

# Solving Septic Impacts in the Colville Watershed

Photo courtesy Stevens County Conservation District



*Installation of gravel-less dome chamber system*

## Introduction

Streams in the Colville River watershed need lower bacteria levels—a lot lower. Knowing where to start working isn't always easy, and since septic systems are out of sight, fixing them is not typically the first action taken to reduce bacteria levels. That is, unless your sink drains slowly and begins gurgling, or the nearby stream has a foul odor. This was the case for a few landowners who had a rare opportunity to use Terry Husseman grant money to fix their failing septic systems.

## Problem

Data collected for a water quality improvement plan (also called a total maximum daily load or TMDL) in 2000 showed that fecal coliform, a type of bacteria that can cause human illness, exceeded water quality standards throughout the Colville River watershed. To meet the standards, bacteria levels need to be reduced by up to 95 percent. While collecting water samples, the Stevens County Conservation District (Conservation District) suspected that failing septic systems were a source in some locations. However, there did not

seem to be any viable funding sources that would help homeowners fix the problems.

## The project

In 2007, Jaime Short (Shorelands and Environmental Assistance Program) and Karin Baldwin (Water Quality Program) assisted the Conservation District on a proposal for a Terry Husseman grant to fix failing septic systems as a demonstration project. In July 2007, Ecology awarded the Conservation District \$50,000 to fix up to five known failing septic systems. To help ensure the maintenance of the new systems, the grant required homeowners to pay a portion of the replacement costs.

Conservation District and Northeast Tri-County Health District (Health District) staff contacted homeowners who either lived near streams that had a foul odor or had high bacteria levels and no known sources. As a result, four homeowners agreed to participate because they knew their systems needed help and they did not have the money to fix the problem. None of the septic systems could be fixed, and so needed to be replaced. Each homeowner filled out the applications and paid all the permit fees. The Conservation District then determined how much grant funding each homeowner would receive, based on the severity of the problem and the homeowner's ability to pay for the new system. Next, licensed engineers designed septic systems to meet the characteristics (distance from surface water, soil type, etc.) of each site. By the end of July 2008, five septic systems were replaced with four new systems. The Conservation District determined the average cost to replace a septic system was about \$16,600 (Table 1).

**Table 1.** Amount of money spent by the grant and homeowners to replace the septic systems.

Total Cost	Terry Husseman Grant	Homeowner/Other
\$66,557.00	\$49,346.90	\$17,209.78

## Milestones and outcomes

To identify impacts of the failing septic systems on nearby surface waters, the Conservation District collected water samples before and after the replacement of each system.

Results show that fixing the failing septic systems decreased fecal coliform levels in nearby streams. The improvement in bacteria levels at one site on the Colville River was almost immediate, since bacteria levels were half the amount measured one week earlier. Bacteria levels on the North Fork Chewelah Creek also dropped dramatically just 19 days after the completion of the new septic system. However, more work remains because bacteria levels increased at three of the four sites in August, which is likely the result of lower flows and other bacteria sources in the watershed.

## Project highlights

The main highlight of the project is an improvement in working relationships between the public and agencies involved. During the TMDL process, some residents believed Ecology blamed the high bacteria levels mostly on livestock. Therefore, many watershed residents were happy about this project because Ecology and the Conservation District were helping reduce bacteria from other sources. In addition, the homeowners were unsure about letting the Health District know their systems were not working properly, so staff from both districts visited each homeowner at the same time, which helped put them at ease. The homeowners proceeded with the projects and now are very happy with the results. This project also highlights the need for more grant funding to help other homeowners fix their systems and improve water quality. The Conservation District received requests from other homeowners who need help replacing their systems, as well as tips from septic system installers about other systems near streams in need of repair or replacement. Unfortunately, despite the demand and positive environmental benefit, grant funding to address septic systems is difficult to obtain.

## Partners

Several people helped make this project a great success, including the staff of the Stevens County Conservation District and Northeast Tri-County Health District, the homeowners, the Conservation Commission, the licensed septic system designers and installers, and the people who helped approve the necessary permits. However, Charlie Kessler, Stevens County Conservation District, and Matt Schanz, Northeast Tri-County Health District, were responsible for much of the work. Their dedication to this project is a primary reason for its success and completion within one year.

## Funding

A combination of funding from the homeowners, Conservation Commission, and the Terry Husseman grant paid to replace the septic systems. The homeowners paid for the permits, and helped with excavation and construction, or other costs. The Conservation Commission paid for some of the engineering costs to design the new septic systems and drain fields. Most of the funding was provided by Ecology's Terry Husseman grant, which is a part of the Coastal Protection Account. Money in this fund comes from penalties businesses and individuals pay when they pollute the state's waters.

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*Septic tank and pump chamber*

Photo courtesy Stevens County Conservation District

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