such short shrift to non-structural alternatives is in blatant violation of PR&Gs. Section 6c(2)(c).</p>	<p>The nonstructural alternatives of conversion to dryland farming, fallowing farm fields, and market-based approaches were considered during the formulation phase but were then eliminated. Please see Appendix D.2 of the Plan-EA for more information on these nonstructural alternatives and why they were eliminated.</p>
433.16	ALT	<p>The eminent reasonableness, and indeed, superiority of such an alternative is evident from documentation prepared for the Upper Deschutes River Basin Study Work Group (“BSWG”), of which AID and NRCS are members. In particular, the Upper Deschutes River Basin Study found that the use of “market-based incentives” could increase streamflows by virtually the same amount as piping and other massive capital infrastructure projects, but at a fraction (less than 10 percent, both in gross and per acre-foot) of the cost, and identified benefits as including that they are “tested and effective approaches,” “are flexible and can be scaled for dry years,” and “could make water available at relatively low cost.” UDRBS at iv. In this same regard, NRCS needs to consider the analysis in Technical Memorandum 7 (July 2017), prepared by Summit Conservation Strategies, for the BSWG, which is not even cited in the references for the Draft Plan-EA (even though the similar Technical Memo for LPE Task 6 is, see Draft Plan-EA at 112).</p>	<p>Please see the response to Comment ID 433.13.</p>

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433.17	ALT	<p>A water bank in particular also has a proven track record in the Basin through the experience and overall success of the Deschutes Water Alliance Bank. In addition, there are three Groundwater Mitigation Banks operational within the Basin, including one managed by AID itself.</p> <p>https://www.oregon.gov/OWRD/programs/WaterRights/Permits/DeschutesGroundwaterMitigation/MitigationCredits/Pages/Mitigation-Banks.aspx (last visited July 8, 2021). In addition, previous experience with a surface water bank, the Deschutes Water Alliance Bank that by all accounts was a success for the years of its operation. Finally, the editorial board of the Bend Bulletin just published an editorial expressly in favor of resuscitating the use of a water bank, revealing broader public interest in this form of alternative. Editorial: Revive the Water Bank to Help the Deschutes Basin (June 24, 2021), at https://www.bendbulletin.com/opinion/editorial-revive-the-water-bank-to-help-the-deschutes-basin/article_43d51908-d445-11eb-9b7b-635c55a44f28.html (last visited July 8, 2021). In this light, as the Bulletin recently opined, the Final EA-Plan must consider in detail an alternative that would reconstitute a water bank in the Basin, only this time providing for all members of the Deschutes Basin Board of Control, including AID, to be members and participants in order to gain the maximal benefit from its operations.</p>	Please see the response to Comment ID 433.13.
433.18	ALT	<p>The Draft Plan-EA provides only the scantest of references to such an alternative, stating under the alternative it labels, “Following Farm Fields,” that states it is a “non-structural alternative that includes permanently transferring or temporarily leasing water rights from irrigated lands or otherwise not using water right appurtenant to irrigated lands.” Draft Plan-EA at D-43. Moreover, the document refuses to consider any alternative along these lines largely because “following would be voluntary, and any water saved would not necessarily be put instream by the patrons.” Id. This ignores the fact that the agreement between AID and NUID is wholly volitional as well, and thus the rejection of the nonstructural alternative on a similar ground reflects a blatant double-standard. See Draft Plan-EA at 50 (“Following the completion of the project and verification and measurement of the total water savings, AID would pass up to 10,526 acre-feet/year to NUID through the Deschutes River during the irrigation season”). Id. The Draft Plan-EA also wholly ignores the fact that Technical Memo 7 that was completed for the Upper Deschutes Basin Study Work Group found considerable interest in voluntary transfers among patrons through the use of surveys, and that the economic dynamics were particularly favorable to believing that they could save up to 160,000 acre-feet of water per year in the Basin.</p>	Please see the response to Comment ID 433.13. Any agreement made between AID and NUID would be an agreement between the districts. In contrast, since individual landowners are the holders of water rights within AID, participation in a water bank would be at the discretion of individual landowners. The District has no authority to compel participation in a water bank; therefore, it would not meet the requirements under the PL 83-566 program, since the program requires project sponsors to be able to carry out, operate, and maintain works for improvement (NRCS 2015a).
433.19	ALT	<p>Another potential option in this regard that warrants detailed consideration would entail the gradual evolution of the District into an updated water management institution like a water bank, opening the water management to a voluntary free market approach to obtain the highest economic or ecological value for water diverted or pumped from the ground. Ironically in this regard, the Draft Plan-EA fails to make any mention of the District’s existing Groundwater Mitigation Bank that AID has registered with the state to hold and convey any type of mitigation credits, including temporary (annual) mitigation</p>	Please see the response to Comment ID 433.13. The alternative of evolving the District into an updated water management institution like a water bank would not meet the purpose and need of the project (see Section 2) and would therefore not meet the

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		credits based on instream leases and time- limited instream transfers. Neither the results of the AID mitigation bank operations nor any ideas about how to form and operate a more robust water bank on a larger scale were considered or even mentioned in the Draft Plan-EA. These promising alternatives need to be evaluated.	formulation requirements of an alternative to be analyzed in the Plan-EA.
433.20	ALT	The inefficiencies extant in certain of the irrigation systems of Central Oregon suggest that new methods of valuing water and distributing water might be possible outside an irrigation district framework. These options might include innovative economic models, groundwater-only models, or hybrid models of water use. One alternative to reduce loss and return water to the Deschutes River would provide for water users currently supplied by the AID to gradually transition to increasing use of groundwater for irrigation. This would encourage implementation of on-farm water conservation methods, further reducing waste, and crop selection would have to return sufficient profit to pay for the cost of groundwater use. The cost of implementing such a change and the impacts on both the river and on the groundwater system have not been assessed. AID’s water rights could in turn be returned to the Deschutes River as an in-stream right, which would solve a significant portion of the low-flow issues in the river. Alternatively, a portion of that water could be used for either Ag-MAR or Aquifer Storage and Recovery (ASR) through injection wells to support the new groundwater use in the area. The water right could also be held in forbearance or as mitigation to allow issuance of new groundwater rights for irrigators in the original District service area (i.e. like the current mitigation bank run by AID). It is also possible that a free-market approach to the water allocation held by the District could be developed in a water banking framework. There are many related possibilities that were not considered to any degree in the Draft Plan-EA. Use of groundwater was eliminated from consideration on the basis of cost and water right complexity, though no engineer’s cost analysis or evaluation of water rights or water permitting options was presented on either factor. In addition, the likely impacts of deepening wells to mitigate for the elimination of recharge to the groundwater system was not evaluated for cost to residents and other groundwater users, as addressed in more detail below.	The exclusive or partial use of groundwater was initially considered as an alternative but was eliminated from further evaluation because it did not meet formulation criteria (see Appendix D.2 of the Plan-EA). Please see Appendix D.2 of the Plan-EA for discussion of the formulation criteria and Appendix E.4 of the Plan-EA for more information on water rights, seepage, flow, and water savings.
433.21	ALT	One distinct advantage that commends the exploration of a water marketing alternative for the Watershed is that it can effectively be implemented immediately, and is not contingent on securing future federal funding in the tens of millions of dollars over the course of the next decade. Moreover, just a fraction of the \$28 million that AID is seeking in Pub. L. No. 83-566 funds could go a long way to incentivizing the use of the water bank, and allowing participants to plough the proceeds from the transfers made through the bank into on-the-ground irrigation efficiency improvements, which would create a “virtuous” conservation cycle that could lead to synergistic, and non-zero-sum results for all involved. Another advantage that commends detailed consideration of a water marketing alternative is that it can be implemented without any adverse environmental effects that necessarily arise from construction of a structural alternative, the minimization of which is a requirement NRCS must satisfy	Please see the response to Comment ID 433.13.

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		<p>in planning and carrying out Watershed Projects funded with grant money pursuant to Pub. L. No. 83-566. See 7 CFR § 622.30(a), which states that: "Watershed projects are to be planned and carried out in a way that will (1) minimize all adverse impacts, and (2) mitigate unavoidable losses to the maximum practicable degree."</p>	
433.22	ALT	<p>Along these same lines, a hybrid or complementary alternative should also be considered in detail in the Final Plan-EA. Where applicable, alternatives should be formulated to examine the incremental efficiency (varying the scale) of an activity and separating it into various components. Alternatives with multiple components should be considered together and as separate alternatives if the components are independent, meaning there are no obvious dependencies or a scientific need to implement all of the measures as a system. PR&Gs, sec. 6.b.(4)(c), p. 17. For example, an alternative that would avoid piping in segments where loss to wildlife habitat, vegetation, and property values would be the greatest would appear to be particularly in order. In addition, an alternative based on a Purpose and Need that takes into account the public's and all stakeholder interests, and not just those of AID, and provide for the irrigation districts not to have to achieve all of the water conservation required of them under the DBHCP via structural improvements, is also clearly warranted. This would also be consistent with the Upper Deschutes River Basin Study, which calls for a complementary approach utilizing the best and most cost-effective mix of approaches. As explained above, boxing the Proposed Action in by stating that it could only be accomplished by structural improvements to the District's existing system was a self-imposed constraint improperly adopted in the first place that, wittingly or not, served to make the Plenary Piping Alternative effectively a fait accompli and only one action alternative left standing.</p>	<p>Please see the response to Comment ID 32.02 for discussion of the Piping Alternative with sections of open canal. The formulation of alternatives followed the CEQ's regulations for implementing NEPA and requirements of the PR&Gs. See Section 5.1 of the Plan-EA for more information. Regarding the Purpose and Need Statement, please the response to Comment ID 433.09.</p>
433.23	ALT	<p>5. The EA-Plan Improperly Failed to Consider in Detail the Canal Lining Alternative. Notwithstanding its finding that the "canal lining alternative" satisfied even its overly constrained "formulation criteria," the Draft Plan-EA eliminated it from detailed consideration because of flawed cost estimates associated with lining vis-à-vis the Plenary Piping Alternative. Draft Plan-EA at 46 & Appendix D.3 & D.4. The flaws arise from a variety of sources. First, it is ironic in the extreme to reject the canal lining alternative based on a cost-effectiveness rationale when the Draft Plan-EA largely ignores this variable otherwise in its analysis of alternatives and, indeed, identifies as its preferred alternative the Plenary Piping Alternative that the BSWG's own studies shows is up to ten times less cost-effective than non-structural market-based approaches that it summarily dismissed out of hand. As Technical Memorandum No. 7 states, "[i]t is clear that market-based approaches merit a significant role in any cost-effective portfolio of new water supplies." Tech Memo 7 at p. 57. Moreover, although the Draft Plan-EA cites excessive cost as the major reason for opting not to consider the canal-lining alternative in detail, even in part, per guidance in the PR&Gs, Draft Plan-EA at 45-46, it fails to acknowledge that cost and economic factors, on their own, do not justify declining to address an alternative in detail under NEPA or its implementing regulations. This is especially the case given that</p>	<p>The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA and in Appendix D.3. Please see the response to Comment ID 29.04.</p>

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		<p>the Draft Plan-EA concedes that the lining alternative meets all elements of even the overly cramped Purpose and Need, and so further and more detailed exploration are clearly justified to assess its viability as opposed to the single study on which the Draft Plan-EA relies to reject its consideration in detail. Draft Plan-EA at 45-46.</p>	
433.24	ALT	<p>Second, the Draft Plan-EA relies on improper parameters and variables in its attempt to justify declining to consider the canal lining alternative in detail. For one thing, it uses a 100-year time frame, on the basis of which it concludes the District would need to completely reline its main canal multiple times, thereby substantially increasing the cost of that alternative. As Summit Conservation Strategies noted in its Technical Memorandum No. 7, however, “[f]ifty-year terms are often used in economic analyses of reservoirs or other water infrastructure.” Tech. Memo 7 at pp. 5-6 & n.7. This is in large measure because making assumptions or relying on benefits from any capital improvement beyond 50 years is inherently speculative, and yet, the Draft Plan- EA fails to acknowledge this standard practice or seek to explain its radical departure from it through using a time frame twice as long. Next, the very study it cites indicates that canal lining in infrastructure typically can be expected to last 50 years: “Concrete and compacted earth canal linings have a typical service life of about 50 years.” Bureau of Reclamation, Canal-Lining Demonstration Proj. Year 10 Final Rpt. no. R-02-03 at 2 & ES-1, Table ES-1 (Nov. 2002).</p>	<p>Please see the response to Comment ID 433.83 regarding how the period of analysis was determined. The period of analysis was kept constant across all alternatives considered to make for an even comparison of the alternatives.</p>
433.25	ALT	<p>Third, the Draft Plan-EA appears to mischaracterize the results of the study on which it relies, which provides that, of the 34 test sections it examined, only seven had failed, “while the remaining test sections are in fair to excellent conditions.” Report Documentation Page. In fact, of the eight test sections within AID, five were assessed as still being in excellent condition (Sections A-1, A-2, A-3, A-7, A-8), and the condition of one more was assessed as Good (A-4). Canal-Lining Rpt. at 92-126. Nor does the Draft Plan-EA account for the fact that the report evaluated many different kinds of lining alternatives and therefore, to treat all lining options the same is unwarranted and improper. The Draft Plan-EA further fails to account for problems that can arise from excessive over-excavation in the cleaning of canals. For example, the Bureau of Reclamation’s Canal Lining Report provides that “[a] district that over-excavates their canal 1 inch each year, will completely remove a 3-ft compacted clay lining in only 36 years.” Canal-Lining Rpt. at 2.</p>	<p>Additional description and photographs of the canal lining test sections installed by Reclamation have been added to the Plan-EA. See Section 5.2 of the Plan-EA and Appendix D.3.</p>
433.26	ALT	<p>Fourth, no attempt is made to evaluate the efficacy or actual maintenance costs of other lining projects, even from within the Basin. For example, the North Unit Irrigation District has lined nearly 12 miles of its main canal, in part due to the lower costs associated with that approach, and drawing lessons from its experience, as well as from other more recent projects of potential relevance, would be instructive and is necessary before completely shelving a lining alternative from detailed consideration. Instead, the Draft Plan-EA provides insufficient substantiation to support its extraordinarily high cost estimate for the lining alternative, in particular because it depends on a single study even though lining is a common</p>	<p>The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA and in Appendix D.3. Please see the response to Comment ID 29.04.</p>

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		practice throughout the Western U.S. In this light, additional and more recent data are clearly available and need to be considered.	
433.27	ALT	Finally, the Draft Plan-EA fails to explain why a lining alternative was found to be reasonable for detailed consideration in the Tumalo District EA-Plan, but not for AID's. That is, NRCS reached the wholly opposite determination in opting to consider a canal-lining alternative in detail in the extremely similar EA that FCA prepared for the Tumalo Irrigation District piping project. Nowhere does NRCS seek to explain why the canal lining alternative justified consideration in detail in that EA-Plan while it ostensibly does not in this one. This discrepancy must be explained in the Final Plan-EA, but on its face would appear to simply be unwarranted.	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA and in Appendix D.3. Please see the response to Comment ID 29.04.
433.28	ALT	6. The Plan-EA Also Needs to Consider in Detail Other Water Management Alternatives. The Draft Plan-EA assumes that piping is the only water management option that can meet the proper Purpose and Need of the Proposed Action. Consequently, the Draft Plan-EA eliminated all other options from detailed consideration without presenting a fact pattern based on a technical evaluation or investigation within the District. Included in the eliminated alternatives were canal lining and on-farm efficiency improvements, both of which could significantly improve efficiency and return flows to the Deschutes River. Further and more detailed analyses of these and the other eliminated options are necessary, with a focus on district-specific and canal-specific hydrogeologic conditions.	The District and NRCS agree that water conservation through piping district infrastructure is one of various potential water management tools. During the formulation of the alternatives phase, multiple alternatives were evaluated based on meeting both NEPA and requirements specific to the NRCS PR&G (USDA 2017). See Appendix D.2 of the Plan-EA for further discussion of the requirements and alternatives that were considered during formulation. On-farm efficiency upgrades were eliminated from further evaluation because AID lacks the authority to carry out, operate, and maintain on-farm infrastructure (which is a requirement of the PL 83-566 program); it would not meet the project's purpose and need; its effectiveness would be uncertain as any water saved would not necessarily be put in stream by patrons; and it did not achieve the Federal Objective and Guiding Principles. See Appendix D.2 of the Plan-EA for further discussion. Regarding canal lining, please see the response to Comment ID 29.04. Following requirements for Watershed Plan-Environmental Assessments, this Plan-EA considered available, relevant environmental studies to determine the effects of the proposed action on various resources.

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433.29	ALT	Relying on data from outside the project area that is based on a basin-wide assessment is misleading to the public and feeds into a narrative that is self-dealing to support piping without assessing on-the-ground impacts and costs to people living near or in the project area. This narrative leap allows the authors of the Draft Plan-EA to ignore competing opportunities in water management and fails the public by falling short of the challenge of doing the work needed to assess the critical unseen water resource of the community at a project level.	The use of project area versus basin-wide data was utilized depending on the nature of the resources and potential effects. For example, basin-wide data was used in Sections 4.8 and 6.8 of the Plan-EA when considering effects on surface water hydrology and groundwater because although actions are taking place within the project area, the potential indirect effects of the proposed project would occur outside of the project area.
433.30	ALT	Three technical scenarios were not identified or address in the AID-PIR. These include: • Selective/ targeted canal leakage improvements, • Winter canal Managed Aquifer Recharge, and • Aquifer Storage and Recovery.a. Selective Canal Improvement AlternativeThe issues of high seepage loss, delayed deliveries, erosional problems, and Deschutes River flows could all be improved by targeting a few high-impact reaches of the AID canal. The 2016 canal field survey (Crew, 2017) identified which reaches contribute most to seepage losses. Further investigation into the contributions of local soil and geologic conditions to seepage, canal recharge time, and erosion could result in targeted options that improve the most impactful reaches of the canal system for the lowest cost. Because of the minimal level of investigation completed by the AID, it is not known if piping only a small portion of the canal could see major improvements for most or all factors under consideration. An appropriate cost-benefit optimization study, including the impacts of reduced seepage to groundwater wells and the local economy, should be conducted to determine if full piping is necessary or the most effective course of action.	NRCS and the District selected the reach of the canal to be modernized based on its ability to best meet the purpose and need of the project. Please see the response to Comment ID 32.02 for discussion of the Piping Alternative with sections of open canal. For information about effects on groundwater, see the response to Comment ID 433.38 and updated text in the NEE in Appendix D.1 of the Plan-EA.
433.31	ALT	b. Managed Aquifer Recharge AlternativeThe primary goal of piping central Oregon irrigation canals is to limit diversion of surface water from the Deschutes River in the summer season. The first item listed in the Draft Plan-EA’s Purpose and Need for Action is improving water conservation. Piping will meet this goal by reducing seepage losses and allowing of some conserved water to remain in the middle and lower Deschutes River course and later diverted at the North Unit Irrigation District. During the winter season, the flow rate in the Deschutes River increases as one moves downstream from the Wickiup Reservoir to Lake Billy Chinook due to inflow contributions from High Cascade recharge and groundwater discharge through springs. Flows upstream of Benham Falls, a major groundwater discharge point about 3.5 miles upstream from the AID diversion, are often too low for healthy fish populations and habitat in the winter. This is primarily due to impoundment of winter water in the Wickiup and other reservoirs. Below Benham Falls, winter flows are generally sustainable (refer to Figure 5-2 in the AID-PIR). Limiting diversions into the AID canal in the summer irrigation season would not address the low wintertime flows in the Upper Deschutes River and could negatively impact groundwater resources	The Plan-EA considered available, relevant environmental studies to determine the effects of the proposed action on various resources. These studies have been incorporated into analyses throughout the Plan-EA. For determining effects on water resources, models used for the HCP were also used for this analysis. However, these models do not incorporate climate change predictions into the model (J. Johnson, personal communication, January 10, 2021). The reason is that the Deschutes River is highly connected to the underlying aquifer system, and many of the available tools used to generate future adjusted climate data do not simulate this

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		<p>below the irrigation districts by restricting local groundwater recharge through seepage. The AID Draft Plan-EA proposes to reduce, forgo, or transfer storage in the Crane Prairie and Wickiup Reservoirs to allow for mitigation of low wintertime flows in the Upper Deschutes above Benham Falls without assessing the impacts of climate change on the availability of storage water flow and changes in winter snow melt timing over the proposed 107-year project life (Draft Plan-EA, Appendix D, at D-4). The impact of climate change on storage at Crane Prairie and Wickiup Reservoirs must be completed over an equivalent time period to assess the viability of the proposed option to pipe AID’s main canal and use Crane Prairie storage water or live flow at or through Wickiup Reservoir to mitigate flows in the upper Deschutes. Agricultural Managed Aquifer Recharge (Ag-MAR) also has the capability to address both parts of the Deschutes River flow problem. Ag-MAR is a system in which surface water is used to recharge aquifers via infiltration during periods of water availability and is stored underground in aquifers for later use as irrigation water or other supply. The AID, as well as other central Oregon districts, could utilize existing canal infrastructure as an Ag-MAR system to manage conjunctive uses of surface water and groundwater. In this system, the current minimal winter reservoir releases from Wickiup Reservoir would be increased, raising flow rates in the Upper Deschutes River, and water would be diverted through the canals during the non-irrigation season. This water would satisfy stock watering and other non-irrigation uses but would predominantly be allowed to seep into the groundwater system, effectively storing winter water within the aquifer. Given the estimated loss rate during the irrigation season, 7,000 acre-feet or more could be stored over three winter months. The infiltrated and stored groundwater would then be available for irrigation or other uses during the summer season. A significant portion of the required irrigation water might be supplied by infiltrated Ag-MAR water. The remaining need could then be met by limited summertime diversions through the canal, therefore also restoring significant flows to the Middle Deschutes River during the summer. MAR has already been demonstrated to increase flows in other rivers regulated for fish passage and habitat (Van Kirk et al., 2020). This is essentially a method of partial use of groundwater, which was eliminated from consideration by the AID, TID, and COID. However, there are many benefits of this system: • Improved winter and summer flows in the Deschutes River• No cost to alter the current canal infrastructure system and surrounding land,• Net positive impact on local groundwater systems instead of declines,• No impact to habitats, animals, and trees potentially dependent on the canals,• AID could potentially obtain groundwater rights for the recharged winter surface water.[SEE TABLE IN COMMENT] Ag-MAR has been demonstrated to be an effective water management technique in other semi-arid systems of the western United States (Niswonger et al., 2017; Kourakos et al., 2019). An Ag-MAR system very similar to the one proposed above has been evaluated in the Walla Walla Basin of Oregon and Washington. Detailed models of winter Ag-MAR suggest that the system can support irrigation needs, raise groundwater levels, and increase summer river flows (Scherberg et al., 2014;</p>	<p>behavior well. Resource agencies have been working on developing tools that could help develop flows for the Deschutes Basin, but the progress has been slow and nothing is available at this time. Managed Aquifer Recharge has been added to the alternatives considered in Appendix D.2 of the Plan-EA. Please see the appendix for discussion. Please also see Appendix D.2 of the Plan-EA for discussion of the exclusive or partial use of groundwater as an alternative and the rationale for why it was eliminated from further evaluation.</p> <p>Reference: Johnson, J. (Reclamation). (2021). Personal communication with Amanda Schroeder (FCA). January 10, 2021.</p>

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		Scherberg et al., 2018). A thorough investigation into the feasibility of Ag-MAR in the AID is needed before determining the most effective way to restore water to the Deschutes River.	
433.32	ALT	c. Aquifer Storage and Recovery (ASR) AlternativeAn Aquifer Storage and Recovery system injects water treated to drinking water standards through wells into subsurface aquifers and recovers the water by pumping the wells. This type of system could meet some or all of the Purpose and Need for Action criteria (water conservation, improved reliability, and public safety) if fully evaluated. A full evaluation of ASR technology requires an in-depth knowledge of the local and regional hydrogeologic framework of the project area. A typical ASR Feasibility Study includes the evaluation of local geology, hydrogeology, water quality, treatment options, identification of regional groundwater aquifers and local shallow water-bearing zones, groundwater modeling, an analysis of water injection rates and simulations of the groundwater model to assess impact of groundwater mounding. An additional benefit of ASR is the preservation of the original surface water right priority date for AID. Any new ASR system would work under an ASR Limited License and would not require the surrender of senior water rights. The ASR option was not evaluated or reported by the Draft AID EA. This option should be considered and an ASR Feasibility Study completed before this innovative technology is dismissed. The Oregon Water Resources Department offers a competitive grant program for evaluation of subsurface storage options that includes ASR and Ag-MAR. The OWRD program provides up to 50% matching funds to pay for the evaluation. It does not appear that AID considered applying for funding to evaluate either the Ag-MAR or the ASR option within the project area. This funding option could assist the District with the evaluation.	Aquifer Storage and Recovery has been added to the alternatives considered in Appendix D.2 of the Plan-EA. Please see the appendix for discussion.
433.33	MET H	7. The Draft Plan-EA Utilizes an Inappropriately narrowly defined Planning/ Study Area, and inconsistent and shifting uses of scales used for purposes of analysis of effects.As an initial matter, NEPA and its implementing regulations require the scale of a federal agency’s NEPA analysis to be based on the environmental effects of a Proposed Action, not on what the National Watershed Program Manual defines as a “watershed area,” which has a totally different underlying purpose, as outlined above.Next, even borrowing from this definition, the “Planning Area” in the Draft Plan-EA as turning on what it refers to as the “irrigation problem area” referenced in the National Watershed Program Manual is entirely too narrow. The Manual after all is just guidance, and the purpose of Pub. L. No. 83-566 is to address problems in “watersheds.” As the Draft Plan-EA indicates, this definition of Planning Area leads it to be just over one percent of the applicable subwatersheds in which the Project will fall, let alone the entire Upper Deschutes Basin watershed. Moreover, nowhere does the Draft Plan-EA explain or disclose how FCA arrived at the “irrigation problem area.” Second, however calculated, it clearly must encompass more than just AID and should ideally take in the Upper Deschutes Watershed.	Please see Section 1.1 of the Plan-EA for a description of how "irrigation problem area" was defined. The Council for Environmental Quality (CEQ) regulations (40 CFR §§ 1500-1508) define the impacts and effects that must be addressed and considered by federal agencies in satisfying the requirements of the NEPA process. This includes direct, indirect, and cumulative impacts. Section 6 of the Plan-EA analyzed the potential for direct, indirect, and cumulative effects across different scales of geographies within the Deschutes Basin based on the type of effect that would occur. For example, analysis of effects on vegetation was limited to the project area because that is where direct, indirect, and cumulative effects would occur (see Section 6.6.2).

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			<p>On the other hand, effects on surface water hydrology were considered outside of the project area from Crane Prairie Reservoir until Lake Billy Chinook because that is where indirect effects of the proposed project would occur (see Section 6.8.2.2 of the Plan-EA).</p>
433.34	MET H	<p>Moreover, one of the Principles to be followed in NRCS's evaluation of any proposed Federal investment in water resources now and into the foreseeable future is to ensure the use of a "Watershed Approach." P&R at 5-6 ("A watershed is land area that drains to a common waterbody. A watershed approach to analysis and decision making facilitates evaluation of a more complete range of potential solutions and is more likely to identify the best means to achieve multiple goals over the entire watershed"). This Principle is expounded upon in the Interagency Guidelines ("IAG"), which provides that utilization of a watershed approach to water resources management "requires a structured consideration of watershed needs and how alternatives under consideration serve those needs. Minimally, the study area should include the watershed, but could also include other areas since there may be impacts outside of it." IAG at 15. Moreover, an agency's specific procedures are agencies must update, revise, or replace these processes, in accordance with the Interagency Guidelines. Id. at 16. Moreover, no explanation of how FCA ensured collaboration with stakeholders affected by the proposed Project, including with respect to "identifying the study area," as required.</p>	<p>Per the Principles and Requirements (P&R; NRCS 2013), the watershed approach should be used in analysis and decision making and allow for "consideration of upstream and downstream conditions, needs, and potential impacts of proposed actions." The P&R further states, "The scope and scale of watershed assessments can vary. Watershed assessments should encompass a geographic area large enough to ensure that plans address cause and effect relationships among affected resources and activities that are pertinent to realizing public benefits." The Watershed Planning Area included in the Plan-EA was developed based on guidance from the National Watershed Manual (NRCS 2015a) and Handbook (NRCS 2014; see Section 1.1 of the Plan-EA for more information on the Planning Area). Please see the response to Comment ID 433.33 regarding the geographic scope of effects analyses. Please see the response to Comment ID 434.10 for information about how potential alternatives were evaluated. Stakeholders identified to have the potential to be affected by the federal investment include property owners adjacent to the canal, patrons of the District, NUID, and organizations and federal/ state agencies with an interest in the Deschutes River. Please see Sections 3 and 7 of the Plan-EA for documentation of the outreach that occurred during the public scoping and Plan-EA development processes.</p>

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433.35	GEN	<p>8. The Draft Plan-EA is also unduly narrow in scope given its failure to address all of the Basin’s ongoing piping projects as “connected,” “cumulative,” and/or “similar” actions as required or urged by NEPA regulations. In defining the scope of an agency’s NEPA analysis, CEQ’s implementing regulations require an agency to consider three types, namely “connected actions, which means that they are closely related and therefore should be discussed” jointly in a single NEPA analysis; “cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed” in the same NEPA analysis; and “similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography.” 40 C.F.R. § 1508.25(a).</p>	<p>Please see Section 6.13.2.3 of the Plan-EA for a description of potential future piping projects using PL 83-566 funding that were included as a reasonably foreseeable action when considering cumulative effects. Additional language had been added to identify that other irrigation efficiency projects, in addition to PL 83-566 projects, would also be potentially occurring in the future.</p>
433.36	GEN	<p>9. The Draft Plan-EA is based on a flawed and legally insupportable use of “Tiering” under the CEQ’s NEPA Regulations. The “Tiering” strategy on which the Draft Plan-EA’s environmental analysis is based is wholly inconsistent with and violative of CEQ’s NEPA regulations. See Draft Plan-EA at 7. First, NRCS will simply need to perform further NEPA analysis (with corresponding opportunity for public review and comment) such as in a Supplemental EA because of its concession that “this Plan-EA does not identify the specific details associated with the engineering design and construction activities that would be required to implement the proposed action,” while inconsistently stating in the very next sentence that the document “intends to present an analysis in sufficient detail to allow implementation of a proposed action.” Draft Plan-EA at 7. In other words, the Draft Plan-EA states that although it does not provide details necessary for implementation of the proposed action, at the same time its objective is to provide environmental analysis at a sufficient level to warrant that implementation the very details of which it expressly fails to provide. This is not only internally inconsistent, but legally deficient.</p>	<p>Please see the response to Comment ID 433.37.</p>
433.37	GEN	<p>Nor can NRCS cure this defect by preparing an “Environmental Evaluation” down the road because it is not a NEPA document, and a federal agency is precluded from tiering to a non-NEPA document, or seeking to cure a NEPA flaw in a non-NEPA document. Plus, there is apparently no opportunity for public review and comment associated with NRCS’s preparation of an Environmental Evaluation, thereby insulating important details important to understanding the Plenary Piping Alternative’s environmental effects from public input and skirting this critically important element of the NEPA process. Analysis of environmental analysis cannot be deferred if the effect is to shield it from public scrutiny. The Draft Plan-EA’s Tiering strategy is also internally inconsistent insofar as it states that an individual Environmental Evaluation would be prepared “prior to the implementation of each site-specific project,” implying that there are multiple such projects, while also stating that the proposed action would be completed in a single “project group.” Draft Plan-EA at 7. The Final EA needs to rectify this problem and clarify whether NRCS intends to prepare a separate site-specific EA that provides the requisite implementation details sufficient to assess environmental effects consistent with NEPA for each construction phase of the Proposed Action,” or just a single EA for all five construction phases.</p>	<p>Please see Section 1.4 of the Plan-EA for updated language clarifying that an Environmental Evaluation is not the same as a supplemental Plan-EA and clarifying under what conditions a CPA-52 is appropriate or when a supplemental EA is needed. If a supplemental EA were to be required, it would follow the guidelines provided in Part 603 of the National Watershed Program Handbook Title 390-600 and Part 503 of the National Watershed Program Manual Title 390-500.</p>

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433.38	WAT	<p>B. ANALYTICAL INADEQUACIES & ISSUES RELATED TO GROUNDWATER AND HYDROLOGICAL EFFECTS 10. The Draft Plan-EA inaccurately represents USGS study findings regarding the local effects of canal piping on groundwater levels in the AID. The Bureau of Reclamation got it right when in their document Water Reliability in the West - 2021 SECURE Water Act Report they summed up groundwater issues: “Groundwater is an unseen, yet critical, water resource for many communities throughout the West. Given unique aquifer properties, local precipitation, topography, and land use; groundwater resources in any particular location are challenging to assess. (Reclamation, 2021)” The Draft Plan-EA contains no project-level assessment of the geology or hydrogeology, nor does the AID PIR. The Draft Plan-EA relies on basin-level estimates in Section 1.1.1.4 Groundwater and references basin wide impacts that were recorded miles north of the project area. Completing local hydrogeologic study within the project area is critical. It is the local groundwater system and groundwater users close to AID Canals that are the parties most likely to be impacted by piping the AID Canals.</p>	<p>An Environmental Assessment (EA) is a concise public document that briefly provides sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or finding of no significant impact (190-610-H, 3rd Ed., May 2016). The EA is based on the best available information at the time of the assessment.</p> <p>As applicable, additional information was added to the Plan-EA to incorporate available material. These changes are intended to reflect and provide additional clarity within the affected environment section and how the effects and costs were analyzed. Please see updated text on effects to groundwater in Section 6.8.2.3 of the Plan-EA and in Appendix D.1 Section 2.3.1.</p> <p>The Plan-EA uses several reports (Gannett and Lite, 2013; Gannett et al, 2017; etc.) to quantify the potential effects from piping the canal on groundwater at the Deschutes Basin scale. An updated economic analysis describing potential effects to pumping costs is in Appendix D.1 of the Plan-EA. When evaluating the effects to the Deschutes Basin as a whole, the Plan-EA relies on currently available reports, which includes limited information about localized effects to wells adjacent to AID’s canal.</p> <p>As stated in the cited reports, most groundwater declines in the basin come from climate change and increased pumping, both of which are outside the control of AID. With or without canal piping, shallow wells in the area around AID have the risk of running dry due to these declines unless they are deepened. In the Deschutes Basin, there are examples of wells in Tumalo Irrigation District drying up adjacent to canals that have not been piped or lined,</p>

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			illustrating the complexity and uncertainty of effects to local groundwater.
433.39	WAT	<p>More specifically, Section 4.8.5, the Draft Plan-EA states as follows: “The study [Gannett and Lite, 2013] predicted an approximate 5- to 14-foot decline in groundwater levels in the central part of the Basin, which lies north of the proposed project area. The study found that 60 to 70 percent of the measured decline was associated with climate variations, 20 to 30 percent of the measured decline was associated with increased groundwater pumping, and 10 percent was associated with canal lining and piping. At the basin-scale, natural climate-induced fluctuations in groundwater discharge largely mask the effects of development on discharge from the regional aquifer (Gannett et al. 2001).” Draft Plan-EA at 34. The foregoing excerpt demonstrates how the Draft Plan-EA repeatedly and incorrectly uses basin-scale averages to represent maximum expected local impacts when it comes to groundwater responses to piping. The USGS report (Analysis of 1997–2008 Groundwater Level Changes in the Upper Deschutes Basin, Central Oregon; Gannett and Lite, 2013) frequently cited in the Draft Plan-EA does conclude that on the scale of the Deschutes Basin, climate variation did account for a majority of the groundwater declines observed and modeled over the 1997- 2008 study period. However, Gannett and Lite also stated within their study that the proportional impacts to groundwater levels of climate variation, increased pumping, and canal piping are not evenly distributed over the region: “Water-level changes in some parts of the upper Deschutes Basin, such as the La Pine subbasin and upland areas, are due to climate influences and are largely unaffected by pumping and canal lining. Simulated water levels in the more developed central part of the upper Deschutes Basin (the area encompassing Sisters, Bend, Redmond, and Powell Butte) show the effects of increased pumping and decreased recharge due to canal lining in addition to climate variations” (Gannett and Lite, 2013, page 19). Canal lining and piping in some areas of the central basin therefore account for more than 10%of observed declines. For example, the study reports that the area east of Sisters, 15-17.5%of 20-25 ft declines since 2000 are connected to loss of canal leakage (Gannett and Lite, 2013, page 23). Gannett and Lite conclude that typical declines in the central basin, which they define as the area generally between Bend and Redmond, “generally ranged” 5-14 ft, about 10%of which was caused by canal lining or piping (Gannett and Lite, 2013). They point out that in areas adjacent to major canal systems that were lined or piped, such as areas around Tumalo and north and east of Bend, experiences much greater declines (Gannett and Lite, 2013, page 28). The study concludes by stating, “Water-level changes are dominated by climatic influences. In the central part of the basin, however, increases in groundwater pumping and decreases in recharge due to canal lining have significantly contributed to water-level declines” (Gannett and Lite, 2013, page 33). This conclusion is directly contrary to the assumptions in the Draft Plan-EA. A local hydrogeologic evaluation of the Project Area therefore needs to be completed for the Final EA- Plan to accurately assess the likely much</p>	Please see the response to Comment ID 433.38.

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		greater declines than the generic levels suggested by the Gannett and Lite study on which the Draft Plan-EA almost exclusively relies that have led it to include a misleading analysis of effects on groundwater.	
433.40	WAT	The AID is outside or on the periphery of the central basin as defined in Gannett and Lite, 2013. The study also concludes that “the effects from increased pumping and decreased irrigation canal leakage extend south into the Bend area” from the COID area (Gannett and Lite, 2013, page 1). Gannett and Lite admit that their model likely “dampened” the impacts of pumping and canal piping in the Bend area due to the limited number of wells with available data, and the fact that the available wells were in close connection with the Deschutes River (Gannett and Lite, 2013, page 1). Despite this, the USGS model predicted much greater groundwater level declines in the AID area due to canal lining and piping than reported in the Draft Plan-EA. For wells in the AID in the upper 100 ft of the regional water table, 1.0-49.9 ft of groundwater decline was estimated between 1997 and 2008, with the largest impacts in the northern and eastern sections of the AID. All deeper wells (200-300 ft below regional water table) in the AID experiences 1.0-4.9 ft of decline attributable to reduced canal leakage. The model did not include perched shallow water-bearing zones, which provide water to dozens of wells in the AID area (CwM, 2021), and which would experience the brunt of the reduction in recharge from unlined canals (Gannett and Lite, 2013).	Please see the response to Comment ID 433.38.
433.41	WAT	The 1.0-49.9 ft of groundwater declines in the AID from 1997-2008 due to canal piping were largely due to piping activities outside of the AID. Piping of COID canals during this period resulted in an estimated 50.0-68.3 ft of decline locally northeast of Bend, which increased the southwest-to-northeast regional groundwater gradient between COID and AID (Gannett and Lite, 2013, Figure 28). The impact of COID piping, along with some lining and piping of laterals within the AID, contributed to the 1.0-49.9 ft of decline in the AID. It is also worth noting that the groundwater effects of canal piping from 1997-2008 were based on a basin-wide reduction in canal leakage of 58,000 AF/year. The completion of the AID piping project is expected to reduce leakage by approx. 10,500-14,600 AF/year (AID, 2019; AID, 2021), yet this change will be concentrated on the AID area alone and not spread across the central basin. The amount of leakage reduction expected in AID is comparable to the reduction in COID from 1997-2008 that lead to 50.0-68.3 ft of declines locally (Gannett and Lite, 2013).	Please see the response to Comment ID 433.38.
433.42	WAT	The Draft Plan-EA takes basin-wide impacts of canal piping and lining and applied them to the relatively small area of the AID. In reality, the expected reduction in groundwater recharge from the AID project will concentrate the groundwater impacts on those wells within close proximity of the canals. Based on the modeled impact of COID canal alterations, the USGS model suggests that a close proximity may be on the order of a mile or more (Gannett and Lite, 2013). A more detailed site-specific study of the AID area is needed to accurately predict the possible groundwater impacts of canal piping. CwM-H2O completed a preliminary assessment of the likely impacts to groundwater wells within one-mile of the AID main canal and found approx. 8 to 42 feet of likely declines. These impacts effect over 500 wells	Please see the response to Comment ID 433.38.

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		<p>based on water well records recorded at OWRD for wells within one mile of the AID canals (CwM, 2021). The Draft Plan- EA does not assess any of these significant impacts or costs to groundwater users near the Canals. This failure to assess real impacts to local drinking water supplies and the cost of well deepening in addition to additional pumping costs feeds into the economic analysis in the Draft Plan-EA completed by Highland Economics. The economics assessment relies on flawed assumptions and incorrect cost estimates for mitigation of groundwater impacts.</p>	
433.43	WAT	<p>11. The Draft Plan-EA includes an inaccurate generalization of USGS study findings regarding the local effects of canal piping on groundwater levels in the AID. Section 6.8.2.3 of the Draft Plan-EA states as follows: “On average, for this part of the Deschutes Basin, this decrease in recharge translates into a decreased groundwater elevation of approximately 0.028 foot annually (see Appendix D 1.1.4.1 for calculation details). An important caveat is that localized effects on groundwater would differ throughout the area. These effects would be most prominent at shallow depths closest to canals and attenuate with increasing depth (Gannett and Lite 2013).” The Draft Plan-EA depends on the Gannett and Lite studies for its estimations of groundwater declines in response to piping the AID system, specifically the figure of 5-14 ft of decline in the central basin. The EA then reasons that 0.5-1.4 ft of decline was incurred by canal piping and lining, based on Gannett and Lite’s estimate that 10% of declines were caused by reduced canal leakage to groundwater. These values were then interpolated based on the total reduction in recharge volume in the basin (58,000 AF/year) and the length of the study period (12 years from 1997-2008) to arrive at a predicted 0.028 ft/year of decline in response to the AID piping project. The groundwater cost and carbon cost estimates presented in the Draft Plan-EA fully depend on this one erroneous value. The Draft Plan-EA does not accurately apply the conclusions of the USGS modeling study during this process. The figures initially used, 5-14 ft of decline, are stated as general declines across a large portion of the Upper Deschutes Basin. As explained above, the same study cited in the Draft Plan-EA concludes that 1.0-49.9 ft of decline occurred at moderate depth within the AID area between 1997 and 2008 due to canal lining and piping alone, with declines increasing west to east across the District (Figure 28 in Gannett and Lite, 2013). This large effect was due primarily to canal piping several miles north of the AID along COID canals. USGS modeled declines were not in response to the 58,000 AF/year of leakage reduction for the entire basin, but instead to approximately 20,000 AF/year of reduction within the COID and AID. Canal piping and lining west of the Deschutes River (TID and TSID), north of the Crooked River (NUID), or very far down-gradient from AID (such as in the norther portions of COID) would not affect groundwater levels below AID land, a fact which the Draft Plan-EA itself erroneously claims (AID EA Section 6.13.3.8, page 85).</p>	Please see the response to Comment ID 433.38.
433.44	WAT	<p>Following the same calculation methodology as used in the Draft Plan-EA, using an intermediate decline value from the USGS model of 20.5 ft for the AID, and the estimated local recharge loss value of 20,000 AF/year, we arrive at an estimate of approx. 0.166 ft/year of decline on average for the AID area, or</p>	Please see the response to Comment ID 433.38.

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		<p>about 6 times the Draft Plan-EA rate. Over the 100 year life of the project, this would amount to 16.6 ft of decline on average, and potentially reaching about 30 ft near the main canal. This is a conservative estimate for three reasons. First, the values from the USGS model for the AID area are in response to a more distant piping action in COID. An equivalent action within the AID would result in a larger local impact than estimated here, and one likely comparable to estimated local declines in southern COID (50-68.3 ft). Secondly, the estimate of 0.166 ft/year of decline is still assuming that 90% of the declines in AID from 1997 to 2008 were due to climate variation and groundwater pumping. Though this estimate may be accurate for the region as a whole (i.e. across the entire Deschutes Basin, it is likely that canal recharge has a greater role in the AID than basin-wide. This assumption is supported by local observations of rapid groundwater response to canal wetting and drying (Caldwell, 1998). Lastly, all of the estimates described above are based on USGS modeled declines in the upper 100 ft of the regional water table, which occurs at a depth of about 500-600 ft (OWRD, 2016; AID, 2021), which is only a part of the impact to groundwater users within a mile of the AID Canals. Many AID area wells depend on shallower, perched water-bearing zones 150 ft or more above the regional water table that would experience greater effects than lower units. No impact analysis was provided in the Draft Plan-EA for these groundwater users. As stated in the USGS report, “the effects of canal lining, in contrast, are most prominent at shallow depths closest to canals, and attenuate with depth” (Gannett and Lite, 2013). Some shallower groundwater units are greatly or fully dependent upon canal leakage to maintain saturation (Gannett et al., 2001). Wells in shallow water-bearing zones may become dry due to the reduction in recharge. A survey of OWRD-listed wells in the AID identified more than 90 wells in the AID with less than 25 ft of available head and more than 250 wells with less than 50 ft (CwM, 2021). If piping the canals impacts the AID groundwater users similarly to the piping of the COID, there could be up to 250 wells that lose their source of drinking water. This impact is not addressed in the Draft Plan-EA.</p>	
433.45	WAT	<p>12. The Draft Plan-EA fails to distinguish local conditions and effects from basin-wide factors. Section 6.8.2.3 of the Draft Plan-EA further states: “As described in Section 4.8.5, changes in canal seepage account for only a small portion of historical changes in groundwater recharge in the area. Climate remains the primary factor affecting groundwater levels in the region. The U.S. Geological Survey estimated that the combined effects of climate and groundwater pumping accounted for approximately 90 percent of the observed decrease in groundwater levels in the region and that canal piping and lining accounted for 10 percent of that observed decrease (Gannett and Lite 2013).” As stated above, the erroneous use of a basin-wide estimate of groundwater impacts in Section 6.8.2.3 fails to address the actual likely impacts to groundwater levels and groundwater users near the AID Canals. There are several hydrogeological factors that suggest canal leakage plays a greater role in maintaining groundwater levels in the AID than basin-wide. The AID area is underlain by the Newberry Volcano basalt lava flows which can extend to a depth of over 200 ft (Sherrod et al., 2004). The Newberry is</p>	Please see the response to Comment ID 433.38.

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		<p>porous, fractured, and is exposed at the surface, allowing canal seepage to infiltration deeply into the ground. Groundwater level and isotope sampling data from near AID indicates that canal seepage can reach wells within a few days and can often increase water levels 10 ft and even up to 90 ft (Caldwell, 1998). The Draft Plan-EA looks at basin-wide recharge source data (Gannett et al., 2001; Gannett and Lite, 2013) to determine that approx. 10% of recharge comes from canal leakage. However, the EA fails to account for the fact that nearly half of precipitation recharge from the High Cascades discharges to surface water west of the Deschutes River and into the river itself, and that most of the canal leakage recharge is concentrated in a relatively small area of the central and northern part of the basin (Gannett et al., 2001; Sherrod et al., 2004; Gannett and Lite, 2013). Therefore, when considering the AID area alone, canal leakage is a considerably larger portion of the overall water budget. This is demonstrated by comparing the groundwater responses of wells west and east of the Deschutes River to recharge in the Cascades and recharge from canal activity (Caldwell, 1998; Gannett & Lite, 2013). The unique geology and geographic location of the AID is not assessed in the Draft Plan-EA and compounds the errors in the assumptions made regarding the degree of impact and cost of impacts to groundwater users and property values. Replacing drinking water sources for up to 250 individual well sites is not considered in the Draft Plan-EA.</p>	
433.46	WAT	<p>Several faults of the southern Sisters Fault Zones in the Newberry and in the underlying Deschutes Formation cross through the AID northwest to southeast. The offsets of four or five of these faults are visible at the surface and likely alter groundwater flow in the area (Gannett et al., 2001). The faults were included in the USGS basin model as horizontal flow barriers due to data suggesting the fault surfaces restrict horizontal groundwater movement (Gannett et al., 2017). Canal leakages in between faults may therefore be restricted from spreading down-gradient, effectively increasing the mounding effect of the canal recharge, and expanding the canal's role in maintaining high groundwater levels in these areas. The corresponding decline due to canal piping would also be greater in between the fault barriers. The effect of the local structural geology on the rate of water loss from the canals and how it might amplify the impact to groundwater levels due to piping is not addressed in the Draft Plan-EA. This should be assessed in a full hydrogeologic investigation of the local AID project area.</p>	Please see the response to Comment ID 433.38.
433.47	WAT	<p>13. The Draft Plan-EA contains conflicting arguments regarding the interconnection between groundwater in various irrigation districts. Section 6.13.3.8 of the Draft Plan-EA states: "Because AID is up gradient in the groundwater system, its projects may affect groundwater within COID. TID's ongoing project and LPID's reasonably foreseeable project are not proximal to AID and therefore would have no effect on groundwater levels in AID. For reference, TID's project is located on the west side of the Deschutes River and LPID is located on the north side of the Crooked River (Figure 1-1)." In this section the Draft Plan-EA claims that there is no impact from TID and LPID because of their location west or north of major rivers. In a section of</p>	<p>AID will pass conserved water from the project to NUID, which NUID will divert at the North Canal Dam near Bend. NUID's canal between Bend and the Crooked River is unlined and loses water to seepage. Seepage from this section of NUID's canal would influence groundwater in the central Deschutes Basin however this influence may be short-term in duration and minor in its intensity. The</p>

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		<p>one of its appendices, however, the document claims that seepage from NUID, which is also on the northside of the Crooked River, will provide mitigation to the groundwater system, as elucidated below. That is, Section 1.1.1.4 of Appendix D to the Draft Plan-EA states: “Some of the conserved water would be conveyed in unlined NUID canals and would seep into the ground and recharge groundwater. An analysis of NUID’s conveyance system suggests that around 35 percent of the water passed by AID to NUID would be lost to seepage and evaporation for a total of 3,642 AF seeped per year (Farmers Conservation Alliance, 2021). The increased seepage in NUID would likely partially offset the decreased seepage in AID, with the result of slightly less impact on groundwater pumping costs than estimated in Table D-2. Since only the potential costs of reduced AID seepage savings are accounted for in this analysis, the result is likely an overestimate of the basin-wide increase in groundwater pumping costs.”</p>	<p>Plan-EA notes that some of the conserved water conveyed in this stretch of canal will seep into the ground and partially offset the reduced recharge in AID’s canal, at a basin scale. The amount of conserved water seepage that may influence groundwater is uncertain in its duration and subject to further reductions as NUID pursues irrigation modernization and water conservation efforts within their District.</p>
433.48	WAT	<p>This suggests that the concepts of the local and cumulative impacts to the hydrogeologic environment and interactions between groundwater, the Deschutes River, and various irrigation systems is not well represented by the Draft Plan-EA. The document appears, at times to be written to support convenient lines of argument to support the purpose and need of the Draft Plan-EA but can not be mutually supported by the factual data that has been omitted from consideration in the Draft Plan-EA in cited literature. Within the same document, the Draft Plan- EA makes conflicting claims regarding the interaction of groundwater effects from canal piping in various districts. First, the argument is made that simultaneous canal piping projects in other central Oregon districts will not compound groundwater impacts from AID’s project. The reasoning presented is that other projects are separated from the AID by the Deschutes and Crooked Rivers (hydraulic boundaries) or by great distance or difference in groundwater elevation. This reasoning is accurate with the exception of more proximate COID canals, which the EA mentions as being subject to compounding effects. The same argument is contradicted in a different section of the document when calculating the costs of groundwater declines. The EA claims that increased canal seepage from the unlined NUID system (to which the conserved AID water would be transferred after piping) would partially offset reduced seepage in the AID and therefore reduce groundwater declines and cost of pumping. Both of these claims cannot be possible at the same time. The AID and NUID are separated by more than 10 miles and by the Crooked River. Just as these hydrogeologic factors prohibit significant compounding of groundwater declines between these regions, they would prohibit canal seepage in NUID from beneficially affecting groundwater levels below the AID project area.</p>	<p>Please see the response to Comment ID 433.47.</p>
433.49	WAT	<p>14. The Draft Plan-EA Fails to Adequately Evaluate or Account for Impacts to Local Groundwater Users. “Water-level changes are dominated by climatic influences. In the central part of the basin, however, increases in groundwater pumping and decreases in recharge due to canal lining have significantly contributed to water-level declines. .the effects of canal lining, in contrast, are most prominent at shallow depths closest to canals, and attenuate with depth” (Gannett and Lite,</p>	<p>Please see the response to Comment ID 433.38.</p>

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		<p>2013).“Canal leakage is a significant source of local recharge in the more arid areas where recharge from precipitation is minimal. .The similarity in the isotopic composition of water from canals and nearby wells suggests that canal leakage is a significant source of recharge to the wells.” (Caldwell, 1998).The ultimate groundwater-related conclusion of the AID Draft Plan-EA is that the economic impact of canal piping on groundwater resources will be miniscule in comparison to the project benefits. A detailed economic analysis is presented in order to support this conclusion. However, the entire analysis is based on a single, incorrect assumption that completely invalidates the study. The Draft Plan-EA takes basin-wide averages from the USGS studies (Gannett and Lite, 2013 & Gannett et al., 2017) and applies them directly to the AID area without any adjustments for proximity to the canal. Within those same studies, the USGS concludes that, while basin- wide average impacts of canal piping and lining may be minor, significant impacts are expected in close proximity to the canals.</p>	
433.50	WAT	<p>The same USGS models that the Draft Plan-EA references present a disturbing forecast of the impacts groundwater users in the AID may experience in response to canal piping. The USGS model is based on historic data from the period during which approx. 10 miles of the main Central Oregon Irrigation District (COID) canal was lined. The model estimated that the lining of this reach of the canal northeast of Bend resulted in a 10,001-16,983 AF/ year decrease in groundwater recharge due to reduced canal leakage. As a result, groundwater levels in the upper 100 ft of the deep regional aquifer were predicted to decline between 10 and 50 ft in 11 years and as far as 3 miles away from the canal itself (Figure 28, Gannett and Lite, 2013). Up to 1 mile from the canal, groundwater declines of up to 68.3 ft were predicted.</p>	Please see the response to Comment ID 433.38.
433.51	WAT	<p>In comparison, piping of the AID canal is expected to reduce canal leakage by over 10,500 AF/ year, analogous to the modeled reduction in the USGS model. The COID canal that was lined was a single, linear canal stretching for approximately 10 miles. The proposed AID piping project will target 13.2 miles of its main canal, yet these reaches of canal are sinuous and branching. This means that, in effect, the AID project will reduce groundwater recharge to a degree comparable to the COID project, yet across a smaller area.</p>	Please see the response to Comment ID 433.38.
433.52	WAT	<p>There are few places within the AID that are more than 1.5 miles from the open canal and the District is less than 5-miles across north-to-south. The groundwater declines in the AID then, based on the USGS model predictions, could be expected to exceed 10 ft in 11 years across the entire service area. At a distance of 1 mile from the canal, groundwater declines could exceed 50 ft in the first decade. This is in stark contrast to the 0.028 ft of declines based on regional averages and used by the Draft Plan-EA to justify their economic analysis.</p>	Please see the response to Comment ID 433.38.
433.53	WAT	<p>Both the USGS studies and previous studies by Caldwell (1998) acknowledge that some wells in the central Deschutes Basin depend on shallow water-bearing zones (WBZs) that are 150 ft or more above the regional water table modeled in the USGS study. These shallow WBZs are the first to intercept</p>	Please see the response to Comment ID 433.38.

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		<p>percolating canal recharge as it travels down towards the regional water table (Figure 2a and 2b from CwM, 2021). Although they may be connected to the Deschutes River to the west, the influence of the river lessens with distance from the recharge source. This means that some parts of these shallow WBZs are completely dependent upon canal leakage to remain saturated and provide water to those water users. The groundwater declines in shallow WBZs are not directly modeled by the USGS, but are expected to be even greater than the impacts to the regional water table.</p>	
433.54	WAT	<p>A preliminary search of registered groundwater wells in the AID determined that there are a total of 555 wells in the Oregon Water Resources Department database within 1.0 mile of the open AID canals, Table 1- Potentially Impacted Wells and attached Figure 4c (CwM, 2021). More than 70% of these wells were located in the upper portion of the regional water table or were located in shallow, perched water-bearing zones (attached Figure 5 from CwM, 2021). Based on the data presented from the USGS groundwater model, all wells could be expected to see 1 to 5 ft of decline per year after the AID canal is piped. An analysis of available drawdown in these wells (based on initial static water levels and well construction data from the OWRD) suggests that there are 265 wells within 1.0 miles of the AID canals that have less than 50 ft of available drawdown. These wells could go dry within a decade or less in response to the canal being piped. There are 90 wells with less than 25 ft of available drawdown. The wells of this group closest to the main canal could potentially go dry within just a few years.</p>	Please see the response to Comment ID 433.38.
433.55	WAT	<p>The Draft Plan-EA concludes that the cost of groundwater declines from canal piping are purely for increased pumping costs. The EA further assume that declines are minimal, totaling just 0.028 ft/year, resulting in just \$5,000 of increased pumping costs. Not only is this a gross underestimation of increased pumping costs from much greater local declines, but it does not consider the costs of well deepening. The preliminary assessment of area wells identified 90 domestic wells at high risk of going dry within 10 years, and more than 200 others that could experience the same fate. Deeping all of these wells would incur significant additional costs to the water users, who would not be able to claim injury due to the loss of recharge from the AID canals.</p>	Please see the response to Comment ID 433.38.
433.56	WAT	<p>15. The AID Preliminary Investigation Report and Draft Plan-EA Appear to Contain Substantial Inconsistencies regarding current AID Main Canal Water Loss Estimates. Section 1 of the Draft Plan-EA states: “Approximately 45 percent of the water diverted into AID’s Main Canal seeps into the porous, volcanic geology or evaporates prior to reaching District patrons.” Section 4.8.5 further provides in this regard as follows: “AID’s Main Canal loses an estimated 32.5 cfs of water during the irrigation season (10,526 acre-feet annually), due to a combination of seepage related to the condition of the distribution system and permeable nature of the underlying soil and rock, and evaporation.” Moreover, during the Power-Point presentation provided at the public meeting on June 23, 2021, it was represented both on a slide and orally that approximately 39 percent of the water in AID’s Main Canal would be lost due to seepage. Pub. Mtg. at 13:49-14:00. See also Draft Plan-EA at 9 & App. E4. The two values for seepage</p>	<p>The AID-PIR (FCA 2018) proposed piping the entire AID conveyance system and estimated 45.1 cfs in water savings. The project proposed in the AID Plan-EA would pipe just 11.9 miles of the AID Main Canal, with an estimated water savings of 32.5 cfs. The difference in water savings between the PIR and Plan-EA is reflective of the different project areas. Water losses for the Main Canal have been updated throughout the Plan-EA to reflect an estimated 32.5 cfs (11,083 acre-feet annually), or 36 percent loss.</p>

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		<p>loss presented in the Draft Plan-EA do not appear to agree with each other or the estimates from the AID Preliminary Investigation Report (AID-PIR, 2019) or what was represented during the recent public meeting. The AID-PIR states that 39%of water in the canal is lost due to seepage and other canal inefficiencies (presumably evaporation and canal “recharge time”). This 39%loss was estimated to be 45.1 cfs of diverted flow. Loss data presented in the AID-PIR was based on the 2016 LAP study (Crew, 2017), which collected flow measurements at points along the main canal and laterals to attempt to estimate loss. The AID- PIR projected that the 45.1 cfs loss rate corresponded to 14,607 AF of water lost each year.</p>	<p>Please see Appendix E.4.1 of the Plan-EA for more information regarding the water loss study that was completed for the Main Canal. The water loss percentage is calculated by dividing the total volume of water lost annually by the median volume of water diverted by the District over a particular time period. The difference in water loss percentages you pointed out in your comment reflects different values used for total water loss and varying median diversion rates. For this Plan-EA, data from the 2000-2021 water years was used; therefore, the median diversion rates during this time period estimated an annual median volume of 30,692 acre-feet. Hence, 11,083 divided by 30,692 is approximately 36 percent.</p>
433.57	WAT	<p>The Draft Plan-EA uses estimates from the 2016 LAP study for all water conservation and cost- benefit analyses. The Draft Plan-EA states that 45%of water is lost in the canal, corresponding to 10,526 AF/ year. The differences in the two loss figures (39% vs 45%, 14,506 vs 10,526 AF/ year) are not explained. Working backwards from these two figures arrives at very different values for total diversion into the canal. Based on AID-PIR numbers, the total diversion into the AID main canal would be 115.6 cfs. In comparison, the numbers from the Draft Plan-EA would suggest 72.2 cfs of diversion into the canal. In addition, in a review of the data collection for the LAP study completed by CwM found that data collected included up to 30% fair to poor measurement of flow velocity often leading to measurement of greater flow volume moving downgradient in the irrigation canal. The LAP study is of marginal value if the fair to poor estimate of flow rate are included in their estimate of overall loss of seepage water to groundwater. The OWRD study cited in the Draft Plan-EA as validating its seepage loss estimates, Draft Plan-EA at E-4, was not made available for review at the time the draft was made available for public review. Upon a follow-up request for the “study,” all that was supplied to the Ranch was a one-page spreadsheet entitled, “AID Sept 2019 Water Loss Study by OWRD_ clean,” which contains no explanation for how the study was conducted and contains just three numbers reflecting percentage of loss that range from 5.1 percent to 31.6 percent, all of which of course are substantially lower than even the lower of the numbers reflected in the Draft Plan-EA. It should also be pointed out in this context that the estimated water losses from AID’s canal are as high as two and a-half times the estimated water losses in the systems of other districts for which FCA has prepared EA-Plans, with no explanation for the disparity. In any event, the unexplained discrepancies that are in the Draft Plan-EA</p>	<p>Please see the response to Comment ID 37.11.</p>

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		for a number that is so critical to the effects analysis and purported benefits offered by the proposed Project must be explained and reconciled for the Final EA-Plan.	
433.58	WETL	<p>C. ANALYTICAL INADEQUACIES & ISSUES RELATED TO INTERRELATED EFFECTS ON WETLANDS, RIPARIAN AREAS, VEGETATION, & WILDLIFE.16. The Draft Plan-EA provides inadequate description of the affected environment and analysis of likely effects to wetlands and riparian areas (Sections 4.10 and 6.10.2).Oregon’s OAR 141-085-0515(9)(a)(b) states that irrigation ditches, such as the AID canal, are not jurisdictional. However, the project area of potential impact (API) extends beyond the bed and banks of the canal system. To facilitate construction access, materials staging, side-casting, etc., the API must encompass a larger area than just the non-jurisdictional canal. As such, the API must be subject to a wetland and waters delineation, just like any other project. The National Wetland Inventory (NWI) data is used by the EA’s analysis, but NWI data is often incomplete and inaccurate. NWI is largely based on aerial photo interpretation, and it is typically not confirmed by on-the-ground site investigations. Furthermore, per OAR 141-085-0510(86), if wetlands or other waters of the state may be indirectly impacted due to the project (e.g., indirect impacts due to loss of hydrology or excess hydrology), they must be considered:OAR 141-085-0510(86) “Reasonably Expected Adverse Effect” and “Adverse Impact” means the direct or indirect, reasonably expected or predictable results of project development upon waters of this state including water resources, navigation, fishing and public recreation uses.The wetland delineation guidance in the OARs (141-090-0035(12)(e)(14)(f) requires a disclosure of wetlands within the study area and those that extend offsite:(12) Report Text: The report text must include: (e) A description of any wetlands and other waters, including whether or not they extend offsite, and the characteristics of the wetland and other water boundaries on the site;(14) The wetland and other waters map(s) must include:(f) The boundaries of all wetlands and other waters and where they extendoffsite;The purpose of this requirement is to assess the connectivity to other waters of the state and to assess the potential indirect effects to such waters.AID should therefore complete a wetland delineation not only within the project right-of-way but also within the area of the affected environment. In the case of wetlands and waters, the affected environment should include areas reasonably expected to be impacted by changes in the hydrology of the system.</p>	<p>The Plan-EA considered effects on wetland areas within the project area and adjacent to the project area and wetland areas along natural waterbodies associated with district operations (see Section 4.10 of the Plan-EA). USACE and ODSL have been notified of the project, and all permit and reporting requirements determined necessary by USACE and ODSL would be completed prior to project construction (see Section 6.10.2.1 of the Plan-EA).</p>
433.59	VEG	<p>17. The Draft Plan-EA contains an inadequate analysis of impacts to adjacent mature trees including ponderosa pines along AID’s Main Canal (Section 6.6.2).The larger trees along the canal have developed biomass and metabolic systems that are artificially bolstered by the unnatural availability of hydrology in a high desert environment. Many of the mature trees adjacent to the proposed piping project would not die during the year or two following piping. Rather, delayed mortality could occur from a combination of weakening over time due to water stress and disease and bark beetle infestation of the weakened trees. As such, most of the mature trees that would die due to the piping project may not die for several years</p>	<p>Please see updates in Section 6.6.2 of the Plan-EA regarding potential dead tree removal and property owner's ability to water trees.</p>

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		following project completion. These trees could become hazard trees if they are close to homes or other structures.	
433.60	VEG	We understand AID based the statement found on p. 62 of the Draft Plan-EA on the experience of the Tumalo Irrigation District. The statement reads “Prior experience with piping projects has shown that 70 to 80 percent of the well-established trees within the project area would survive after piping with active irrigation by the property owner (20 to 30 percent of the trees that do not normally survive in such a location without the canal did not survive after piping)”. AID should consider not only the potential loss of mature trees that would result from the Main Canal project but also cumulatively throughout the basin as other similar piping projects are implemented by the nearby irrigation districts.	Irrigation infrastructure piping projects in other irrigation districts are considered in the cumulative effects. Please see updated language in Section 6.13.3.6 of the Plan-EA.
433.61	WILD	18. The Draft Plan-EA contains an inadequate discussion of likely effects to Wildlife (Section 6.11.2).Piping the Main Canal would remove an open water source for wildlife. This could be significant for a wide range of species that use the area as summer range. Larger, more mobile species, such as mule deer and elk, would likely experience a smaller impact than species that depend on smaller home ranges and that require predictable habitat elements. Examples include birds that utilize nesting locations along the Main Canal. Many of these species exhibit strong nesting site fidelity and would potentially be negatively affected by removal of the open water resource and changes to the adjacent vegetation community within already established nesting territories. The piping project would also remove sporadic occurrences of willows and alders along the canal. While these riparian species are uncommon along the canal, they do have the potential to provide nesting and foraging opportunities for birds.	Clarifying language has been added to Sections 6.11.2, 6.11.2.1, and 6.11.2.2 in the Plan-EA regarding effects on wildlife resources. Please see Appendix E.6 of the Plan-EA for a list of migratory birds that may potentially occur within the project area. Please also see the response to Comment ID 37.25.
433.62	WILD	19. The Draft Plan-EA contains an inadequate discussion of cumulative effects on Wildlife and Habitats (Sections 6.13.3.6 & 6.13.3.8-11).The Project is located at the border of two large ecoregions in Oregon, the Blue Mountains and East Cascades. According to the ODFW Conservation Strategy, both ecoregions are experiencing conservation issues associated with water quality and quantity. Although this project aims to increase the efficiency of the irrigation system and conserve water it could have unintended local and regional impacts to the mosaic of wildlife habitats present on the landscape by changing the hydrology of the system. The habitats that are particularly sensitive to changes in hydrology are wetlands, streams, and riparian areas. Wetlands, streams, and riparian areas are also conservation strategy habitats due to their relative rareness and importance in providing food and cover to a variety of wildlife species, particularly in dry ecoregions such as the East Cascades and the Blue Mountains. The impacts of the proposed project are difficult to predict but should be considered more carefully than has been presented in this EA, particularly in combination with the other planned and already completed irrigation canal piping projects.Although AID asserts the effects of piping the Main Canal on these resources would be minor, the cumulative effects of planned piping projects among the several irrigation districts in the Deschutes Basin are not analyzed with the level of detail needed to understand the regional cumulative implications of the piping projects on these resources.	Please see Section 6.10.2 in the Plan-EA for clarifying information about wetland sites in and adjacent to the project area. Clarifying language has been added to Sections 6.13.3.8 through 6.13.3.11 in the Plan-EA regarding the effects of AID and other Deschutes Basin projects on instream flow and the Oregon Conservation Strategy.

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433.63	WAT	<p>D. OTHER NEPA FLAWS AND ISSUES IN THE DRAFT PLAN-EA20. The analysis in the Draft Plan-EA relies on a significant overestimate of the Proposed Action’s potential benefits. The Draft Plan-EA confidently asserts that 100 percent of water saved instream during non- irrigation system would be “protected” under the Proposed Action, Draft Plan-EA at 11, but this would appear to be a problematic assumption at best, given that any such water technically would appear to be available to junior water-right holders for diversion. Indeed, the only way to make sure that water is protected instream is for the District to avail itself of transfers for instream use, which will confirm the protection as a legal matter. Indeed, the Draft Plan-EA concedes that the water the District does not divert will be available for use by junior water holders. Draft Plan-EA at xii.</p>	<p>Please see updated language in Section 6.8.2.1 related to instream protection.</p>
433.64	BNFT	<p>The projected benefits from piping are also substantially too uncertain particularly in light of how many other irrigation districts are already in the queue for sizable amounts of funds under the exact same federal program, Pub. L. No. 83-566. Therefore, there is no guarantee that the full amount of federal funding/ grants will actually materialize, especially in the context of all of the other piping/ infrastructure projects in the Basin that will be competing for the same funds. In this light, there needs to be some discussion in the Final Plan-EA of the impacts if such funding does not fully materialize. Indeed, as the Draft Plan-EA concedes, all of the modernization projects within the Basin “are contingent on the availability of funding.” Draft Plan-EA at 82. The DBHCP further recognizes in this regard that “the costs of piping . . . will be substantial,” ranging from \$2 million all the way up to \$115 million, and will therefore “influence the financial ability of the Permittees to provide additional mitigation.” Id. Nor is there any discussion of where the remaining approximately \$14 million the Plenary Piping Alternative is estimated to cost will come from. This is a major oversight that needs to be rectified in the Final EA-Plan.</p>	<p>Please see the NEE analysis in Appendix D.1 of the Plan-EA for how benefits were determined. Please see Section 8.7.6 of the Plan-EA for discussion of how the District would expect to fund the required match funding.</p>
433.65	FISH	<p>Another key variable that warrants analysis and consideration in the Final Plan-EA is the acknowledgment that, even if the assumptions about water that will be able to remain instream during the non-irrigation season are borne out to the full extent projected in the Draft Plan-EA, it will not come even close to doing enough to meet the conservation needs of the listed Oregon Spotted frog. The U.S. Fish & Wildlife Service concluded four years ago, in 2017, that a minimum of 600 cfs in winter was needed to save that species. In this context, NRCS needs to compare the situation and whether it will truly be in the best interests of the public as a whole, in the light of the experience that has played out on Whychus Creek, where, despite years of publicly financed conservation projects in the Three Sisters Irrigation District, the creek still fails to provide adequate stream flows for spawning and migrating steelhead.</p>	<p>Please see Section 2.1.3 of the Plan-EA for a discussion about the collaborative effort the Deschutes Basin irrigation districts are making to meet the streamflow requirements set forth in the HCP. The water savings from this project alone would not enable NUID to meet those HCP requirements (see Section 6.8.2.1 and Appendix E.4.8 of the Plan-EA). However, NUID is required to release water into the upper Deschutes during the non-irrigation season on the schedule identified in the HCP. This project is one mechanism that would support the target flow requirements set forth in the HCP. Coordination with USFWS, for threatened and endangered species covered under USFWS, was</p>

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			initiated on April 6, 2020 (Section 7.1 of the Plan-EA), and occurred throughout the planning process. During informal consultation regarding NRCS's Biological Assessment of federally listed species, USFWS concurred with the NRCS determination that the project may affect, but is not likely to adversely affect, the Oregon spotted frog (see Section 6.9.2.2 in the Plan-EA and Appendix E.11 for updated consultation information).
433.66	WILD	<p>21. The Draft Plan-EA Fails to Properly Analyze Impact of Proposed Project on the Outstandingly Remarkable Values of the Wild & Scenic Deschutes River Corridor.</p> <p>The EA provides a general recognition that the proposed project will create impacts on sections of the Deschutes River that are protected under the federal Wild and Scenic River Act ("W&SRA"), 16 USC §§ 1271 et seq., and Oregon Scenic Waterways Act (ORS 390.805- 390.925) but improperly defers the identification of impacts and any necessary or associated mitigation measures until construction of the pipeline is scheduled to commence. (See EA Sections 4.12 and 8.3.11).</p>	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic River designation.
433.67	WILD	The section of the Deschutes River between Wickiup Reservoir and Bend's Urban Growth Boundary is classified as a "Scenic" or "Recreational" waterway under the W&SRA. Federal resource planning, conducted by the USDA, identifies the following "Outstandingly Remarkable Values" ("ORV's") within these designated river segments: Cultural, Fish, Geologic, Recreation, Scenery, Wildlife and Vegetation. See Appendix E.7 to Draft Plan-EA at pp. E-25 – E-29. The affected river corridor area is also designated as a Scenic River Area under the Oregon Scenic Waterway Act, with new development governed by the requirements of OAR 736-040. Under state law, designated Scenic River Areas are administered to "maintain or enhance their high scenic quality, recreational value, and fishery and wildlife habitat, while preserving their largely undeveloped character and allowing continuing agricultural uses". In addition, the river corridor area is protected under the Landscape Management Combining Zone under Section 18.84 of the Deschutes County Code. The EA provides little or no evaluation of the impact of governing local, state and federal rules/regulations on that portion of the project located within the Deschutes River canyon.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on Wild and Scenic Rivers.
433.68	CONS	The proposed project will require the removal and replacement of the existing approximately one mile-long wooden flume that provides for the diversion of irrigation water from the Deschutes River. The District proposes to replace the first 450-feet of the flume with supports and an elevated piping structure at the approximate height of the existing flume. All remaining portions of the existing flume structure would be replaced by a buried pipeline along the route of the existing flume structure. EA Section 8.2.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. No construction would occur along the flume. See Section 1.2 of the Plan-EA for an updated project area description and map.

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		<p>Because this section of pipe must be level with the aerial section, “the pipe would be buried above the existing landscape elevation and would hug the hillside”. (EA Section 5.3.2). The District anticipates covering the buried pipe with “a minimum of 3 to 4 feet of engineered backfill” and placing a new maintenance road on top of the buried pipe. As noted above, the existing flume structure runs parallel to the Deschutes River for a distance of one-mile, located entirely within river corridor areas that are protected by local, state and federal regulations. The affected area is characterized by extremely steep topography, but the Draft Plan-EA fails to acknowledge this factor nor provide any data as to the percent grade of the terrain in which the significant construction work it proposes to replace the flume will be occurring. This area of the river corridor is also heavily vegetated with mature Ponderosa Pine trees and other native vegetation. There is currently no roadway access to this portion of the project area, requiring the construction of additional roadways to facilitate access for the heavy equipment necessary to complete construction. The proposed project will require the clearing and removal of mature trees and vegetation within the river corridor area to facilitate the planned construction activity. The District and its contractors will be required to conduct extensive grading activity (cut and fill slopes) to create roadway access, the planned pipeline corridor and its associated maintenance road. In addition, new roadway access will be required to create areas of “engineered backfill” over the buried pipeline to facilitate construction of the anticipated maintenance road.</p>	
433.69	CONS	<p>The EA contains no reference to the steep slopes of the river canyon and the impact of existing topography on the feasibility of constructing required improvements within AID’s available easement corridor. Moreover, the EA contains no analysis of the impact of construction activity on the Deschutes River itself. In lieu of this required evaluation, the EA contains the following language that impermissibly defers its impact analysis until construction activity has commenced: If determined necessary, mitigation measures to address any potential adverse effects on Wild and Scenic Rivers’ resources would be identified and formalized before construction and completed concurrent with or after construction. Potential mitigation measures could include, but not be limited to, actions such as ensuring that the flume would blend into the surrounding landscape, construction would occur within the ROW, and construction staging would minimize impacts to visual resources.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please see Section 8.3 of the Plan-EA regarding minimization, avoidance, and mitigation measures.</p>
433.70	WILD	<p>At a minimum, the EA must assess how its plan to remove large areas of existing vegetation and to conduct widespread grading activity will impact the natural and scenic resources of this protected river corridor area. The EA must address the potential for considerable erosion from the pipeline corridor area to the detriment of the river, water quality and associated areas of fish/ wildlife habitat. In addition, the EA must evaluate and address the visual impacts of its planned construction activity on the Wild and Scenic River corridor under applicable federal, state and local regulations.</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on Wild and Scenic Rivers.</p>
433.71	WILD	<p>For similar reasons, the Plenary Piping Alternative likewise violates the Wild and Scenic Rivers Act, which requires that “[e]ach component of the national wild and scenic rivers system shall be</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment</p>

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		<p>administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values.” 16 U.S.C. § 1281(a). In this regard, the only assurances provided in the Draft Plan-EA are that “all new structures, improvements, and development would comply with the Land Management Rules as described in OAR 736-40-035 and OAR 736-40-040((1)(b)(B),” and that “[c]onsultation with Oregon Parks and Recreation Department and [the USDA-Forest Service] will occur prior to finalization of this Plan-EA.” Draft Plan-EA at 79. Nothing in these statements, however, even purports to explain how following the referenced rules will suffice to protect and enhance the Outstandingly Remarkable Values of the Upper Deschutes River at the location of the flume, particularly in light of the topography at that site, or to explain why such consultation with the referenced agencies has not already occurred or the results of such consultation. Without that information, it is virtually impossible to evaluate or have a meaningful opportunity to comment on the likely significant effects on this stretch of the Wild and Scenic-designated Upper Deschutes River.</p>	<p>ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on Wild and Scenic Rivers.</p>
433.72	GEN	<p>22. The Draft Plan-EA erroneously identifies no issues of controversy surrounding the Proposal. The Draft Plan-EA, without a shred of explanation, justification, or discussion conclusorily states that “[t]here have been no areas of controversy identified.” Draft Plan-EA at xiv. This is a wholly unwarranted conclusion, likely arising from FCA’s myopic focus on piping wholly in accord with AID’s originally submitted Proposal, as well as NRCS’s failure to consult with private landowners who stand to be the most directly and severely affected by the Proposed Action as formulated by the District.</p>	<p>Please see the response to Comment ID 39.01.</p>
433.73	BNFT	<p>23. The Draft Plan-EA contains no discussion of or accounting for the effect of the lag in the timing for piping, which is particularly glaring given the urgency for swift action to address water conservation in the Upper Deschutes Watershed given the historic drought.</p> <p>The Draft Plan-EA concedes that the project, even once approved, will take at least seven years to implement before the benefits it projects will be realized, and this assumes no construction, funding, or litigation delays. The situation demands swifter and more innovative thinking and alternative solutions that will benefit everyone in the Basin, including the irrigators. Indeed, at least one NUID patron has already stated that piping will take too long to save their farms.</p>	<p>Please see Section 6.8.2.1 of the Plan-EA, which identifies the timing of how water saved would be passed to NUID. Please see Section 1.1.3 of the NEE in Appendix D.1 of the Plan-EA for a description on how the timing of benefits was included in the analysis. Additional language has been added to Section 1.1.3 for further clarification that benefits associated with an individual phase are considered only once that phase has been constructed. The project’s construction timeline has been updated to 6 years; see Section 8.7.2 of the Plan-EA for the updated timeline.</p>
433.74	BNFT	<p>During testimony at a recent Oregon House of Representatives Water Committee Hearing on May 25, 2021, Cate Casad stated in her own words as follows: “I can’t stress enough that we don’t have time. A lot of the irrigation solutions, a lot of the piping projects are going to take some years to unroll, and we’re so excited to see those conservation projects send water this way, but I can promise you, based on last</p>	<p>Thank you for your comment. Nonstructural alternatives were considered during the formulation of the alternatives phase; see Appendix D.2 of the Plan-EA.</p>

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		<p>season, and based on the realities of this season, people who are seventh-generation farmers in this district [NUID] are seriously considering throwing in the towel because with each year of the 100-percent overhead costs to a 40 percent income, they're losing not just money, but they're watching their futures blow away in the form of their soil." On this basis, she explained that the Upper Deschutes River Basin Study identified that there is sufficient water in the Basin to support all of the needs of everyone who relies on it if water is better managed, leading her to conclude that "what we really have is a management issue," and advocating for solutions that allow for more equitable and efficient water management and sharing along the lines of the nonstructural alternatives proposed above given that many of the NUID farmers do not have "one more season in them like this one or the one last year."</p>	
433.75	SAFE	<p>24. The Draft Plan-EA fails to make any attempt to put the public safety risk on which it heavily relies as a basis for rejecting alternatives into any type of appropriate context. The Draft Plan-EA notes that "unpiped canals in AID carry a risk of 0.0018 death per year" (Draft Plan-EA at D-28); see also Draft Plan-EA at 11 & 21, & D-28. Although any death is obviously a tragedy, and public safety is a legitimate consideration, in order to properly evaluate the level of this risk in the comparison of alternatives, some level of context needs to be built around it by comparing it to other kinds of similar risks, such as those from drowning in natural bodies of water or swimming pools. NRCS should provide this context in the Final Plan-EA.</p>	<p>In addition to drowning deaths, the open canal is a public safety risk due to the potential for injuries and flooding from canal failure. See Section 4.3 of the Plan-EA for further discussion. Calculating the risk from drowning in natural bodies of water or swimming pools is beyond the scope of this Plan-EA.</p>
433.76	PROP	<p>25. The Draft Plan-EA Contains Inadequate Discussion/ Analysis of Impacts to Socioeconomic Resources. The Draft Plan-EA's analysis of impacts to socioeconomic resources fails even to reference or mention the dramatic loss in property values to private landowners who live along or near the main canal to be piped. Draft Plan-EA at 59-60. This oversight must be rectified in the Final EA and is made even more inexplicable by the fact that the benefit-cost analysis in Appendix D concedes that such diminution in value is a likely cost of the Plenary Piping Alternative. Draft Plan-EA at D-10. Even in this analysis, however, the plan makes no attempt whatsoever to provide for a quantitative evaluation of the impact on private landowners' property values, even though it concedes that their loss could reduce property values by up to 30 percent based on three studies it cites. Draft Plan-EA at D-10. By conceding as it must that this is a "likely cost" of the Plenary Piping Alternative, and yet refusing even to seek to quantify it for purposes either of its NEPA analysis or PL 83-566 cost-benefit analysis, the Draft Plan-EA fails on both fronts.</p>	<p>Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Additional language regarding the effects on property value has been added to Sections 4.4 and 6.4 of the Plan-EA.</p>
433.77	RES	<p>26. The Draft Plan-EA Contains An Inadequate Discussion of Cumulative Effects. The Draft Plan-EA discusses cumulative effects at pages 81-88. The discussion fails to satisfy the standard in 40 CFR § 1508.7, however, given that, even though the other piping projects underway or proposed in the Basin are briefly mentioned, Draft Plan-EA at 82, only the most cursory, vague, and generic analysis is provided, particularly in regard to:--Cultural Resources (Section 6.13.3.1)--Vegetation (Section 6.13.3.6)--Water Resources, especially related to groundwater (Section 6.13.3.8)--Wetlands (Section</p>	<p>Additional clarifying language has been added to cultural resources in Section 6.13.3.1, vegetation in Section 6.13.3.1, wetlands in Section 6.13.3.10, and wildlife in Section 6.13.3.11. The water resources section quantitatively describes the cumulative potential effects on both surface and groundwater</p>

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		6.13.3.10) (“implementation of the proposed action would not be anticipated to have a cumulative impact to wetlands in the Deschutes Basin”)–Wildlife (Section 6.13.3.11) This appears to be a quintessential example of zooming in and out on the scale and scope of analysis to relieve the onus of providing an adequate cumulative impact analysis that can pass muster under NEPA’s implementing regulations. This section needs to be bolstered considerably to provide much greater specificity on the cumulative effects of all of the piping projects instead of effectively representing that the impacts of each of the proposed projects of themselves are deemed to be minor, and therefore, taking them all together, they necessarily will be minor.	from irrigation modernization projects across the Deschutes Basin.
433.78	CONS	E. PROCESS ISSUES & CONCERNS ²⁷ . The Final EA-Plan Needs to confirm/ clarify that construction activities will stay within the existing rights-of-way and easements, not just do so “[w]here possible.”The Draft Plan-EA states that construction activities will stay within the District’s existing right- of-way and easements “[w]here possible.” Draft Plan-EA at xii. This statement needs to be clarified for purposes of the Final Plan-EA to confirm that such activities will in fact remain within the District’s existing right-of-way and easements and, if not, the costs associated with the physical takings of private property that would result need to be factored into its cost analysis.	All construction would occur within AID’s existing ROW and easements. Prior to construction, the contractor would identify if any temporary staging or construction access areas outside of the District’s ROW and easements were required. If any temporary areas were required, AID or the contractor would communicate directly with the landowner to ask for permission. No land would be acquired for construction of the project.
433.79	PUB	28. NRCS failed to consult with landowners who will be most directly affected by the Proposed Action. The Draft Plan-EA reveals an inexplicable failure to consult with any of the affected landowners. See Draft Plan-EA at 12. This oversight is particularly egregious given that the planning area is defined as 99.2 percent privately owned, Draft Plan-EA at xi, and “[t]he project area crosses nearly all privately owned land.” Draft Plan-EA at 20. Nor is there any discussion of [comment ends here]	Please see the response to Comment ID 39.09.
433.80	GEN	29. NRCS needs to explain in detail how it independently evaluated and validated the analysis of environmental effects and the WRDA-07 PR & G analysis in the Draft Plan-EA. The Draft Plan-EA contains no description of the steps NRCS has taken to review and independently validate analysis. The document indicates it was prepared by Farmers Conservation Alliance, and later simply identifies four individuals from the agency who were involved in its preparation without describing their roles. Draft Plan-EA at 114-15. This is wholly insufficient to meet NRCS’s duty under NEPA’s implementing regulations, which require the federal agency to independently validate a NEPA analysis carried out by an independent non-federal entity. 40 CFR 1506.5(a) & (b). The need to do so in this case is particularly salient given that much of the analysis in the Draft Plan-EA is essentially replicates that set forth in previous analyses FCA has prepared for other piping projects in the Basin and appears to reveal an	FCA has been contracted to produce Plan-EA, and NRCS is the lead federal agency under NEPA. NRCS is conducting all reviews and approvals in accordance with NEPA implementing regulations in addition to Title 390, National Watershed Program Handbook (NWPH), Part 606, Subpart C, Section 606.30, “Review and Approval Process for Watershed Project Plans.” Section 1.4 of the Plan-EA has been updated with this clarifying language.

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		<p>Assembly Line approach inconsistent with an independent and rigorous analysis a project of this magnitude deserves and requires under the law.</p>	
433.81	GEN	<p>F. INADEQUATE PR&G ANALYSIS TO QUALIFY FOR PL 83-566 FUNDING³⁰. The Draft Plan-EA Fails to Comply with PR&Gs for Pub. L. No. 83-566 Funding. The Draft Plan-EA erroneously conflates and confuses NRCS's requirements under NEPA and those under Pub. L. No. 83-566, leading it to fail to comply with various required elements of the PR&Gs. For example, those provide that NRCS is to "describe and request public input on the PR&G analysis in the scoping NEPA process" and "clearly separate out what the agency wants to know for PR&G purposes and what is desired for NEPA purposes," PR&G at 6-7, which NRCS wholly failed to do here.</p>	<p>Please see the response to Comment ID 433.82.</p>
433.82	PUB	<p>Moreover, NRCS appears to have not conducted a separate PR&G Planning and Evaluation Process. Similarly, it failed to engage in any meaningful collaboration with affected stakeholders representing the landowners in the area of the main canal, as required by PR&G. PR&G at 11-12. In addition, the Draft Plan-EA fails to explain how it follows the requisite eight-step PR&G Evaluation Process, nor is there any place in the document where such steps are explicitly identified and carried out.</p>	<p>NRCS integrated the PR&G analysis based on guidance provided in DM 950-0013. Section 10 of DM 9500-013 discusses "Agency Specific Implementation" for NRCS. It states, "NEPA NRCS activities undertaken with authorities in the Watershed and Flood Prevention Operations Program, Watershed Surveys and Planning Program, and Watershed Rehabilitation Program are subject to NEPA review. In those cases where an Environmental Analysis or Environmental Impact Assessment are required NRCS will incorporate the NEPA and PR&G processes into a single document to satisfy both review processes." Please see Section 1.4 of the Plan-EA for language regarding how this Plan-EA was prepared to meet both NEPA and PR&G requirements. The DM 9500-013 further describes, "For applicable activities that have a combined NEPA and PR&G analysis, the NEPA analysis should integrate the PR&G analysis with a clear explanation of any requirements, considerations and choices that are specific to the PR&G (not otherwise required under NEPA)." This has been identified throughout the Plan-EA. Please see Section 1.4 of the Plan-EA, Section 2, and the first paragraph of Section 4. Further clarifying language has been added to Sections 5.1, 8.1, and 8.9 of the</p>

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			<p>Plan-EA to make this distinction more clear. The eight-step evaluation process referred to in the comment is discussed under DM 9500-013 Section 6, "Planning and Evaluation Process." In this section, it states, "The steps described in this DM are complementary and consistent with existing agency planning processes, including NEPA regulations, where applicable." The following is a description of where each step can be located in the Plan-EA.</p> <p>Step 1: Identify Problems and Opportunities. Per DM 9500-013, "If the PR&G analysis is done in conjunction with a NEPA analysis, this section may correspond to the definition of the purpose and need." Please see Section 2 of the Plan-EA for more information regarding the problems and opportunities identified. The DM 9500-013 also identifies that during this step, agencies should "scope with affected stakeholders to identify the water resources and associated problems or opportunities and evaluate potential collaboration with other Federal, State, and local stakeholders..." As part of this step, a scoping meeting and scoping period was held. Please see Section 3 of the Plan-EA for more information. Step 2: Inventory Existing Resources and Conditions. Per DM 9500-013, "If the PR&G analysis is done in conjunction with a NEPA analysis, this step corresponds with the requirement to 'Inventory Existing Resources' that identifies the affected environment." Please see Section 4 of the Plan-EA for more information on the resources and conditions inventoried. Step 3: Forecast Future Conditions. Per DM 9500-013, "When the PR&G analysis is completed in conjunction with a NEPA analysis, the FWOFI may be synonymous with "no action" as used in NEPA and the accompanying CEQ regulations (40 CFR 1502.14(d)). The FWOFI</p>

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			<p>is also referred to as future-without-project, no action, no action alternative (or condition), and without project alternative (or plan)." Please see Section 5.3.1 for a description of the No Action Alternative and the No Action subsections in Section 6 for more information regarding the forecasted future conditions. Step 4: Develop Array of Alternatives. Per DM 9500-013, "If the PR&G analysis is done in conjunction with a NEPA analysis, the alternatives developed at this stage should determine the range of reasonable alternatives (and vice-versa). Each alternative formulated for the PR&G analysis should be included in the NEPA document, or the differences should be explained and justified." Please see Section 5 of the Plan-EA and Appendix D.2 for more information. Step 5: Evaluate Effects of Individual Alternatives. Per DM 9500-0013, "Agencies may have existing requirements for evaluation (for example, NEPA or the forest planning rule) that are also required either by statute, Executive Order, USDA directives, or agency-specific directives. To the extent possible and accounting for differing objectives, the evaluations should be conducted jointly with common data sources, assumptions, and processes." Please see Section 6 of the Plan-EA and the NEE in Appendix D.1 for more information. Step 6: Compare Alternatives. Per DM 9500-0013, "Agencies may have existing requirements for evaluation (for example, NEPA or the forest planning rule) that are also required either by statute, Executive Order, USDA directives, or agency-specific directives. To the extent possible and accounting for differing objectives, the evaluations should be conducted jointly with common data sources, assumptions, and processes." DM 9500-013 states</p>

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			<p>further in this section "Agencies may develop additional guidance and direction for displaying alternatives and tradeoffs. For examples of a project-level tradeoff table, see Appendix A." Please see Section 5.3 of the Plan-EA, which includes the Summary and Comparison of Alternatives Table that was based on Table A-1 in Appendix A of DM 9500-013. Step 7: Identify Recommended Alternative. "The rationale supporting the Federal investment should summarize and explain the decision rationale leading from the identification of need through to the recommendation of a specific action." See Section 8.1 of the Plan-EA for more information. DM 9500-013 states further in this section, "This information should be presented in a decision document or documents, and made available to the public in draft and final forms." The Draft Plan-EA that went out for public comment included the identification of the Preferred Alternative. Step 8: Implement and Evaluate. Per DM 9500-0013, "While the PR&G process does not describe the Implementation and Evaluation step, it follows the identification of the recommended alternative." This step would occur only if NRCS-OR issued a Finding of No Significance and the Plan-EA was authorized by NRCS National Headquarters.</p>
433.83	MET H	<p>The period of analysis in the Draft Plan-EA for its Pub. L. No. 83-566 analysis is not to exceed 100 years pursuant to PR&Gs at p. 19, and yet it utilizes 107 years. See, e.g., Draft Plan-EA at 59 n.22. This needs to be rectified, and the relevant analysis adjusted in the Final Plan-EA.</p>	<p>The Draft Plan-EA's period of analysis was developed based on guidance in the DM 9500-013, which states, "The period of analysis is defined as the time required for implementation of the investment plus the lesser of: 1) The period of time over which any alternative would have meaningful beneficial or adverse effects; or 2) A period not to exceed 100 years" (NRCS 2017a). The 107 years presented in the Draft Plan-EA published for public review included the</p>

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			7 years necessary for implementation of the different project phases plus the 100 years of analysis once each project phase is complete. After removal of the flume from the proposed project (see response to the Comment ID 12.01 for more information), the number of years for installation of the proposed project has been decreased to 6 years.
433.84	NEE	Finally, the Benefit-Cost analysis in the Draft Plan-EA is fatally flawed for various reasons alluded to above. For one thing, it fails even to attempt to quantify the costs associated with reduced property values of landowners. As another example, it fails to adequately account for costs associated with groundwater losses. Moreover, it utilizes the wrong time frames and standard parameters for conducting economic analyses for water infrastructure projects.	Please see the response to Comment ID 433.83 regarding the time frame and parameters used. Please see the response to Comment ID 218.13 regarding property value. See Section 2.3.1 of the NEE in Appendix D.1 for a discussion of groundwater recharge costs that were included in the economic analysis.
433.85	GEN	G. ERRATA <ul style="list-style-type: none"> Incorrect citation to regulations in Draft Plan-EA at 8 n.3, which should be 40 CFR § 1506.13. 	Thank you for your comment. The regulation in this footnote has been corrected to read 40 CFR § 1506.13.
433.86	FISH	<ul style="list-style-type: none"> NMFS has not issued a final permit decision on Deschutes Basin HCP (Draft Plan-EA at 10). 	Thank you for your comment. Clarifying language has been updated in the Plan-EA Sections 2.1.3 and 6.13.2.2.
433.87	GEN	We would be pleased to sit down and discuss any or all of the foregoing issues or concerns with you, and also be willing and eager to make our expert consultants available as well should you seek any clarification or have any questions about any of our comments. We look forward to continuing to work with you to improve upon the analysis FCA has conducted to date and help to ensure a legally adequate process and analysis that will consider a reasonable range of alternatives and lead to an outcome with broader public support and be substantially more cost-effective with much fewer environmental, cultural, and economic effects.	Thank you for your comment.
434.01	GEN	Attached are comments and supporting documents regarding Arnold Irrigation District's modernization project EA. <Comment includes 5 attachments.>	Thank you for your comment. Please see Comment IDs beginning with 434 for responses to comments provided in the attached documents.
434.02	GEN	Thank you for the opportunity to comment on the Draft Environmental Assessment (“EA”) for the Arnold Oregon Irrigation District Irrigation Modernization Project (“Project”). Central Oregon LandWatch (“LandWatch”) is a conservation organization which has advocated for preservation of natural resources in Central Oregon for over 30 years. With over 400 members in Central Oregon,	Thank you for your comment.

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		LandWatch has worked on water resource issues in the Deschutes River Basin and in gaining special protection for Whychus Creek and the Metolius River and spring systems. LandWatch has lately been particularly concerned about flows in the Upper Deschutes River, the impacts of the management of the irrigation diversions from the River, and maintenance of flows in the River’s key tributaries. We continue to be interested in supporting an efficient irrigation-based farming community throughout Central Oregon.	
434.03	BNFT	This EA for Arnold Irrigation District’s (“AID” or the “District”) proposal to spend \$43mil of public money to pipe 13.2 miles of canals, benefitting only 149 patrons at a cost of over \$220,000 per patron, falls short of meeting the requirements that NRCS projects receiving public funding benefit the public. 7 CFR § 650.4, 622.2(c).	All patrons in the District would benefit from the project; the fact sheet in the Plan-EA has been updated from 149 patrons to 646 patrons. Please see the NEE in Appendix D.1 of the Plan-EA for information regarding the benefits and costs of the proposed project.
434.04	WAT	This is especially true considering that the District historically diverts only 92 cfs of water, the Project proposes to conserve 32 cfs of water, yet proposes to reduce the District’s diversion to only 88 cfs. For \$43mil the EA proposes to reduce AID’s actual diversion by only 4 cfs. This result is entirely inadequate and irresponsible considering the dire needs in the Deschutes River basin for water conservation.	Please see updated language in Section 6.8.2.1 of the Plan-EA and in Appendix E-4 related to water rights and diversion rates.
434.05	PURP	1. Purpose and need of ProjectThe EA states the purpose of this project is to improve water conservation in District-owned infrastructure, improve water delivery reliability to District patrons, and improve public safety on up to approximately 13.2 miles of District-owned canals and flume. EA at page 9. Public Law 83-566 authorizes federal assistance for only Projects that fit at least one of eight listed purposes: Flood Prevention, Watershed Protection, Public Recreation, Public Fish and Wildlife, Agricultural Water Management, Municipal and Industrial Water Supply, Water Quality Management, and Watershed Structure Rehabilitation. National Watershed Program Manual Title 390, Part 500, Section 500.3(B). The EA proposes only Agricultural Water Management as its purpose.	Thank you for your comment.
434.06	PURP	This stated purpose is overly narrow in scope when the purpose and need for water conservation extend well beyond district owned infrastructure. The overarching purpose of water conservation in the Deschutes River basin is to improve streamflows and aquatic habitat for fish and wildlife. We encourage the District to include Public Fish and Wildlife as a purpose of the Project. Improved streamflows for the benefit of fish and wildlife are widely understood to be the primary motivating factor for water conservation Projects in Central Oregon. Our state’s congressional delegation agrees. Senator Merkley, in his position on the Senate Appropriations Committee, found a funding mechanism that would help irrigation districts in Central Oregon upgrade their infrastructure and improve their water management practices in order to handle the new needs for water in the basin for listed species under the ESA. The purposes and needs should be listed in rank order of priority and weighted in the subsequent analysis of	The “Purpose and Need for Action,” Section 2 of the Watershed Plan, identifies the underlying problems, opportunities, and goals of NRCS and the SLO (NRCS 2014). The types of measures included are based on PL 83-566 requirements, the sponsor's authorities, and the underlying need of the sponsor (in this case AID). The District has not proposed a Public Fish and Wildlife project; it has proposed an Agricultural Water Management project. Therefore, measures have been considered with respect to this authorized purpose.

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		alternatives. Eliminating water loss and increasing instream flows for the benefit of fish and wildlife should be the primary purpose and need of this EA.	
434.07	PURP	2. Project Scope.a. Selection of Project area.The EA proposes one small 13.2 mile section of canals to spend a proposed \$42 million. Aside from the proposed alternative (canal piping) being a relatively inefficient method of conserving water (discussed further below), the EA lacks any sort of analysis that explains why improving these 13.2 miles of canal best serve the Project purpose and need. Were other sections of district-owned canal examined? What makes the proposed section of canals the best option for accomplishing the Project purpose and need? How much water could be conserved, and how many patrons could have their deliveries improved, on other sections of District-owned canals or on patron-owned canals?	See response to Comment ID 433.03 regarding the District's Request for Assistance letter to NRCS. The District has prioritized addressing water loss along its Main Canal primarily because this is the location where the majority of water loss occurs within AID and because of the open canal's risk to public safety (see Sections 2.1.1 and 2.1.4 of the Plan-EA). Section 2.1.1 and Appendix E.4 (Table E-4) of this Plan-EA and the District's SIP (Crew 2017) identify the measured water loss in the District's Main Canal. The SIP also includes water loss measurements from District laterals, which intersect the Main Canal.
434.08	WAT	b. Cost/benefit assessment. The Project cost/benefit assessment (pg xiii) is based largely on spurious claims that the project will reduce NUID agricultural damage by \$1,489,000 per year. Despite its claim to the contrary, the project does not provide a new water source for NUID. The water that is conserved through canal piping will be left instream for NUID, but since AID's diversion will not be reduced much below its actual historical diversion, there will be a negligible amount new water instream. NUID will only have access to water that has always been instream and traditionally been available to them. AID can generate better water availability for NUID only to the extent that the district reduces its diversion below its historic diversion.	Please see updated language in Section 6.8.2.1 of the Plan-EA and in Appendix E-4 related to water rights and diversion rates.
434.09	WAT	The primary beneficiaries of this project are 149 district patrons. To pipe a mere 13.2 miles of canals in AID, the Project proposes to spend \$42 million, a direct public subsidy of \$282,000 per patron. Also, the project proposes to conserve 10,526 acre-feet of water each year at the unrealistically high price of \$4,062 per acre foot of water conserved. On these numbers, the Project proposes significant financial costs but delivers benefits only to 149 private water patrons and, critically, only de minimis benefits to fish or NUID water supplies. Without actually reducing AID's historic diversion and leaving that water instream for fish and/or NUID, the Project does not benefit the public and is not worth its exorbitant costs.	Please see the National Economic Efficiency Analysis in Appendix D.1 of the Plan-EA for an analysis of the costs and benefits of the project.
434.10	ALT	3. Alternatives The EA fails to consider a reasonable range of alternatives, violating NEPA as well as the NRCS Watershed Program Manual, Water Resources Development Act of 2007, the Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies and	During the formulation phase, alternatives were evaluated based on meeting both NEPA and environmental review requirements specific to

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		Federal Water Resource Investments (“PR&G”). The final EA should consider an alternative that meets the Project purpose and need for less cost to the public, using nonstructural measures, and providing greater public benefit, as proposed below.	NRCS federal investments in water resources projects (PR&G). According to NEPA, “Agencies shall rigorously explore and objectively evaluate all reasonable alternatives” (40 Code of Federal Regulations 1502.14). "Reasonable alternatives means a reasonable range of alternatives that are technically and economically feasible, meet the purpose and need for the proposed action, and, where applicable, meet the goals of the applicant" (40 Code of Federal Regulations 1508.01). Please see Sections 5.1 and 5.2 and Appendix D.2 of the Plan-EA for a description of the alternatives that were analyzed, how they were analyzed, and rationale describing why alternatives were eliminated or selected for further evaluation in the Plan-EA.
434.11	ALT	a. Unreasonable range of alternativesThe EA only considers two alternatives: the no action alternative and the preferred alternative. National Watershed Program Manual Title 390, Part 500, Section 501.12(A)(1) requires that “[a]ll reasonable alternatives that address the purpose and need for action must be presented in the watershed Project plan, including those not within the program authorities of the NRCS and those not preferred by sponsors.” The EA only considers the alternative preferred by the sponsor.	Please see the response to Comment ID 434.10.
434.12	ALT	The EA further only considers a structural alternative and fails to seriously consider nonstructural alternatives that could achieve the Project purpose and need with greater efficiency and at less cost to the public. NRCS has a legal duty to consider nonstructural alternatives. 7 CFR § 622.2(b).	Conversion to dryland farming, fallowing farm fields, and market-based approaches to include voluntary duty reduction are all nonstructural alternatives and were considered during the formulation of alternatives. Please see Appendix D.2 of the Plan-EA for more information.
434.13	ALT	Further, the Project must comply with the Water Resources Development Act of 2007 and the principles and guidelines that the Act requires be used in the formulation, evaluation, and implementation of water resources projects. EA at page 9; Water Resources Development Act of 2007 at Section 2031(b)(2)-(3). The PR&G require that nonstructural alternatives must be fully considered and carried forward to the final array of alternatives, and that project evaluation ensures that water resources projects are justified by public benefits. PR&G at page 12.	The PR&Gs state, "A nonstructural alternative may not be included in final analysis: Alternative plans, strategies, or actions that can effectively address a problem through the use of nonstructural approaches, if they exist, must be fully considered and carried forward to the final array of solutions." Nonstructural alternatives were considering during the formulation of alternatives; however, none met

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			the required formulation criteria. Please see Appendix D.2 of the Plan-EA for further discussion.
434.14	ALT	Examples of nonstructural alternatives include modifications to public policy, regulatory policy and pricing policy, as well as management practices, including green infrastructure. PR&G at page 11. The PR&G also requires that alternatives must also be evaluated to ensure public benefits and that any recommendation for federal investment “must be justified by the public benefits when compared to costs.” PR&G at 6, 13. The EA’s limited consideration of alternatives assumes that piping 13.2 miles of District canals is the only reasonable method for achieving the Project’s purpose and need. Several other alternatives, including nonstructural alternatives like regulatory or pricing policy, would achieve that Project’s goal, and would do so more efficiently, conserving more water and providing greater irrigation water reliability for less cost to the public. A basic requirement of NEPA is that a project such as this considers a reasonable range of alternatives.	Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for a description of how potential alternatives were analyzed, selected for further evaluation in the Plan-EA, or eliminated from further evaluation. Since the Draft Plan-EA was published, a market-based alternative was considered and added to Appendix D.2 of the Plan-EA.
434.15	ALT	The results from the recently completed Deschutes Basin Study show that the most cost-effective way for irrigation districts to conserve water is through on-farm efficiencies, piping of private laterals, voluntary duty reductions, and market-based water leasing and transfers. See Exhibits B-E (Selected Basin Study Work Group technical reports). The reasons given by the EA for excluding from consideration these types of alternatives are inadequate. The EA must give a rationale for eliminating alternatives from detailed study (“For alternatives that were eliminated from detailed study, the rationale for this elimination will be provided.”) National Watershed Program Manual Title 390, Part 500, Section 501.12(A)(2).	The rationale for why certain alternatives were eliminated is provided in Appendix D.2 of the Plan-EA. Since the Draft Plan-EA was published, piping private laterals and a market-based alternative were considered and added to Appendix D.2 of the Plan-EA.
434.16	ALT	The alternative to pipe private laterals would conserve water and greatly improve deliveries to patrons. If the purpose and needs of the Project had been ranked and weighted properly, conserving water lost in the system and improving flows for ESA-listed species should have dominated the priorities. When factoring in cost, piping private laterals would generate far more water at a much lower cost. ORS 545.287 specifically allows an irrigation district to upgrade private laterals: “When improvements for the distribution or delivery of water to any tract of land are not owned by the district and the owner or person in control of the improvement fails to maintain, repair or replace the improvement as required for the proper and efficient distribution or delivery of water to any tract. ...When the interest or convenience of such tracts requires the construction, repair or maintenance of any ditch, flume, dike, aqueduct or other improvement, the board may construct, repair or maintain the improvement.” A Project that proposes benefiting private patrons by improving water deliveries should not exclude alternatives that would conserve water through upgrades to private patrons’ infrastructure.	Please see the response to Comment ID 434.15.
434.17	ALT	b. Recommended project alternative To remedy the EA’s failure to analyze a reasonable range of alternatives, including its failure to consider nonstructural alternatives, we recommend the final EA/ EIS consider a project alternative that uses nonstructural market incentives combined smaller investment in	Please see the response to Comment ID 433.07.

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		structural measures. Full consideration of this approach is called for in the PR&G: “A nonstructural measure or measures may in some cases offer a more effective alternative to a traditional structural measure. In other cases, nonstructural measures may be combined with fewer or smaller traditional structural measures to produce a complete alternative plan. Full consideration and reporting on nonstructural alternative actions or plans should be an integral part in the evaluation of Federal investments in water resources.” (PR&G at page 11)	
434.18	ALT	The purpose and need of the Project are to maximize water conservation in AID for the benefit of both public fish and wildlife and junior water rights holders in NUID whose patrons produce far more agricultural products than AID patrons. These purposes and needs can be best accomplished by an alternative primarily based around nonstructural regulatory and pricing policy. This would take the form of a water bank, wherein money is used to incentivize AID patrons to temporarily lease their water to instream uses and/or to NUID. This nonstructural project expenditure would be accompanied by funding on-farm efficiency upgrades for those patrons who continue using their water, piping and other structural conservation work on smaller private laterals, and, if funding is available, some repair and lining of AID’s main canal system. As discussed above, the results of the multi-year, multi-stakeholder Deschutes River Basin Study Work Group show that this approach is the most cost-effective means of improving water conservation and improving water delivery reliability in the DBBC districts.	Since the Draft Plan-EA was published, a market-based alternative was evaluated and added to the Plan-EA. Please see Appendix D.2 of the Plan-EA for discussion of alternatives considered.
434.19	WAT	4. Environmental baselineAs discussed in greater detail below, the Project fails to establish an accurate environmental baseline condition concerning the amount of water that AID currently diverts from the Deschutes River. Provision of accurate baseline environmental information is a basic prerequisite for determining the environmental effects of a federal action. See Oregon Nat. Desert Ass’n v. Jewell, 840 F.3d 562, 568 (9th Cir. 2016). The EA fails to present accurate baseline information about AID’s actual, historic water use, and instead uses an unsubstantiated, arbitrary figure. EA at page 66. Accurate baseline information is necessary for determining the environmental effects of the Project. Water conserved from the project can only be analyzed for its environmental effects if it is compared to accurate baseline information about existing water use by the District. This EA fails to disclose that information, resulting in a faulty analysis that violates NEPA.	The Plan-EA considered available, relevant data to determine the effects of the proposed action on water resources. Historical diversion data for AID was used for this determination, and this data is publicly available (OWRD n.d.). Section 4.8.1 of the Plan-EA has been updated to include a discussion of this data.
434.20	WAT	5. Protection of instream waterThe EA, at page 66, describes how AID plans to conserve water, make this water available to NUID, and how NUID will protect an equal volume instream: “AID’s water right currently allows it to divert up to 150 cfs, and this rate exceeds AID’s historical diversion rates. To reduce effects on junior water right holders, AID would voluntarily reduce this maximum rate and identify 120 cfs as the District’s pre-project diversion rate for the purposes of any water rights administrative processes. Following construction of each phase, AID would reduce its diversion by the amount of water saved (up to 10,526 acre-feet per year). AID would bypass this water in the Deschutes River for diversion by	Please see Section 6.8.2.1 of the Plan-EA and Appendix E-4 for an updated discussion of water rights and diversion rates. Please see the portion of the response to Comment ID 207.04 related to carry water.

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		<p>NUID. Due to seepage losses in the Deschutes River between AID and NUID’s diversions, there would be 10,123 acre-feet of water available for NUID to divert annually. This additional water would assist NUID in fulfilling its patrons’ existing water rights throughout the irrigation season. No effect would occur to AID patrons’ certificated rate and duty. This alternative would reduce NUID patron’s dependence on water stored in Wickiup Reservoir to fulfill their water rights. Following the completion of each phase, AID would work with OWRD and its partners to verify and measure all water savings prior to creating any instream water leases. Based on AID’s historical practices, AID only diverts the water that patrons need. Following project implementation, the District’s conveyance system would be more efficient and they would decrease their diversion rate proportionally to the amount of water being saved; therefore, any water that the District does not divert would remain in the Deschutes River and would be available for junior water right holders, including the Deschutes River itself.</p> <p><i>Protecting Water Released by NUID to the Deschutes River</i></p> <p>Following the completion of each phase, NUID would legally protect the water released from Wickiup Reservoir through an instream lease under Oregon water law (ORS 537.348 [2] and OAR 690-077). The water leased instream would retain the same priority date as the originating water right (Certificate 51229). The instream lease would protect water in the Deschutes River downstream from Wickiup Reservoir during the non-irrigation season (i.e., in the late fall, winter, and early spring). Once an instream lease was approved by OWRD, the leased portion of NUID’s water right would be unavailable for use by NUID or its patrons. Oregon statute allows for NUID’s storage water rights to be permanently transferred instream (ORS 537.348). However, OARs need further clarity to allow these storage water rights to be permanently transferred instream. An agreement would be established specifying that these instream leases would be renewed in perpetuity or until the State of Oregon provided the clarity needed for a permanent change. Water released by NUID during the non-irrigation season would be in addition to the HCP minimum winter flow target of 100 cfs in the Deschutes River downstream from Wickiup Reservoir. This additional flow would be beneficial to the Deschutes River until Year 8 of the HCP (January 2028) when the minimum winter flow target is increased to 300 cfs.”</p> <p>The EA proposes a new disposition of water that violates basic tenets of Oregon water law and court decrees in a couple of ways. First, the Project fails to recognize that water conserved through prevention of seepage losses must be left instream under long-standing caselaw. The project proposes to conserve water at a rate of 32 cfs through the irrigation season, but as described in the EA, there is no assurance that the saved water will be left instream. The EA says that as AID becomes more efficient, their demand would decrease and “any water that the district does not divert would remain in the river.” It does not say, on the other hand, that all the seepage losses recovered by the project must be left instream. The canal’s seepage losses are not owned by the district and are not part of AID’s certificated water rights. A</p>	

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		series of circuit court decisions in the 1920s and 30s (known as the Duffey decrees) authorized irrigation districts in Central Oregon to divert more water from the river than is contained in their water rights so that water deliveries to patrons could be assured. By piping the canal, AID loses the right to divert this water and must leave it instream.	
434.21	WAT	Second, the Project fails to propose a transfer of actual “wet” water rights to instream and/ or to NUID, and instead only proposes to transfer dry “paper” water rights that AID has not historically diverted and are already instream. Leaving water conserved by the Project instream does not generate the alternative water source for NUID claimed in the EA. The EA claims it will generate 10,123 acre-feet of new water for NUID by piping 13.2 miles of AID’s canals. The project can only generate an additional water source for NUID, however, if AID reduces its diversion below its real historical diversion rate. Over the last ten years, the average of AID’s mean daily diversion rate was 92 cfs during peak summer months, June 15 – September 15 (Oregon Water Resources Department Near Real-Time diversion gauge data 2011-2020). Exhibit A. AID proposes to reduce its maximum diversion rate of 150 cfs to 120 cfs to establish a pre-project diversion rate for water rights administration purposes. This voluntary reduction, however, is not sufficient to generate new water supply for NUID because such a large portion of AID’s water right is a “paper right,” a water right on paper but not actually diverted. The project will conserve 32 cfs. Subtracting this amount from AID’s diversion rate of 120 cfs yields 88 cfs. Compared to AID’s actual average of mean daily diversion rates over the past 10 years of 92 cfs, the water potentially available to NUID under this project is only approximately 4 cfs. The remaining 28 cfs has not been diverted by AID historically, and thus, has traditionally been instream and available to NUID already. To generate the full 10,123 acre-foot benefit for NUID, AID would have to reduce its post-project diversion below its actual historical diversion rate of 92 cfs by 32 cfs, which calculates to be 60 cfs.	Please see Section 6.8.2.1 of the Plan-EA and Appendix E-4 for an updated discussion of water rights and diversion rates.
434.22	WAT	The EA is vague on how exactly AID will reduce its certificated water rights. This sentence in particular appears to indicate that AID will forfeit 30 cfs of its water rights before any conserved water transfer is pursued: To reduce effects on junior water right holders, AID would voluntarily reduce this maximum rate and identify 120 cfs as the District’s pre-project diversion rate for the purposes of any water rights administrative processes.” EA at page 66. A careful reading of the EA however indicates that it is silent on what is intended by this language. To “identify” a pre-project diversion rate is not the same as formally canceling through OWRD administrative processes a portion of AID’s water right that it has not historically put to beneficial use. LandWatch is concerned that with construction of a new flume and main canal as proposed in this Project, AID could increase their diversion from the historic actual average diversion of 92 cfs. The final EA/ EIS must clarify this point.	Please see Section 6.8.2.1 of the Plan-EA and Appendix E-4 for an updated discussion of water rights and diversion rates.
434.23	WAT	As LandWatch pointed out in our scoping comments, any portion of AID’s certificated water rights that it has not historically used is already forfeit and cannot be now relied on as a baseline “pre-project diversion rate.” We fully incorporate by reference LandWatch’s scoping comments dated May 15, 2019	Please see Section 6.8.2.1 of the Plan-EA and Appendix E-4 for an updated discussion of water

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		<p>into these comments on the draft EA. The EA should use the District’s actual historical average diversion rate of 92 cfs as its baseline from which water conserved through this Project is subtracted for the purposes of any water rights administrative process. The fact that so little new water (4 cfs) will be available to NUID under this project casts significant doubt about NUID’s ability to release water below Wickiup Dam in the non-irrigation season. In the Piping Alternative analysis on page 50 of the EA, the project is justified as meeting its purpose and need as follows, among others: “Enhance streamflow and habitat conditions for fish and aquatic species: Following the completion of the project and verification and measurement of the total water savings, AID would pass up to 10,526 acre-feet/ year to NUID through the Deschutes River during the irrigation season. In return, NUID would release an equal volume of water minus losses in the Deschutes River between the AID and NUID diversions, up to 10,123 acre-feet/ year. from Wickiup Reservoir into the Deschutes River during the non-irrigation season (see Section 6.8). Streamflow and habitat conditions along the Deschutes River would benefit from this protected water.”</p>	<p>rights, diversion rates, and the protection of water instream.</p>
434.24	WAT	<p>As proposed the project cannot meet this significant purpose and need. It would generate practically no improvement to habitat conditions for fish and aquatic species anywhere in the Deschutes River. The project would offer no protection of streamflow in the Upper Deschutes below Wickiup, nor would it protect streamflow in the middle reach of the river. We recommend that the project be revised to generate real, demonstrable benefits for the Deschutes River</p>	<p>The District has not proposed a Public Fish and Wildlife project; it has proposed an Agricultural Water Management project. Therefore, measures have been considered with respect to this authorized purpose. However, AID is one of the eight irrigation districts of the Deschutes Basin and the City of Prineville (the applicants) that have together developed and submitted the Deschutes Basin Habitat Conservation Plan (AID et al. 2020) to the U.S. Fish and Wildlife Service and National Marine Fisheries Service, which includes irrigation activity conservation measures. The conservation measures include streamflow targets rates in the Deschutes River and its tributaries that the applicants must meet to benefit the ESA-listed species. To meet the requirements set forth in the HCP, the applicants must identify mechanisms that would enable them to keep water instream, including the proposed project. Please see Section 6.8.2.1 of the Plan-EA for an updated discussion of water rights, diversion rates, and the protection of water instream.</p>

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			Reference: Arnold Irrigation District (AID), Central Oregon Irrigation District (COID), Lone Pine Irrigation District (LPID), North Unit Irrigation District (NUID), Ochoco Irrigation District (OID), Swalley Irrigation District (SID), Three Sisters Irrigation District (TSID), Tumalo Irrigation District (TID), City of Prineville. (2020). Deschutes Basin Habitat Conservation Plan (HCP). Retrieved from: fws.gov/Oregonfwo/articles.cfm?id=149489716
434.25	WAT	As it now stands, \$42 million of public funds are proposed to implement a project that direct benefits to only 142 private landowners and provides no real public benefit. Water conserved through the project must be subtracted from AID’s actual average historic use of 92 cfs. Otherwise, the project proposes to transfer paper water rights that are already instream, and it achieves virtually no benefit for fish, wildlife, or NUID.	Please see Section 6.8.2.1 of the Plan-EA and Appendix E-4 for an updated discussion of water rights, diversion rates, and the protection of water instream. Please refer to the National Economic Efficiency Analysis in Appendix D.1 of the Plan-EA for an analysis of the costs and benefits of the project.
434.26	WAT	6. Failure to Take a Hard Look; EIS requiredNCRS has no basis by which to conclude that this project will not have a significant effect on the human environment. Due to the focus on “paper” water rights rather than actual diversion rates, the agency’s analysis of the environmental effects is inadequate and fails to take a hard look at the environmental effects of the project. The project is also highly controversial by stating that its intents are to restore instream flows to the Deschutes River and provide agricultural water supply to the North Unit Irrigation District, yet it fails to propose a transfer of actual “wet” water rights and instead only transfer dry “paper” water rights.	Please see Section 6.8.2.1 of the Plan-EA for an updated discussion of water rights and diversion rates. See the response to Comment ID 94.02 regarding the need for an EIS.
434.27	PURP	To adequately and accurately disclose the environmental and other effects of the project, the agency either should prepare a revised draft EA that provides a full and fair accounting of the project’s impacts, or a formal EIS for this project.	Please see the responses to your other comments, Comment IDs 434.01 through 434.26. In regard to your comment about an Environmental Impact Statement, please see the response to Comment ID 94.02. The Final Plan-EA includes revisions and edits based on public comment that was received; please see the response to Comment ID 1.01.
434.28	GEN	Thank you for your consideration of these comments. Please keep us updated as to all future Project matters, and inform us of any further opportunities for comment and appeal at [EMAIL].	Thank you for your comment.
435.01	FIRE	To whom it may concern I live in woodside ranch and am opposed to the canal piping proposal. We bought our property here	Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.

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		based upon a lot of things. The canal and its benefits would help life and the ability to have excess water in our area for fires.	
435.02	PROP	We are concerned with the tax dollars that are being used to complete this project, destruction to our neighborhood and property value decline. But most of all worried about the all that supplies is with water will run dry too. I believe there needs to be more discussion of option of what to do before this projects starts. Please delay and rethink Thanks	Please see the response to Comment ID 218.13 regarding the proposed project's effects on property value. Please see Section 6.8.2 of the Plan-EA regarding effects on water resources. Please see Section D.2 of the appendix for information regarding additional alternatives that were considered and Comment ID 1.01 regarding the public process.
436.01	ALT	To whom it may concern, I am expressing my sadness that the Arnold canal may be closed in. The people who live along the canal will have an ugly pipe in their gardens and no doubt will have to endure months of construction. Also, the wildlife rely on the water. Is there an alternative to saving the water that is apparently lost due to seepage? Many thanks for your consideration,	See Section 5.3.2 in the Plan-EA for information about construction activities and Section 8.7.2 in the Plan-EA for a construction timeline. Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered. Please see Section 6.11 of the Plan-EA for more information about effects on wildlife.
437.02	ALT	I don't believe Gunite is more expensive since existing canal and headgates could be used.	The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04.
437.03	WAT	No one seems willing to share how much is actually lost to evaporation. I also do not believe that a pipe would not effect the aquifer and our wells.	Please see the response to Comment ID 331.01 for information regarding losses in the canal from seepage and evaporation. Please see Section 6.8.2.3 in the Plan-EA regarding the effects on groundwater.
438.01	ALT	I own a home in Deschutes River Woods and am against the piping, lined Canal would be better, thank you	Canal lining was considered as an alternative in the Plan-EA. Please see Section 5.2 of the Plan-EA.
439.01	WAS	As a former resident of River Bend Estates, (which shares boundaries with Deschutes River Woods), and a former long-time customer of Arnold Irrigation District, I am keenly aware of the District. The brakes need to be applied to the proposed pipeline plan until the public has had ample time to comment and the process has been totally vetted. For example, does AID's proposed piping project break the law with regard to the Wild and Scenic River Act (WSRA) and the Oregon Scenic Waterway Act?	The flume has been removed from the project. Please see the response to Comment ID 12.01. See Section 6.12.2 of the Plan-EA for updated language regarding effects on the Wild and Scenic Rivers. The public comment period for the Draft Plan-EA was set to conclude on July 8, 2021, and was extended to July 23, 2021. This extension was made in response to a public request for additional review time.

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439.02	WILD	Have all environmental issues been fully considered, including loss of historic riparian and wildlife habitat as trees are removed?	Please see Section 6 of the Plan-EA for more information about project effects; see Section 6.10.2 for information about riparian areas and Section 6.11.2 for information regarding effects on wildlife resources.
439.03	WAT	How much water is really lost to evaporation? These and other questions need to be discussed and evaluated in the public arena now, before the proposed project is a done deal without adequate citizen input.	Please see Comment ID 331.01 for information regarding losses in the canal from seepage and evaporation.
440.01	ALT	I am against piping the canal as it would be inhumane to have all the wild life that have come to depend on it for generations of years, lining the Canal and letting it flow instead of a couple more bales of hay is a lot better purpose than what is being proposed, thank you for your time	Please see Section 5.2 in the Plan-EA for discussion of a canal lining alternative. Please see Section 6.11.2 in the Plan-EA for information regarding impacts to wildlife resources.
441.01	CONS	We are fortunate enough to live above the flume. It's the most beautiful water feature anyone could ask for. But more importantly it is part of our view. A view we paid a considerable amount for. We are told that the flume May be buried and a roadway put above the new pipeline. That would be a major degradation of the view on what is supposed to be a scenic byway. The flume compliments the natural aspect of the byway. We are vehemently opposed to dismantling the flume. It could be sealed so it does not leak. It could also be partially covered. There are many more solutions that could be entertained by Arnold Irrigation District. We propose an environmental impact be conducted prior to spending \$50 million to deconstruct the flume.	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. See the response to Comment ID 94.02 regarding the need for an EIS.
442.01	PROP	Hello, I just return from vacation today, and found this letter in my mailbox. We bought our house because of the canal. It's a part of our everyday life walking the canal as well as many other in our neighborhood. It would be not be right if it got piped in and covered. I pay property taxes for the canal to go through my property. Canals have been a way of life for thousands of years. And it's not broken than don't mess with it. Also how will you be compensating those who live on the canal if you move forward with piping.?	Please see the response to Comment ID 218.13. Please see the response to Comment ID 32.03 regarding people walking on AID's maintenance road.
443.01	ALT	I am fully aware of and appreciate just how beautiful and important the Canal is to those who live on or near it. The wildlife, the owners property and anyone who has seen it understand how its existence is an important and cherished part of the District's beauty and environmental importance. Many comments have been made regarding this Project, and detailed comments like those of the Linn family and one of the most thoughtful and important comments that have been made and others who have identified all the reasons why this Project is not being proposed or handled in a proper manner. A proper plan and Project takes all the truly critical and mentioned aspects of the plan, the communities and home owners in the Project's area into discussion, consideration and an acceptable and workable solution for everyone. Instead, there has not been any real consideration of several alternatives and the critical issues that have	Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered. The description and cost of the Canal Lining Alternative have been updated in Section 5.2 of the Plan-EA. Please see the response to Comment ID 29.04.

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		<p>been mentioned in the comments made that make more sense.As it stands, this Project, as it has been proposed, will destroy the value and beauty of land owners and have a negative effect on the wildlife and environmental importance of an entire area. There are always acceptable alternatives and compromises when everyone has input for realistic concerns. I strongly suggest that input from environmental sources and citizens with concern about the Project’s impact on their properties and the environment itself are the most important participants in the creation of a Project Plan. The Project Plan should address not just the current Project planners, but all those who will be directly or indirectly affected by this Project. Perhaps there are ways to modify and update the canal in an agreeable manner that enhances and saves the beauty and environmental importance of its existence. Thank you for considering my comments and those of others,</p>	
444.01	WILD	<p>To whom it may concern,I am writing to you today concerning the arnold canal you plan on filling and piping. We have been out of town for the last few weeks and just got back so I apologize that this is a few days past the time allowed. I am attaching pictures of my property as is today as well. It is very disappointing and disheartening hearing that you are considering filling and piping this beautiful attraction we all hold very close to our hearts. The reason we bought our home as first time home owners was because of this canal. It is sad that we have to even consider selling our home so early on because of this project.The habitat that will be impacted by this is also very sad to see. The frogs, beavers, birds, etc. are going to suffer because of this and I think is the main reason you should consider opting out of this project.</p>	<p>Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources.</p>
444.02	PROP	<p>You should also consider the lost profit home owners will now have to face because of this project when they go to sell their homes, potentially losing up to\$100,000 in lost profit and how you will go about compensating those people who have rights to their land that sit on the canal. Please consider other options. Thank you for your consideration.</p>	<p>Please see the response to Comment ID 218.13.</p>
445.01	GEN	<p>I support the proposed piping of the irrigation canals. We need to conserve as much water as we can and piping will help reduce loss of water to evaporation and leakage. It would likely be cheaper to maintain as well. All of the people who are complaining are simply whining because they thought the canal was their own private water feature. Don’t back down, pipe the canal.</p>	<p>Thank you for your comment.</p>
446.01	ALT	<p>To whom it may concern,I wanted to reach out to you to let you know I didn't get an email sent by July 23. I do not pick up my mail often because I have stage 4 breast and bone cancer and my spine has been damaged from the cancer. I am very sick and undergoing chemotherapy treatments. But with that said I did call in before I got sick and talked with someone about the canal and how it would affect us, the animals from not having the water to drink many times a day. When I was in the hospital bed I looked out my living room window to see the canal and I could not wait to get out on the back deck. After months my husband could put me in the wheelchair with the Hospice nurse so I could find comfort from looking at the canal. It brings tears to my eyes thinking that I could lose the canal. I just know if you</p>	<p>Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered. Please see Section 6.11 of the Plan-EA for more information regarding the effects on wildlife.</p>

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		take that away from me it will break my heart. I think other alternatives to piping should be considered. Taking into other consideration would save our property values also.Thank you	
447.01	PROP	To whom it may concern,I recognize that this comes a week after the opening for comments, however I still hope to voice my serious concern for the piping project and the impact it will have to property owners, wildlife and communities that depend on this as a resource in case of wildfire activity.I own a home along the canal in deschutes river woods and am devastated at the proposed piping. On a personal level we anticipate that this will impact our property value to a significant degree. The canal was a primary reason we bought our particular property and piping it creates significant impact to our home. At this time, the canal serves as a natural fence line between us and and neighboring homes. Piping this will join our property with our neighbors and necessitate that one or both of us spend a significant amount of money fencing the property lines. For this, there needs to be some level of compensation from Arnold irrigation.	Please see the response to Comment ID 218.13 regarding effects on property value. Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Please see Section 6.2.2 of the Plan-EA regarding the project's effects on easements.
447.02	WILD	Additionally, our home and the canal is a sanctuary to countless wildlife that depend on this for their survival and have for 100 years. Deer, ducks, frogs all frequent us in search of water that will be no more. This environmental impact cannot be ignored and will be devastating to the central oregon area. Lining the canal seems the best compromise here. My hope is you will work with ALL of the residents this project impacts and find the middle ground.	Thank you for your comment. Please see Section 6.11.2 in the Plan-EA for information regarding effects on wildlife resources. Clarifying language has been added to Section 6.11.2 of the Plan-EA indicating potential available water sources for wildlife. Please also see Section 5 and Appendix D.2 in the Plan-EA for discussion about alternatives considered and eliminated from the study and the response to Comment ID 237.01.
448.01	GEN	"Arnold Irrigation has plans to change the Aqueduct along the Deschutes River and I live at [ADDRESS] which will affect my Well, my Property Value, my View, my Fire Safety, the Wildlife and Living Landscape.First we need more Time for everyone in this neighborhood to be totally informed of this intended proposal. We also need an economic and ecological study of the effects of such a project on the existing Neighborhood, Wildlife and Area.We would like to see action regarding the above information and with some kind of contact to All Involved. This is drastically going to affect all of us here."	The flume has been removed from the proposed action. Please see the response to Comment ID 12.01. Please the following sections of the Plan-EA for more information about effects on wells (Section 6.8.2.3), public safety (Section 6.3.2), wildlife (Section 6.11.2), and vegetation (Section 6.6.2). Please see Section 2.3.3 of Appendix D.1 for information regarding effects on property value. The Plan-EA and accompanying National Economic Efficiency Analysis have been prepared to assess the potential effects of the proposed action. Please see the response to Comment ID 1.01 regarding the public process and public involvement.

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449.01	GEN	Please pipe all the canals that you can!! We need to save every drop of water we can. If people cannot see into the future for the benefit of our kids and grandkids then they can move to a town with lots of water. Thank you for taking comments!	Thank you for your comment.
450.01	WAT	I am an concerned tax payer in Deschutes Co. The amount of water that will be saved by piping the Arnold canal seems silly considering the water use rate of up to 6 million gallons of water a day Thornburg resort will be using. According to your "data" (which I think is questionable) 3.5 billion gallons annually will be saved by piping AID canal. Hum? That is not really a gain or benefit.	An evaluation of Thornburgh Resort is outside of the scope of this project. Please see Section 2 of the Plan-EA for more information regarding the purpose and need of the project and Section 3 regarding the scope of the Plan-EA.
450.02	ALT	You should be more concerned about updating farmers irrigation equipment , Thornburg, Tanager and Petrosa (etc.) developments over consumption, over appropriated water rights and evaporation of water for private use in the desert.Furthermore, where are the water reclamation project plans that are needed?	On-farm efficiency upgrades was considered as an alternative during the formulation of alternatives. Please see Appendix D.2 and Sections 5.1 and 5.2 of the Plan-EA for discussion of the alternatives that were considered.
450.03	GEN	All along the COID canal there are development plans for waterfront properties. Do they know the canal will be piped? Or did the developers pay to stop that pipe? Hum?. So the rich privileged get preference to waterfront properties over homeowners who have lived along the canals for many many decades? Hum?	Information about piping projects in COID can be found on the COID website at coid.org .
450.04	RIGHT	And what about the 20ft easements that were extended to 50ft without property owners knowledge and input? My property deed says 20ft easement. We pay taxes on those properties and there has been no attempt for compensation. When we bought the properties we have respected the easements for decades. Now all have structures, fences etc that AID are saying property owners need to remove. Hum? In the AID Development Handbook:6.3 Piping Agreement and Easement Requirements:"The District requires that the Developer obtain all easements necessary for the location or relocation of a pipeline and related facilities. **The underlying property owner is the "Grantor" of a new or modified easement to the District. ** The pipeline easement shall be recorded against the servient land in county land records at the Developer's expense".So the option to refuse a new or modified easement is an option to propertie owners.	For information about the Carey Act, please see the response to Comment ID 39.02. For discussion about individual easement documents, please see the response to Comment ID 39.18. Please see the response to Comment ID 283.01 for discussion about the construction footprint.
450.05	WAT	Last year there was an undisclosed amount of water delivered to Tanagers private water ski lake. Furthermore , it was over filled. How is that allowed and not saved for the frogs and farmers. How is it that the north unit farmers are more important than the "hobbie" farmers that make a living farming? There is so much more that is OFF with the piping EA. Do you see the irony? The way many in the community see it, it's not amusing!	The District and the proposed project are not associated with the development mentioned; therefore, it is not included in the Plan-EA.
450.06	WAT	In addition, how is the piping going to help the wells during a Cascadia Subduction Zone effects. We will definitely need lots of fresh well water. Not canal water on private lakes and golf courses.I'm concerned.	Please see Section 6.8.2.3 in the Plan-EA for information about the effects on groundwater. Please see the response to Comment ID 433.38.

Comment ID	Topic Code	Comment	Response
451.01	GEN	<p>Hello Gary...My name is Jerry Rudloff and I've spoken with you a couple of times in the past concerning the Arnold Irrigation District's modernization plan. My wife Debbie and I are patrons of AID. I mentioned to you on January 6 that an organized group of us were putting together a video explaining our position on the piping issue. You said to send it to you to take a look at and if it was pertinent information to the comments that have already been submitted it could be entered into the comments as new information. Well it took a little while longer than we had anticipated and actually is more of a 12 minute documentary than just a video. Here it is in this link Arnold Canal: Modernization, Conservation, or Decimation? Bend, Oregon Thank you for your consideration on this. VIDEO LINK: https://www.youtube.com/watch?v=urLz2vUy_U&feature=youtu.be</p>	<p>The flume has been removed from the proposed action. Please see the response to Comment ID 12.01.</p> <p>Please see the response to Comment ID 283.01 for discussion of the expected area that would be disturbed by construction. See Section 6.6.2 in the Plan-EA for updated language regarding effects on vegetation.</p> <p>See Appendix D.1 of the Plan-EA for the National Economic Efficiency Analysis, which details the costs and benefits of the project. Please see Section 8.1 of the Plan-EA for why NRCS selected the Preferred Alternative.</p> <p>Updated language regarding effects on wildfire risk has been added to Sections 4.3 and 6.3 of the Plan-EA.</p> <p>Updated language and costs regarding the Canal Lining Alternative have been added to Section 5.2 of the Plan-EA. On-farm efficiency upgrades was considered as an alternative; see Appendix D.2 of the Plan-EA.</p> <p>Following the proposed project, piping and SCADA would allow AID to improve water management. AID anticipates reduced spill at the end of select laterals.</p> <p>Please see the following Sections of the Plan-EA for more information about effects on groundwater and wells (Section 6.8.2.3), public safety (Section 6.3.2), wildlife (Section 6.11.2), and visual (Section 6.7.2).</p>