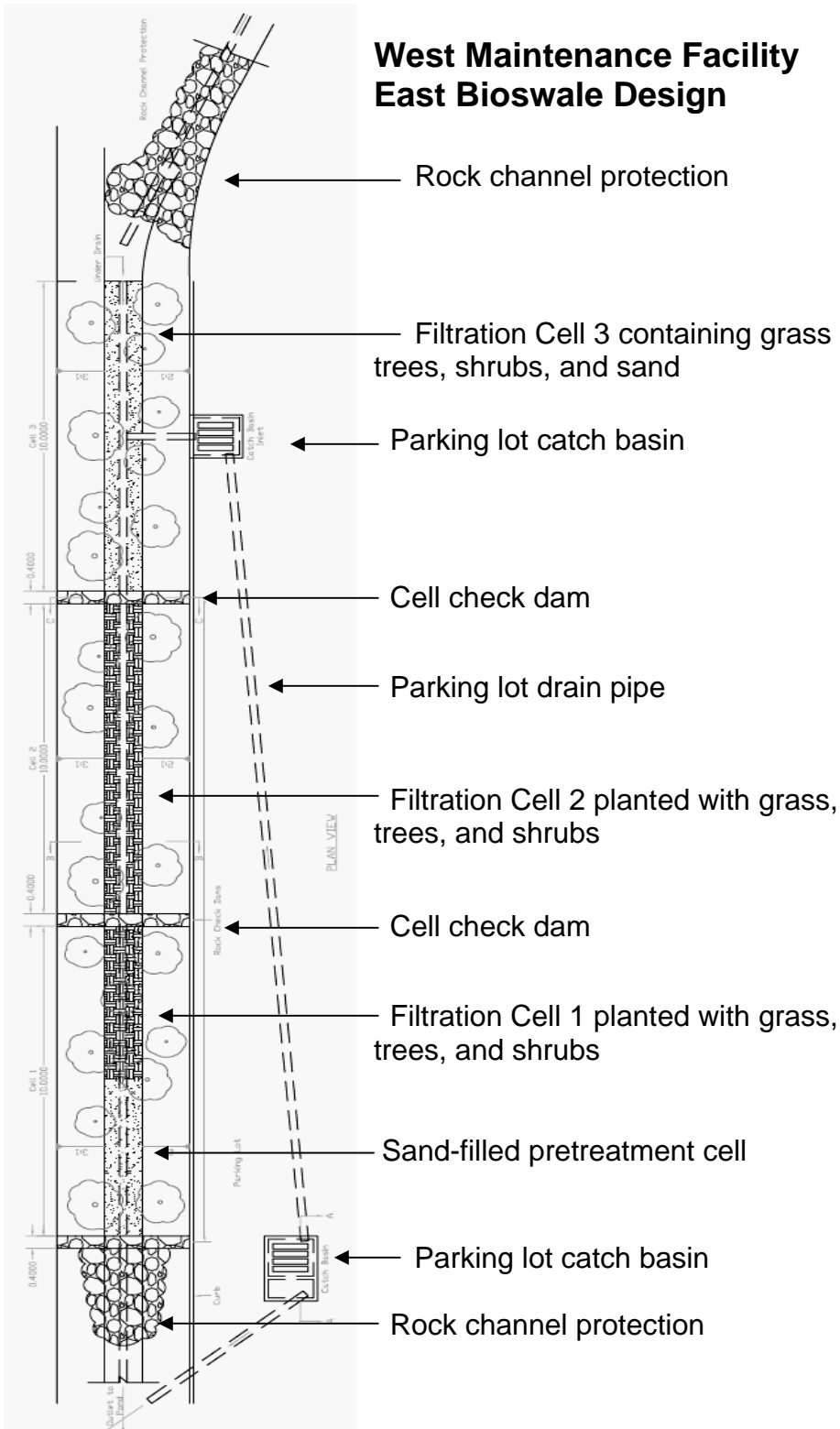


West Maintenance Facility East Bioswale Design



Storm Water Quality Protection:



West Maintenance Facility Bioswale Drainage System

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Safeguarding the environment at our West Maintenance Facility

The construction of our West Maintenance Facility (2003-2005) at 4444 Fisher Road required an innovative approach to storm water management that met basic drainage needs and protected the surrounding landscape from erosion and flooding. It was also imperative to safeguard the Barnes Ditch, which runs through the property, from sediment and other pollutants since it outlets the facility's storm water into the Scioto River Watershed.



Prior to construction, environmental and hydrologic studies were conducted of the site, and it was determined that a "bioswale" drainage system would be the most effective in meeting National Pollutant Discharge Elimination System (NPDES) and Ohio Environmental Protection Agency (EPA) water quality standards.

Scientific research has shown that bioswales can remove as much as 80 percent of water pollutants.

It is our goal to release the cleanest storm water into the environment, as well as to showcase the West Maintenance Facility Bioswales as models for constructing more effective storm water management systems in residential and commercial developments, and roadside drainage areas.

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Bioswales let nature do the work

A bioswale is a wide, shallow, gently sloped drainage filtration system planted with grass and other vegetation. Its width and rooted flora slows the water flow to allow for the sufficient trapping of silt and other contaminants before it reaches a watershed outlet.

Storm water at the West Maintenance Facility free-flows into two separate bioswale systems located along the east and north sides of the property. They contain unique design features that provide filtration for the first three-quarters-of-an-inch of a rain event, which is considered to be the most harmful to the environment:

East Swale (300 feet long, 20 feet wide)

- Sand-filled pretreatment cell
- Three bioretention cells layered with mulch and soil, and planted with grass, trees and shrubs
- Rock channel protection and cell check dams
- Perforated under drain pipe with fabric filter to catch and guide water seepage
- Aerated sediment retention pond for filtered storm water and overflow
- Slow water release pipe to Barnes Ditch

North Swale (250 feet long, 30 feet wide)

- Grass layered surface with soil and washed gravel base
- Perforated under drain pipe to catch water seepage
- Aerated sediment retention pond for filtered storm water and overflow
- Slow water release pipe to Barnes Ditch
- Test design for new roadside drainage that meets NPDES and EPA standards

County Engineer personnel will monitor and maintain the bioswales to ensure their maximum operating efficiency.