

# Turbid Runoff and the Railroad

## Cooperative solutions



*Stormwater running off BNSF's dirt access road to Madelia Street*

### Introduction

The Urban Waters Initiative is tasked with locating and eliminating sources of pollution being discharged to the Spokane River. One of the techniques we use is to conduct neighborhood sweeps, looking for businesses or land uses that may be potential sources. Burlington Northern Santa Fe (BNSF) Railroad's dirt access road, leading from Madelia Street up a hill to its silos, turned out to be one source of muddy runoff. When it rained or snow melted at the site, water would run down the hill, picking up dirt and delivering it to a storm drain.

### Problem

Finding and fixing direct discharges of stormwater to the river are constant and perplexing problems. There are dirt streets, alleys, parking lots, and access roads around the cities of Spokane and the Spokane Valley that contribute muddy water during each rain event or snow melt. When this happens, it can cause a stormwater water quality violation. When the Urban Waters Initiative team found one such site, in the city of Spokane at 310 N. Madelia Street, we had to figure out who was responsible for the turbid runoff. The history of the site dates back to 1898, when the BNSF Railroad gave the city a 60-foot easement along the north property line of the railroad right-of-way for a road to parallel the tracks. However, the city never exercised this easement agreement and subsequently the railroad created an access road for its silos on a portion of it. The initial challenge was coming up with who was responsible for maintenance of the road and control of turbid runoff—the city of Spokane or the BNSF Railroad.



*Turbid stormwater running into storm drain on Madelia Street*



*Construction of rock flow control structures*

### Project or event goals

Ecology contacted both the city of Spokane and BNSF Railroad to discuss the problem of muddy discharge to the storm drain, determine the responsible party, and find a solution. After much discussion about the history of the site and who actually owned the road, BNSF accepted responsibility and stepped up to fix the problem.

Ecology worked with Donald Girard of BNSF Railroad to come up with a solution. After conferring with their consultant, Kennedy-Jenks

Consulting, the railroad contracted with a local firm, GeoEngineers, Inc., to design a stormwater management system for the slope. The resulting plan was to berm the parking area above the slope to retain much of the stormwater onsite, and reshape the road so the



remaining drainage would flow to the shoulders. Along the shoulders, water would enter ditches with rock flow controls to slow the runoff and sod to filter the runoff. BNSF awarded a contract to NRC Environmental Services to construct the project.

### **Milestones and outcomes**

The Urban Waters Initiative team first found the problem in June 2010. Discussions regarding who would take responsibility for addressing the problem took place until February 2011, when the consulting firm of Kennedy-Jenks was brought in by the railroad to facilitate a remedy for this site. GeoEngineers designed the project in March 2011. NRC Environmental Inc. installed it in May 2011.



*Newly sod-lined ditches to slow and filter runoff*

### **Project highlights**

Due to the work of the Urban Waters Initiative and collaboration with BSNF Railroad and the city of Spokane, the site now has a well thought-out stormwater management system that should eliminate runoff of turbid water. In addition, the new road should help reduce track-out (mud stuck to truck tires) onto Madelia Street. As of July 15, 2011, the access road has been paved further eliminating scouring of the roadbed and subsequent turbid runoff.

### **Partners**

The partners for this project included Donald Girard of BNSF Railroad, Melissa Godlewski of Kennedy-Jenks Consulting, Scott Laytham of GeoEngineers, Inc., NRC Environmental, and the Department of Ecology.

### **Funding**

BNSF railroad provided the full funding for this project.

### **For more information**

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*Site post construction*

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