

Evaluating Residential Development Impacts to Drinking Water Quality in the McKenzie River Watershed: Assessing the Threats and Seeking Solutions

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The McKenzie River is an important regional resource, providing over 250,000 people with high quality drinking water, producing hydroelectric energy, serving as a world-renown recreation and fishing area, and providing habitat to one of the last remaining native Bull Trout populations in the Pacific Northwest. Potential high-risk threats to this critical regional resource includes urban stormwater runoff, hazardous materials spills, industrial discharges, agricultural activities, forest management activities, and septic systems.

Eugene Water and Electric Board's (EWEB) Drinking Water Source Protection Program collects baseline information about various nonpoint sources of pollution activities (i.e., urban runoff, forestry, agriculture, septic systems, and construction activities) in the McKenzie watershed and, through geographic information system analysis and water quality monitoring, evaluates those areas that may impact the McKenzie River. These baseline data are used to evaluate trends over time and identify opportunities for collaboration to mitigate potential impacts before they become a drinking water problem. Program research to date highlights human habitation (urban or rural residential) to be among the greatest threats to quality water in the future.

Current research on this project is focused on reviewing historic development decisions and examining the potential effects of future development build-out potential. Historic residential development trends of potential water-quality impact in the watershed are examined from both a statistical perspective and an anecdotal narrative of development permit activity in the watershed. This analysis is then used in conjunction with recent land use legislation data (Measure 37) to project a future residential build-out potential for the watershed.

The combination of these three work programs—monitoring of current watershed activities, research into historic development patterns, and the projection of potential future development—allow EWEB to plan for maintaining excellent water quality for the future.

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Nancy Toth is an environmental associate who works on drinking water source protection for Eugene Water & Electric Board. Her recent project work includes a septic system assistance project, an agricultural chemical collection project, water quality monitoring and natural resource mapping. Nancy and her colleagues work with agencies, organizations, and watershed stakeholders to develop innovative ways of addressing threats to water quality. Nancy has a BA in Geography from Dartmouth College and an MS in Environmental Studies from the University of Oregon.