

# Detailed Outline of Eugene Water & Electric Board's Drinking Water Source Protection Program

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## BACKGROUND

In August 2000, the Eugene Water & Electric Board (EWEB) completed a plan to protect the McKenzie River as the sole source of drinking water for the community of Eugene. EWEB began development of a source protection program in May 2001 that implements the August 2000 plan to address the various threats to water quality and long-term viability of the McKenzie River as a drinking water source. The source protection program is comprehensive in that it addresses all threats to the watershed from pollution runoff to spills to terrorist activities, as well as, fostering partnerships and education among the residents and stakeholders in the watershed. EWEB is currently working closely and developing long-term partnerships with over 30 agencies and watershed stakeholders, local high schools, University of Oregon, Oregon State University, and residential associations as the source protection program is implemented on the ground. The source protection program consists of eight main elements:

- ? Comprehensive Monitoring;
- ? Disaster Preparedness and Response;
- ? Education and Research Assistance;
- ? Point Source Evaluation and Mitigation;
- ? Nonpoint Source Evaluation and Mitigation;
- ? Land Acquisition;
- ? Public Outreach and Information Sharing; and,
- ? Watershed Land Use Tracking and Management.

The overall concept of source protection is to have the ability to measure the balance between watershed health and human use over time and implement actions that maintain a healthy balance for production of exceptional water quality. This requires not only being aware of all the different human activities going on within the watershed, but also understanding the limits of what the river can handle and still maintain a healthy watershed with good water quality.

## COMPREHENSIVE MONITORING

The *Drinking Water Source Protection Plan (2000)* sets as a priority the need to establish a comprehensive monitoring subprogram to evaluate water quality, biological health, and land use trends within the McKenzie watershed over time. The plan indicated that the focus of a source protection monitoring program should be the assessment of potential impacts from pollution or other degradation sources to the river. A risk assessment was conducted as part of the source protection plan, which identified and prioritized the various sources that threaten the health of the river. The greatest threats to the McKenzie River are from storm sewer discharges and urban runoff. Discharges from commercial

and industrial facilities, roadside vegetation management, and agricultural activities were also listed as significant risks for contamination.

**Objective:** The objective of a drinking water source protection monitoring subprogram is to provide comprehensive water quality and biological information to allow assessment of the watershed's health over time. This information allows EWEB and others to identify potential problems or threats to the drinking water source early on and evaluate the relative success of restoration and other protection strategies to mitigate potential threats.

- ? Stormwater water quality monitoring (Springfield stormwater channels and sewers during storm events as well as monthly baseline).
- ? Lower McKenzie River water quality and biological monitoring (McKenzie river, Cedar & Camp Creeks, Keizer Slough during storm events and monthly baseline).
- ? Nonpoint source monitoring associated with agricultural, forestry, septic systems, and construction "hot spots" (storm event related and may include shallow groundwater).
- ? Air quality monitoring.
- ? Commercial and industrial facility discharge monitoring.
- ? Performance monitoring associated with actual conservation, restoration, or source protection projects.
- ? Monitoring data management and analysis (SQL database and GIS/modeling analysis).

## **DISASTER PREPAREDNESS AND RESPONSE PROGRAM**

The *Drinking Water Source Protection Plan (2000)* sets as a priority the need to prevent spills of hazardous substances in the watershed and increase preparedness and response capabilities in the event that a spill does occur. Other potential disasters (forest fires, floods, terrorism, and volcanic activity associated with South Sister) also threaten EWEB's drinking water source and are addressed as part of a prevention and preparedness strategy.

**Objective:** The objective of the disaster preparedness and response subprogram is to recognize and be prepared for events that may have a low likelihood of occurring, but if they happen may cause extensive problems for EWEB's drinking water source.

- ? McKenzie Watershed Emergency Response System (MWERS) currently developed for spill response and preparedness (GIS-based watershed emergency response plan in partnership with 27 other agencies).
- ? Terrorism preparedness and response (GIS-based module that builds on HazMat response system and will focus on high priority targets in watershed).
- ? Wildfire assessment & response (GIS-based tool for preparing for and responding to wildfires).
- ? Natural disaster preparedness (GIS-based earthquakes, floods, and volcanic activity preparedness and response modules).
- ? Extremely Hazardous Substance (EHS) facility and community preparedness (through the Local Emergency Planning Committee).

## **EDUCATION AND RESEARCH ASSISTANCE PROGRAM**

The benefits of supporting the education of elementary, middle, and high school level students in understanding the various water quality, biological, and cultural issues that surround the health and future of the McKenzie River are numerous and far reaching. EWEB benefits in the short-term by having students conduct water quality and biological monitoring to support the source protection program. The long-term benefits are that hopefully this curriculum helps educate the younger generation on the importance of these issues and promote a sense of stewardship among the youth. University research in the watershed will provide an excellent source of detailed data and information to better understand watershed functions, biological processes, and how to best apply restoration and mitigation strategies.

**Objective:** The objective of this subprogram is to encourage and promote education of students and research in issues related to watershed health and protection of the McKenzie River as a valuable resource.

- ? Springfield School District monitoring program (Cedar Creek and Camp Creek monitoring for water quality and biological parameters).
- ? Support of OSU research in climate impacts to source water, nitrites, atmospheric transport & deposition of pollutants, microbial finger printing.
- ? Coordinate with research at HJ Andrews experimental forest.
- ? Assist/coordinate with USGS research (pesticides, sediment transport, pharmaceuticals).
- ? Encourage U of O, OSU, and LCC Involvement in Watershed Research.
- ? EWEB/partner organizations research grant program for universities.

## **POINT SOURCE EVALUATION AND MITIGATION PROGRAM**

**Objective:** The objective of the point source subprogram is to inventory, track, evaluate, and monitor point sources of potential pollution (i.e., industrial and commercial facilities) to understand these potential threats and work with regulatory agencies and facilities to reduce the potential threat to drinking water.

- ? Develop GIS universe of point source facilities.
- ? Track air and water discharge permit renewals (including solid and hazardous waste permits) and become involved during permit renewals.
- ? Increase monitoring at high risk facilities.
- ? Work with facilities to reduce hazardous chemical use and storage (Pollution Prevention Coalition and Ecobiz program).
- ? Based on monitoring & GIS analysis, target hot spots for mitigation.
- ? Provide education and outreach to facilities.
- ? Encourage and influence laws and regulations that benefit protection of the McKenzie River from point sources of pollution.

## **NONPOINT SOURCE EVALUATION AND MITIGATION PROGRAM**

**Objective:** The objective of the nonpoint source subprogram is to inventory, track, evaluate, and monitor nonpoint sources of potential pollution (i.e., concentration of septic systems; agricultural activities; forest management activities, stormwater and urban runoff, construction activities, and air pollution deposition) to understand these potential

threats and work with regulatory agencies, land owners, and business groups to implement best management practices and reduce the potential threat to drinking water.

The idea is to focus on specific areas in the watershed using GIS analysis tools to monitor for water quality impacts and work with landowners and partner agencies/organizations to implement long-term.

- ? Through GIS analysis and focused water quality monitoring, evaluate impacts from nonpoint sources of pollution (Agriculture, Septic, Forest Management Practices, stormwater and urban runoff, construction activities, etc.).
- ? Work with landowners and stakeholder groups to reduce pollutants, especially pesticide use and implement long-term solutions in conjunction with economic development and market identification.
- ? Based on GIS analysis and monitoring results, target high pollution load areas for mitigation.
- ? Provide education and outreach.
- ? Encourage and influence laws and regulations that benefit protection of McKenzie River from nonpoint sources of pollution.

### **LAND ACQUISITION PROGRAM**

The land acquisition subprogram will use the data and information compiled from the monitoring, point source, nonpoint source, and land use tracking and management subprograms to target areas that are threatened or degraded for protection or restoration, respectively. As these subprograms are implemented, hot spots of pollution, areas of high risk, and areas with zoning that is incompatible with protection strategies will be targeted for land acquisition. The McKenzie River Trust (MRT) is currently the main vehicle for land acquisition for source protection. EWEB could also work with others to encourage land acquisition (Nature Conservancy, Ducks Unlimited, etc.). However, once the scope of the potential properties that should be acquired is better understood, it may be necessary for EWEB to consider additional mechanisms for providing a continual source of funding for land acquisition.

**Objective:** The objective of the land acquisition subprogram is to target critical properties in the McKenzie River watershed for purchase or conservation easement in order to protect the watershed over the long term as a high quality source of drinking water.

- ? Use of McKenzie River Trust to target areas of interest for source protection.
- ? Establish additional land acquisition program that provides reliable inflow of capital for purchase of land in the watershed.
- ? Work with partners and landowners for placement of conservation easement and other measures in critical areas.

### **PUBLIC OUTREACH AND INFORMATION SHARING PROGRAM**

**Objective:** The objective of the public outreach and information sharing subprogram is to widely disseminate data and information collected as part of the source protection program to EWEB water customers, McKenzie River watershed residents, and other stakeholders.

- ? Coordinate and support the McKenzie Watershed Council public outreach and education efforts.
- ? Develop a GIS-based website to allow easy dissemination and downloading of watershed data, reports, maps, and information among researchers, watershed residents, partners, stakeholders, and the general public.
- ? Actively seek opportunities to get the source protection message across to EWEB customers and watershed residents.

#### **WATERSHED LAND USE TRACKING AND MANAGEMENT PROGRAM**

**Objective:** The objectives of the land use tracking and management subprogram are to: gain a thorough understanding of current land use activities and zoning regulations in the watershed; develop a mechanism for tracking land use activities; and, become an active participant in shaping land use and zoning policy in the watershed to protect the McKenzie River as a drinking water source.

- ? Track land use and/or zoning changes and building permits in the watershed using GIS.
- ? Active involvement in commenting and influencing land use and zoning laws and regulations to protect the McKenzie River as a drinking water source.
- ? Target areas with incompatible land use or zoning that are important for source protection for land acquisition.