# FIFTEENMILE MANAGED UNDERGROUND STORAGE

## PILOT PROJECT

The Fifteenmile Managed Underground Storage (MUS) Project attempts to strike a balance between resource utilization and the maintenance of natural ecosystems by providing an active management solution promoted by both conservationists and agricultural producers alike.

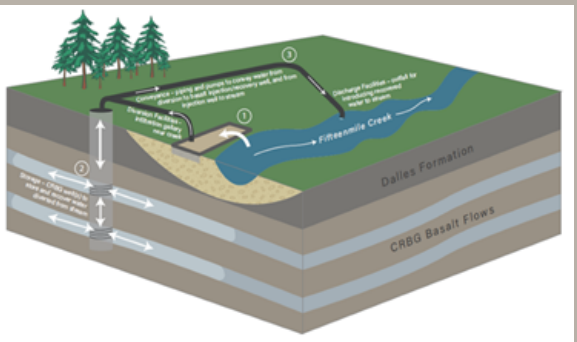
## HISTORY

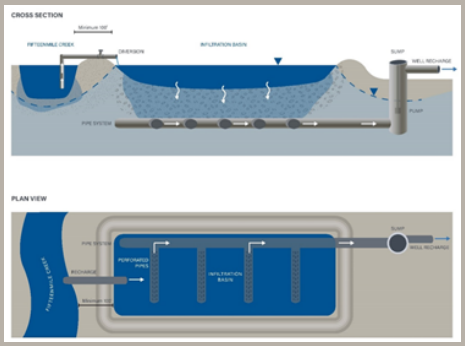
Fifteenmile Creek is a small stream that flows from its headwaters on Mt. Hood, downstream into the Columbia River within Wasco County. Fifteenmile Creek is home to Endangered Species Act (ESA) listed Middle Columbia steelhead, as well as Coho Salmon, Pacific Lamprey and other trout species.
In addition to being home to these ESA listed steelhead, the Fifteenmile Watershed also supports a robust agricultural community. This ag community relies on irrigation withdrawals from Fifteenmile Creek to produce crops such as alfalfa hay and wheat. Like many streams in the American West, Fifteenmile Creek is severely temperature limited. During mid-late summer months, irrigation diversions exacerbate naturally low base flows, reducing available habitat and hindering mobility for juvenile and adult fish. In 2009, low flows and extended high air temperatures combined to kill an unknown but significant number of juvenile fish in Fifteenmile Creek including threatened steelhead. As a result, an enforcement official from the National Oceanic and Atmospheric Administration (NOAA) investigated claims that the watershed violated the ESA, an offense that carries both civil and criminal penalties. Since then, stakeholders have collaborated their efforts to ensure the continued coexistence between irrigators and ESA listed steelhead.

## GOALS

- Conduct baseline monitoring
- Pilot Study for Treatment Design Optimization
- System Design and Construction
- Operational Pilot Testing

Wasco County Conservation District




## MUS Project Design & Basin Examples

# IMPLEMENTATION

The solution we propose to address the issues facing the Fifteenmile Watershed lies within the Fifteenmile Managed Underground Storage Project: a subsurface storage facility designed to catch and store water when flows are abundant and release water back into the stream when flows are low. This solution was reached through a series of feasibility studies analyzing the project costs and benefits of several methods of addressing low stream flows and high temperature, including above ground storage, water delivery efficiency improvements, and stream restoration. The underground storage facility will consist of diverting water from the creek when flows are high, leading to an infiltration basin full of sediment that will provide filtration for the water. Under the infiltration basin will be an underdrain system that will feed into a well, which will then pump water into the aquifer for storage. The water may then be retrieved and pumped back into the creek during the summer providing thermal refuge for endangered salmonids.

This water that will be diverted and pumped back into Fifteenmile will be protected as it moves downstream in coordination with the local OWRD Watermaster. What that means is the returned water is solely to be used for ecological benefit, rather than irrigation. The protected water will also offer peace of mind to the irrigators by reducing the risk of fish-kill and subsequent enforcement action as a result of utilizing their legally assigned water rights.

Through a recently concluded grant for stakeholder engagement, a vast majority of the affected irrigators and agency partners participated in identifying an owner and operator for the facility once constructed. The stakeholder engagement process also identified Safe Harbor Agreements which may be facilitated through the SWCD as another avenue to protect the producers who have been proactive in their efforts to help protect the steelhead.

## OUR GOAL OF SHARING THE DETAILS OF THIS PROJECT IS TO INCREASE AWARENESS OF THE MUS CONCEPT, GROW OUR PARTNERSHIP AND SEEK LONG-TERM FUNDING SOLUTIONS

For more information please contact the Wasco County SWCD office at 541-296-6178 x3

Wasco County Conservation District