



# Compost Works: Streambank Stabilization

Compost Works

Iowa State University applied compost for streambank stabilization and vegetation establishment on campus. A section of stream had the potential to compromise the structural integrity of a nearby parking garage and further compound an existing erosion issue. Soil Tek, a Des Moines erosion control contractor, was selected for the project. This type of application has been used on similar projects across the nation and in Iowa, including one by the City of Des Moines on Salisbury Creek.



Application of compost at ISU to stabilize stream near a parking structure in April 2004

## The Situation

- ◆ Structural concerns for foundation of parking garage
- ◆ Increased flow and decreased stability in stream

## The Problems

- ◆ Future undercutting of garage footings
- ◆ Increased volume and speed of run-off entering stream
- ◆ Sedimentation and contaminant issues downstream

## The Answer

- ◆ Compost

## Application

- ◆ 18-inch Filtersoxx™ (tubular mesh containers) filled with a mix of equal parts: soil, pea gravel and half-inch screened compost
- ◆ Shade-tolerant fescue grass seed blown into Filtersoxx™; dogwood plugs were implanted
- ◆ Secured along bank with wooden stakes and Geogrid (net-shaped product, often made of synthetic fibers, used to reinforce earth-fill slope), applied between the tubes, staggered to create a stable slope
- ◆ Matting, tubes and stakes will biodegrade in roughly three years



The streambank one month after the application was installed; May 2004

## Results

- ◆ Treatment cost effective and quick to install
- ◆ Fescue grass species began to emerge from the socks at only six weeks from application, as seen in the photo above
- ◆ Heavy early summer and late spring rains of 2004 diminished the stability of the grasses; some sections of the tubing were ripped open by passing debris.
- ◆ Soil Tek repaired damage and replaced the grass mix with the DOT floodplain seed mix which is better suited for occasional heavy water flow
- ◆ "We are looking forward to evaluating the success of the wall over time based on bank structure, stream dynamics and aesthetic appeal," said Iowa State University Planning Staff.

## Compost Works For:

### Soil Incorporant

- Turf establishment
- Garden bed preparation
- Reclamation/remediation
- Nursery production
- Roadside vegetation

### Surface Applied

- Garden bed mulch
- Erosion control media

### Turf Topdressing

### Manufactured Topsoil

### Growing Media Component

- Container/potting substrates
- Landscape (e.g. rooftop, raised planters)
- Backfill mixes (tree and shrub plantings)
- Golf course (e.g. tee, green, divot mixes)

### Physical Improvement

- Improves soil structure
- Moisture management

### Chemical Balance

- Modifies and stabilizes pH
- Increases cation exchange capacity

### Biological Impact

- Supplies nutrients and soil biota
- Suppresses plant diseases

### Other Benefits

- Binds/degrades contaminants
- Binds nutrients

Project Date:  
April 2004

Organization:  
Iowa State University

Location:  
Campus parking structure

Application Method:  
Layers of compost-filled Filtersoxx™

Contact:  
Facilities Planning and Management  
Iowa State University

