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AGENDA

Mid-Coast Water Planning Partnership Strategy Development

Session #6: Source Water Development and Protection  
February 10, 2021 8:00am–9:30am

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[**https://global.gotomeeting.com/join/756758117**](https://global.gotomeeting.com/join/756758117)

**Objective:** Develop draft strategies that address the [key issues](https://www.midcoastwaterpartners.com/key-water-issues) associated with Source Water Development and Protection in the Mid-Coast region of Oregon.

**Source Water Development and Protection**

* 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.
* 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.

8:30am–8:35am Welcome, introductions

8:35am–8:40am Review of key objectives, definition, and key issues from Step 3 of the Planning Process

8:40am–9:10am Review/affirm/edit draft strategies/actions discussed by partners to date, and consider other potential actions.

9:10am–9:25am Consider additional objectives and strategies to address Source Water Development and Protection goals.

9:25am–9:30am Summarize, discuss goals for next week, and adjourn

| **T**able 1. States, objectives, and actions to address key water issues in the Mid-Coast region of Oregon. | | |
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| **States** | **Objectives** | **Potential Actions to Consider/Incorporate** |
| 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. | Assess the levels and presence/absence of contaminants in Mid-Coast waters and describe negative effects to human health.  Consistently attain water quality standards that protect drinking water and other beneficial uses.  Anticipate and prepare for the effects of climate change stressors, which are predicted to influence precipitation, temperature, coastal inundation, ecosystem function, and water quality. | 1. Develop and implement long-term water quality monitoring program to improve understanding of baseline conditions and event- caused conditions (i.e., storm, low-flow) for nutrients, bacteria, temperature, dissolved oxygen, pH, turbidity and other specific contaminants identified by DEQ. 2. Prioritize restoration work and support land management practices that reduce contaminants of concern to drinking water    1. Encourage longer forest rotations, improve riparian buffers, and implement more erosion control practices. Seek funding opportunities to reduce landslide and other sediment delivery hazards (e.g., undersized culverts, outdated road maintenance, legacy roads) in locations that are not currently regulated.    2. Advocate for increasing wooded buffer zones associated with intermittent and non-fish bearing streams that feed source water as well as perennial streams that are not currently regulated (e.g., rural residential, urban, legacy agricultural areas). TT    3. Implement education and restoration projects with partners to directly address impairments and improve conditions (e.g., erosion prevention and control, riparian and wetland buffers, urban tree and forest protection)    4. Identify cause, educate and support the reduction of nutrient inputs to source water to prevent algal blooms (e.g., grants, well water nitrate screening, well water and septic system education, low-input gardening).    5. Lessen the amount of sediments and debris from harvested areas from entering source waters.[[1]](#footnote-1)    6. Partner with agencies and OSU to deliver education on safe pesticide application practices coupled with vegetation management practices that reduce or eliminate pesticide use.    7. Advocate for integrated pest management[[2]](#footnote-2) associated with use of pesticides in the Mid-Coast region. For example, minimize aerial spraying in watersheds adjacent to source water; promote hand clearing, when possible, in riparian zones (versus hand spraying); support notification of all water treatment facilities when and where spraying will occur); advocate for education and technical assistance to landowners and others on best management practices.    8. Advocate for the use of fewer herbicides and pesticides.    9. Develop strategies and actions to address biosolids applications, septic system effluent, unregulated pesticides and pharmaceuticals, and hazardous or toxic chemical use by residents and commercial/industrial sectors. Partner with agencies and OSU to conduct water quality monitoring for contaminants of emerging concern and special situations (e.g., biosolids applications), and participate in Clean Rivers Coalition ([https://www.cleanriverscoalition.com](https://www.cleanriverscoalition.com/)) to deliver marketing campaigns to reduce their use.    10. Advocate for funding and partner with DEQ and local organizations to implement hazardous and toxic chemical roundup events for residents and commercial sectors. 3. Planning    1. Encourage municipalities to update/complete stormwater management control plans to incorporate Green Infrastructure/Low-Impact Development practices, using statewide LID technical design guide, and update codes and ordinances that are barriers to implementing these practices. Assist smaller communities, that are not currently required, in developing similar stormwater management plans and technical design guides.    2. Create a Source Water Protection Plan[[3]](#footnote-3), or multiple source-specific plans, to reduce, or minimize contaminants from entering source waters. Advocate for funding to support the development and implementation of these plans. |
| 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.[[4]](#footnote-4) | 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. | 1. Implement monitoring programs that collect water samples to identify pollutant sources (location, source, practices influencing input, transport and fate of pollutants), and use results to prioritize outreach and incentive programs to modify practices.    1. Advocate for additional sampling in headwaters (where herbicides and pesticides are applied and at municipality intakes. TT 2. Conduct comprehensive and ongoing water testing, and use results to guide BMP implementation, restoration, etc. to address water quality impairments. |
| Public information is lacking re: source water protection measures and sources of contamination and concern. | 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. | 1. Notify and educate the public re: the need for source water protection measures. 2. Conduct outreach to inform rural residents about sources of contaminants of concern, and actions they can take to reduce risk. 3. Implement regular private well and intake outreach/education/testing. 4. Advocate for herbicide/pesticide data recording and sharing from industrial users. TT 5. Provide outreach/education programs and info campaigns re water quality impacts of lawn management near streams and ponds, pesticides and fertilizers . Share ways to reduce impacts, find alternatives. 6. Provide outreach/education on septic system management to protection groundwater and surface water. 7. Advocate for increasing the accessibility of data and the sharing of data that is easily interpreted and used by the public. Provide training on use, access, and interpretation of available local data. |
| There is no regional emergency response and management communication and action network in the Mid-Coast. | Support a regional emergency response and management communication and action network. | 1. Ensure Emergency Response Plans address water system needs and specific vulnerabilities, and are interconnected to create a regional network during emergency situations. 2. Support the development of spill response plans in instances where they are not mandated to facilitate quick response and notifications should a spill occur as well as incorporate spills and erosion/turbidity problems in water bodies (streams, lakes, etc.). |
| Lack of protected public drinking water source areas reduces water system control over potential impacts to watersheds. | Seek opportunities to protect and conserve public drinking water source areas. | 1. Acquire land, or obtain conservation easements, to protect critical land areas managed for water quality protection. 2. Support the development of incentives for landowners, carbon exchange, carbon credits, and watershed acquisition (should this be modified to be “as it relates to limiting water quality contaminants of concern”?) 3. Form collaborative efforts with funders, agencies, and NGOs to develop pathways for land purchases, or increased percentage of acreages managed for source water protection and enhancement. |
| Research is lacking on a variety of water quality-related issues in the Mid-Coast region. | Conduct research to better understand impacts and best management practices associated with water quality issues. | 1. Examples of potential research:    1. Conduct in-depth studies of the effects of applying bio-solids on land.[[5]](#footnote-5) |

**Classifications of toxics categories (DEQ):**

* **Consumer product constituents**
  + Includes fragrances, pharmaceuticals, insect repellants and other products found in every-day household chemicals, cleaning products, beauty products, clothing and medications. Examples of commonly detected consumer products include the insect repellant DEET, the stimulant caffeine, and the antibiotic sulfamethoxazole. These constituents likely make their way into the water through wastewater discharges and septic systems. Plant or animal sterols, a sub-set of this category shown separately in the chart, exist both naturally in the environment as products of digestion (such as cholesterol and coprostanol) and may also be present in industrial processes (wood pulping, food oils) and certain dietary supplements (such as beta-sitosterol).
* **Current-use pesticides**
  + Includes insecticides, herbicides, fungicides and others. Use of these products occurs on agricultural lands, public right-of-ways, managed forest areas and residential properties. Some examples of current-use pesticides are: diuron –herbicide used for roadside weed control as well as on varied agricultural lands; carbaryl - insecticide used on forests, fields, homes and a variety of crops; and propiconazole – fungicide used on food crops as well as ornamental plants. Detections of this group of chemicals are common in this monitoring program. Research indicates current-use pesticides may affect salmon and other fish species.
* **Legacy pesticides**
  + Includes pesticides banned from use in the United States. In some cases, these chemicals continue to be used in other parts of the world. Due to their environmental persistence, they remain in parts of the environment. These chemicals often bind to sediment and, thus, runoff from historically treated areas is a source of these chemicals to aquatic systems. In addition, because of their chemical nature, these compounds bioaccumulate in organisms and pose a risk to these organisms, wildlife and, ultimately, human health.
* **Flame retardants**
  + Flame retardants or polybrominated diphenyl ethers (PBDEs) are chemicals which are added to a variety of products. Prevalent in items such as laptops, automobiles, furniture and textiles, these chemicals tend to leach out of these products and enter the environment. Similar in structure to polychlorinated biphenyls (PCBs), they persist in the environment and tend to bioaccumulate in organisms. Concern over the potential toxicity of this group of chemicals prompted several states and countries to pass legislation banning their manufacture and use.
* **Combustion byproducts**
  + Includes polycyclic aromatic hydrocarbons. These combustion byproducts make their way into the aquatic environment through a variety of routes. Since these chemicals are a product of automobile combustion, forest fires and incineration of industrial and municipal wastes, air deposition is a major source. Another large source is stormwater runoff, especially from urban and impervious surfaces. This group also includes the family of chemicals known as dioxins and furans. These chemicals are not produced intentionally but rather are a byproduct of industrial activities (paper bleaching, industrial production) and fossil fuel combustion from sources such as incineration, wood stoves and forest fires. These chemicals persist in the environment, bioaccumulate in organisms, and are toxic to humans and wildlife.
* **Metals**
  + Stormwater runoff, industrial processes and consumer products are all sources of metals to the environment. In addition, metals occur naturally in the earth’s crust and enrichment of certain metals in rocks varies based on the makeup and source of the rocks. This group includes metals such as copper and lead that may reach the environment from cars; silver, which is found in x-rays and photography, jewelry and electronics; and arsenic used in some pesticides and semi-conductors. This group also includes mercury and methylmercury. Atmospheric deposition from coal-burning and other activities is a major source of mercury, but it is also found in dental amalgams and is naturally occurring. Mercury bioaccumulates in organisms. Fish consumption advisories exist for mercury in Oregon and around the world.
* **Industrial intermediates**
  + Includes the industrial chemicals known as polychlorinated biphenyls or PCBs. Most commonly used historically as an electrical insulating fluid, old transformers and capacitors are a common source. However, additional uses existed, including use of PCBs in adhesives, sealants, paints and pesticides. Because of their persistence in the environment, toxicity to humans and possible links to cancer, the United States banned manufacture and use of these chemicals. Similar to legacy pesticides, these chemicals persist in the sediment of aquatic systems. Sources still exist from improper disposal of transformers and other PCB-containing items. Because of their chemical nature, they bioaccumulate in organisms and pose a risk to humans through fish consumption. Several fish consumption advisories exist in Oregon for PCBs.

1. Note: Organic compounds from sediment and debris cause disinfection by products. DBPs like Trihalomethanes and Haas5 are cancer causing. Low flows, warm water In fall time exacerbates the decay of organic matter.] [↑](#footnote-ref-1)
2. Create a sidebar on IPM in the plan. [↑](#footnote-ref-2)
3. Elements of a source water protection plan

   * + 1. Identify human resources needed for planning.
       2. Form an advisory committee of technical experts, citizens, and landowners.
       3. Request state agency assistance to provide GIS and database information/maps.
       4. Identify and map potential sources of contamination in the watershed.
       5. Prioritize protection and restoration activities.
       6. Develop basic protection strategy.
       7. Determine funding necessary to achieve protection planning goals.

   [↑](#footnote-ref-3)
4. Based on the assessment conducted for Oregon’s 2018/2020 Integrated Report on water quality status. [↑](#footnote-ref-4)
5. Note: Fertilizers (Nitrogen) In source water promotes algae growth which Is very problematic at the water treatment facility. Climate change will Increase PAHs. [↑](#footnote-ref-5)