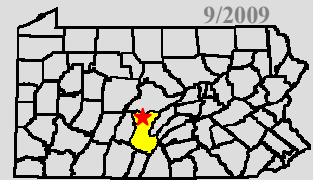


Worksite in Focus

Red Rose Revisited 2001 – 2009: eight years later



Project Overview:

Red Rose Road was an extensive road rehabilitation project that was completed in 2001, with Driving Surface Aggregate placed on the road in 2002. This demonstration project was completed in cooperation with the Huntingdon County Conservation District, the Penn State Experimental Forest, and Barree Township.

The Problem:

Red Rose Road was a severely “entrenched” roadway. The road elevation had been lowered over time by traffic, erosion, and maintenance activities. Over 1,200 feet of road was acting like a stream channel, collecting water from the surrounding land and funneling it to the small stream below. The long ditch drainage overwhelmed the small stream with excessive flows and sediment. The road also had a steep drop-off to the stream after the crossing, and was heavily shaded.

The Solution:

The best permanent solution for Red Rose Road was to restore a more natural drainage pattern by raising the road elevation. An on-site shale pit was used to raise over 1,000 linear feet of road 3 to 6 feet in elevation in compacted 8” lifts. (See photo sequence on reverse) Raising the road eliminated the downslope ditch, and provided necessary cover for crosspipes to be installed to drain the upslope ditch.

In addition to raising the road elevation, several other Environmentally Sensitive Maintenance Practices were implemented. Trees around the road were selectively thinned to reduce canopy cover without wholesale “daylighting” of the road. The section of road immediately after the crossing was shifted upslope approximately 50’ to provide a stable buffer between the road and stream. Several gradebreaks were installed on the road to provide pipe cover and prevent drainage from flowing down the road. The shale pit was retired after the project. Rootwads, stumps, and logs were used to stabilize both the shale pit and downslope bank on the relocated road.

Project Facts

Project: Red Rose Road
Project Owner: Barree Township
Watershed: Shavers Creek (HQ)
Project Length: 2,500 feet
Date Completed: 2001, DSA in 2002

Cost Summary:

Road Fill & Drainage: ~\$35,000
Included road filling (shale free on site), pipes, shale pit retirement, tree thinning, and bank stabilization.

DSA: ~\$10,000
6” compacted depth, paver placed, roller compacted

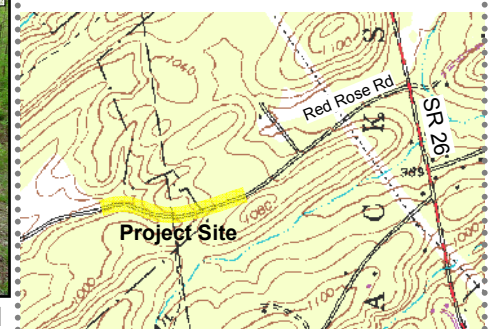
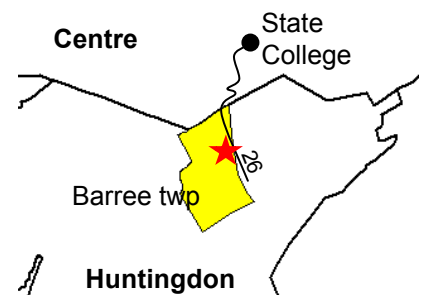
This project was funded by Growing Greener

Maintenance

The road has only been “lightly graded” twice since aggregate placement in 2002. Occasional potholes have been patched near the stream crossing where the road lacks crown. Other than that, no other maintenance has been needed.

For More Information:

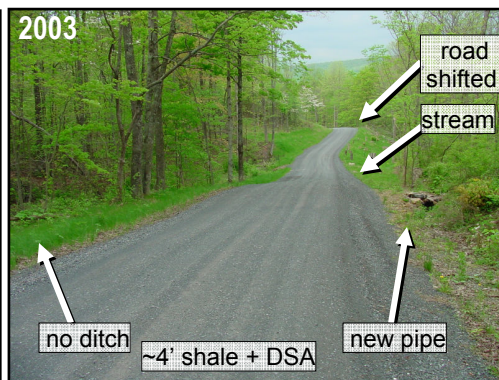
Center for Dirt and Gravel Road Studies
(814) 865-5355 www.dirtandgravelroads.org



Lat: 40° 40' 38" N Long: 77° 53' 25" W



BEFORE. Entrenched road traps runoff in ditch, transporting it to stream. Heavy canopy and insufficient cover to install crosspipes.



AFTER. Raised road eliminates left ditch, and provides cover for pipes to drain right ditch. Trees thinned and road shifted away from stream.

The publishers of this publication gratefully acknowledge the financial support of the Pennsylvania Bureau of Forestry. For additional information or assistance, contact: Center for Dirt & Gravel Roads Studies, Penn State University, 207 Research Unit D, University Park, PA 16802 (Toll-Free Phone: 1-866-668-6683, Fax: 814-863-6787, Email: dirtandgravel@psu.edu). Additional copies available on our website at: www.dirtandgravelroads.org



Eight Years Later...

Filling the road and adding crosspipes are relatively permanent solutions. The drainage on Red Rose Road has withstood the test of time very well. The road still sheds water from its downslope side. Gradebreaks are still functioning to insure water does not flow down the road. The added crosspipes still function to separate uphill ditch flow into manageable volumes and outlet it away from the stream.

The Driving Surface aggregate has performed well. It has been graded lightly only twice since placement in 2002. Notice that while the road was filled with shale in 2001, aggregate was not placed on the road until 2002. This time lag is recommended in order to allow the fill material to settle. It can then be graded in preparation for aggregate. Placing aggregate immediately over new fill may cause the aggregate to become deformed as the fill settles differentially underneath. It is important for road maintenance crews to be aware of surface drainage features such as gradebreaks during routine maintenance. One grading by an uninformed operator could easily remove these drainage features.

Don't Take Our Word for it.....

“Overall, the project addressed and remedied several issues with Red Rose Road. First, it was a “sunken road” and any “fix” we did was a band aid at best. Although the project was rather expensive initially, it has remedied several problems and reduced the need for significant annual or biannual maintenance. We were able to successfully place drainage pipes and use grade breaks to redirect runoff, coupled with the use of DSA has significantly reduced sediment in the adjacent stream (leading to Shavers Creek and Stone Valley Lake).

The selective thinning (instead of daylighting) along the road has provided needed sunlight on the road surface but not opened it up too much to give drivers the impression that they can drive fast. Also, the selective thinning has not encouraged quick regrowth of saplings and small trees that are easily bent over or broken off onto the road from heavy wind or snow events.

In the eight years since the project was completed, we have only had to lightly grade the road twice and fill several potholes occasionally. The road improvements have also made the road much safer for winter travel since water and ice are no longer trapped in the road corridor.”

-Joseph A. Harding

Director of Forestlands, Penn State University

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BEFORE. Existing entrenched roadway traps drainage and transports it to stream around bend.



DURING. Entrenched road is filled with shale. Trees are selectively thinned.



DURING. Driving Surface Aggregate is placed 8" deep using a motor-paver and compacted to 6" with a roller.



AFTER. Raising the road provided a long-term solution to the runoff issues on Red Rose Road.