

**Bioretention Area (Fredericksburg, VA)
Chuck E. Cheese at Central Park
Completed in 1998**

This site was the first parking lot bioretention to be built in the Fredericksburg area. It was built as a retrofit to demonstrate the use of bioretention in treating parking lot runoff. The 1.64 acres of runoff that is intercepted by the bioretention area is part of a larger drainage area that flows to a stormwater wet pond (Hornung 2001).



Above photo taken in fall 2001.

Construction - Due to site limitations, the bioretention area is undersized and is only capable of treating precipitation events that are approximately 0.25-0.35 inches occurring over a six-hour time period (as opposed to 0.5 inches over 6 hours, which is the typical runoff volume treated by cells designed using standard sizing criteria). During precipitation the water is allowed to pond to approximately 8 inches in the bioretention area. Instead of spilling down into a drop inlet, any excess runoff exits the system over a curb outlet located opposite to the inlet. This additional water then flows across a parking area and into the wet pond.

The water that does filter through the bioretention passes through 2-3 inches of mulch and then through four feet of planting media. The planting media used is a mixture of 50% sand, 25% topsoil, and 25% composted leaf mulch. After it passes through the plant media it then accumulates in a 6-inch sump of #57 gravel. This allows infiltration of the treated water into the surrounding soil. Running through the gravel is a 4-inch perforated pipe that drains the filtered water to the stormwater conveyance system. The bioretention is well vegetated with mixed trees and shrubs that run throughout the length of the filter. The underdrain outlet for this system can be viewed from the manhole near the dumpsters at the western end of the bioretention (near Greengate Rd.).

ACCESSIBILITY: The site is open to the public and available for viewing at any time.

DIRECTIONS: *From I-95, Take the VA-3 W exit (Number 130B), towards CULPEPER. Merge onto Plank Rd. Turn Right onto Carl D Silver Pkwy. Turn left onto Trade Street. The bioretention is in the parking lot between Chuck E. Cheese and the Ice Park.*



The information in this write-up was prepared by Krista Thompson Sharp at Friends of the Rappahannock in March 2002 through a grant funded project from the Chesapeake Bay Restoration Fund.