OREGON'S 100-YEAR WATER VISION

Community Conversation and Web Survey Summary

The state hosted 8 community conversations across the state and posted an online survey, engaging over 700 Oregonians, to gather feedback on the 100-Year Water Vision, and to hear about community-specific water challenges. This document is intended to provide a summary of the community conversations and comments gathered through the online survey. Raw notes from each community conversation and results of the online survey can be found at www.OregonWaterVision.org.

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Overview

Oregon's water supports communities, businesses, and thriving fish and wildlife populations. However, many factors make Oregon's water future uncertain. It is critical that Oregonians continue to steward and invest in the state's water resources so that they may continue supporting people and the environment. The 100-Year Water Vision is intended to provide high-level goals and operating practices that will help guide Oregon into the future.

In the fall of 2019, the state launched an outreach effort to connect with Oregonians and ask about their water needs, challenges, and goals for the future. The feedback received was used to update the Oregon's 100-Year Water Vision document and develop recommendations for next process steps. This document is a record of community's needs, challenges, and visions for the future of water, and some comments may not be reflected in the updated 100-Year Water Vision Document. In this document, the 100-Year Water Vision is also referred to as the Water Vision, or the Vision.

Outreach for both the community conversations and web feedback was broad, but not complete. Participants in the conversations tended to be those individuals whose paid or volunteer work had a nexus to water infrastructure or ecosystem management, so they were generally more informed about water challenges and opportunities.

Feedback included issues around aging infrastructure, climate change, water shortages, funding for planning and water system upgrades, and many more. One thing that all participants could agree upon is that Oregonians have become disconnected from their water. Most people do not know where their water comes from, or what condition it is in. They are under informed of the current threats to their water source, and don't know about the challenges Oregonians face in other parts of the state. Individuals turn on their faucets, and think nothing else of it. These sentiments were heard on the coast, in the Willamette Valley, in Central Oregon, and ubiquitously, east of the Cascades.

To create a culture that values water availability, conservation, and protection, Oregonians must understand the challenges that local communities are facing and collectively work to solve them. The outreach process and the findings summarized in this report are a first step to understanding those challenges.

Balancing Interests

Across all community conversations there was a strong desire to figure out ways to realistically balance competing water interests, including those of people and native fish and wildlife in ways that support thriving farmers, tribes, municipalities, fish, beavers, and elk. Planning processes need to identify goals that balance the environment, communities, and economy. Interests should be focused on "needs, not wants" to help balance limited water availability.

Participants want a process that will address water for all needs, both in- and out-of-stream, balancing needs with available resources. Success is "a sustainable and thriving social,

ecological, economic, agricultural system that can support a human civilization for the foreseeable future," a "broad consensus-based plan on how instream and out-of-stream uses are met in the basin," and "sustainable fisheries and vibrant wildlife habitats set within the context of our communities and economy."

Some participants noted there can be tension and interconnection between the four goals. For example, protecting headwaters has the benefit of protecting habitat while also keeping water on landscape with connected and active floodplains. One participant noted, "Economy could either be seen as keeping our current economy, or to promote green jobs that help the economy while also benefiting the environment and health." A survey respondent also noted the need for "an impartial referee to balance interests."

Business needs water, and water availability can limit business—especially in the context of over-allocation where water demand exceeds current water availability in many places. Several participants wanted to see business more engaged in water discussions. Part of that is making a strong economic business case for clean water.

Different business sectors have different water needs and there are new business sectors coming to Oregon because of energy and water availability. Several survey respondents noted that agriculture has very different water needs than other business sectors, and those needs could be in conflict in some instances (e.g., agriculture, housing, and breweries). Survey respondents said both, "agriculture is important and needs to be highlighted," and "agriculture's water needs can't drive higher prices for other water users."

There is a global demand for water-intensive agricultural products, and a need to provide irrigation water in spring through fall. Water is a key ingredient to feeding Oregon and America, according to several survey respondents. Participants were interested in having adequate water for agriculture and irrigation, and promoting innovative, low water use agriculture. Some survey respondents wanted to see a specific goal of protecting water for agriculture. Others wanted to recalibrate irrigation water rights based on water availability and current agricultural needs. Several survey respondents stated they wanted irrigation water to be used to grow crops, not water lawns or pastures for a horse.

There are a wide variety of water needs and uses. Who needs water and how they get it is a reflection of a community, and that community's needs. Some of the challenges in communities are rooted in conflict over limited water supply.

One of the nuances discussed in Medford and Ontario, were the issues of balancing water quality for competing interests. Different water quality standards are set for food safety, drinking water, fish and wildlife, and recreation. A major question that was raised was how to manage and set attainable water quality standards for multiple users that balance human and environmental health.

Participants in several places hoped that communities would be good stewards of water supply for future generations—for people and the environment. This means everyone has their water supply needs met—municipal, private, agriculture, and business; and communities are using water efficiently. In Tillamook, one participant emphasized that water conservation was the job of permanent residents, weekenders, transient, and day trippers—everyone.

Balancing public and private issues was also of great concern. Several survey respondents emphasized that water—the water itself, access to it, and even the infrastructure to manage it—is a public resource, and that privatization should be avoided. Those survey respondents also expressed concern over the consolidation of water rights in a small number of private interests.

Perhaps the most difficult balancing act is holding tensions between different cultural perspectives across the state. Participants at the eastern Oregon community conversations voiced the current cultural misunderstanding between the agricultural industry and the general public in regard to food production. The lack of knowledge around how food is produced and how it gets on the table was cited as a wedge that has been driven between rural and urban stakeholders. In Ontario, the agricultural community voiced difficulty adequately telling their story as a reason for the complicated relationship between them and the general public. There was widespread support in these communities for reconnecting Oregonians with the production of their food and fostering a greater understanding of the overall supply chain.

Other participants talked about another cultural mismatch—that people expect clean, abundant water, but they don't link that expectation to investment in water and the natural systems they rely on.

External Pressures: Climate Change, Population, and Funding

Many of Oregon's communities are feeling the direct effects of climate change. From ocean acidification and sea level rise on the coast, to wildfires in the south, and sustained drought in the east, the changing climate is noticeable across the state. Many participants noted that humans are not the only species impacted by these changes. Fish and wildlife are directly impacted as well.

In general, most participants recognized the massive stress that climate change places on Oregon's water. Availability for fighting wildfires, irrigating crops, supplying Oregon's growing population with drinking water: climate change threatens each of those uses. Across the state, there was a call for more comprehensive and accurate climate models, and best management practices for mitigating and adapting.

Population growth was often mentioned because it interacts with climate change, and both factors affect clean water. As Oregon faces population growth, concerns around clean water for existing domestic water users were raised. Planning for increased growth poses issues for "nice, healthy, clean watersheds for us and future generations," as mentioned in the virtual

community conversation. Another respondent articulated a need for more accurate population forecasts that account for climate, housing, and other drivers of future population. Along with this comes the mounting pressure to expand drinking, storm, and wastewater infrastructure capacity in accordance with that growth.

Additionally, participants identified some tension around population growth. On the one hand, they want Oregon to be open, welcoming, and provide opportunities for people to join a community and thrive. However, some participants worried that if water systems were improved too much, Oregon might attract more people and expressed concern that the current context of perpetual growth may be unsustainable.

These population and infrastructure challenges are present everywhere. Some participants talked about urban density and some of the challenges there—retrofitting old pipes and stormwater systems, managing floods. On the coast, participants identified the growth in recreation and vacationers creating seasonal pressure on their infrastructure and ecosystems. Some of the water challenges articulated from people along the I-5 corridor included the impact of development pressure on water. They described that pressure could include development occurring in floodplains, or other growth near rivers. Some participants talked about managing growth so it aligns with water and other resource availability. That management could include better identifying long-range water capacity before growth occurs, so that some areas do not become "overbuilt or underbuilt." One survey respondent also suggested limiting development, or water use, in water-sensitive areas and encouraged promotion of stewardship in all planning and development.

Conversely, in some areas of Oregon, populations are decreasing. This poses large issues around the costs, and distribution of those costs, for investments in water. Reduced populations may ultimately result in a smaller rate base available to pay for water projects, and a reduced capacity at the local level for resource management.

Built and Natural Infrastructure and Ecosystems

From aging built structures to the balance of built and natural systems, water infrastructure was a prevalent theme throughout all of the communities. Failing built infrastructure, whether tide gates or dams, pose huge threats to the safety of Oregonians and the health of fish and wildlife. Furthermore, aging infrastructure was discussed as a large challenge in many agricultural communities, as irrigation modernization is critically needed across the state. This, coupled with general concerns around septic tanks, drinking water infrastructure, wastewater treatment, and stormwater systems led to the conclusion that Oregon needs a different approach to invest in water.

A majority of participants agreed that leveraging investments and projects that balance the use of natural and built water systems is beneficial to communities as well as the environment. Integrating how land development with water treatment and storage and the preservation of

natural systems—such as wetlands, floodplains, and forests—was at the forefront of many infrastructure conversations across the state.

Infrastructure that serves to enhance storage capacity (i.e. dams and reservoirs) were topics of conversation in some communities. Uncertainty around the conditions of dam infrastructure, as well as the associated impacts of increased sedimentation within human-engineered reservoirs were areas of concern. Furthermore, goals of utilizing built infrastructure to maximize the capture and retention of precipitation for flood management, as well as management to help account for seasonality of water availability emerged.

While built infrastructure was of huge concern, natural infrastructure was equally discussed as a resource and a vision for the future. The environment has been taking care of water a lot longer than people have—every community and many survey respondents acknowledged and discussed this fact in some way. One survey participant stated: "Clean and adequate water is best created by returning the land to its natural functions. The manmade structures should be secondary to this, or at best, mimic it."

Development in wetlands and floodplains, as well as clearcutting on timber lands, were flagged as large challenges by participants on the western side of the state and in the survey. Using natural and native forest systems to "capture, store, and filter water" was a priority specifically discussed in the Gresham conversation. Similar sentiments were expressed in Tillamook: "Forests maintain clean, safe, abundant drinking water." Floodplain development on the coast was also highlighted as a large concern that put communities in harm's way of flooding and tidal fluctuations. A discussion about wetlands in Albany resulted in a vision of success: "Wetlands have been restored and are serving as water cleaners and flood control as well as home for a variety of species".

A continuous tension between the uses of natural versus built infrastructure was present at all conversations and the need for investment in both was vocalized by all. In Gresham and Medford specifically, the critical need for protection and restoration of natural systems, and utilizing green spaces in urban areas were common themes that emerged. On the eastern side of the state, taking advantage of natural storage systems was seen as a high priority. Similarly, a survey respondent said "The current draft of the Vision is too focused on building additional hardened infrastructure."

Another ever- present tension that should be noted, is that in focusing on the functions of natural systems that serve humans, systems that solely function for a healthy ecosystem might not be given the attention they deserve.

Oregon's Innovative Approach

An overarching theme discussed amongst participants, both in person and in the survey, was the need to reorient management to be proactive instead of reactive. Rather than waiting for

infrastructure to fail, adequate maintenance and investments should be made before the health and safety of communities are put at risk.

While communities across the state have different infrastructure challenges, participants at each conversation vocalized the need for a change in the way that Oregon approaches and use infrastructure. In some communities, balancing and "blending built and natural infrastructure" is an approach that was identified as critical to ensuring resilient water systems that are affordable and functional. Oregon should "model decision processes after natural process—not a fixed Vision—rather a decision support tool." Integrating environmental quality, recreation, municipal, and wildlife needs should be the underlying foundation for interacting with water systems, both built and natural.

Participants also agreed that any process needs to be flexible to adapt to changing climate and community conditions. Participants also identified a need to have standards against which decisions are measured, including impact to communities and water users.

As the water needs of Oregon grow and change, the need to tap into new technology is critical to ensuring adaptation and flexibility. The need to harness new technologies to collect, share, and coordinate data collection was highlighted in Bend, La Grande, and Albany conversations. In the survey, participants also cited a similar strategy of using innovative technology and approaches to solve current and future infrastructure problems, such as fish passage, seismic resiliency, affordability, and supply.

Across the community conversations, participants identified the need to focus on new funding approaches. "How can we incentivize water reuse?" asked one participant, and another referenced insufficient incentives for increased water conservation. Participants raised a range of new funding approaches, such as: a sales tax; raising funds from existing infrastructure (in-conduit hydropower); and a dedicated funding source like the gas tax for transportation. "We need a dedicated and full funding source similar to transportation funding that can fund water infrastructure needs, both built and natural, that provide resiliency against not only disasters but drought and climate change," noted one participated. Others mentioned the need for state tax credits or other incentives for water-related upgrades. Private sector investments were also mentioned in many community conversations.

Regional Flexibility

While the details were described in different ways in each community conversation, participants in all parts of the state wanted some sort of regional approach to managing Oregon's scarce water resources, noting that solutions are not the same in every part of Oregon. Some participants provided models to look to including: Metro Government; transportation or economic development regions; Columbia Gorge Commission; watershed councils; and Upper Deschutes integrated water management. In some locations, participants noted that Oregon's current political boundaries don't align with watersheds and basins, and identified that strategic water conversations need to occur within watershed boundaries,

increasing the need for cross-jurisdictional coordination, where now there is a lot of competition for resources. “Support local water management and relationships. It may require new roles and new leadership in our state water management approach, but there is more trust at the local level. Planning, implementation and strategy should take place at the local/regional level, not a statewide approach,” said one survey respondent.

In each conversation, participants also recognized the need for state engagement and, in most cases, oversight of the process. Feedback included: broad recommendations to ensure coordination between state government and local communities; recommendations to develop intentional “bottom-top engagement” strategies; ensuring all agencies with a connection to water had staff in the identified regions; and recommendations that communities be placed in the leadership role on water issues with the state serving in more of a support role. While the structure wasn’t consistently identified, communities did want to see more of a partnership approach between the state and some type of regional or local structure. Many participants recognized this will take a lot of work to develop and trust-building to be sustainable over the long term. Some participants identified the need to develop approaches that can help resolve conflicts at the local level. Other participants saw regional approaches as ways to bridge the “rural-urban divide,” as well as a way to help small communities have the resources to address their water needs. As one participant put it, “success is communities working together using cross-sector integrated approaches to planning, education, and management of water for the future.”

While regional approaches were highlighted, participants also recognized a need to share information between regions, and across state lines, noting that no common place exists to share that information currently. Many participants also mentioned the critical need to balance this tension between local and state needs. Furthermore, extensive engagement with the federal government and 9 federally recognized and sovereign tribes should be prioritized.

Different regions have different challenges, and therefore need flexible solutions. In Tillamook, participants suggested using condensation and fog from the coastal forests to combat drought. That solution does not exist in Medford, where participants rallied around promoting water efficiencies. Unique challenges across the state should breed creativity and flexibility from the bottom, up.

Oregon’s Culture of Water

In order to address the realities of climate change, population growth, and increasing infrastructure costs, it is important that Oregon adopt a culture around water that embraces and prioritizes collaborative solutions. Overcoming the perceptions that water is an unlimited resource was also ubiquitously discussed across the state. Participants agreed that significant progress cannot be made, without an equal effort to educate and spread awareness amongst all Oregonians: “We cannot expect people to pay for a problem that they don’t even know

exists." Prioritizing public awareness and consensus building around the current state of Oregon's water, will be an essential first step in gaining support for water investments.

Oregonians must be engaged, aware, and informed about their water needs, and the needs of others around the state, and must be willing to collectively invest in Oregon's shared water future. Lack of investment in climate resiliency and infrastructure has generated an unrealistic and unsustainable perception of what water systems actually cost. Shifting this perception, to one which views investments as necessary and worthwhile, should be a marker of success.

To move the process forward successfully, Oregon must work collaboratively to develop a culture of water stewardship, where Oregonians not only value water resources, but are willing to collectively invest in projects across the state to secure a sustainable water future for everyone.

Acknowledging History

Tribal Interests in Water

There are 9 federally recognized tribes within Oregon's present day borders. As sovereign nations, these tribes have unique treaty rights related to water, land, and food, and are responsible for managing systems that provide water to their tribal members. Since time immemorial, tribes have been stewards of natural resources and native fish and wildlife species. In several of the community conversations, as well in conversations with all of the tribes, individuals voiced the critical need for the Vision to respect, honor, and recognize tribal sovereignty, the history of the tribes' relationship to water, and the current and future relationship between tribal communities and water resources. Tribes should be viewed as individual sovereign nations and not as a group or "just another stakeholder." Continuous formal consultation between individual tribes and the state was highlighted as necessary for future engagement moving forward with the Water Vision.

As sovereign nations, tribes have a variety of concerns, challenges, and needs surrounding water. While tribes have been in present day Oregon since time immemorial, many of their challenges are very current. The fulfillment of tribal treaty rights, maintenance of instream flows for salmon, securing clean drinking water for tribal members, and emergency preparedness for earthquakes and tsunamis were all mentioned as high-priority interests by at least one tribe. Furthermore, one tribe suggested there must be an acknowledgement that the spiritual and cultural obligation to water, plants, and animals to keep them healthy, is a precursor to fulfilling any treaty rights.

Legacy Issues

Overallocation

"Water rights are overallocated" one survey respondent stated simply. Others noted that this needs to be stated in the Vision clearly. In many parts of Oregon, there is no water to allocate to new uses—either surface or groundwater. One participant talked about a legacy of 100 years of overallocation as a significant challenge and a root cause of water quality issues, Endangered Species Act listed fish, and dry/compromised rivers. A survey respondent noted a need to acknowledge that many water commitments were made in the past without full knowledge of water availability or impacts of allocations.

Aspects of water law have made some types of innovation difficult. Some water users are discouraged from conserving water by the "use it or lose it" aspect of water rights. Some types of transfers have been difficult. Some participants wanted a basin-scale water allocation approach that is sufficiently flexible to respond to economic changes, and changes in water demand. Other participants pointed specifically to overuse in agriculture, and the need to balance allocations between humans and fish and wildlife. Other participants pointed to the availability of water for junior agricultural users in the future as

a challenge. Water allocation from the Columbia River came up several times. Another participant said, “Diverse water users all think they are the most important use.”

Several participants said it was hard to measure and account for all water uses, and one participant mentioned the challenge of illegal water use. This accounting is complicated by the multiple times water is used. Some participants suggested that truly accounting for the full cost of water would lead to more equitable allocation of that water.

For the future, participants talked about creating a surplus in the water budget, and eliminating over-allocations—or even just recognizing that history of overallocation.

Human Impacts

All communities highlighted the environmental impacts of development and built infrastructure on natural infrastructure. “We need to move away from a mindset that growth is essential to well-being. Instead we need to understand that our civilization is dependent on earth’s resources and that our use of those resources must be limited to what is sustainable,” noted a survey respondent.

A number of survey respondents raised concerns with the statement in the Vision, “our infrastructure has served us well.” As one survey respondent put it, this statement is “too simplistic, not recognizing that the 19th and 20th century infrastructure is a great deal of the problem for the environment as it was often created with little regard for or knowledge of its effect on the natural world.” Another noted, “I believe our state is over-committed to its old infrastructure. Outdated dams and grandfathered irrigation systems are damaging our watersheds and placing native species at risk.”

On the coast, concerns were raised about old levees and tide gates that may trap fish. In the Willamette Valley, concerns about balancing hydropower and environmental needs were highlighted. Dredging was raised as a concern for instream habitat along the coast as well as potential impacts of ditch cleaning.

Some survey responses highlighted specific issues related to dams and recommended a stronger focus on dam removal for fish habitat. “Dams that impede fish passage should be eliminated, where possible, to ensure high water quality that free-flowing rivers have,” said one survey respondent. Another said, “Without consideration of dam removal and watershed-wide restoration efforts that consider ideal fluvial geomorphic conditions, we will continue to have fragmented and less healthy systems that neither serve people nor wildlife as fully as functioning, intact systems.” Others noted the need to balance improving needed built infrastructure with removing outdated, un-needed infrastructure, returning to more natural systems.

Legacy Natural Resource Impacts

A historic and current facet of Oregon’s economic identity is natural resources (i.e. forestry, agriculture, fisheries, etc.). The state’s natural resources economy has provided

generations of Oregonians with high quality jobs, upward socioeconomic mobility, a sense of community and culture, and a vibrant and diverse market of goods to buy and sell. Many communities, however, pointed out that while this sector of Oregon's economy is important, acknowledging the negative ecological impacts is equally critical.

Several participants noted that land use practices, like industrial forestry and agriculture, have historically degraded water quality. Several communities noted that historic agricultural and forest practices (removing trees from streams, farming to the stream's edge) have caused soil and chemical runoff into rivers, streams, and lakes. These legacy practices have had lasting impacts on water, fish, and wildlife.

Similarly, invasive species pose a threat to water and aquatic habitat quality.

Equity

A number of community conversations discussed fairness, equity, and paying attention to who is most impacted by water challenges. Specifically, the current draft of the Vision does not explicitly address equity as much as it should, according to several participants.

Engagement and Inclusion

Participants talked about procedural justice—ensuring people impacted by insufficient access to clean, affordable, abundant water are actively involved in decisions related to water. Some of the specifically impacted communities that were identified during the community conversations included: tribes and indigenous leaders (both federally and not-federally recognized tribes); people without access to political and economic power; small farms; small towns; marginalized communities; communities of color and minority communities; low-income communities; homeless/houseless: fish and wildlife; rural towns; coastal communities; and linguistically isolated communities. Specific to the community conversations, participants noted that some communities were missing. Several participants pointed to equity across rural and urban communities, and others point to equity across people, fish, and wildlife. The word "diversity" only appeared in one conversation, but the concept was embedded in a lot of the comments on "inclusion."

Participants called for both more attention to and engagement with rural and urban communities. For example, one survey respondent articulated that rural communities are "left to fend for themselves…and are seen as 'problem areas,'" that the benefit rural communities provide statewide are not given due consideration, and that "natural resources are the ultimate wealth." Similarly, another survey respondent said the Vision process needs to better engage urban communities—especially leaders working on community engagement, water conservation, and smaller-scale, or distributed infrastructure projects.

With inclusivity, many participants also called simply for equity in access to high quality and abundant water in the Vision. That there needs to be a focus on meeting the needs of

marginalized communities (e.g., compassionate solutions to homelessness and water quality impacts). Some people framed this as equity, social justice, or environmental justice.

The need for more certainty when it came to how equity might be expected to show up in water decisions was raised. Beyond calling for equity, the Vision could be more specific in *how* to be inclusive and what the expectations for public engagement should be.

Participants in some conversations raised the issue of environmental justice. Designing a process that is fully inclusive recognizes the state's historical choices that may have excluded individuals and ensures all individual's basic needs are met in the process.

Funding and Infrastructure Costs

There are inequities built into how communities currently value and pay for water. One participant noted the importance of water affordability as a more important benchmark than economy overall. Another held a vision where water resources and their use are equitably distributed, and the benefits and costs of using water are shared among all. Participants also felt it important that the state allocate its own resources to advance equity.

Water affordability for low income and rural families came up a few times in the Bend and Albany conversations (e.g., high cost of wastewater treatment, high cost of sewer hook-ups, unaffordable new septic systems, and the future cost of water).

Across the state, it was recognized that many communities may not be able to afford infrastructure and other improvements, and as a result, face water insecurity. Participants highlighted the need for funding to address inequities regarding the impacts of rate increases. Some conversations also highlighted the importance of the "bottom-line cost" being affordable for impacted communities. Affordable water rates were discussed at most meetings, as well as the broader need to address water resources and human well-being in an equitable fashion. As one survey respondent noted, disproportionately impacted communities "… need to have water infrastructure improved first," recognizing these systems may be in most immediate need of replacement.

Health and Water Quality

Inequitable distribution of quantity and quality of resources between groups has been a source of perpetual health disparities. In Medford, "Fulfilling the rights to all citizens for clean, safe, reliable drinking water" was seen as a vision for success. Rural, low income, communities of color, and immigrant communities are often the last to be included, the first to feel the impacts of degraded water, and are more likely to experience water insecurity.

Equitable distribution of safe drinking water for everyone, not just those who can afford it, should be a cornerstone of the Water Vision. "Those with the least clean water are given

priority" in order to resolve and attempt to correct past inequities. It was flagged that farmworkers having access to clean well water, was a critical piece to ensuring that clean water is a basic human need made available to all.

Climate Justice

Climate change will increase the risk of drought, floods, and damage from catastrophic wildfire. Marginalized communities are experiencing some of the largest threats from these changes, and are not present when water management decisions are being made. Suggestions included a "vulnerability analysis" to identify the specific communities most at risk, and/or who might be impacted the most by water and water management.

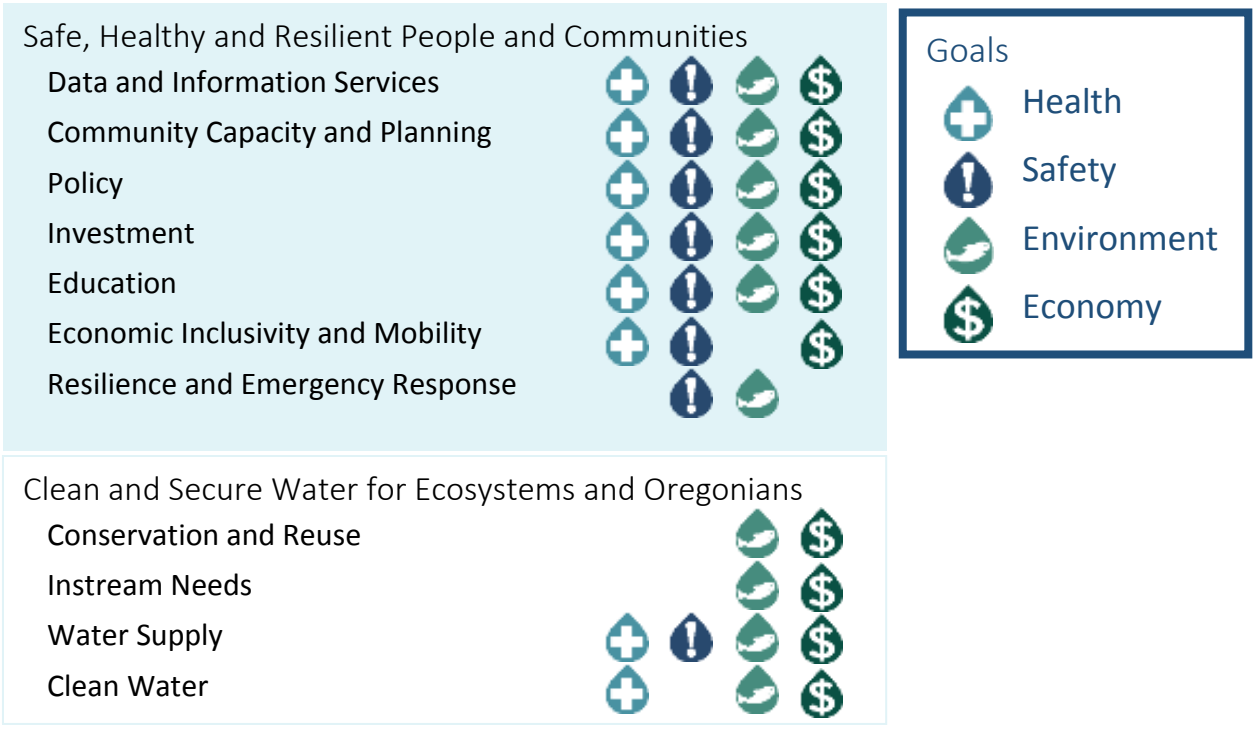
Water Vision Goals and Feedback

Vision Goals

The 100-Year Water Vision is organized into 4 integrated goals: Health, Safety, Environment, and Economy. These goals establish the framework within which to characterize the desired condition of water. The process of implementing these goals, and the feedback received from the public, acknowledges that no single goal can be fully realized independent of the others, and the 100-Year Water Vision will continue to be viewed through a holistic lens that considers all goals equitably.

Based on the sheer volume of feedback from the 8 community conversation and web survey, feedback directly tied to the specific language of the 4 goals is not reflected in this document, and can be found in the community conversation meeting summaries, the web survey summary, and the updated Vision document at www.OregonWaterVision.org.

Below are summaries of the challenges and needs for successful water planning that were discussed in the community conversations and the web survey. They are organized into two categories. Virtually every theme that was covered was grounded in multiple Vision goals, further supporting the need for goal integrations and holistic planning.



Safe, Healthy, and Resilient People and Communities

Data and Information Services

The importance of water data was a common theme throughout all of the community conversations. Communities need the best available science to adequately plan and innovate for future challenges. Furthermore, communities identified specific data and process gaps that hinder statewide collaboration.

Best Available Data

In order to make good management decisions, communities need good data. However, in virtually every community and in the survey responses, quality data were either inaccessible, inaccurate, or outdated. Many communities voiced that their inability to access the best available data drastically hinders the accuracy of water management for people, as well as fish and wildlife, specifically in regard to availability and usage.

In La Grande, gathering data that are legal and defensible was seen as a critical piece to success. More broadly in communities east of the Cascades, a lack of confidence in the current data was prevalent. Those communities also expressed a need to obtain real-time data, and the challenges presented by other infrastructure limitations, such as broadband, in achieving this.

Measurement Infrastructure

For rural communities, the lack of broadband infrastructure seriously hinders their ability to effectively manage water resources. Without broadband, water usage cannot be metered in real-time, which creates issues for adaptive management and targeted investments.

Climate Change

Information around climate change, and uncertainty around current and future projections, pose major hurdles for community water planning. In Tillamook, sea level rise and increased flooding are current threats that are projected to worsen in the future. On the coast, the accurate and updated data projections on where and when land may be inundated with salt water or which buildings are at risk from flooding or tsunamis is critical. As one survey respondent stated, “A need for data on carrying capacities, realistic objectives-driven actions, and sustainability in light of climate change should be the first priority so the data can drive problem statements and identify critical priorities.”

Precipitation models were also mentioned as large data gaps that need filling in order to effectively plan. Precipitation data were specifically mentioned in the Bend and Albany conversations.

Inventory

In the La Grande and virtual conversations, as well as in the survey, a “Comprehensive database, with interagency coordination and responsibility” was raised as a vision of

success. Currently, there is a lack of a reliable, self-updating water inventory that is available to local communities. Many communities do not know how much water they have, how much they are using, or the state of their built and natural infrastructure. A "water database" could help move the state toward that vision of success.

Surface Flow and Groundwater

In some communities, the lack of data on hydrologic systems, both instream and groundwater, were flagged as hurdles to water planning. These general challenges were mentioned by several survey respondents as well. Groundwater availability, usage, and distribution, were of primary concern in the eastern portions of the state, as well as the growing need for site specific data sets. In Gresham, instream data needs for fish and wildlife were discussed as a priority.

Ocean

In Tillamook, the lack of understanding on how changing ocean conditions impact the coastal communities and industries is an identified data gap.

Water Quality

In Tillamook and Albany, there were mounting concerns around whether or not drinking water is adequately tested for emerging contaminants in watersheds and in private wells. Furthermore, communities raised issues around the lack of instream temperature data. A survey respondent also mentioned that "Without clear scientific understanding of who, what, and where waters of the state receive negative impacts that compromise the quality of water, Oregon's Health, Environment, and Safety goals will always be at risk."

Water Availability, Use and Storage

There is little information about how much water is available and how much is being used. What are the growing demands for water? Will increased population growth result in increased agricultural production? Is there enough water for that? Where is it and when? Is there enough water to balance the needs of tourism, fish habitat, municipalities, agriculture, and developing markets?

The lack of availability, use, and storage data, was a commonly raised theme in all of our community conversations, and in several survey responses. A participant in Tillamook suggested that detailed, and up-to-date water budgets for all basins would be a sign of successful visioning.

Watershed Conditions

A more holistic use of data will help in assessing the overall health of watersheds. This was the sentiment at the Tillamook conversation, where the impacts of timber harvest has altered the conditions of local watersheds. The importance of maximizing healthy watershed conditions was also mentioned by a survey respondent.

Monitoring, Testing, Modeling, and Sharing

Communities identified coordinated, standardized and adequate water data as essential. This requires monitoring, testing, and modeling. Disjointed water metering, of both streamflow and groundwater as well as water use, was a common theme discussed in almost every community, and by several survey respondents. A common monitoring framework, evenly distributed across the state with quality assurance, is a step in the right direction to ensuring communities have the most up-to-date water data. Furthermore, modeling for future events, such as flooding or water shortages, is a critical aspect for creating resilient communities. Adequate testing and quality data for drinking water, primarily in smaller communities, was flagged as a major gap in both Bend and Tillamook.

With a comprehensive data monitoring and testing methodology, the next step is to create a cohesive data sharing system. In almost every community, publically available and trusted data for everyone, was a shared need. Uniform, statewide data will ultimately require building trust between the state and stakeholders. East of the Cascades, there were conflicting views on water rights data. Some communities professed the need for data privacy regarding individual water use, while others advocated for transparency of water right allotments, accompanied by usage data. For that reason, relationship building among water users, owners, advocates and the state should be a priority in the Vision.

Community Capacity and Planning

Capacity

Part of being in community is the capacity to act as a community. One participant in Ontario articulated success as when "Communities are able to sustain ourselves economically, socially, and ecologically with innovative strategies that are supported with funding through state, federal, and local funds." Several participants also pointed to a future where communities have what they need to make better water decisions and investments going forward.

Participants also identified some challenges limiting community capacity. Leadership turnover and political instability make it difficult to form the continuity needed to take on big challenges like water. Turnover (both elected officials and staff) can have an especially big impact in small communities. Participants also talked about funding capacity building (e.g., supporting small communities to accesses the resources they need, or conduct education and outreach).

Often, people pointed to the specific needs of small communities—especially cities that have small populations, but large actual/potential effects on water quality and quantity. Smaller communities may not have the staff to do more than deal with day-to-day issues. Oregon may need to provide technical assistance to facilitate long-range planning activities, and revision of utility rate structures. Improved access to grant funding, was also suggested as a way to help small communities prepare for the future.

Engagement

There is no community, if there is no "we," said one participant. Nearly every community conversation articulated a vision where the community is involved, contributes, and stays engaged over time. That includes the community working together for its future. Participants also talked about the need for individuals taking personal responsibility for broader community health—and that this responsibility would become a community norm.

Participants were asked how to bring a community together to accomplish the Water Vision. And when asked what that success looks like, people listed: hundreds of people engaged; people who have been missing are included; stronger relationships within the community; and stronger relationships in regions across communities. As an example, this could look like teams working with all parties in the same direction with relationships built in trust and what was best for the community. A survey respondent wanted to see active inclusion of those who use and manage forests and ecosystems.

One participant talked about building a "reservoir of social capital" that was built on shared understanding and relationships, and could be used to strategically craft collaborative solutions. Another called for more investment in "ground-up processes." For example, county planners may not often get involved in water planning because that role is viewed as the state's responsibility. One survey respondent wanted the Vision to call out the benefits of collaboration.

There were some specific ideas about how to engage citizen scientists to collect, analyze, and help innovate around water including empowering communities to collect information about water.

A participant noted improved engagement and collaboration would lead to a public that feels good and supports decisions. Another participant said, "When farmers, foresters, conservationists, and ecologists work together—I think that's when really brilliant policy change happens."

Many participants, both in person and in the survey, expressed the need for thorough community engagement and empowerment. Frequent and meaningful communication and outreach with communities was cited as critical for ensuring local awareness of water related challenges and ownership of solutions. Community messaging around water issues, locally and across the state, can help create understanding and compassion for everyone's water challenges, and pave the way for difficult and necessary conversations between stakeholders with competing interests. One participant from Tillamook observed "that a respectful but honest and informed perspective" is a valuable perspective, which further reinforces the need to foster awareness and engagement on water issues across the state.

Planning and partnerships

The need for inclusive and transparent regional planning was highlighted in all conversations. Many discussions highlighted the need for more integrated place-based

planning approaches. At the same time, challenges were recognized in place-based planning efforts, which included lack of data and community capacity for planning, and the need for strong partnerships and facilitation expertise.

Participants noted that climate resilience needs to be taken into consideration for place-based planning. Some were concerned that plans were based too much on past and current conditions, rather than anticipation of future, changing conditions. Moving toward resiliency in the face of changing climate and water conditions is further challenged by changing leadership in election cycles and the difficulty of keeping elected officials engaged at the right level.

A number of community conversations highlighted the need to better integrate local land use and water planning. A number of examples were raised, including new residential developments and policies that encourage "infilling" in urban areas, and the question was asked—was water taken into consideration in these decisions?

Policy

Participants listed a number of policy challenges related to water. While the specifics varied, every community conversation highlighted a need to modernize laws and policies concerning water management and the protection of water-dependent resources from drought, flooding, and other water related hazards. Participants were interested in holistic and integrated approaches to water management that looked at systems, rather than individuals. This was true for both instream and out-of-stream needs. It was also the case for both ground and surface water, with many communities suggesting stronger integration of ground and surface water management. Participants also highlighted the need for consistent water policies at the state and local levels.

The need for regional approaches and flexibility were highlighted in every community and took a variety of forms. This came up in conversations about water quality, water supply, and water related hazards. Good governance was highlighted as required for any successful regional approach. Some participants were concerned that communities are competing for water rather than working together at a regional level, and with neighboring states, to protect and share water resources.

Along with regional approaches, the importance of considering both human and environmental impacts from regulatory changes was raised. "Regulatory changes must also consider the social impacts they will have on communities they impact, not only environmental… however we also must recognize that our social well-being is ultimately tied to the environment… we are a part of the ecosystem we rely on to support us," noted one survey respondent.

Concern was raised that if Oregonians don't understand the overall value of water, it will be more difficult to regulate and build cohesive water management approaches. As one

participant highlighted, success is “Oregon’s policies, systems, funding, and water law support water supply and management that leads to resilient ecological and human communities.”

Flood Management

There are some policy challenges to increasing safety. The regulatory environment does not think much about how to build and maintain levees, or how to harden buildings and built infrastructure for seismic and flood impacts.

For instream restoration, some of the “no rise” regulations at the local level (and driven by Federal Emergency Management Agency (FEMA) requirements), make it difficult to do floodplain restoration. There were also safety concerns related to wastewater reuse.

Along the coast, participants highlighted the importance of the connection to the National Flood Insurance Program and FEMA map updates.

Enforcement and Litigation

Some community participants noted that the Vision does not address legal, regulatory, or statutory elements of water use and protection of water quality. Some participants wanted increased enforcement of existing water quality laws and water rights. Other participants raised concerns that ongoing litigation takes away funding from on-the-ground water projects. Some participants felt that local governments needed more ability to adopt and enforce policies and goals related to water. Enforcement of tribal treaty rights was also raised.

Participants in a few communities wanted Oregon to consider a different judicial system for water regulation with specialized judges and accelerated decisions.

As in other areas of policy, many participants highlighted a preference for local control and flexibility to allow water solutions that make sense locally, and provide flexibility to both move and manage water strategically with protection from lawsuits.

Land Use and Building Codes

“Land management and development is a central component to determining whether our state’s water goals can be achieved,” said a survey participant. “Oregon has always been a national leader in planning, and we can continue that trend by encouraging not only long-term visioning, but clear planning guidelines that acknowledge the interconnectedness of our water and land uses.”

Participants in all communities recognized the strong connection between water use and quality and Oregon’s land use laws. Many highlighted how the current land use laws have benefitted the state in terms of water quality. However, some participants felt there was disconnect between the state’s land use laws and water planning, particularly in places with population growth and increased development. This applied to density in large communities and concerns over wells and septic systems in rural areas. Generally,

participants wanted a stronger, more formal recognition of limited water availability in land use planning. Participants also recognized that land uses are changing—an example is conversion from agriculture—that will inherently change the volume and timing of water use.

"Historically, we have built our cities next to our water bodies, which makes sense. But as we increase density and the pressure to provide for affordable housing, we may need to change our approach," noted a survey respondent. "We need our land use laws to incentivize growth in such a way to provide source water protection, which is not a small political feat."

Some participants had questions about the connections between building codes and water—could the tie be stronger? As one participant said, "a stronger connection between the Water Resources Department and the Department of Land Conservation and Development—is there an opportunity to regulate resources together?"

Quality and Habitat

Participants highlighted policies that could be better utilized to help address water quality and habitat, including: the Oregon Forest Practices Act (OFPA); water quality regulations regarding contaminants; sediment and temperature; the Endangered Species Act; and Clean Water Act. As one participant noted, "The Oregon Water Vision needs to include reforms to the Oregon Forest Practices Act to increase stream buffers (both fish bearing and non-fish bearing) to protect against clearcutting and aerial pesticide spray." Another said, "Truly sustainable forest practices must be adopted… mature native forest habitats desperately need protection, and forestlands need restoration, to provide clean, cool water in the face of a warming climate, growing demands, and future droughts."

At the same time, some participants also raised questions about the amount of regulatory requirements for restoration projects, and wanted to encourage regulatory flexibility around improvements to fish and wildlife habitat, including beaver reintroduction and management.

General Regulation

In general, participants in each community referenced a feeling that statutes are outdated and may hinder progress. Others felt that regulations may be adequate, but staffing to enforce regulations is not. And, a few participants raised concerns about high costs of regulation for businesses and for communities, and unrealistic regulations.

Some participants were concerned that current regulations are a disincentive to developing new and flexible approaches for water infrastructure improvements. Examples were highlighted around the state where communities wanted to use natural infrastructure solutions for water quality improvements, but faced regulatory hurdles to implementation at either the state or federal level. There was an interest in re-writing regulations to be outcome-based instead of process-oriented.

Some participants were clear that they did not want to make changes to the state's water right laws, recognizing they provide certainty for water users. Others wanted to consider updating prior appropriation and other components of the state's water right laws. Recommendations ranged from small updates to improve flexibility to complete overhauls of the state's system. "I'm hopeful the Water Vision work will address Oregon's prior appropriation water rights system, including the structured inequity, incentive for overuse and beneficial use components and be able to take a bigger picture view that diverse stakeholders can be a part of and use to move forward in a more productive way."

Conservation, Supply, and Re-Use

Some participants in eastern Oregon communities referenced the challenge of the "use it or lose it" nature of state water law, and indicated that it made it more difficult to encourage conservation of the resource. Participants recognized the need for incentives to shift management. Others wanted to ensure that conservation paid for with public dollars required instream transfer of water rights.

Examples of regional approaches included flexibility around conservation, transfers between irrigation districts, better use of long-term leases, instream permitting, and developing water marketing frameworks and strategies. At the same time, some participants highlighted concerns about outside influence in market approaches like what was seen in Washington State's market program. They wanted to ensure water remained a public resource and wasn't privatized. Some participants felt there was a disconnect between local conditions and statewide policies, and others suggested that any changes need to include certainty.

Some participants also highlighted that water rights seem to focus on individuals rather than looking at the needs of the entire system. One participant noted, "We need flexibility to use storage water if there is community support, for example the ability to release and protect instream flow for fish and other multiple uses." In taking a systems approach, some participants highlighted the need to look closely at dams and other means of storage as a solution rather than an obstacle to be addressed.

Communities in eastern Oregon in particular highlighted the need to address abuses in water use, increased monitoring and enforcement, which requires increased staffing in the Water Resources Department.

Some participants wanted regulations to be more flexible to support water reuse in a way that makes sense for water use today. They noted some types of water reuse are illegal, while others are difficult to permit. "The state needs to modernize the existing codes and policies for water, water reuse, nutrient recovery and disposal," said one survey respondent.

Looking to the future, some participants highlighted the need to address water use for hemp and other, future 'boom and bust' crops.

Investment

Every community conversation highlighted funding and investment approaches as both a challenge and an opportunity. Communities discussed the need for long-term funding approaches, but also recognized that investments in infrastructure, planning, and data need to occur now. “Oregonians cannot continue to under-invest in vital infrastructure. We must significantly raise the level of investment in this critically important area,” one survey participant noted. Some participants wanted assurances that the state was going to seriously commit to large-scale, long-term funding for Oregon’s water future. Many conversations and the survey responses raised the need for a dedicated funding source for water investments.

Incentives for conservation were also a priority in many communities. There is a “lack of motivation or incentives for water conservation practices (urban, agricultural, and industrial) before we get to a crisis,” said one participant.

As noted in the subsections below, investments in new technology, agriculture, community infrastructure, and ecosystems were discussed. At the same time, there was strong emphasis on investments in community capacity, data gathering, processing and translating, community engagement, and monitoring. Participants highlighted the need for agencies to be funded to do water work, but also for agencies to more closely coordinate around investments in built and natural water infrastructure. Challenges were identified around funding processes that could be more streamlined.

Equity was generally raised in the context of funding and investments. This is highlighted as an ongoing need for any funding conversations moving forward.

Finally, in discussions both at community meetings and in survey responses, it was noted that funding was not necessarily the only solution. Investing in infrastructure, “Will not necessarily alleviate overbuilding, overconsumption, overpopulation, or farm use. We need a multi-pronged, comprehensive and planned approach.”

Investments in Capacity and Communities

Across every community conversation, there was a recognition that many communities do not currently have the capacity to engage the public, or to design, implement, or monitor projects. The needs were highlighted in a variety of ways. These included staff and resources to make informed, long-term water infrastructure decisions and a recognition that rural communities are often not staffed at the same level as urban communities. In rural areas, communities raised concern about even having staffing in place to keep up with required mandates around water quality and supply, as well as having staff available to apply for grants or loans.

Some communities highlighted successes when funding was available to expand the capacity of community-based groups to work together. Many communities identified the

need for dedicated, flexible funding to help stakeholders engage meaningfully in water management decisions, to support work around water, and to engage their communities, including planning and convening. From a participant in Albany, “We need more flexible funding that provides the capacity for stakeholders to engage in planning and collaborate.”

It was also recognized that small communities generally struggle with infrastructure costs per capita, and may lack personnel to assess and upgrade systems.

Value, Cost, and Finance

Who pays? How do communities and the state develop stable funding sources? How do communities plan and prioritize investments? These questions were raised in every community. Upgrades and maintenance to water systems, both built and natural, can be expensive and are often not valued as necessary by communities. Costs of modernizing irrigation or septic systems, installing fish ladders, or restoring watersheds, “…requires long term stable funding sources.” Communities, large and small, are struggling to both identify revenue streams to fund infrastructure projects, and prioritize investments once the money is obtained. Uncertainty around how old infrastructure is, and how much it will cost to repair, is also a constant strain felt by communities.

During conversations on the western side of the Cascades, challenges of managing small community water systems arose. Discussions were primarily focused on issues with maintaining and investing in infrastructure in small communities that may lack the capacity, funding support, and integrated systems. “Small communities with fewer people have the same amount of old infrastructure to maintain” with a smaller rate base to draw from. This a major challenge now and in the future as costs increase and population dynamics continue to fluctuate.

Data Funding

In addition to emphasizing the need for data generally, all communities recognized the importance of data as an area of investment. Data investment needs ranged from testing, better understanding “physical systems” in all basins, monitoring and general data collection, processing, and translation. Participants also called out specific data funding needs, like stream gages, wells, and pesticide monitoring. Participants highlighted the need for funding for data related to instream needs and prioritizing restoration projects and ecosystem needs.

Agency Funding

Nearly every community conversation included discussion of funding for state agencies. The needs ranged from funding for agencies to manage water and enforce water quality and quantity laws, to funding to support the Integrated Water Resources Strategy and carry out current agency missions. Participants highlighted the need to increase funding for the Governor’s Natural Resources Office. Participants also identified the need to have staff

on hand to analyze and share existing and new data. Communities expressed interest in increased funding resulting in increased coordination across agencies.

Federal, State, and Local Funding Coordination and Limited Funding

In nearly every community, participants highlighted the need for increased coordination around state and federal funding. In both the survey results and community meetings, participants highlighted the importance of strong connections with federal agencies and Oregon's congressional delegation to ensure the most efficient use of funding at all levels. Funding examples ranged from a state-wide bond to match federal funding, to first capitalizing on the funding already available, and ensure funding is aligned and strategic. Communities also discussed local rate increases as a potential funding source along with state and federal funding increases.

Funding Process

Where funding is available, participants noted that applications can take a long time to be processed, and recommended funders consider streamlining funding processes at both the state and federal levels. For small or consistent projects, a few participants noted it would be nice to have a "fast money" approach. At the same time, other participants noted there needs to be funding accountability. One participant suggested, "Don't give funds to water projects without justification and accountability."

In Medford, there was a lack of clarity on funding and resource availability to communities. Whether it be resources for expanding community capacity or understanding what funding options are available and attainable, it is important for communities to be empowered to leverage external financing opportunities. Furthermore, leveraging external funding is critical as communities continue to tackle the issue of aging infrastructure.

Long Term Investment Approach

Given the long-term nature of the Vision, some participants recognized that a commitment to long-term funding was needed. The ability to provide seed funding for future projects was identified along with a long-term commitment to funding and understanding water issues.

Project Implementation

Participants at each conversation explicitly identified project funding as a key need. Whether it was a general statement like "funding for projects" or more specific needs like irrigation efficiency, reducing invasive species, or bio-filters, project funding is top-of-mind across Oregon. Funding for seismic resiliency was a concern in western Oregon, while investments in irrigation were raised in central and eastern Oregon.

Education: Creating the Culture of Water Stewardship

An informed, supportive, and empowered population is central to any community-based solution. This was voiced by all the communities. For a community to be invested in water, they must first be aware and understanding of water issues that they face, and that other

communities face. Community-specific and accessible tools, and resources for conservation and efficiency strategies must be available to private citizens, municipalities, land owners, and irrigators in order to empower and inspire a public that values and supports investments in water projects. Furthermore, participants also highlighted the importance of providing the necessary environmental education to younger generations in K-12 schools and technical education in community colleges and trade schools to ensure a qualified water workforce.

Public Awareness and Understanding

In order for communities to invest in a water problem, they have to know about the problem. One issue that was raised in every community and by several respondents in the survey, was the fact that the general public is largely unaware of local water issues. Public awareness is often not focused on an issue until it becomes a crisis. One participant stated, "People should know that others are in crisis now," and achieving broader understanding of impending demand issues was cited as large challenge. Regionally-specific public education, aimed at informing people on the current status of their water as well as solutions and investment needs was suggested as a missing piece of the Water Vision.

Residential Conservation and Industry Efficiency

To increase public awareness and understanding, the need for public education around specific conservation measures and water stewardship was broached in almost every community. Furthermore, the need to prioritize public education around "conservation as a way of life" and the "consequences of water insecurity" in residential areas was also discussed. Information and resources around drought-resistant landscaping, and efficient water usage were specifically called out in some conversations.

Similar discussions also highlighted solutions on the industry side. In Bend and Medford, participants discussed the need for education and engagement resources for landowners, water rights holders, and irrigators that are looking to enhance water efficiency and conservation improvements. Information and resources around reduced pesticide usage next to waterways or enhancing riparian buffer zones were referenced as specific areas for improvement.

Formal Educational Curriculum and Water Workforce Solutions

At nearly all of the community conversations, the lack of comprehensive public education was mentioned, and the need for formal water curriculum in public schools was presented as a solution. The expansion of public education around watershed, water infrastructure, and environmental sciences in K-12 schools and at community colleges was specifically called out as a vision of success. These sentiments were also voiced by several survey participants.

In some communities, the lack of a trained water workforce was flagged as a current and future challenge. A shortage of wastewater treatment plant operators and water quality

technicians has emerged as a challenge in several communities. Solutions that leverage a qualified, well paid workforce and water investments were cited as highly favorable.

Managing water requires people who are excited and skilled. Several participants said how important it was to engage younger generations, so they are interested and invested in current and future water plans.

When thinking about recruiting a new generation of water leaders and an infrastructure workforce, people asked who would do the training, and who will provide the technical assistance to communities. Specific water sectors who called for workforce development include drinking and wastewater utilities (especially for certified operators), and forest restoration.

A Supportive and Water Literate Population

In addition to an engaged community, a supportive and water literate population was mentioned in every community. The lack of location-specific data in some areas, or lack of understanding of water issues by the general public and local decision makers was a challenge raised almost everywhere. Obtaining water literacy among private citizens and local decision makers was flagged by several communities and a few survey respondents, as missing from the Vision.

Furthermore, community buy-in was also discussed as a challenge that inhibits continuous water investments. Long-term, broad-based public support for water projects and investments was widely discussed as a marker of success for the visioning process. In order to adequately fund infrastructure projects, local buy-in from an informed tax-base is critical. Similar ideas were raised around attaining buy-in from ratepayers as well.

Economic Inclusiveness and Mobility

The economy is important to people, but not just in terms of money earned. A lot of comments provided by participants and survey respondents pointed to economic themes around sustainability, long-term views, water as a critical element to provide food and ecosystem needs, keeping water affordable, and providing an atmosphere that allows the different sectors of Oregon's economy to thrive.

Affordability

Water must be affordable for ratepayers, for farmers, and to meet people's basic needs. For several survey respondents, affordability is a function of community planning, population dynamics, how water infrastructure is funded/financed, and the technology used to treat/transport/store water—all of which affects the percent of household income spent on water, an indicator for affordability. A survey respondent pointed to the costs of regulations as a driver of agricultural water affordability. Participants felt it was important to make sure "affordable" or "economic accessibility" is clearly included in the Vision.

Ideally, people would know the difference between the cost to deliver a gallon of water to their home or business vs. what they pay. And over time, the cost of water should also adequately reflect the current and future costs of providing clean and healthy water.

Costs

Several participants discussed costs and revenue for water. There was general interest in using money wisely, and being clear about who pays for the water needed for economic development.

Several participants also pointed out the conundrum that if water utilities and irrigation districts become really efficient and reduce overall water use, they may actually reduce their revenue as well.

Agriculture

Several participants pointed to the essential role of water in supporting a vibrant agricultural economy, and the importance of agriculture to rural Oregon, Oregon statewide, and the world—both in terms of access to food and economic value. For several survey respondents, this essential role needed to be made explicit in the Vision generally and in the "economy" goal specifically. In most community conversations, participants wanted agriculture-based communities to be sustainable and viable over time. One participant in Ontario noted, "Agriculture-based communities are supported by water. Without it, everything we do stops." Another participant articulated a need to support farming economy where small local farms are healthy, and young people have easy access to starting/joining a viable farm business. One survey respondent also pointed to the need for reliable water, which included protecting existing water rights. Furthermore, as cities have grown, agricultural land has changed hands, and there are non-farming landowners who hold water rights.

There was also recognition that future changes (e.g., climate change, increasing number of hobby farms) could change the economic structure of domestic and farm water use (e.g., how crops are irrigated, what is grown). For example, several participants in La Grande and survey respondents noted that crops grown might shift from water-intensive crops (e.g., grass seed) to less water-intensive crops (e.g., dry land wheat). As farming conditions change, there is a need for new approaches (e.g., precision agriculture, irrigation districts working together to increase efficiency, using fewer or no pesticide or herbicide, etc.) to keep farms viable. Participants also articulated a vision of irrigation modernization—where a robust agricultural economy is built on efficient irrigation.

A few participants pointed to the unique water issues (water use and runoff) related to the growth in hemp production.

Several of the community conversations highlighted the important role (and tension) of farms in growing food. Several participants pointed to how farms, including livestock, feed

the local area and the world, and others noted that a lot of products are exported, but the local community is impacted in terms of water quality and supply.

Ecosystem Services

A healthy environment underpins a healthy economy. Several participants were interested in better understanding the economic and other values provided by fish and ecosystems—especially for setting priorities and identifying funding opportunities. In particular, how might costs and benefits of healthy watersheds be quantified, so those values can be considered properly? One participant noted that economic development is tied to functioning natural systems, and another participant articulated a vision of a healthy stewardship economy.

Energy

There is a nexus between energy and water. A number of participants mentioned an interest in expanding in-conduit hydropower opportunities (e.g., in irrigation pipes) or other renewable energy projects on farms and ranches. The expansion of new technology, and changing patterns of energy demand could continue to expand the opportunity to link water conveyance and energy production. But there are still barriers. The wholesale power prices paid for renewable projects are still low, and there are tensions between micro-scale energy production and the larger industrial scale projects.

Several participants and survey respondents talked about the existing hydropower system—both preserving the economic contribution the system provides, and recognizing there is also a challenge that instream hydropower continues to limit fish passage and degrade habitat.

Eastern Oregon communities recognized the need to look at the energy-water nexus. This was expressed in the need to open up small-scale hydropower markets (in-conduit hydropower). Others highlighted the need to be more connected between clean energy policy and water policy.

Recreation and Tourism

Outdoor and water-related recreation are big business in Oregon. Recreation is also linked closely to people's cultural and aesthetic connection to water. Whether fishing or boating, time on the water leads to lasting memories and feeling connected to water, according to several survey respondents. Several participants saw lack of access to recreational water use as a challenge. This includes infrastructure to support access, and programs supporting sustainable tourism across Oregon (e.g., the Coast, southern Oregon, and eastern Oregon). It was noted that in addition to other barriers, invasive species are a threat to recreation access.

Tourism and growing recreation has also had economic impacts on communities. For example, growing tourism on the coast strains water infrastructure, and might change job structure from higher-paying timber jobs to lower-paying service jobs.

Participants felt that the draft Vision is missing express references to recreation. Generally, the recreational value of water needs consideration.

Invasive species are a threat to recreation access.

Resiliency

Ultimately, two general themes emerged around economic growth: A) there should be support for new businesses and collaboration that create water innovations locally, and B) Economic growth needs to be planned and sustainable, and isn't inherently good all by itself. Measures of economic growth need to account for the values of watershed health, and anticipated changes in climate, economic structure, and population.

Several participants framed economic challenges in terms of resiliency—or the ability of economic sectors and communities to persist and sustain. Water is connected to local economic vitality. Rural economies, healthy agricultural communities, and resilient businesses, were all themes raised by participants. One participant noted that, "The economy relies on sustainable use, not regulations."

In a resilient future, participants envisioned water being used efficiently, fewer farms are going out of business, and groundwater being managed and protected. Others asked about ways to mitigate the impact of economic disruption. Reducing that economic pressure would allow farmers to shift toward regenerative agriculture, which could include permaculture, and other practices to restore water quality, quantity, and habitat.

Participants also talked about resilience of communities over the long term—the ability to withstand crisis, and recover quickly (e.g., drought, wildfire, sea level rise, loss of land). Several participants noted the ability of communities, especially rural and farming communities, to thrive out into the future.

In places like Tillamook, Ontario, and La Grande people wanted to see communities holding on to their rural character and keep agriculture as a backbone. And another participant pointed to the importance of engaging young generations of farmers through succession planning.

Communities noted in varying ways that the Water Vision is going to require attention to shared histories, including discriminatory and inequitable housing, health, and environmental policies, so that respect and care can be woven into a resilient fabric of community that can tackle and withstand any challenge.

There were also a number of participants that talked about the long-term resiliency of farm communities. This included a vision that farming is sustainable, productive, and managed in a way that ensure future farmers will be successful. Another participant wanted to ensure generation farms and ranches are still in operation and the small towns near those farms and ranches are still prosperous. Participants in Bend, Ontario, and La Grande mentioned the importance of increasing local food production and food security/supply.

One said, “Food doesn’t come from Safeway!” in reference to being able to feed a growing population in Oregon and globally given patterns of aging farmers, water access, and urbanization.

Transportation

Water bodies are part of the transportation system, so how can access be provided to rivers for commercial shipping and other transportation?

The role of water in transportation is not reflected in the draft Water Vision (e.g., investment in port infrastructure, and keeping rivers open for transportation through actions such as dredging).

Resilience and Emergency Response

Participants and survey respondents focused much of their “safety” comments in the areas of flood and earthquake resilience—the ability to anticipate, respond/recover, and adapt to natural hazards. Some participants also cited wildfire, pollutant spills, and water security/attacks as potential disasters. Participants talked a lot about building resilience and minimizing the impacts of hazards—using both built and natural infrastructure. A survey respondent clarified that safety is preventing loss of life and property, and another articulated that water quality is both a safety and health issue. It was also noted that disasters are hard to predict, so recovery is important to consider.

Flooding

Too much water was discussed as both a challenge—particularly when flooding impacts communities—and an opportunity to restore and protect floodplains and recognize the role of floods in maintaining ecosystem functions. In urban areas with more impervious area, streams can rise suddenly during precipitation events due to stormwater runoff, creating water quality problems. There will be more frequent high-flow events that also create challenges for water quality and impact habitat—both positively and negatively. More severe storms and higher sea levels will create more storm damage to coastal properties.

Participants in every community conversation raised flooding as an issue. Similarly, respondents to the survey and conversation participants—on both the east and west sides of the Cascades—recognized flooding will likely get worse in the future. Several participants talked about the timing of flooding caused by more rain-on-snow events, especially in winter and spring, and a survey respondent talked about the role of farm drain tile in flooding. Another participant spoke about the need for better gaging/monitoring to predict floods (e.g., investing in gaging).

For the future, participants talked about the need to define better roles for managing development in the floodplain and others discussed strategies for storing water on the

landscape. Several survey participants also mentioned ways to discourage rebuilding repetitive loss structures in flood zones and other high risk areas.

In terms of infrastructure investments to improve flood management, participants discussed natural systems (e.g., wetland and riparian restoration) and built infrastructure (e.g., upgrades to existing flood control dams and structures). Others offered that more permeable surfaces could reduce flooding in cities and on roads.

Several conversations talked about modernizing the levee systems. This includes changes in policy to allow repair, removal, and raising of levees. Several participants asked which levees should be raised and which should be removed. In some communities, there is a levee that fails every 5-10 years and does not meet fish passage requirements. For the future, there would be proactive management of levees, and the levees and tidegates that need to be repaired or removed would have that work completed.

Some participants noted that the Vision does not get specific enough about flooding in general, and flooding in eastern Oregon specifically.

Wildfire

Wildfire risks need to be added to the articulation of "safety," according to some participants. There needs to be enough water to support firefighting, and fire itself could destroy water infrastructure (e.g., plastic water pipes).

Preparedness

A number of community conversations raised the importance of being prepared for an emergency, especially an earthquake. Participants talked both about the ability to be self-reliant for some time, and creating mutual aid agreements for neighboring communities to support each other. Another survey respondent stressed the need for communities to coordinate approaches to resiliency and recovery.

A need was expressed for emergency water supplies following a Cascadia earthquake event (e.g., for schools and hospitals) via secondary water sources (e.g., backup source or interties with other community water systems).

A lot of Oregon's water infrastructure is not built to current seismic standards (e.g., dams). "What does the state or federal government plan to do to help with improving safety infrastructure?" asked one participant. Another was clear they wanted all high-hazard dams to be earthquake resilient or removed.

Resilience

Resilient infrastructure, both built and natural, was cited as a need in every community. From a lack of redundant water supplies and systems to the increasing need for climate resiliency, infrastructure that can withstand change and uncertainty is critical. Watershed resiliency in the face of wildfire and seismic resiliency for built infrastructure, like dams and drinking water systems, are specific challenges that communities face today and will

undoubtedly face in the future. A participant in Medford described a vision of success as "A holistic approach to creating climate resilient built and natural water resources to ensure clean water for communities and ecosystems".

Clean and Secure Water for Ecosystems and Oregonians

Doing More with Limited Water Resources

A large number of community conversation participants and survey respondents talked about their concerns and hopes for Oregon's water supply. Those challenges and opportunities were framed in terms of making efficient use of available water before undertaking major infrastructure investments.

How water is used stems from how it is valued—for cities, fish, irrigation, electricity, or the environment. Participants asked if there were ways to increase water supplies (e.g., capturing more of the water from springs), increase efficiency (e.g., irrigation modernization), or reduce the amount of water used. Water use is also tied to whether it is viewed as a fixed resources, a renewable resource where all water is reused, or a consumable resource – when water is used, it is gone.

Several participants noted the challenge of managing water supply locally when some users are outside the watershed, and others wanted to limit/disincentivize transfer of local water supplies outside of their community.

Efficient Use and Reuse

Several participants and survey respondents noted that efficient use, and lack of water are not given enough importance in the current version of the Water Vision. Several survey respondents were clear that they didn't believe there was a need for more water infrastructure like until expectations are reset on water use, and efficiency improves. Other respondents said both storage and efficiency are needed.

Some participants wondered if interests could be balanced when water is not managed in an integrated way with a recognition that resources are limited. They expressed a need for integrated water management with a focus on conservation and reuse. Said one survey respondent, "This is a good start, but appears to take the tactic of 'building our way out' of water shortage issues. Although resilient infrastructure is essential to addressing the issue… we need to acknowledge that certain regions in our state may have to make hard decisions about how water is allocated, and whether future development might not be appropriate in certain water-constrained areas." Another participant pointed out that water provides for multiple uses, and should be used multiple times.

Participants talked a lot about water efficiency as a strategy for a) making current water supplies go further, and b) creating additional water for other uses (e.g., instream or business). Participants identified a lot of room for potential improvements in water efficiency. Many participants felt water conservation has not been taken seriously enough,

and conservation needed to be a priority for all water uses. Many survey respondents also talked about efficiency and water reuse in the same comments.

Some survey respondents offered ideas around water pricing to encourage efficiency (e.g., graduated rate structures).

Participants also noted that some ecosystems have evolved with flood irrigation and leaky canal systems. In these systems, how irrigation occurs could be important for groundwater recharge, or existing wetland and bird habitat. In other cases, irrigation efficiency can increase water that stays instream.

In the future, Oregon would have a culture of conservation and would have optimized all areas related to water to be more resilient and adaptive. One participant referred to, "Adequate water for conservative living." Another called for a "statewide citizen and corporate commitment to water conservation."

Many participants talked about reusing more water—especially wastewater reuse. There are challenges to reusing industrial process water and municipal wastewater, but it is being done for irrigation (e.g., data centers sending warm cooling water to irrigate crops in Morrow and Umatilla counties).

As a limited resource, water should be used to its maximum potential, primarily in regards to the recovery and reuse of greywater—used water from bathroom sinks, showers, tubs, and washing machines. Infrastructure to make reuse and recovery possible, however, does not exist in many building codes and there may even be regulatory hurdles that inhibit this practice all together. In some communities, innovative and accessible solutions for greywater was a vision of success.

Use of smart technology can help increase water use efficiency. A survey respondent also noted that upgrading water management, doesn't always have to be state-of-the-art. Tidegate improvements can be quite simple.

Drought

Drought is a challenge—hard for farmers and hard for rivers. Participants talked about how to share water resources in times of drought. The seasonality of drought, and how that seasonality is changing, was also raised by several participants.

It was noted that "droughts" might also be caused by water pollution where water is unavailable (e.g., harmful algal blooms).

Instream Needs

The connection between water and the environment was highlighted in all water conversations across Oregon. "I want my great-grandchildren to visit healthy wetlands and listen to the frogs," was one participant's vision of success. Participants raised concerns about water in the face of climate change and the health of watersheds with increasing

floods, fire and drought. Participants in each conversation referenced the importance of habitat as a key part of the 100-Year Water Vision. Some participants felt the Vision was too focused on built and natural infrastructure, without a strong enough reference to aquatic habitat and watershed health as an independent goal. “The Vision is too focused on ‘infrastructure.’ We need both infrastructure and ecosystems,” one participant said.

Participants who focused on the environmental goal wanted a clear distinction between the term natural infrastructure and ecosystem health. “I think the Water Vision needs to more explicitly address ecosystem protection and restoration measures that are needed to protect ground and surface water resources,” said one survey respondent. “It is not appropriate to refer to these precious water resources as ‘natural infrastructure’.”

Many participants highlighted the need for balance between a healthy environment and the other Vision goals, while some wanted environmental benefits to take precedent over economic needs. At each conversation, at least one participant raised the question of helping diverse groups move from “wants” to “needs” in terms of water use.

Participants expressed concern that conservation was not more strongly highlighted in the Vision, given that water is a limited resource and there are many competing demands. Measurement was noted as an important step in this direction.

Climate Change Leading To Changes in Water Availability, Ocean Acidification, Wildfire, Flooding and Drought

Climate change was raised as a serious concern for water in every community water conversation. “Water supply and water quality issues are impacted by climate change, including increased droughts, fires and flooding,” said one participant, and a survey respondent said, “the plan needs to anticipate changes caused by climate change as well – environmental changes including higher sea levels and animal and plant ranges shifting.” Another respondent noted, “Building new infrastructure won’t stop climate change.”

Others referenced increased impacts of storms on coastal communities, and weather variability that changes when water is available, including decreasing snowpack. Data will be critical to better understand these impacts on Oregon’s water systems. “Incorporating models of climate change into this planning is essential,” noted a survey respondent.

Coastal participants talked about both sea level rise and increasing ocean acidification. Those who raised acidification as an issue wondered how and if it would fit in the broader Vision conversation. “We also need to contribute to solutions for our coastal communities,” said a survey respondent. “That means reducing nutrient inputs that contribute to hypoxia and linking Oregon’s carbon footprint to rising sea levels and ocean acidification which threatens our coastal residents and economy.”

Climate change has impacts on ecosystems as well as water itself. As one participant recognized, “We need streams with natural hydrographs and natural infrastructure capable

of mitigating climate change and providing resiliency." Many participants noted that humans are not the only species impacted by these changes. Fish and wildlife are directly impacted as well. Others recognized that while natural systems are resilient, investments need to continue to focus on watershed resiliency.

Some participants also noted that to address water availability issues, Oregonians need to reduce their own carbon footprint and its associated climate change impacts.

Watershed Connectivity

Much of the conversation around water and the environment focused on connectivity and the need to talk about whole system (watershed) health rather than individual projects. Depending on the location of the community conversation, participants provided connectivity examples that included healthy, fire-resistant forests, habitat connectivity, or making sure natural systems are seen as a part of the broader community infrastructure system. "For fish and wildlife, it's not just about 'access to water', it's also about the ecological processes that sustain healthy aquatic ecosystems," said a survey respondent. Another highlighted the importance of "access and full 'connectivity' for native fish and wildlife. Fish and wildlife need to be able to migrate throughout habitat."

Participants wanted to ensure that natural systems were not just considered as a part of the broader "built and natural water infrastructure" discussion, but that ecosystems were recognized for the benefits they provide, independent of infrastructure.

Soil health and its relationship to clean water came up across the state. A participant noted, "Soil, like water, is a fundamental resource that is at risk and will determine not just the ability of future generations to enjoy the same access to clean water, but the ability of future generations to survive in the face of the potential for catastrophe."

Forest management was also raised consistently with a connection to both keeping forested watersheds healthy and reducing the potential for catastrophic wildfires in source water watersheds. While this has been traditionally an issue in southern and eastern Oregon, concerns about catastrophic wildfires were raised in every community conversation, including the coast and Willamette Valley. "A major goal for any vision of water for Oregon should identify restoring floodplain function to Oregon's rivers, streams, and wetlands," a survey respondent said.

Connectivity to other environmental priorities were highlighted, including land management, coastal estuaries, and their connection to broader aquatic systems.

Many participants identified the importance of managing federal, state, and private lands for clean and available water. They noted that, while some lands are private, all are needed to manage water as a public resource, yet management across these ownerships isn't always coordinated. Programs exist for some landowners. As an example, participants referenced the Conservation Reserve Enhancement Program that works with private

landowners to plant trees in riparian areas as an example that is not available for all landowners or ownership types.

Instream Flow, Protection, and Restoration

Participants in each community conversation discussed adequate instream flows as an important consideration for the state's Water Vision. Concerns were raised that decreases in river flows for endangered fish and other species will get worse with climate change. Reserved instream water rights for fish were referenced as a tool that could be utilized more broadly. "Under environment, it should include not just access, but a clear statement in the goal to protect streamflows necessary to support healthy populations of fish and wildlife," said one survey respondent.

The connection between instream flows and water quality was highlighted in a number of conversations. Participants also talked about ways to keep more water higher up in the system (federal and state forestlands) for fish, habitat, and water quality for consumptive uses. The Integrated Water Resources Strategy was mentioned as an important linkage with the Vision for instream flow language.

Some participants recognized tensions around flow minimums and the multiple demands on water, with the need for more flexible tools to ensure adequate instream water. Some wanted to seek a balance based on "needs rather than wants," getting people to come to the table to discuss critical water needs in a collaborative way. One participant highlighted the importance of "cool, clean water, abundant fish and wildlife and free-flowing rivers along with sustainable, vibrant and diversified economies." Others wanted to ensure that protection of instream flow was the top priority, recognizing the need for more water for fish instream combined with more efficient water systems for human use.

Invasive Species

Invasive species and their impact on water systems were raised in most community conversations. Participants were concerned that invasive species issues weren't able to be addressed in a timely manner. If they aren't addressed, they have potential to greatly impact watershed health and water quality. The invasive species referenced range from invasive fish species and mussels to aquatic plant species. Said one survey respondent, "The impact [noxious weeds] have on Oregon's fragile ecosystems as well as water quantity and quality needs should be considered."

"The state needs to invest more resources (staff and funding) into protecting Oregon's waters against the negative impacts that aquatic invasive species pose," said another respondent. "Prevention of new species getting established and the control and management of existing species needs to be highlighted. If future investments are not made into this important environmental issue, then future water supplies will suffer major negative impacts that will go beyond just investing in the current Vision and problem statement."

In addition, survey respondents highlighted a critical need for data around invasive species to address the issue as early as possible. “We need to invest heavily in invasive species monitoring, detection and early eradication or we will suffer not only great losses to our water resources but also to our industries.”

Public education was also raised as critically important in the area of noxious weeds, to reduce their impact and to help Oregonians understand the key link between invasive species and water quality.

Ecosystem Services

Some communities highlighted the potential for more strongly making the connection around the importance of ecosystem services—the direct and indirect contributions of ecosystems to human well-being—and stressing the economic value of environmental conservation. Participants recommended providing clarity that investing in restoration is a part of the Vision, and to look for opportunities for natural systems to meet water goals in more sustainable ways. “The ecosystem services that the water cycle provides should be somehow incorporated as well,” noted a survey respondent.

Participants in nearly every conversation noted the need for more investment in restoration and natural resource management. Opportunities were highlighted for investments in forest restoration and investments to improve planting projects to add native plants, for example. Public participation to ensure their willingness to invest in restoration projects was mentioned as well.

Habitat Restoration and Connection to Species Needs

Restoration projects that improve water quality and quantity and natural systems were mentioned in most community conversations as important. “Environmental benefits of restoration of natural systems are critical to all of our futures,” said one participant. Participants noted that habitat restoration and protection should be coordinated with development. Restoring habitat, streamflows, riparian zones, and naturally functioning wetlands were all identified as important in various conversations.

A number of species were discussed in community conversations that can either provide a benefit to habitat for fish or are impacted by habitat quality. Beaver were referenced in many community conversations. “Beaver create and maintain wetland, riparian, and riverside habitats,” noted one participant. Others would like to see increased accommodation for beaver on the landscape, including on federal lands and private lands where they are compatible. Where beaver aren’t on the landscape, some eastern Oregon participants highlighted the use of restoration techniques like “beaver dam analogs” to mimic natural beaver dams.

Communities highlighted that water quality and quantity to support aquatic species are as important as human health needs to restore healthy, abundant fish populations. Some communities viewed success as the ability to de-list species like Coastal Coho from the

Endangered Species list, and as enough fish are in Oregon's rivers for sustained harvestable populations of native fish.

In every community conversation, the importance of water for habitat was raised. Tribal members who attended community conversations raised the importance of access to fish and their habitat as a part of their tribal treaty rights. Others highlighted concerns about habitat to support threatened and endangered species habitat and maintain healthy waterways. Riparian buffers, beaver dams, and fish passage were all mentioned as important for fish habitat. The co-benefits of streamflow and riparian habitat were identified—both fish and humans benefit from clean, cool water.

In southwestern Oregon, the Jordan Cove pipeline project was discussed with respect to concerns about riparian areas and contamination of fish-bearing streams. In the Willamette Valley and Coast Range, concerns were raised about rivers being disconnected from their floodplains. "Lack of river structure, meanders and riparian cover is increasing water temperature," said one participant.

Some communities discussed the need for habitat restoration projects to follow different requirements to exempt restoration projects for easier implementation.

One participant identified success as "ecosystems, aquatic, riparian, estuary protection, and restoration are recognized under the Vision as integral to sustaining water supplies and supporting human communities and economies."

All communities discussed cold water as important for habitat, and highlighted concerns about continued access to cold water and associated refuge areas for fish. Conversations around the importance of cold water refuges for fish species was highlighted as a priority that should be included in the Vision. Utilizing natural infrastructure, such as streamside buffers and vegetative shading to cool instream water temperature and enhance aquatic habitats were specific solutions proposed in Albany.

Water Supply

A large number of community conversation participants and survey respondents talked about their concerns and hopes for Oregon's water supply. Those challenges and opportunities were framed in terms of:

- Recognizing the ability of all water uses to have access to the water supply they need; and
- Moving forward quickly on natural and built storage strategies in the face of climate change.

Availability

Currently, there is a lack of groundwater and surface water to meet all needs, and there is limited information on what water is available. Participants liked the idea of a good

statewide plan that identified the water resource quantity, quality, and demand. Participants asked whether the state had enough water, but not the right natural and built infrastructure. Others commented on the lack of flexibility in regulation relative to water availability.

Groundwater

Participants talked about critical groundwater, declining aquifer levels, and overdeveloped aquifer areas. Some of those groundwater supplies could be gone, and some are drawn down to levels where domestic wells are going dry. Some wells need to be dug deeper. Several participants mentioned groundwater levels dropping at rates near 3-5 feet per year. Several survey respondents called for no overallocation of groundwater, setting withdrawal levels at or below sustainable levels, or even adjudicating some groundwater basins. One survey respondent stated, “Our water is being mined out from underneath us.”

There were also challenges identified around groundwater recharge (e.g., difficult in some geologies, or recharge changing as a result of irrigation modernization). Some participants mentioned recharging groundwater with surface water drawn from the Columbia River. Others mentioned the challenge in recharging the near surface groundwater and shallow aquifer. One participant’s vision of success included, “Storing winter water to recharge aquifer to feed river baseflows.” Participants expressed that there needs to be a better understanding between surface and groundwater connections, and between groundwater recharge rates and withdrawal/use.

Some communities—both municipalities and farming communities—are dependent on groundwater (e.g., Hermiston and Hines). Several survey respondents talked about the emerging challenges from different groundwater uses (e.g., residential well and hemp farm growth in northern Deschutes County, or hay farming and municipal use in Harney County).

An example was highlighted where a pending moratorium on new wells prompted many to drill wells before the date the moratorium took effect. Those ancient aquifers may not recharge, or may not recharge at a rate that would make them usable once they are drawn down.

Many participants felt there needs to be a groundwater strategy to track conservation and recharge, that future groundwater use needs to be sustainable, and that there needs to be stronger groundwater and aquifer protections. One participant also called for restoring surface and groundwater levels to increase cool groundwater returns for fish and to protect domestic wells.

Some noted that efficient irrigation could slow the rate of groundwater decline, and groundwater recharge could be included as part of irrigation district modernization projects.

Participants highlighted that the Vision should be clearer that the 4 goals all apply to both surface and groundwater.

Less Reliable Summer Water Supply

Water supply will be less reliable with less snow, more rain, and shrinking glaciers. That change in rain and snowpack will lead to lower summertime and fall flows in rivers across the state. As a result, there will not be enough water stored to meet needs (e.g., instream, drinking water, hydroelectric generation, and irrigation) later in the year. In the winter and spring, there may also be increased flooding that is harder to predict. Those concerns were expressed about both western and eastern Oregon. As one survey respondent noted, Oregon's water challenge has always been about timing—that we have enough water, but the mismatch in timing between water availability and water need is what makes things hard.

Low stream flows and warmer air temperatures in summer and fall also present a challenge for the fish that need cold water, and for species that don't do well in streams that dry out sooner and more often. In Clatsop county, one participant pointed to drinking water supplies starting to dry up later in the summer. Low flows and warm temperatures can also lead to water quality problems (e.g., harmful algal blooms). The change in runoff timing can also be a challenge for fish migrating through the river systems.

Low water supplies can increase fire risk via dry conditions, and also limit water for firefighting.

Participants talked about the potential to increase storage capacity on the landscape. One participant discussed restoring habitat for and working with beaver in headwaters to retain water naturally. Another noted, it is challenging to build new or expand existing storage.

Participants hope for the future includes the ability to grow and not be limited by lack of water, and the ability to reestablish a healthy water cycle to help "hydrate" the landscape. Consistent flows of high quality water were identified as important. One participant hoped that "water calls" for agricultural uses to realize their water rights become rare because there is adequate water. Getting there could include action plans for increased resiliency in water storage capacity, creating redundant water supplies, and planning for water security.

Some participants pointed to a need for flexibility—so if one water user needed more, those who need less can give.

Long-term Needs

"We have the water we have" said one participant. Water is not an unlimited resource, and there may not be enough water for all future needs.

Long-term supply includes projecting and planning for changes in demand from small and large communities, population growth, the result of shifting sources from surface to groundwater supplies, and other variables.

Participants wanted people to be aware of the changing demand for water, and a survey respondent noted that increasing demand will also increase the need to navigate trade-offs.

For the future, many participants hoped for sustainable, abundant, adequate, safe, reliable, consistent surface and groundwater supply for people, business, habitat, and instream. Some participants also noted that it was difficult to manage for the long term with missing information on water availability and lack of flexibility in regulations. Ideally, each water user would be aware of the other users and their needs.

Participants provided suggestions including holding water in reserve for emergencies, ensuring long-term water supplies flowed to places with need, not just where money is, and planning for now and future generations to avoid crisis mode.

“Reorientation of the problem statement which reads with a heavy focus to infrastructure. A better expression of the problem would seem to be that there may not be enough water to meet the needs of fish and wildlife, communities, and industry into the future considering climate change and population growth projections. Additionally, there isn’t currently a robust enough “toolbox” or information to adequately address this problem and there is not a recognition of the existence or magnitude of this problem by the Oregon public at large,” Said a participant. Some survey respondents also pointed to reframing the problem statements to recognize overallocation and missed opportunities for efficiency as problems underpinning long-term water issues.

Municipal

For municipal water users, many participants were interested in seeing an adequate supply for drinking water and industry. Municipal water supply came up often in growing communities (e.g., Tillamook, Bend, and Albany).

Land use right now is managed for housing and business supply, not water supply. There is pressure for development in areas with little water availability.

On the coast, several participants pointed to the surges in water use from “transient occupancy” (i.e., tourists). Participants were concerned about equitable allocation of water use, and costs. This is especially challenging because seasonal water use is highest when supply is lowest (summer). This is leading to worries about water shortages and moratoriums on new connections.

Some small communities don’t have reliable access to sufficient water (e.g., Monroe). Some municipal supplies are more at risk from decreasing snowpack (e.g., Ashland) than others.

Participants wanted communities to have sufficient access to drinking water regardless of size or demographics, and others wanted to expand potable water to more people.

Storage

There is a lack of storage capacity in the summer and fall—both natural and built storage, according to many participants. Storage capacity is more limited in some areas (e.g., Walla Walla Valley; Coast Range). That storage can help mitigate the flux between dry and wet years. Sometimes that storage is not only needed for towns and agriculture, but also to support instream flows for fish, recreation and tourism, and energy production.

Storage could include reservoirs behind dams, groundwater infiltration/recharge, or it could include storing water on the landscape in forests, wetlands, healthy soils, etc.—both with the intent of holding water up high for use later in the year. Several survey participants were interested in natural storage potential to "Keep the water in the watersheds." This included the role of beavers as beneficial to storage, and fuels reductions in forests to reduce wildlife and retain snowpack longer.

Participants both pointed to dams as a storage solution, and to dams as a challenge for habitat, water quality, etc. Suggestions included decoupling storage from dams, or considering the potential of off stream storage and/or use of stormwater.

A few survey respondents mentioned the potential of more rainwater harvesting. Others suggested speeding permitting for the storage capacity needed to adapt to climate change, and noted that storage is also needed to supply firefighting efforts.

Some participants asked about the costs and benefits of natural storage (e.g., floodplains) and dams. Others noted that the idea of natural storage and groundwater recharge is not fully in the Vision.

Water from Public Lands

Several participants talked about the important role of public lands especially forests—in providing water for downstream users (and even prioritizing water's role in land management). On the coast, many municipal supplies rely on water generated from state and national forests, and they rely on that water to be clean. On the east side, municipal and agricultural water also starts in the national forests. Several participants called for holistic forest management that stores water, sinks water, and reduces erosion. One unique aspect of the coastal forests, is the role of summertime "fog drip" for water supply—where fog is captured by trees, turns into precipitation, and supplies water for streams.

Clean Water

Water is integral to life. In Oregon, not all waterways are clean, drinkable, swimmable, or fishable. "Improving water quality in all Oregon basins" was called out as a priority in all communities. Broad-based issues, like ensuring clean water is available for expanding communities and balancing the interest of multiple water users, highlight the emerging need to protect and enhance water quality and health using equitable management

solutions. Similarly to the environment goal, several participants suggested that health should be placed ahead of all other goals.

Other specific issues, like algal blooms, wastewater treatment, sedimentation, temperature, and microplastics pollution, were commonly cited water quality concerns across communities. “Clean water available to all those who rely on it (humans, wildlife, plants),” should be a priority in the Water Vision, and was a theme that appeared to be supported in all communities.

Harmful Algal Blooms

With recent water quality issues related to harmful algal blooms, the community conversations in Tillamook, Albany and Medford, raised the management and anticipation of harmful algal blooms (HABS) as a major water challenge. In Bend, similar issues around eutrophication due to excess nitrate runoff was also sighted as a challenge and a hazard that exacerbates algal blooms. HABS were also cited as a large concern by several survey respondents: “Eutrophication (nutrient enrichment from municipal, agriculture and industry) is generating conditions that favor harmful algae blooms, especially those from cyanobacteria or blue-green algae.”

Fishable, Swimmable, and Drinkable Water

Water that is fishable, swimmable, and drinkable is critical to the health of any community. “Accurate, transparent information about our drinking water” and restored trust that communities have clean, safe drinking water was a prevalent need discussed in every community. Drinking water quality in small communities and in private wells, and the lack of resources available for testing was also a major concern. Re-instilling public faith in drinking water infrastructure should be of high priority in the Vision.

Clean water to support recreational interests, including swimming, fishing, and boating, was a concern in all communities and in the survey. “Everyone swimming and fishing and boating in clean rivers and tributaries” would be a marker of future success, according to a participant.

Wastewater Treatment, Reuse, and Water Quality Standards

In La Grande, a vision of success looks like “no 303d listed streams in Oregon.” Ensuring that all of Oregon’s water meets water quality standards is a marker of success. In Albany, Medford, and the virtual conversations, the “lack of wastewater solutions” and the solution of “fully reusing wastewater” were suggested. The specific issue around the needs tech companies have for cooling capabilities and other non-consumptive water uses was raised. How do communities plan for these needs, and ensure that this water can be returned, at adequate quality and temperature, to the system? In an uncertain climate future, maximizing the use of available freshwater should be a priority.

Septic, Wastewater, and Stormwater

General concerns around wastewater, stormwater, and septic systems were vocalized in most communities. These concerns however, tended to differ by community. In Tillamook, septic systems, either aging or needing expansion or regulation, were highlighted by several participants. In Bend, increased efficiencies in wastewater treatment and recovery was seen as a vision of success, especially when managing and planning for projected community growth. Conversations along the I-5 corridor identified the shortcomings of current stormwater management systems. From utilizing natural infrastructure to reducing costs of stormwater management and treatment, to incorporating stormwater management into all water projects, conversations in Albany and Medford flagged these systems as a large concern.

Source Water Protection

Water quality at the source is also critical in ensuring future sustainability. Protecting headwaters, watersheds, and upstream habitat was a consistent thread throughout all of the community conversations. The restoration of critical land and habitats utilizes natural infrastructure to protect upstream water quality.

In Albany, Tillamook and Medford, as well as in the survey, impacts of land use was discussed as a source of water quality stressor, primarily wildfire and forestry practices: “Clear-cutting tree plantations directly and negatively impacts down-stream communities' water quality and quantity.” Industrial forestry practices were cited as historical and current practices threatening water. Increasing wildfire hazards are also of high concern in wildfire prone areas, primarily voiced at the Medford conversation. The removal of natural stream buffers, from either forestry practices or wildfire, is viewed as a problem that requires an integrative, holistic, place-based land management approach that prioritizes source water protection.

Pollutants: Pesticides, Sedimentation, Stormwater, and Microplastics

A variety of pollutants have constant impacts on water quality. From pesticides and plastic pollution, to chemicals and other emerging contaminants, each community faces both similar and different challenges when it comes to managing pollutants in waterways. In the Gresham and Albany community conversations, and in several survey responses, the quality of stormwater runoff was of particularly high concern. As water washes over the landscape, in rural, urban and residential areas, communities are concerned with the impacts of land-based toxins entering waterways. More broadly, along the 1-5 corridor, on the coast, and in the survey, pesticide runoff from agricultural and forestlands were cited as major concerns in those areas. Conversations around pesticides were almost always followed by issues surrounding sedimentation influxes due to clear cutting on forestlands. In Ontario, however, sedimentation was raised as a concern, but in reference to upstream agricultural practices along the Snake River.

Coastal communities pointed out the fact that the ocean is the ultimate receptacle for upstream activities, and coastal communities often feel the impacts of those activities. Emerging contaminants, like microplastics and fibers, pharmaceutical drugs, personal care products, and other toxins places extra burden on wastewater treatment facilities and degrades the overall quality for downstream users and the environment. Impacts of emerging contaminants on downstream users was also mentioned during the Gresham, Bend, Albany, and Medford community conversations, as well as in the survey.

Several survey respondents flagged the presence of chemicals—whether it be from industrial manufacturers, agriculture, or forestland runoff—has led to reduced water quality in streams, rivers and lakes. A few participants discussed the need to halt "indiscriminate logging" and end the use of all synthetic petrochemicals on forestland.

Process Recommendations

The information regarding process design provided below is a summary of what was gathered through the community conversations and web survey, and does not necessarily reflect the process that will be recommended moving forward. Participants provided extensive feedback about the process to both design and implement the 100-Year Water Vision. Based on information from the conversations, website, interviews, tribal meetings, and individual correspondence received, a design for Phase II is in the process of being finalized, and will be made available upon completion.

Balancing Interests

One common theme across all conversations was the need to balance interests. This included balancing stakeholder participation in the process, as well as balancing across the Vision's goals. Some felt the Vision and associated process was too focused on infrastructure, and that any future process will need to do a good job of balancing across all goals, while also being agile to adapt to future needs.

Participants appreciated the idea of a shared statewide Vision, but some had specific caveats. Examples included ensuring the Vision was realistic and achievable, that a shared Vision would make it easier to move forward on projects and programs that could show real-world successes, that that the Vision was truly integrated and not just focused on infrastructure, and that the Vision was enforceable. Participants also wanted to ensure the benefits were worth the investment, and that the Vision was supported—both in planning and implementation—by communities statewide.

Regional Approaches and State Framework

Across the state, to varying degrees, participants emphasized the need for the process to include regional approaches and flexibility to adapt to different conditions in each region. There was strong encouragement for systems that allowed regional prioritization of water projects and innovative approaches that reflect regional differences.

At the same time, there was also a recognition that some sort of statewide framework needs to exist for the Vision to be successful. While few locations provided specifics about how this could look, participants in every region had specific examples of projects where flexibility was key. These included the use of wetlands to treat wastewater, innovative solutions to address aging tide gates, market-based water trading for both ground and surface water, groundwater recharge, and investments in better management of the land in source water watersheds, to name a few. In each conversation, participants identified the need to ensure the Vision was adaptable to changing conditions, lessons learned, new science, and other local or statewide conditions.

Connection to Integrated Water Resources Strategy

In every conversation, the importance of connecting the Vision work to the state's existing Integrated Water Resources Strategy (IWRS) was raised. Participants recognized the extensive work that went into the development of that strategy, and wanted to ensure that the time and effort that went into the strategy was not lost in the development of the Vision. At the same time, some participants wanted to ensure that the work on the Vision also provided feedback for the next iteration of the IWRS. In addition, numerous participants recognized the need to build off of other models in Oregon or in other states (example: Oregon's regional approach to prioritizing transportation investments).

In many conversations, participants highlighted the need to ensure that the process led to both "sustainable" water management and "resilience" for both built and natural infrastructure. These were not specifically defined.

Equity

In some conversations, participants raised the need to ensure equity, both in who is involved in developing the Vision and in how the Vision is implemented. At the same time, participants raised concerns that not all interests were represented in the community conversations and that the state needs to work to ensure all impacted groups are invited and encouraged to participate in the process.

Communications

Participants in most conversations recognized a need for broad communication between stakeholder groups and the state throughout this process—transparency was key. Once implemented, communication in communities continued to be an important aspect to highlight in the process, including the need to help community members understand the importance of investing at all. In addition, "Strategic investments may also be required to facilitate and maintain community engagement needed to ensure all community voices are heard and the local vision is embodied in the outcome," said one participant.

Public Input

In addition to educating the public, some participants wanted to ensure that projects received public input, particularly if funded with public dollars. In terms of the process itself, "Perhaps a committee of interested stakeholders from across the state should be in charge of developing the Vision and concrete steps to accomplish the important task of ensuring reliable and clean water into the next century," recommended a participant.

Coordination and Collaboration

Participants in all conversations highlighted the need for the process and its implementation to be collaborative. "Collaboration and coordination across agencies and organizations to create sustainable solutions that can evolve over time to meet the Vision and goals," was identified as an indicator of success. At the same time, concern was expressed that the process wouldn't

truly be collaborative, instead pitting different interests against one another. A survey respondent noted, “Being creative and cooperative rather than regulatory in our approach to maintain access to water and protecting habitat has many long-term benefits for all of eastern Oregon.”

Participants were concerned that water management and investments were fragmented and overlapping. They encouraged agencies to manage silos and work to coordinate from the federal level across to the state, universities, tribes, and local communities. Federal land management agencies should be included in the process. One example of silos was the many agencies who either manage or fund water projects. Another was the potential for land use planning and water regulation to be more closely coordinated. Participants also encouraged interstate coordination with neighbors, especially those that are connected to the Columbia River system. “I don’t see how the 100-Year Vision can be effectively implemented without… an immense funding effort for the numerous environmental agencies and without some overseeing body to coordinate the implementation of the objectives and strategies,” said a survey respondent.

Small communities in particular highlighted the need for coordination. Adequate technical oversight and guidance provided by the state to small communities could result in more collaboration amongst small communities and their neighboring large communities. Currently, “Small struggling systems are isolated, and not sharing,” said one participant. Other participants also encouraged more city-to-city partnerships, city-county partnerships, and collaborative problem-solving across water user communities. One participants said they would like to see “multiple local organizations collaborate on regional water strategy that integrates agricultural uses with municipal users.”

Participants in half of the conversations highlighted the need for a “one water approach” for water supply, water reuse, and wastewater to increase coordination. These approaches could help meet both common and individual goals.

Consideration for Future Generations

Given the Vision’s 100-year mandate, participants noted it was important to take a multi-generational approach. Participants in some communities wanted to ensure systems were designed to provide flexibility for future generations, given how hard it will be to predict future needs. Some participants noted that young people were missing from the conversation. Others also recognized youth outmigration from rural communities and expressed concern about how to manage for generational change. Some participants wanted the Vision to encapsulate a longer time frame, similar to the tribal “7-generation” approach.

Leadership

Participants identified a need for leadership at all levels (local, state, federal), with engagement across agencies to make difficult decisions. They highlighted concerns about leadership of state agencies and the legislature to enact big changes, and wondered if water leaders were

committed to follow through. Participants felt that commitment was not seen in terms of staffing, support for planning, or funding water projects. Participants would like to see proposed legislation and funding viewed through the lens of the Vision and the IWRS.

Participants also noted that there isn't clarity about who is in a leadership position related to the 100-Year Water Vision.

More broadly, participants noted that all Oregonians can take a leadership role in water conservation and improving water quality. They wanted to find ways to empower individuals to take responsibility and understand the needs of others, as well as ways to utilize institutional knowledge in decision-making.

When the Vision is successful, participants wanted "leaders willing to take risks, do things differently, and be bold," said one participant. Another noted that successful leadership would be realized when Oregon "is a model for how to work through complex issues."

Another participant identified success this way: "Watersheds have a rotating leadership team with authority granted by the watershed to: 1) prioritize projects to protect the water quality and quantity; 2) authorize pooled funding; 3) convene; and 4) negotiate for regulatory issues at state, county, and federal level."

Participants in some of the conversations recommended that the state pay attention to the experience of tribes and their connection to water as a basis for long-term water conversations.

Measuring Vision Objectives and Outcomes

Participants in all communities highlighted the need for accountable criteria to measure progress toward the Vision and local plans and an ability to check in to determine what's working and what's not. The need for measurable outcomes was also discussed and an ability to track incremental progress and improvements.

Prioritization

Participants identified the ability to prioritize projects and investments as important for the Vision to be successful. Currently, they identified a lack of consensus on prioritization, and raised questions about who would be at the table to ensure prioritization reflected diverse communities and focused on major issues. "A prioritization process needs to be logical and fair, with clarity about how money is spent," said one participant.

Balancing a Sense of Urgency with Long-term Vision

In addition to balancing stakeholder involvement and investments, participants in each conversation identified the need to both have a long-term Vision and the urgency to act now to invest in key water projects, planning, data, and other critical water-related needs. Some participants were concerned that 100 years was too long for a vision, others raised concerns that it wasn't long enough. Some participants worried that a long-term plan would slow down efforts to invest in current needs. While only one conversation (Ontario) specifically included

youth, nearly every conversation included a discussion of the needs of future generations of Oregonians.

Some participants were concerned about multiple years of feasibility studies that would put good projects on hold. “Long-term and immediate planning based on comprehensive data collection and iterative decision-making to build an adaptive system,” was one participant’s description of success.

Some participants wanted a set of water-related questions that decision-makers should ask before making land use or other decisions—both in the short term, and questions to consider long-term impacts.

Across the conversations, some participants noted that the state is not planning on the same cycles as communities, who need to develop 20- or 50-year plans for their water systems. “Try to think big picture and what is best for Oregonians 100 years from now, not what is best for us in the next 5 years,” said one survey respondent.

Other Process Models

The state’s approach to transportation funding was highlighted as a model in some community conversations. While the regional approach is a model, some participants noted that both the type of funding for transportation (gas tax) and how regional systems are organized for transportation are currently lacking for water.

Trust

Participants highlighted issues related to trust across the conversations. Perceptions of “haves and have nots,” “us vs. them,” and stakeholders with “all or nothing” approaches were raised as barriers to successfully implementing a Water Vision process, given that water is limited resource. Participants referenced a lack of trust between groups based on past practices (litigation and overuse of water were both discussed). Participants highlighted a critical need to build relationships with existing and new water interests, particularly those who haven’t seen eye-to-eye in the past. “Success is when diverse groups see value in each other’s work towards a virtuous circular economy of water that benefits and optimizes all uses. Imperfect but holistic,” noted one participant.