

Worksite In Focus

Carbon County Mauch Chunk Lake

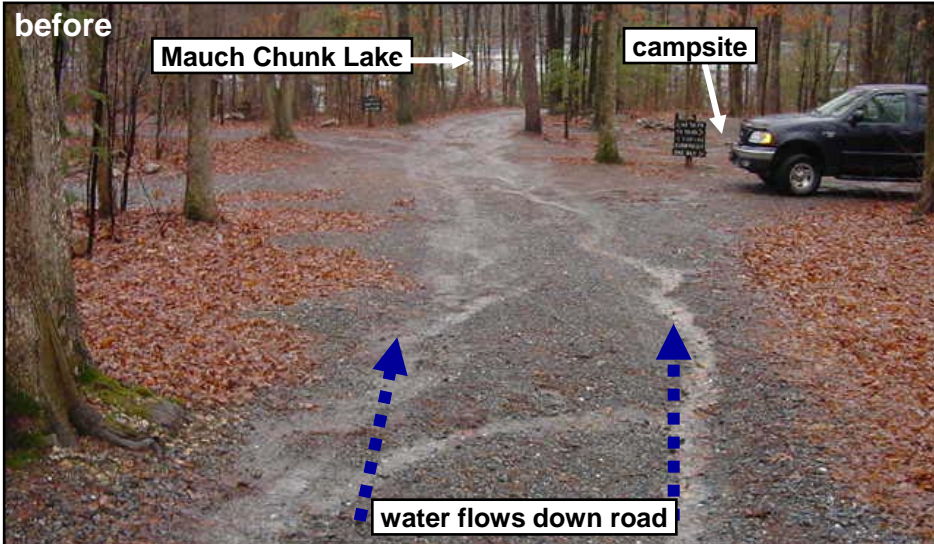
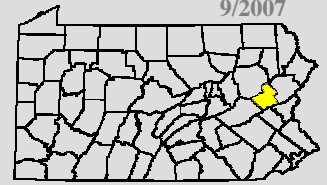


Photo 1. A typical section of the campground loop road is shown here. Few water control structures means that water runs down the road, through campsites, and into the lake.

Project Overview:

Mauch Chunk Lake is a County Park located in western Carbon County. This project was a collaborative effort using Growing Greener, Dirt and Gravel Road Program, and County funds. The project was intended to address some maintenance and pollution issues that were occurring in the County-operated campground. The campground contains approximately 120 tent sites within a labyrinth of access roads (see photo 2). The high density of roads and campsites caused many problems with surface runoff. Because virtually no drainage control structures were present, large rainfall events caused erosion and

damage to roads and campsites alike. To make matters worse, significant amounts of water enter the site from culverts under the State Highway located just 100 yards upslope. Much of the eroded material enters the adjacent Mauch Chunk Lake. This project was designed to reduce runoff pollution to the lake and significantly improve the condition of the park's roads and campsites.

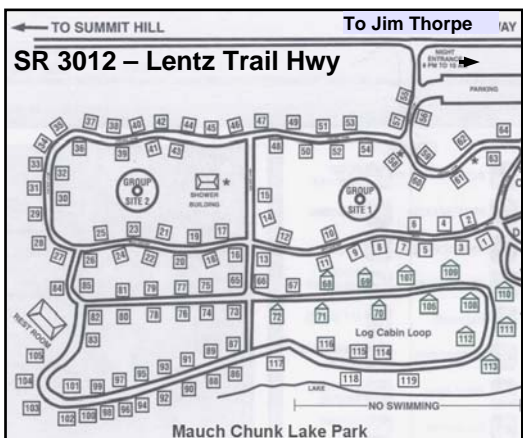


Photo 2. Layout of Mauch Chunk Campground

Project Facts

Project: Mauch Chunk Lake
 Project Owner: Carbon County Park
 Watershed: Mauch Chunk Lake
 Date Completed: 2006

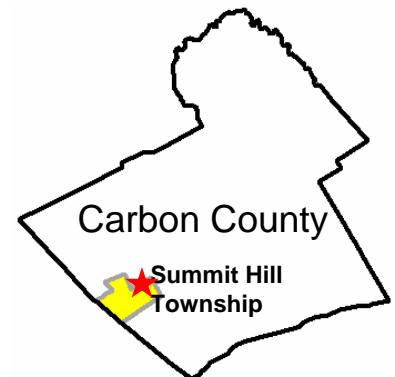
Cost Summary:

Growing Greener: ~\$35,404
 Dirt & Gravel: ~\$15,000
 Carbon County: ~\$ 7,000
 Total: ~\$57,404

For More Information:

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

Carbon Conservation District: (610) 377-4894



The Plan:

Most of the problems in the campground are generated by uncontrolled surface runoff. Many structures were created throughout the campground to control runoff from roads and campsites, and to encourage infiltration before runoff could reach the lake.

Infiltrating Level-Spreader:

Photo 3 illustrates a “level-spreader” designed to slow runoff and encourage infiltration. Water from a road ditch enters from the bottom left of the picture. Water is retained in the structure until it infiltrates or percolates through the “French mattress style” outlet. The bottom edge is built wide and level to spread water from high flow events over a larger area instead of concentrating it in a ditch. Before this structure, the eroded road ditch cut a channel away from the road, through the woods, and into the lake.

French Mattresses & Infiltration Box:

Where possible, pipes were installed under the campground road to direct runoff under the roadway. In many locations, campsite pull-offs and low road elevations prevented the installation of traditional crosspipes. The road acted as a dam to overland flow in many situations, causing ponded water and poor road conditions. These situations were ideally suited to French Mattresses to allow water to flow under the road. A total of 16 French Mattresses were constructed in the campground. Photo 4 illustrates a French Mattress that empties into an infiltration box. The excavator is about to fill the mattress and infiltration box with clean stone in Photo 4. The infiltration box will retain some of the water to allow for infiltration, and will slow and disperse water from higher flows.

Driving Surface Aggregate:

Once all of the drainage issues were addressed, Driving Surface Aggregate was placed using a motor paver and compacted with a roller. Placement widths varied as the camp road wound through the trees between campsites. Edge compaction of the DSA was critical in this case to insure that campers could easily pull low-clearance vehicles into campsites without “bottoming-out” on the aggregate edge.

Dust Suppressant:

Because of the high levels of summer use and close proximity of campers to the roads, a dust suppressant was topically applied to the aggregate after placement.

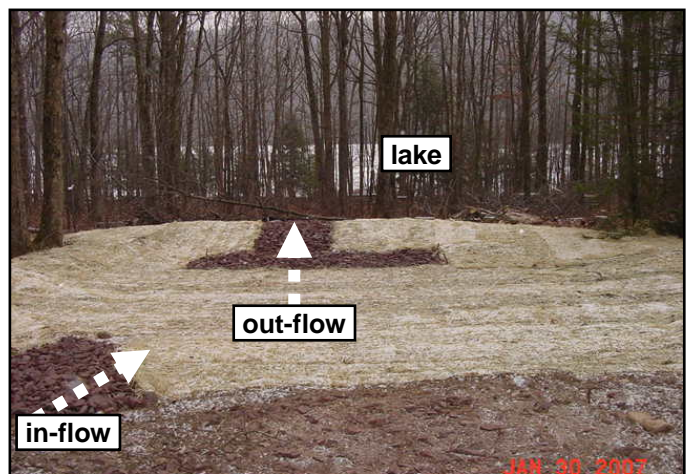


Photo 3. Level spreader to control and slow runoff.

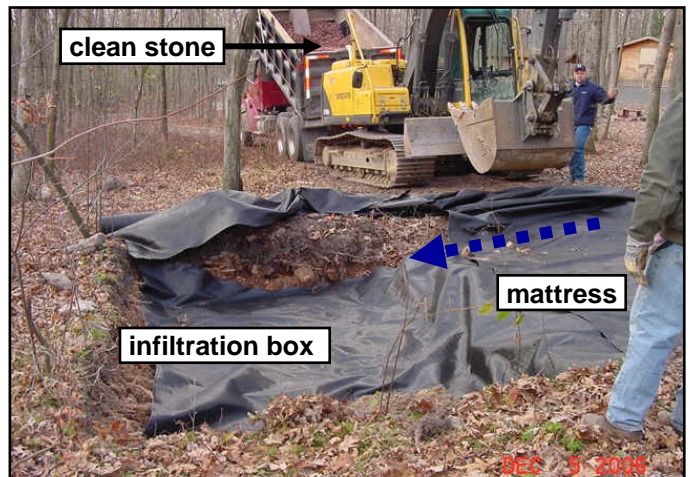


Photo 4. French mattress and infiltration box being filled.



Photo 5. Compaction of paver-placed Driving Surface Aggregate