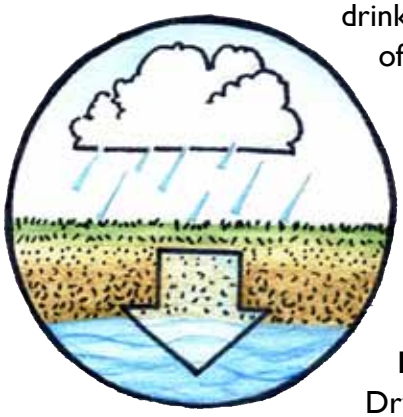
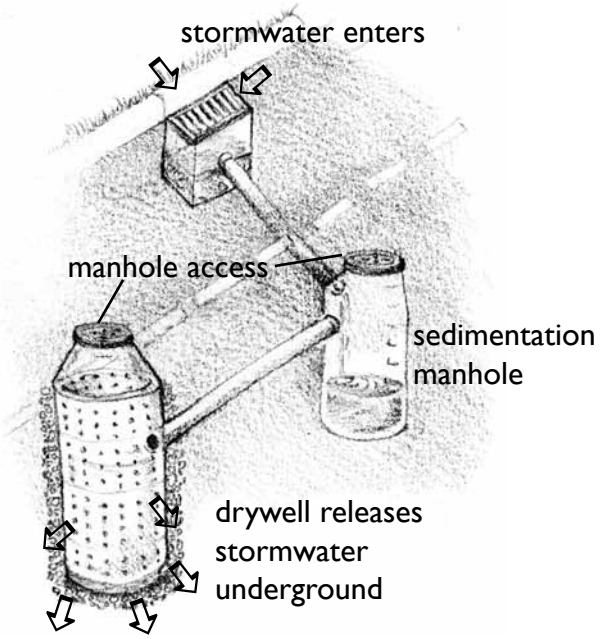
Drywell Decommissioning Program

Summary
The City of Eugene owns and manages about 100 public drywells, many of which need to be decommissioned to comply with state and federal regulations to protect local drinking water supplies. The majority of these drywells are located in the River Road/Santa Clara area. The City is working with Lane County on solutions in unincorporated areas where the County owns and operates an equal number of public drywells.





Drywells in Eugene

Drywells are stormwater management facilities that collect stormwater runoff from adjacent areas and direct it into the ground, as opposed to directing it to a piped system or waterway. Drywells have been used in Eugene in areas where there are no pipes or waterways to receive and convey stormwater, and where the soils are suitable for infiltration. The two most common types of drywell configurations in Eugene are a horizontal perforated pipe embedded in a rock-filled trench and a vertical pre-cast manhole structure with perforated sides (see illustration upper right). Once stormwater enters a drywell, it is discharged through the perforations in the pipe or manhole, then into the surrounding soil and ultimately into groundwater.

Stormwater Discharges to Drywells are Regulated by Federal Safe Drinking Water Act

In 2002, municipalities and industries with more than 50 drywells were required to apply to the Department of Environmental Quality (DEQ) for discharge permits under the federal Safe Drinking Water Act. The intent of the permits is to protect potential drinking water sources by eliminating pathways for pollutants that could get into the groundwater. Existing drywells that pose a risk to groundwater must be decommissioned or retrofitted, if possible, to protect groundwater. New drywells must meet stricter requirements for design and construction to protect groundwater. The City of Eugene anticipates that its permit will be issued by mid-2011 and that it will require the decommissioning of most or all of its public drywells over a 10-year period.

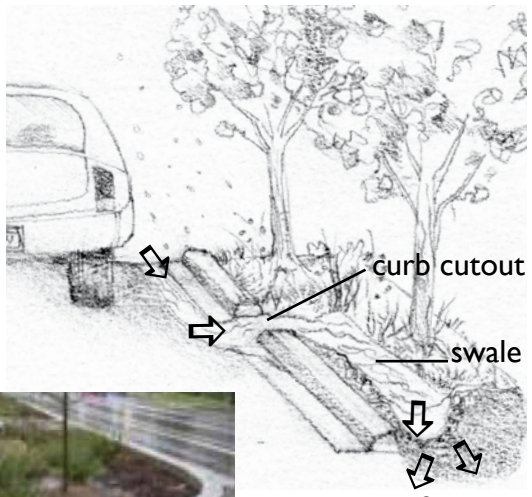
Protecting Groundwater Quality

In Oregon, all groundwater is considered a potential source of drinking water. While the use of drywells is an appropriate and beneficial stormwater management practice in many instances, adequate vertical separation is necessary between the bottom of the drywell and seasonal high groundwater levels and horizontally between the drywell and any nearby domestic wells. The average depth to groundwater in the River Road/

Santa Clara area is approximately eight feet below the ground surface. Using information about the City's public drywells, estimated groundwater levels, and interpretations of federal and state regulations, the City has concluded that the majority of Eugene's public drywells are not adequately separated from seasonal high groundwater to meet the upcoming permit requirements.

Eugene's Approach to Addressing the Drywell Issue

Over the next several years, Eugene plans to replace most or all of its public drywells with different types of stormwater management facilities that reduce the risk of polluting potential drinking water sources, and to comply with the new DEQ permit. Appropriate facilities could range from underground pipes connected to the municipal stormwater system to vegetated swales and other surface infiltration facilities (see illustrations). Depending on the solutions selected for specific locations, the end results could look – and function – differently from place to place. Design strategies will be developed for the first group of drywells in fall/winter 2011, and construction is scheduled for summer 2012. Initial contact with property owners is anticipated to occur fall 2011.



Potential drywell solutions include constructing vegetated swales or rain gardens as shown here. These types of facilities collect stormwater and provide natural filtration as water returns more slowly to underground aquifers. Other potential solutions include constructing an underground piped system to connect to the existing municipal stormwater system.

More Information

Oregon DEQ's web site: deq.state.or.us/wq/uic/templates.htm

City of Eugene web site: eugene-or.gov/drywell

For general program questions: Therese Walch, water resources manager, 541-682-5549, or therese.walch@ci.eugene.or.us.

For question specific to drywell decommissioning projects: Doug Singer, civil engineer, 541-682-8460, or doug.k.singer@ci.eugene.or.us.

For questions about drywell solutions in the unicorporated areas of Lane County: Dan Hurley, senior engineering associate, at 541-682-3811 or daniel.hurley@co.lane.or.us.