Head 2 Cape

MID-COAST WATER PLANNING PARTNERSHIP

March 2021

The Water Action Planning Team

- Creative Resource Strategies, LLC
  - Lisa DeBruyckere, President
- Institute for Natural Resources
  - Lisa Gaines, Director
  - Janine Salwasser, Oregon Explorer Program Lead
    - Marc Rempel, Myrica McCune, and Tyson Schoepflin (OE development)
  - Jeff Behan, Science Policy Research Analyst
- Oregon Sea Grant
  - Sam Chan, Extension Watersheds and Aquatic Invasive Species
- Oregon State University Extension Service
  - Derek Godwin, Extension Watershed Management

Agenda

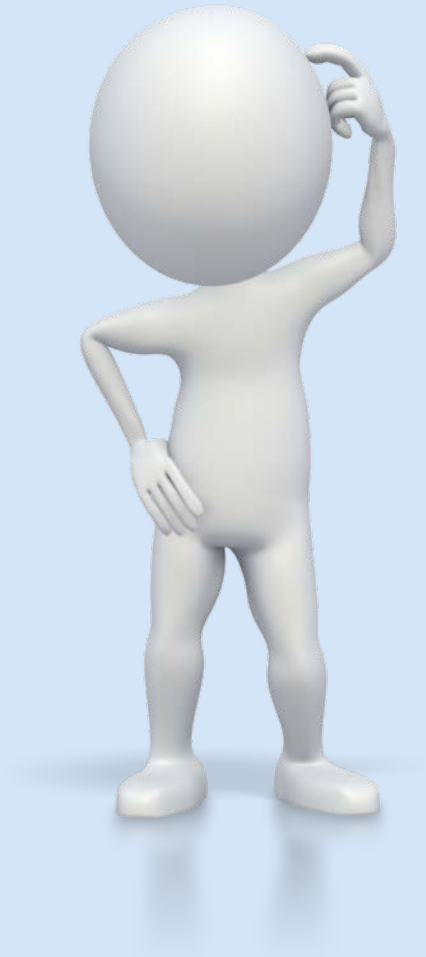
9:00am–9:05am	**Welcome and Review of Agenda**
9:05am–9:10am	**Our Process, Approach, and Deliverables to Developing an IWM and Implementation Plan by Dec 2021**

9:10am–9:40am	**Where the MCWPP is in its Process to Develop an Integrated Water Management Plan**
	• Step 4
	  • Develop draft actions
	  • Prioritize actions in 3 tiers
	  • Draft implementation plan

9:40am–9:45am	**Next Steps**
9:45am –9:55am	**Website Updates**
9:55am-10:15am	**Q and A**

OUR PROCESS, APPROACH, AND DELIVERABLES TO DEVELOPING A WATER ACTION PLAN BY DEC 2021

PHILOSOPHICAL APPROACH



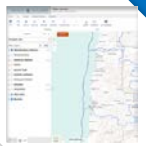
- All water has value, and must be managed carefully to maximize benefits.
- Focus on achieving multiple benefits, balancing cost/benefits/priorities across economic, social, and ecosystem needs.
- Consider the complete life cycle of water and larger infrastructure systems.
- Respect and respond to the natural flows of watersheds and natural ecosystems, geology, and hydrology in a region.
- Focus on the appropriate scale of intervention to achieve desired outcomes.
- All sectors are part of the solution to a water-secure future.
- The best results can be achieved when all people have a stake in ensuring a water-secure future.

PLANNING PROCESS

JUL-OCT 2020

REVIEW IWM PLANS, INITIAL WEB FRAMEWORK, CONVENE WORKING GROUPS, AFFIRM VISION, MISSION, GOALS AND OBJECTIVES, CATEGORIES OF MANAGEMENT STRATEGIES

NOV 2020 – MAR 2021



DRAFT STRATEGIES, BUILD OE MID-COAST WATER SITE AND WATER PLANNING MAP VIEWER, ROADMAP TO DEVELOP PROJECTS

APR-AUG 2021

SHARE AND REVIEW DRAFT PRIORITY STRATEGIES, DEVELOP IMPLEMENTATION PLAN, AND PERFORMANCE METRICS

SEPT-OCT 2021

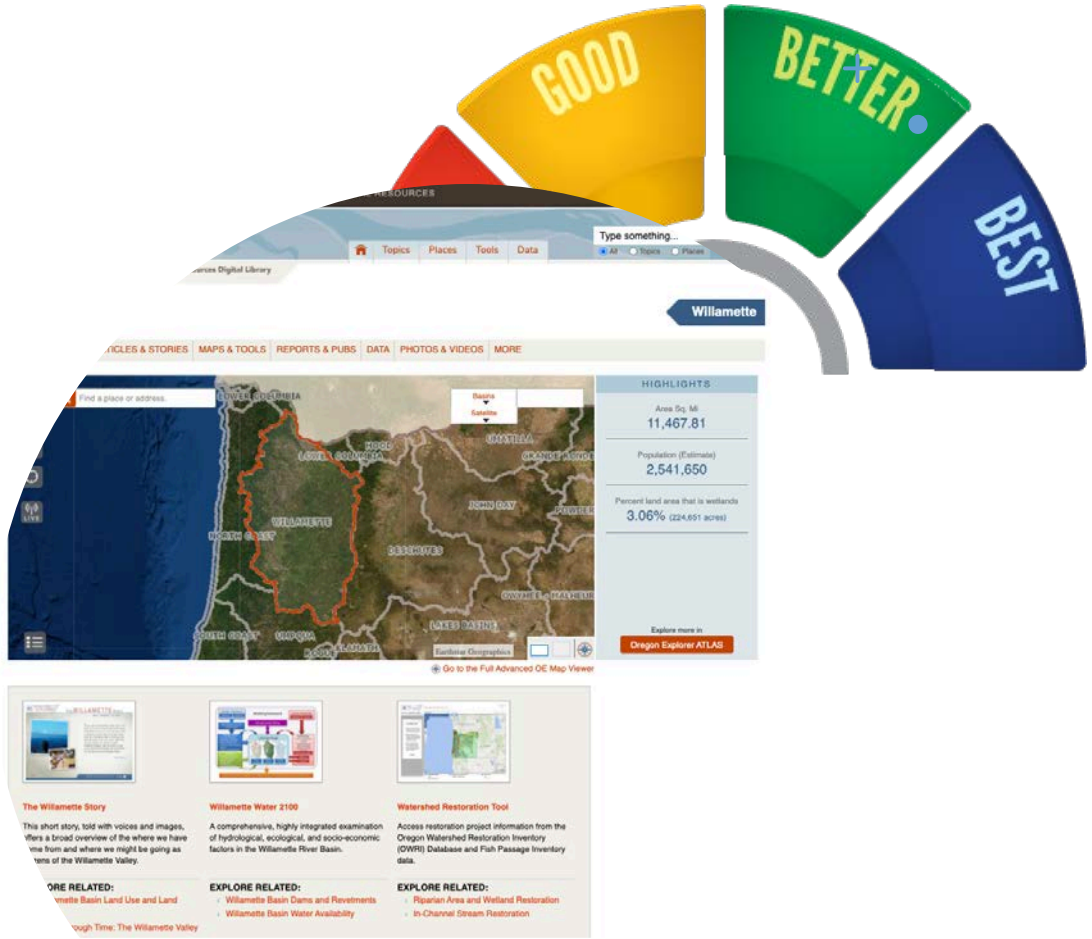
LAUNCH OE MID-COAST WATER SITE, REVIEW DRAFT ACTION PLAN WITH STAKEHOLDERS

NOV 2021

WATER ACTION PLAN FINALIZED – PRINT AND ONLINE, AND OREGON EXPLORER

Project Deliverables

- Develop prioritized integrated strategies with designated targets and metrics
  - Water Action Plan components
- Visualize Action Plan online via Oregon Explorer Mid-Coast Landing Page and Mid-Coast Water Planning Map Viewer
  - Benefits to online product
    - Communicate core elements of plan
    - Track plan implementation
    - Less reliance on institutional knowledge to implement
    - Incorporate flexibility and facilitate updates
- Not in scope of work, but value added
  - New website

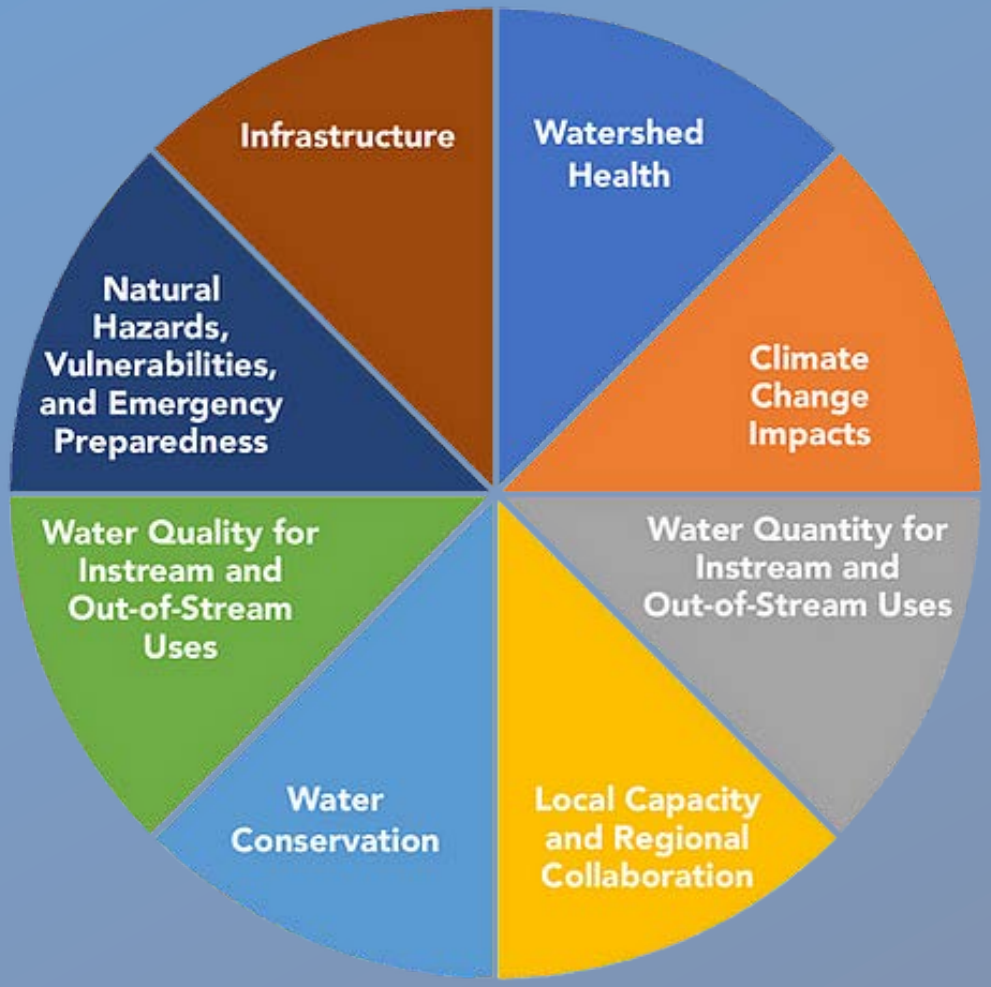


WHERE THE MCWPP IS IN ITS PROCESS TO DEVELOP AN INTEGRATED WATER MANAGEMENT ACTION PLAN

Mission, Vision, and Goals

- **Mission -** The purpose of the Mid-Coast Water Planning Partnership is to develop an inclusive community forum that examines water use in the region, identifies current and potential water challenges, and creates a unified plan to balance water needs.
- **Vision -** Regional partners ensuring balanced water resources for the environment, the economy, and coastal communities.
- **Goals**
    - **Work collaboratively** to develop an Integrated Water Resources Plan for the Mid-Coast Region:
    - **Develop a sustainable water supply** for consumptive uses that also protects the environment, supports healthy watersheds, and is resilient to climate change stressors and natural hazards.
    - **Balance the needs** of our ecosystems, our economies, and our communities.
    - **Develop cross-boundary solutions** that help neighbors work together to achieve additive effects.
    - **Develop and implement integrated regional water management strategies** for improved water quality and quantity as well as provide fair access.
    - **Increase awareness** about regional water needs, challenges, and opportunities.
    - **Improve the resilience** of water management infrastructure by identifying emergency water sources and taking steps to access those water resources when needed, and repair water system infrastructure.

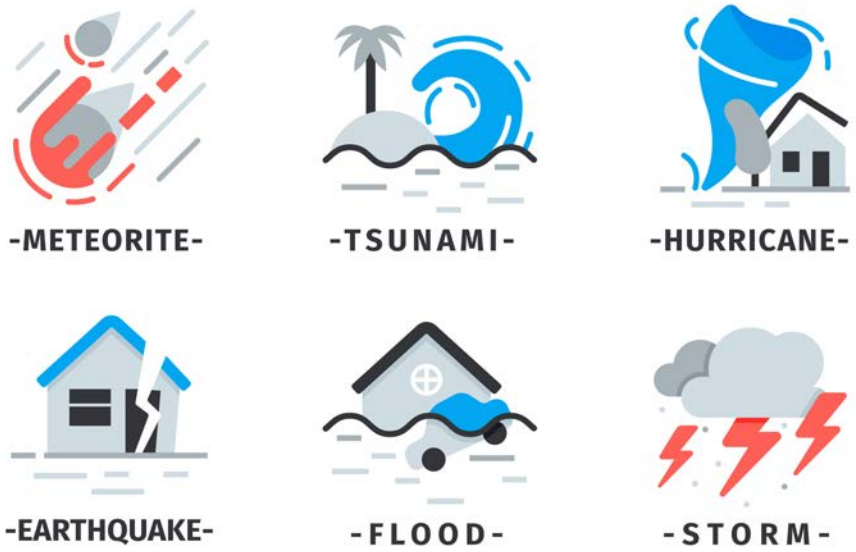
KEY WATER ISSUES



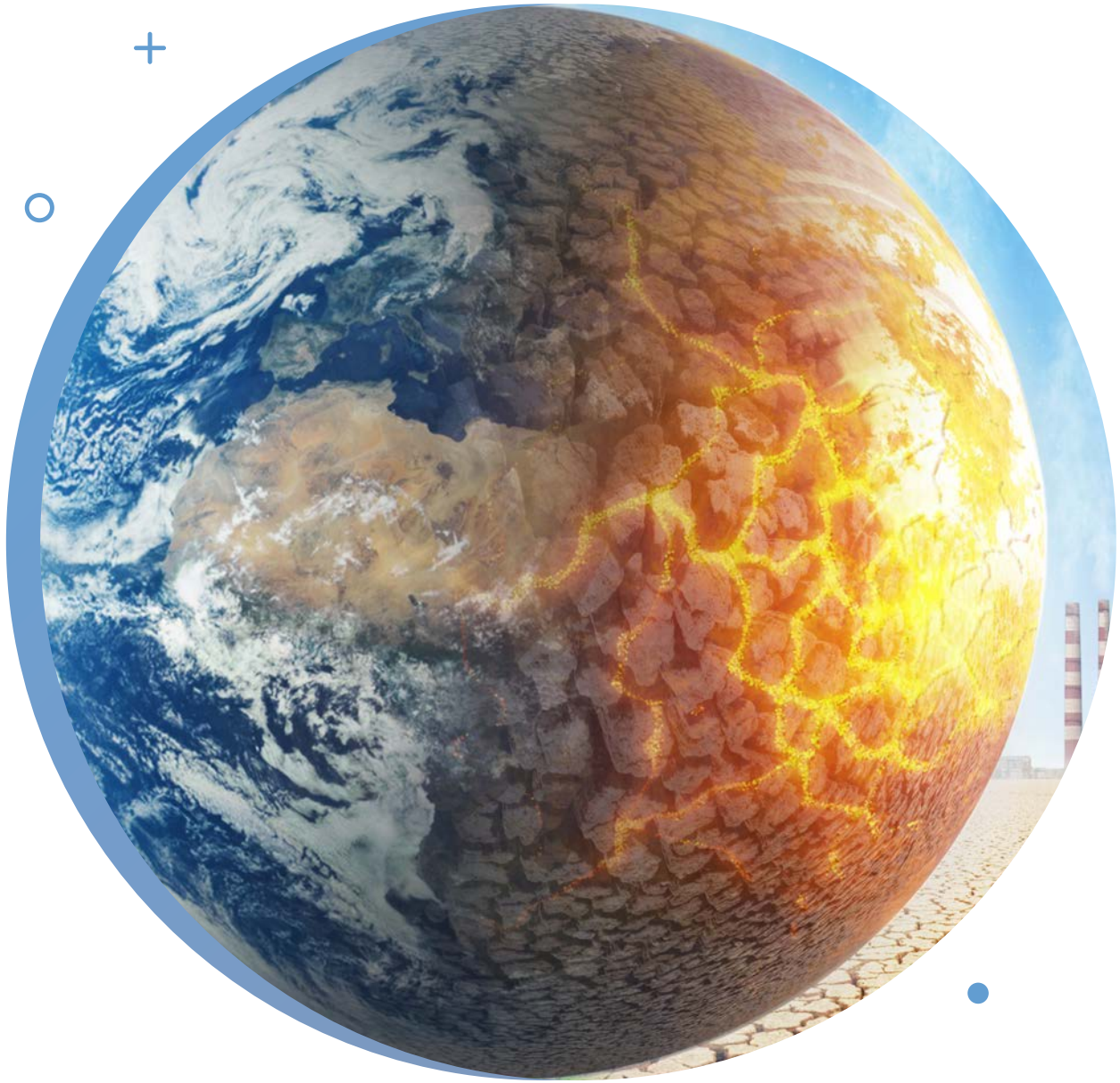
Water Conservation

- The Mid-Coast needs a coordinated water conservation initiative/strategy that focuses on reducing water use, educating stakeholders, promoting incentives, and effectively using limited water supplies, especially in times of water shortage.
- Rural residents and businesses need improved access to information, incentives, funding, and resources to help them implement water conservation measures.

Natural Hazards, Vulnerabilities, and Emergency Preparedness



- The majority of water providers need redundancy, water system interconnections, and alternative sources to ensure access to safe drinking water in case of emergencies or shortages.



Climate Change Impacts

- Climate change affects the health and well-being of coastal communities, and is having profound impacts on the ecosystem. Although we may not fully understand nor be able to accurately predict climate change effects, we can and should proactively adapt to climate change impacts at a regional scale.

Local Capacity and Regional Collaboration

- Mid-Coast water providers share the need for system resilience and reliable source water quantity and quality. Regular coordination and collaboration among water providers can improve access to resources and funding to support this need.

Water Quantity for Instream and Out-of-Stream Uses

- Summer streamflows are insufficient in some areas of the Mid-Coast to meet the instream water needs of fish and wildlife. Low streamflows contribute to water quality impairments (e.g., high temperatures) that negatively affect fish and wildlife.
- Many streams in the Mid-Coast lack: 1) legal protections (e.g., instream water rights) to protect streamflows for the full range of ecological flows, and 2) streamflow targets to guide instream flow restoration efforts where there are already significant out-of-stream uses.
- Some municipal and special district water providers are currently facing water shortages late in the summer and during dry years.
- Rural residents and landowners, agricultural irrigators, and industrial water users currently experience chronic seasonal water scarcity due to limited water availability.
- Some watershed systems, such as the Siletz, have insufficient water to meet the needs of all uses (both instream and out-of-stream) leading to ecological impacts on the rivers, insecurity for water users, and the potential for conflict.

Watershed Health

- Opportunities exist in the Mid-Coast for enhancing beaver habitat and management to improve water storage, stream health, and support the recovery of key native fish species.
- Degraded riparian areas throughout the Mid-Coast negatively affect water quality, wildlife habitat, and overall watershed health. Opportunities exist to improve these areas.

Water Quality for Instream and Out-of-Stream Uses

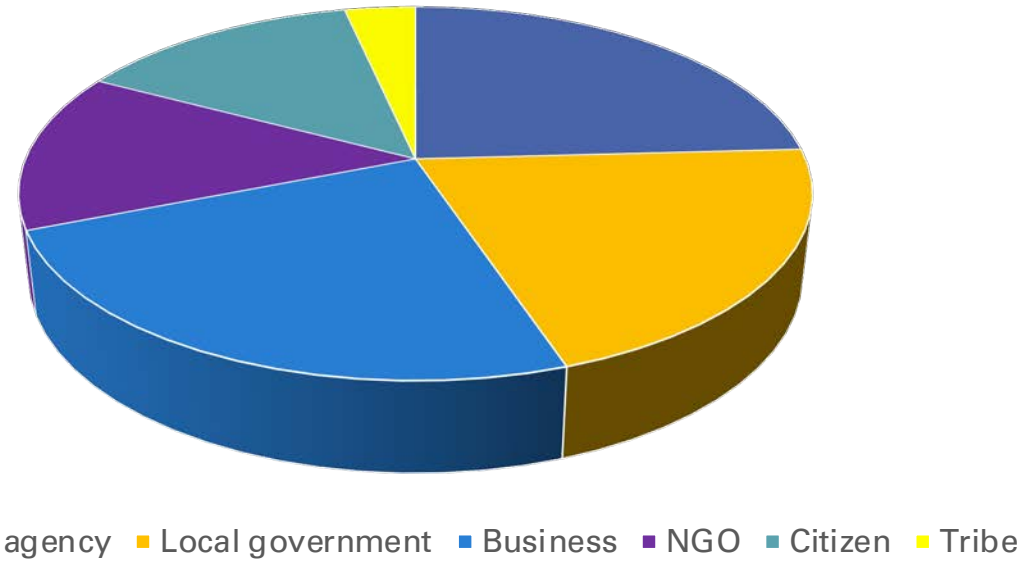
- Multiple river and stream segments consistently do not meet Oregon and federal water quality standards: high temperature and low dissolved oxygen threaten fish, and elevated turbidity affects the ability to treat and use water.
- Low stream flow and high temperatures in the summer months, and high turbidity due to winter storms, pose challenges for drinking water suppliers to meet state and federal regulations to provide safe drinking water.
- Self-supplied rural residents are increasingly concerned about drinking water quality and need adequate and timely data to determine regional, local, or site-specific water quality contamination issues that may pose a health risk.

Infrastructure

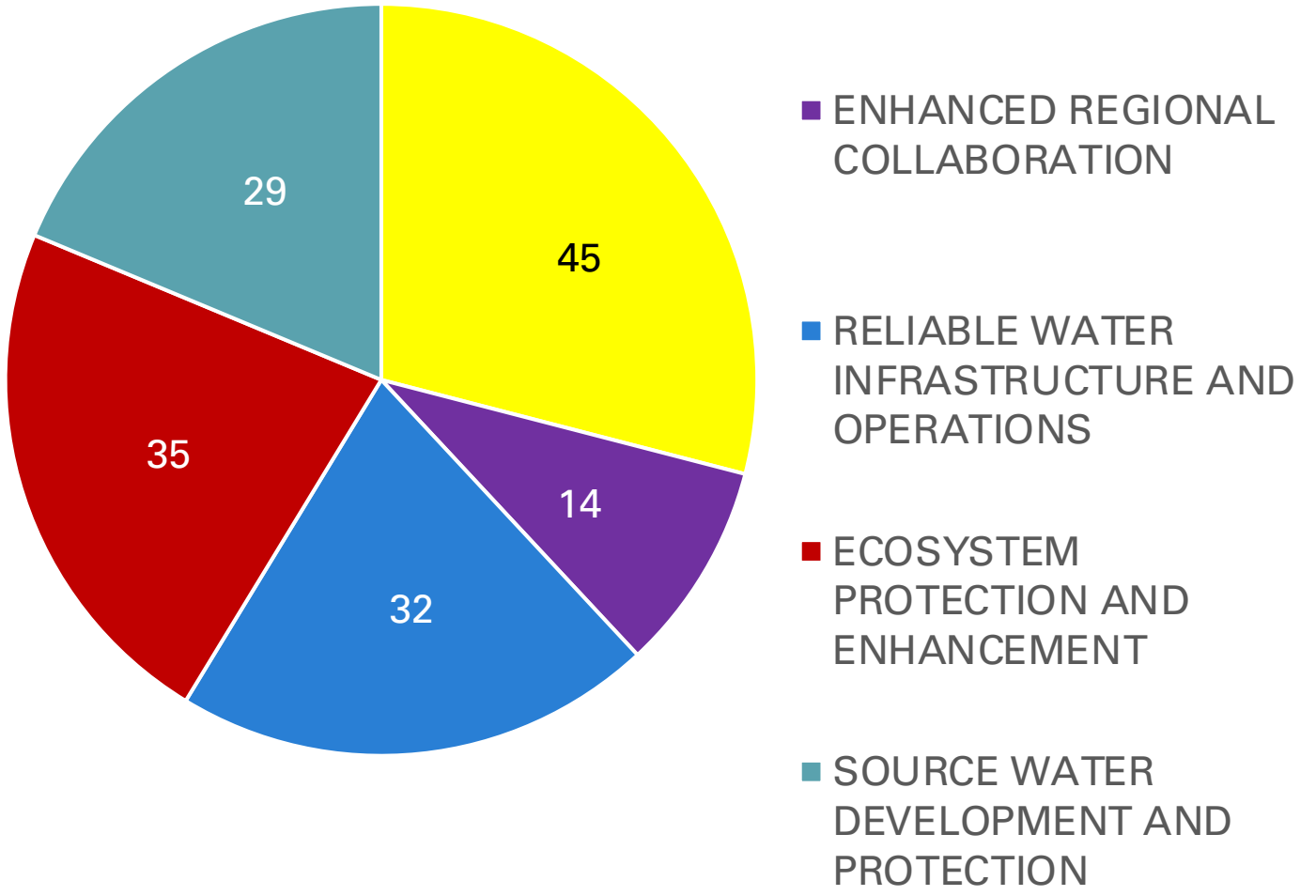
- The degradation of aging water infrastructure used to divert, store, treat, and convey water can lead to water loss and water quality issues, and poses a threat to the health and safety of communities.
- Infrastructure to manage water for self-supplied uses (rural residences and agricultural operations) is oftentimes undocumented, old, inefficient, and fails to meet current construction and quality standards, which negatively affects water security and source water quality throughout the region.
- Multiple sources of funding are needed to address current and legacy infrastructure issues and to design and build resilient infrastructure that can withstand natural hazards and help communities adapt to climate change.

Charter Signatories – Draft Actions

- Adam Denlinger, Seal Rock Water District
- Alan Fujishin, Gibson Farms
- Bill Montgomery, Interested citizen
- Billie Jo Smith, Interested citizen
- Caylin Barter, Wild Salmon Center
- Chris Janigo, City of Newport
- Clare Paul, City of Newport
- David Bayus, Johnson Creek Water Services
- David Waltz, Oregon DEQ
- Evan Hayduk, Midcoast Watersheds Council
- Geoff Wilkie, Interested citizen
- Greg Scott, City of Yachats
- Harmony Burright, Oregon Water Resources Department
- Jacquie Fern, Oregon DEQ
- Jay MacPherson, Oregon Health Authority
- Jeanne Anstine, Newport Community Gardens
- Jen Hayduk, Lincoln SWCD
- Jennifer Beathe, Starker Forests
- Lisa Phipps, Oregon Department of Land Conservation & Development
- Mark Saelens, Saelwood, LLC
- Matt Thomas, Oregon Department of Forestry
- Mike Broili, MidCoast Watersheds Council
- Nikki Hendricks, Oregon Water Resources Department
- Paul Robertson, Robertson Environmental
- Penelope Kaczmarek, Interested citizen
- Stan van de Wetering, Confederated Tribe of the Siletz Indians
- Suzanne DeSzoeke, GSI Water Solutions
- Tim Gross, Civil West Engineering Services
- Tim Miller, Lincoln County Farm Bureau



150+ “Raw” draft actions developed



Strategy Development - Phase I

Session 1 - Water Conservation and Efficient Use (6 Jan 2021, 11:30am-1:00pm)

January 6 table - FINAL
- Older versions of tables:
  - January 6 table - final comments and edits
  - January 6 table - 2nd round of edits
  - January 6 table - initial round of edits incorporated
  - January 6 table - showing suggested edits
  - January 6 agenda and table - original version

January 6 meeting recording
January 6 meeting attendance
January 6 meeting chat comments

The MCWPP is one of several Oregon place-based integrated water resources planning efforts to help communities meet water needs now and into the future. A key planning principle is that the partnership develops "voluntary, non-regulatory," actions. The MCWPP charter describes the partnership as a "voluntary association." The language used in the proposed actions to meet the key objectives of the MCWPP emphasize the intent of voluntary, non-regulatory actions.

Session 2 - Enhanced Regional Collaboration (13 Jan 2021, 8:00am-9:30am)

January 13 table - FINAL
- Older versions of tables:
  - January 13 table - final edits
  - January 13 table - round 1 edits (clean version)
  - January 13 table - round 1 edits (last updated 1:50pm on 19 Jan 2021)
  - January 13 table - edits incorporated during meeting
  - January 13 table - initial edits
  - Agenda and table - original version

January 13 meeting recording
January 13 meeting attendance

Session 3 - Reliable Water Infrastructure and Operations (20 Jan 2021, 11:30am-1:00pm)

January 20 table - FINAL Note: 3 additional actions were added on 3 Feb 2021 (moved from Ecosystem Protection and Enhancement table to Infrastructure table).
- Older versions of tables:
  - January 20 table - round 2 edits (27 Jan 2021)
  - January 20 table - round 1 edits (clean version)
  - January 20 table - edits made during meeting
  - January 20 table - round 1 edits
  - Agenda and table

January 20 meeting attendance
There is no meeting recording from the 20 January meeting

Sessions 4 and 5 - Ecosystem Protection and Enhancement (27 Jan 2021, 8:00am-9:30am; 3 Feb 2021, 11:30am-1:00pm)

January 27 table (FINAL) - All edits incorporated.
January 27 table - edits made during 10Feb2021 meeting
January 27 Table (3 Feb 2021)
- Older versions of tables:
  - January 27 table - edits made during 2nd meeting (3 February 2021)
  - January 27 table - additional edits after the meeting (ODFW presentation referenced in document) (last edits 2 February 2021)
  - January 27 table - edits made during meeting
  - Agenda and table

January 27 meeting attendance
February 3 meeting attendance
February 3 meeting recording

Session 6 - Source Water Development and Protection (10 Feb 2021, 8:00am-9:30am)

February 10 table (FINAL) - All edits incorporated
February 24 meeting attendance
February 24 meeting recording
Older versions of tables:
- February 10 table - edits made during February 24 meeting
- February 10 table - edits made since last meeting (updated 18 Feb 2021). Note from Lisa D: This version of the table does not show track changes or lots of marked out/red text because so much reorganizing was done since the last meeting, that the table was not readable documenting all of the changes.
- February 10 table - initial edits
- Agenda and table

Criteria to prioritize strategies

- High (Tier 1): A critical action without which the objective is not achievable. An action that absolutely must be completed to fully achieve the objective.
- Medium (Tier 2): A necessary but deferrable action, which makes the plan/objective less workable, but functional. An action that is necessary, but potentially deferrable.
- Low (Tier 3): A productive action to implement if the resources exist, but the plan/objectives can be achieved without implementing. An action that adds value and would be completed under ideal circumstances, but is not essential to achieve the objective.

The next step in the process is for individual charter signatories to prioritize draft actions, and then reconvene on March 10 from 8:00am to 10:00am to discuss.

Water Conservation and Efficient Use

STATES	OBJECTIVES	ACTIONS
Inadequate promotion of information and comprehensive outreach on water conservation. Lack of adequate efficient use and implementation of available information.	A. Promote tools and information for water conservation. B. Develop a culture of water conservation.	11
Insufficient planning for water conservation and curtailment.	C. Expand water conservation planning programs and initiatives	11
The Need for Water Conservation and Re-Use.	D. Effectively use limited water supplies, especially during times of water shortage. E. Reduce water use.	23

Enhanced Regional Collaboration

STATES	OBJECTIVES	ACTIONS
Lack of access to resources and funding to enhance system resilience and reliable source water quantity and quality.	A. Build capacity of constituents to advocate for state resources and funding.	5
Limited communication among regional water providers.	B. Promote opportunities to improve communications, share knowledge, and pool resources.	4
Insufficient monitoring of stream flow and water quality	C. Improve the effectiveness of water quality and quantity monitoring programs throughout the region.	5

Reliable Water Infrastructure and Operations

STATES	OBJECTIVES	ACTIONS
Degradation of aging infrastructure that diverts, stores, treats and conveys water. Rural residences and agricultural operations often have undocumented, old, inefficient infrastructure that fails to meet current standards.	A. Create more resilient infrastructure. B. Replace aging infrastructure.	12
Lack of adequate workforce of skilled water technicians to maintain present and future water supply systems.	C. Support training and professional development to ensure the availability of skilled water technicians.	5
Lack of identified additional and alternative sources of water	D. Identify additional and alternative sources of water for the Mid-Coast region of Oregon.	4
Insufficient water infrastructure to address water emergencies (e.g., tsunamis, earthquakes).	E. Create redundancy, water system interconnections, and alternative sources of water to ensure access to safe drinking water in case of emergencies.	6
Insufficient water infrastructure to address water shortages (e.g., peak summer visitation to the Mid-Coast region).	F. Ensure adequate water supplies exist in the Mid-Coast in mid-summer.	5

Ecosystem Protection and Enhancement

STATES	OBJECTIVES	ACTIONS
Reduced health of watersheds and degraded riparian areas. Insufficient habitat to facilitate recovery of key native fish species. Multiple river and stream segments consistently do not meet Oregon and federal water quality standards.	A. Restore watershed ecological function (ridgetop to river approach) 1. Restore riparian areas and instream habitat functions, values, and benefits. 2. Re-establish hydrologic regimes (and sediment transport regimes) to a more natural state. 3. Restore natural channel morphology. 4. Protect, maintain, and improve water quality in the region for all beneficial uses.	16
Inadequate water availability to meet instream and out-of-stream uses ("Balance in the Basin").	B. Identify, meet, protect, and restore peak and ecological flows.	13
Inadequate natural water storage.	C. Promote natural water storage in the region using beavers and green infrastructure. D. Balance instream and out-of-stream water uses. E. Ensure summer stream flows are sufficient to meet the instream water needs of fish and wildlife.	6

Source Water Development and Protection

STATES	OBJECTIVES	ACTIONS
Some Mid-Coast waters do not meet Oregon and federal water quality standards for turbidity, E. coli, or other contaminants of concern for drinking water providers. Source water quality may be at risk from unregulated contaminants, or contaminants which are currently within water quality standards, but pose a risk to drinking water.	A. Assess the levels and presence/absence of contaminants in Mid-Coast waters and describe negative effects to human health. B. Consistently attain water quality standards that protect drinking water and other beneficial uses. C. Anticipate and prepare for the effects of climate change stressors, which are predicted to influence precipitation, temperature, coastal inundation, ecosystem function, and water quality. D. Prioritize restoration work and support land management practices that reduce contaminants of concern to drinking water.	13
There exists insufficient data in the Mid-Coast to assess water quality and draw firm conclusions about the presence or levels of toxic chemicals in drinking water source areas	E. Sample throughout the Mid-Coast to accurately identify the quantity and type of toxics entering source waters to assess potential risks to both drinking water quality and aquatic life.	3
Public information is lacking re: source water protection measures and sources of contamination and concern.	F. Informed self-supplied water users that need and want adequate and timely data to determine regional, local, or site-specific water quality contamination issues that may pose a health risk.	7
There is no regional emergency response and management communication and action network in the Mid-Coast.	G. Support a regional emergency response and management communication and action network.	2
Lack of protected public drinking water source areas reduces water system control over potential impacts to watersheds.	H. Seek opportunities to protect and conserve public drinking water source areas.	3
Research is lacking on a variety of water quality-related issues in the Mid-Coast region.	I. Conduct research to better understand impacts and best management practices associated with water quality issues.	1

Criteria to Prioritize Actions

- **High (Tier 1):** A critical action without which the objective(s) is not achievable. An action that absolutely must be completed to fully achieve the objective(s).

- **Medium (Tier 2):** A necessary but deferrable action which makes the plan/objective less workable but functional. An action that is necessary but potentially deferrable.

- **Low(Tier 3):** A productive action to implement if the resources exist, but the plan/objectives can be achieved without implementing. An action that adds value and would be completed under ideal circumstances, but is not essential to achieve the objective(s).

Water Conservation and Efficient Use

§ The Mid-Coast needs a coordinated water conservation initiative/strategy that focuses on reducing water use, educating stakeholders, promoting incentives, and effectively using limited water supplies, especially in times of water shortage.

§ Rural residents and businesses need improved access to information, incentives, funding, and resources to help them implement water conservation measures.

STATES	OBJECTIVES	PROPOSED ACTIONS	Ranking
Inadequate promotion of information and comprehensive outreach on water conservation. **Lack of adequate efficient use and implementation of available information.**	**A. Promote tools and information for water conservation.** **B. Develop a culture of water conservation.**	1. Create a culture of water conservation by promoting water conservation opportunities and need, water rights and their management, the water cycle in the coastal region, how water moves through Mid-Coast watersheds, and how water is used, at local events, incorporating water conservation messaging in the MCWPP website and the websites of regional partners and entities, in news articles, in water bills, and via social media (A)	1
		2. Develop a water-wise landscaping guide for the Mid-Coast (RR, B, U).	1
		3. Inform property owners about self-assessment tools and information to monitor water use and reduce water usage (OHA/OWRD/DEQ/OSU/EnergyStar/ OWEB/SWCDs/watershed councils) (A/I, RR, B, U).	3
		4. Develop drought declaration and audience-specific water conservation and curtailment messages (A).	1
		5. Promote school education programs (K-12) (RR, B, U).	3
		6. Conservation kit give-aways (RR, B, U).	2
		7. Seminars, trainings, classes, and demonstrations in coordination with Oregon Coast Community College Community Education and Small Business Development Center (A).	3
		8. Develop a Water Conservation Public Awareness Program, or social marketing campaign, aimed at changing behaviors of highest priority water users (A).	1
		9. Work with NRCS to develop a Conservation Implementation Strategy to cost-share with agricultural irrigators on irrigation system improvements, pursuing incentives and support for irrigators that want to increase efficiencies (I).	2
		10. Educate and inform people of the interdependence of economy, ecology, and society as it relates to water use (https://sdgs.un.org/goals) (A.)	2
		11. Encourage local jurisdictions to implement sustainable development targets in water use and conservation (A).	3

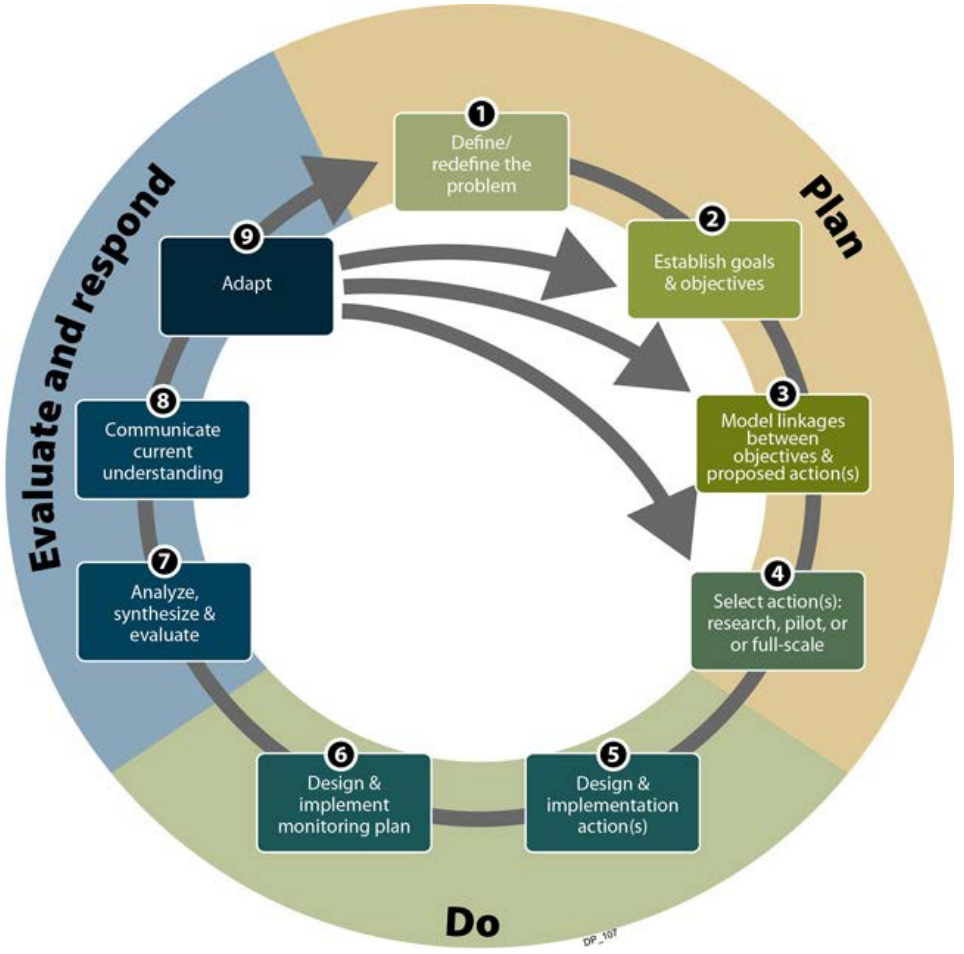
STATES	OBJECTIVES	PROPOSED ACTIONS	Ranking
Insufficient planning for water conservation and curtailment.	**C. Expand water conservation planning programs and initiatives.**	1. Develop and update water conservation plans for Mid-Coast regional industrial direct water systems (I).	1
		2. Coordinate water curtailment plans for Mid-Coast water providers (A).	2
		3. Develop water conservation programs for businesses, rental management companies, the lodging industry, and other businesses throughout the region (B, U).	3
		4. Support existing Water Conservation Consortium by helping municipalities update and implement actions identified in their Water Conservation and Management Plans (A).	1
		5. Conduct annual, and if possible, monthly water audits (e.g., a "report card" on bills showing account's use relative to average use, outliers [positive and neutral messages only]) to assess input-output efficiency of municipal systems (WP).	2
		6. Implement advanced metering infrastructure, and expand real-time streamflow monitoring to accurately assess supply source water and enable faster identification of leaks and shortages(A).	1
		7. Create training opportunities and support for water managers (i.e., water workforce development) (WP).	2
		8. Evaluate rate structure for water consumption (A).	3
		9. Encourage municipalities to become a partner of the WaterSense® program to promote water conservation and	

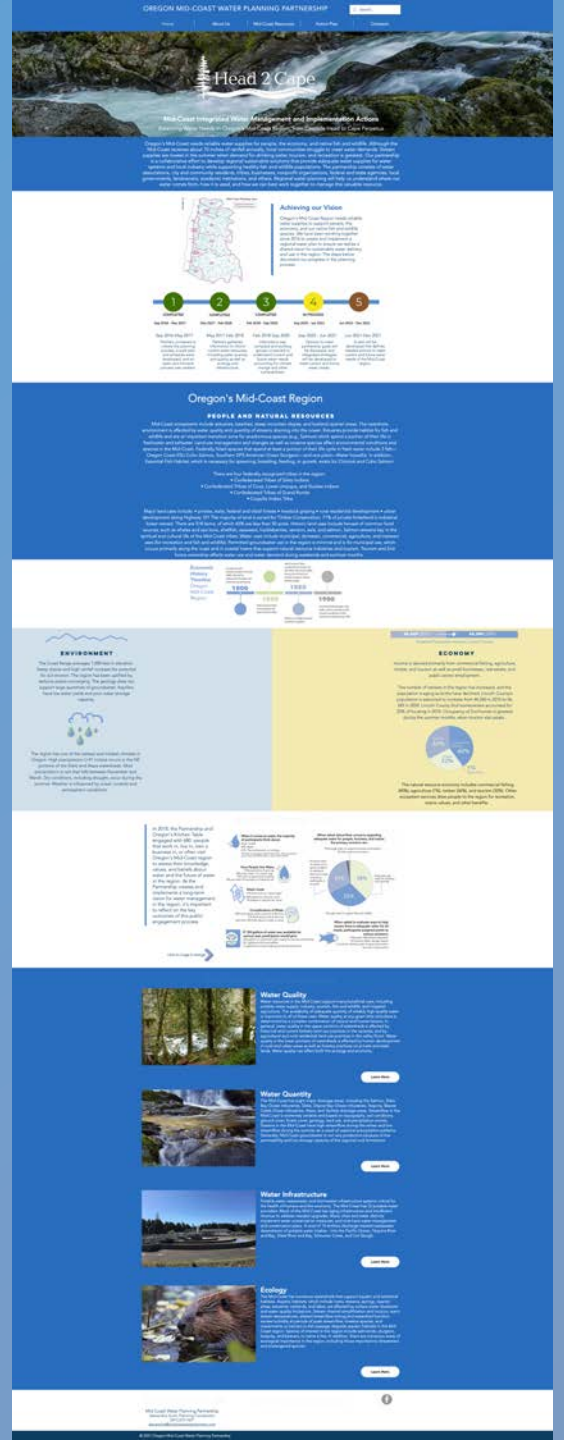
NEXT STEPS

- Compile results of action ranking exercise by all charter signatories
- Convene with willing and able charter signatories March 10 from 8am-10am to discuss priority rankings and make adjustments
- Post results to website
- Give all partners an opportunity to comment on priority rankings
- Finalize priorities
- Develop implementation plan for highest priority (Tier 1) actions
- Share draft implementation plan with full partnership – provide opportunities for input

MCWPP Action Agenda Implementation Plan

- Goals and benchmarks to evaluate progress
- Prioritize strategies
- Define budgets
- Establish timelines
- Designate responsibilities
- Implement in phases
- Adaptive management
  - Includes governance, planning, implementation, monitoring, and evaluation of outcomes, iterative co-learning, knowledge co-production, strategic focus on a future desired state





Integrated Pest Management

Note: The content on this page is from the Integrated Pest Management Institute of North America.

Integrated Pest Management (IPM) is a sustainable, science-based, decision-making process that combines biological, cultural, physical and chemical tools to identify, manage and reduce risk from pests and pest management tools and strategies in a way that minimizes overall economic, health and environmental risks (National IPM Roadmap Definition, updated in 2018).

IPM is an approach to solving pest problems by applying our knowledge about pests to prevent them from damaging crops, harming animals, infesting buildings or otherwise interfering with our livelihood or enjoyment of life. IPM means responding to pest problems with the most effective, least-risk option. Actions are taken to control pests only when their numbers are likely to exceed acceptable levels. Any action taken is designed to target the troublesome pest and limit the impact on other organisms and the environment.

Applying pesticides to crops, animals, buildings or landscapes on a routine basis, regardless of need, is not IPM. Applications of pesticides are always the last resort in an IPM program.

Anyone can use IPM. Farmers, greenhouse growers, facility managers, grounds maintenance personnel, pest management professionals, homeowners and apartment dwellers can all learn how to apply low-risk solutions to prevent pest trouble or respond to problems when they arise.

Agricultural IPM and Community IPM differ in many ways but share the same basic principles of prevention, monitoring, careful analysis of risk, and risk-reduction.

Community IPM is an approach to managing pests in buildings and landscapes including homes, businesses, rights-of-way and recreational areas using proactive, preventative, knowledge-based and low-risk methods. Community IPM practitioners work to identify and correct pest-friendly conditions, eliminating access to food, water and harborage by improving sanitation, maintenance, exclusion and landscape management practices. By correcting the conditions that lead to pest problems and using approved pesticides only when necessary, IPM provides more effective pest control while reducing pesticide use.

Key Practices in Agricultural IPM

- Soil Preparation: Growers give their plants a head start on pest problems by choosing the proper site, testing the soil, rotating crops, creating raised beds where necessary, and providing sufficient organic matter.
- Planting: Growers plant crops that tolerate common problems, altering planting time and spacing to discourage certain diseases and insects.
- Forecasting: Weather data are consulted to predict if and when pest outbreaks will occur. Treatments can then be properly timed, preventing crop damage and saving sprays.
- Pest Trapping: Traps that are attractive to insects are used so that growers can pinpoint when the pest has arrived and decide whether control is justified.
- Monitoring: Growers inspect representative areas of the fields regularly to determine whether pests are approaching a damaging level.
- Thresholds: Before treating, growers wait until pest populations reach a scientifically determined level that could cause economic damage. Until that threshold is reached, the cost of yield and quality loss will be less than the cost for control.
- Cultural Controls: The pest's environment it then disrupted by turning under crop residues, sterilizing greenhouse tools, and harvesting early.
- Biological Controls: It is necessary for growers to conserve the many beneficial natural enemies already at work. They import and use additional biologicals where effective.
- Chemical Controls: Growers select the most effective and appropriate pesticide and properly calibrate sprayers. They then verify that weather conditions will permit good coverage without undue drift.
- Recordkeeping: Records of pest traps, weather and treatment are kept for use in pest management decisions.

Key Practices in Community IPM

- Inspection and Monitoring: Regular, close examination of structures and landscaping to accurately diagnose pest problems and their sources. Monitoring devices such as sticky traps for insects can indicate pest presence, abundance and direction of travel.
- Sanitation, Pest-Proofing and Exclusion: Food and water sources and harborage are identified and eliminated.
- Communication: Educating building occupants to avoid pest-friendly conditions and unauthorized pesticide use, and to report pest sightings promptly.
- Recordkeeping: Documenting pest complaints, inspection and monitoring results, pesticide applications and recommendations.
- Low-Risk Pesticides: Non-chemical methods including prevention are the first line of defense. If pesticide use is necessary, products are available such as baits, gels and dusts, with low-toxicity active ingredients applied in ways that greatly limit potential for exposure.

Definitions

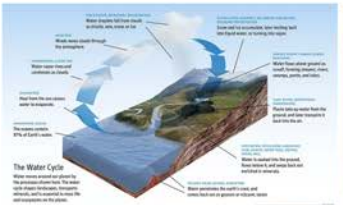


Figure 2. Graphic credit: By Ehud Tal - Own work, CC BY-SA 4.0, https://creativecommons.org/licenses/by-sa/4.0.

Figure 1. NASA/JPL Flickr (CC BY 2.0).

Adaptive Capacity—The ability of systems, organizations, and individuals to (1) adjust to actual or potential adverse changes and events; (2) take advantage of existing and emerging opportunities that support essential functions or relationships; or (3) cope with adverse consequences, mitigate damages, and recover from system failures. Adaptive capacity is an indicator of how well a system will adjust to or recover from external changes or large perturbations (e.g., severe floods or droughts). See also "resilience."

Agricultural water use efficiency—The ratio of the amount of water required to sustain agricultural productivity to the total applied water. Efficiency is increased through the application of less water to achieve the same beneficial productivity or by achieving more productivity while applying the same amount of water.

Anthropogenic—Of human origin or resulting from human activity.

Aquifer—A geologic formation, group of formations, or part of a formation that contains saturated and permeable material capable of transmitting water in sufficient quantity to supply wells or springs and that contains water that is similar throughout in characteristics such as potentiometric head, chemistry, and temperature.

Available groundwater storage capacity—The volume of a groundwater basin that is unsaturated and capable of storing groundwater.

Average annual runoff—The average value of total annual runoff volume calculated for a selected period of record, at a specified location or area.

Beneficial use—(1) As part of the nine regional water quality control boards' basin planning efforts, up to 25 water-quality beneficial use categories for water have been identified for mostly human and instream uses. From Section 13050(f) of California's Porter-Cologne Water Quality Control Act: "'Beneficial uses' of the waters of the state that may be protected against water quality degradation include, but are not necessarily limited to, domestic, municipal, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves." (2) As part of the State Water Resources Control Board's water rights program, the California Water Code Section 1240 states, "The appropriation must be for some useful or beneficial purpose, and when the appropriator or his successor in interest ceases to use it for such a purpose [typically five years or greater] the right ceases." In the water rights process, beneficial uses are defined in the California Code of Regulations. Categories of beneficial uses recognized in California include aquaculture, domestic, fire protection, fish and wildlife, frost protection, heat control, industrial use, mining, municipal, power, recreation, stockwatering, and water quality control.

Biosolids—Wastewater treatment residuals, not including material removed during preliminary treatment, treated to levels that allow agronomic use in accordance with federal law.

Catchment—The area of land that catches and collects water above a reservoir or other storage structure.

Climate change—Changes in long-term average temperature, precipitation, wind, or other variables in a specific region.

Consumed Water—Water that does not return to the system for other uses.

Contaminant—Any substance or property preventing the use of, or reducing the usability of, water for ordinary purposes such as drinking, preparing food, bathing, washing, recreation, and cooling. Any solute or cause of change in physical properties that renders water unfit for a given use. (Generally considered synonymous with pollutant.)

Domestic Well—A water supply well used to serve no more than three residences for the purpose of supplying water for drinking, culinary, or household uses, and which is not used as a public water supply.

Hydrologic Cycle—The general pattern of water movement by evaporation from sea to atmosphere, by precipitation onto land, and by return to sea under influence of gravity.

Integrated—To make whole by bringing all parts together.

Integrated Pest Management—Integrated Pest Management (IPM) is a sustainable, science-based, decision-making process that combines biological, cultural, physical and chemical tools to identify, manage and reduce risk from pests and pest management tools and strategies in a way that minimizes overall economic, health and environmental risks (National IPM Roadmap Definition, updated in 2018).

Integrated Water Resource Management (a.k.a. One Water)—An approach, or process, to managing water that holistically assesses the planning and management of water supply, wastewater, and stormwater systems, focusing on the water cycle as a single connected system while promoting coordinated development and management of water, land, and related resources to maximize the economic and social benefits while minimizing impacts to the environment (American Planning Association 2020).

Permeability—The ability of material to transmit fluid, usually described in units of gallons per day per square foot of cross-section area. It is related to the effectiveness with which pore spaces transmit fluids.

Public Water System—A system for the provision to the public of piped water for human consumption, if such system has more than three service connections or supplies water to a public or commercial establishment that operates a total of at least 60 days per year, and that is used by ten or more individuals per day. Public water system also means a system for the provision to the public of water through constructed conveyances other than pipes to at least 15 service connections or regularly serves at least 25 individuals daily at least 60 days of the year. A public water system is either a "Community Water System," a "Transient Non-Community Water System," a "Non-Transient Non-Community Water System" or a "State Regulated Water System."

Resilience—The capacity of a resource/natural or constructed system to adapt to and recover from changed conditions after a disturbance.

Stormwater—Stormwater runoff is generated from rain and snowmelt events that flow over land or impervious surfaces, such as paved streets, parking lots, and building rooftops, and does not soak into the ground. The runoff picks up pollutants, such as trash, chemicals, oils, and dirt/sediment that can harm our rivers, streams, lakes, and coastal waters (EPA 2020). Stormwater systems include traditional gray infrastructure, such as storm sewers, as well as green, or nature-based infrastructure.

Wastewater—Wastewater is water that has been used and must be treated before it is released into another body of water so that it does not pollute water sources. Wastewater comes from a variety of sources., including home use (toilets and drains), rainwater and runoff, and agricultural and industrial sources (Safe Drinking Water Foundation 2020).

Water Conservation—Water conservation includes strategies, policies, incentives, outreach, and regulations implemented to efficiently manage water resources to ensure sustainable water supplies for current and future demand (. It addresses both indoor and outdoor water usage.

Water Cycle—The hydrologic cycle that describes the continuous movement of water on, above, and below the surface of the Earth.

Water Supply—Water for human use comes from two primary sources—surface water and groundwater. Water supply systems convey, store, treat, and distribute water. Understanding water use helps to evaluate the effects of future development on water supply sources.

Well—Any artificial opening or artificially altered natural opening, however made, by which groundwater is sought or through which groundwater flows under natural pressure, or is artificially withdrawn or injected. This definition shall not include a natural spring, or wells drilled for the purpose of exploration or production of oil or gas. Prospecting or exploration for geothermal resources as defined in ORS 522.005 or production of geothermal resources derived from a depth greater than 2,000 feet as defined in 522.055 is regulated by the Department of Geology and Mineral Industries.


Partnering for a Secure and Sustainable Water Future
Connecting the Stories of Water Supply, Water Use, & Water Security From Cascade Head to Cape Perpetua
Mid-Coast Water Partners
https://www.storymap.midcoastwaterpartners.com/


Colaborando para un Futuro de Agua Seguro y Sostenible
Conectando las Historias de Provisiones de Agua, Uso de Agua, y Seguridad de Agua Desde Cascade Head a Cape Perpetua
Mid-Coast Water Partners
https://www.storymap.midcoastwaterpartners.com/spanish