Rain Gardens and Bioswales

Designing for Drainage

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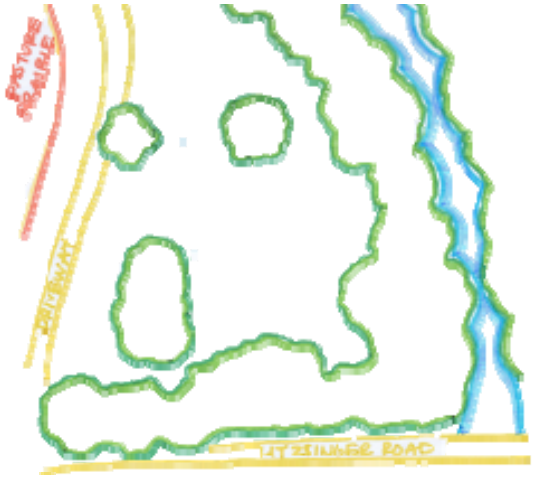
The Problem

- Storm water runoff
- Water quality
- Flooding
- Stream bank erosion
- Lack of water filtration
- Poor drainage
- Flat surfaces

The Solution

Rain Gardens and Bioswales…

- Collect, absorb, and filter storm water runoff from impervious surfaces
- Provide a natural habitat
- Encourage biodiversity
- Prevent erosion
- Require little maintenance
- Absorb 30% more water than a lawn



The Site

The area near the driveway and the drain collects runoff water.

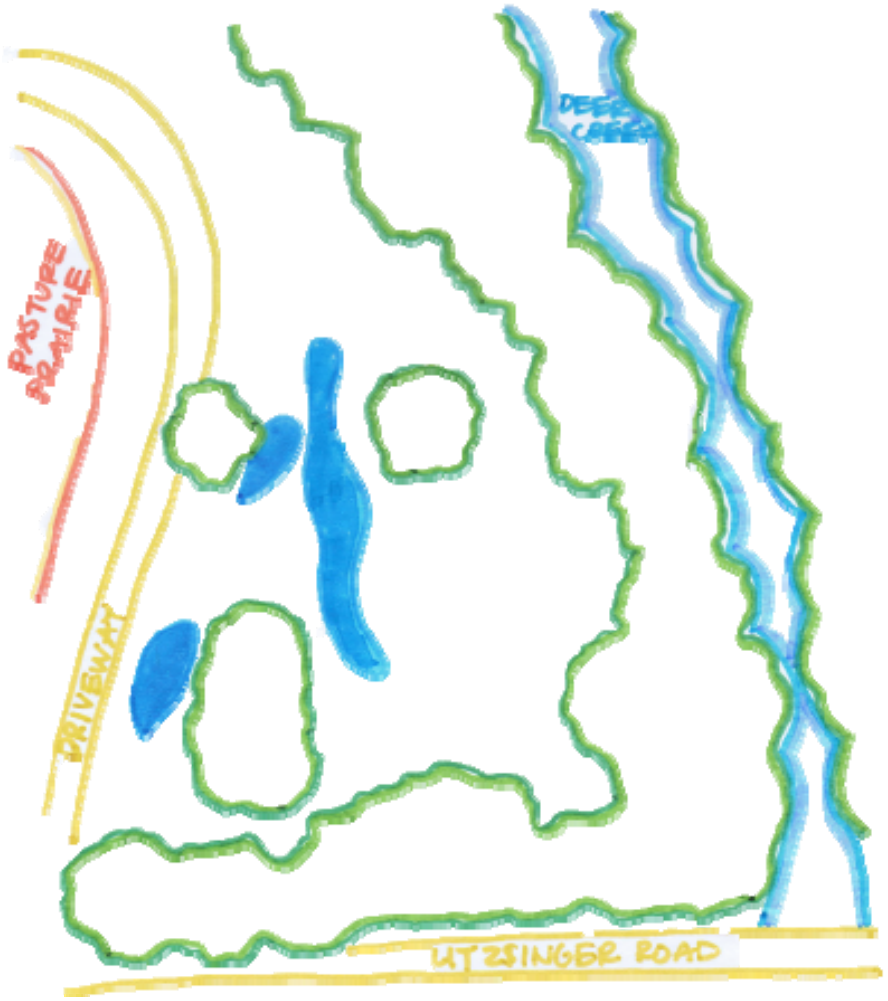
There is an existing swale that transports runoff.

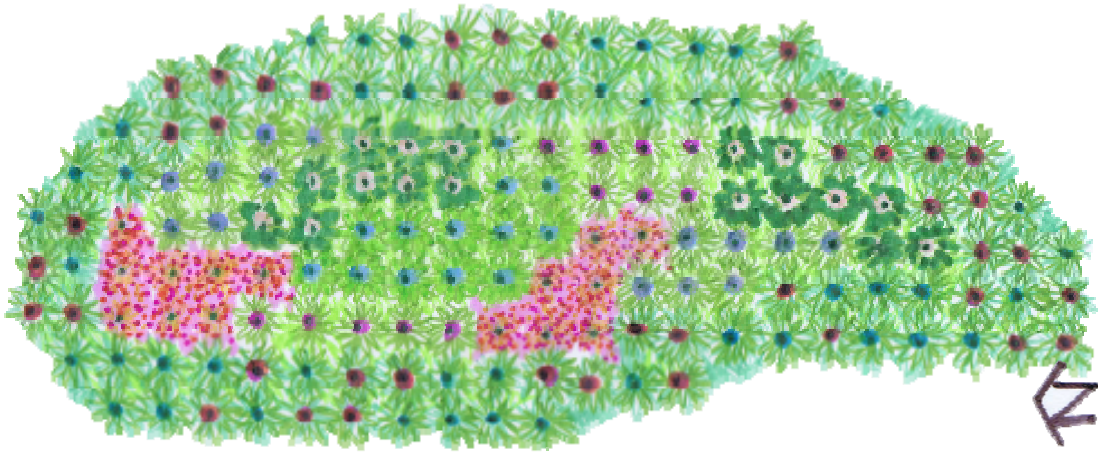
An adjacent existing swale holds water.

Water flows across the turf grass in sheets when it storms.

The Design

- Incorporation of two rain gardens (one of forbs and one of grasses, sedges, and rushes) and a bioswale (forbs, sedges, grasses, and rushes)
- Using native plants for better infiltration and filtration
- Planting 1.5 feet away from one another to allow natural fill
- Using shorter plants for a border around the taller, inside plants





Forb Rain Garden

Plants that can tolerate full sun, part shade, and wet conditions were considered.

Short stemmed iris and copper iris are suggested border plants.

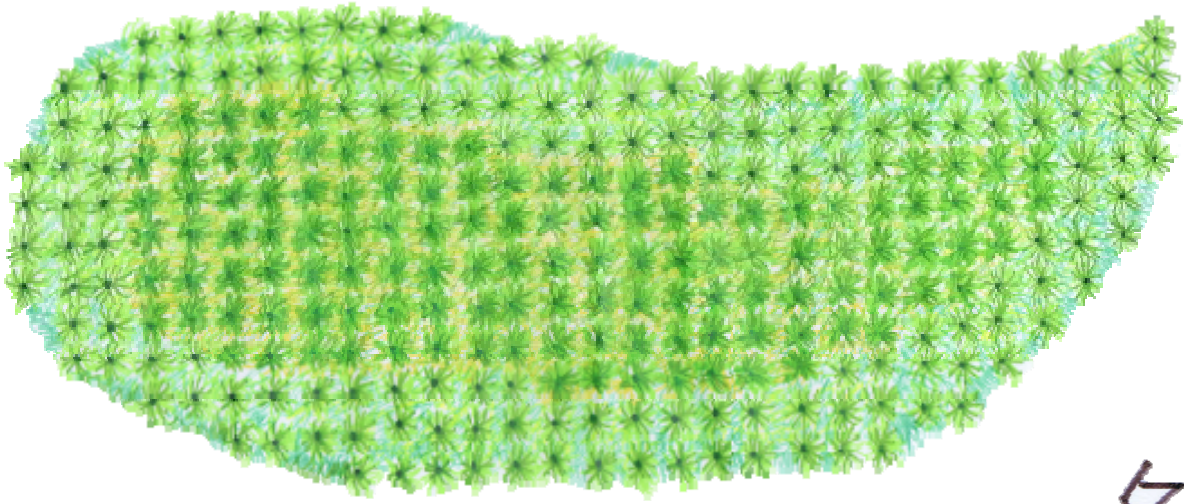
Smooth phlox, bluestar, prairie milkweed, queen of the prairie, white turtlehead, rose mallow, monkey flower, prairie ironweed, and blue lobelia are suggested.

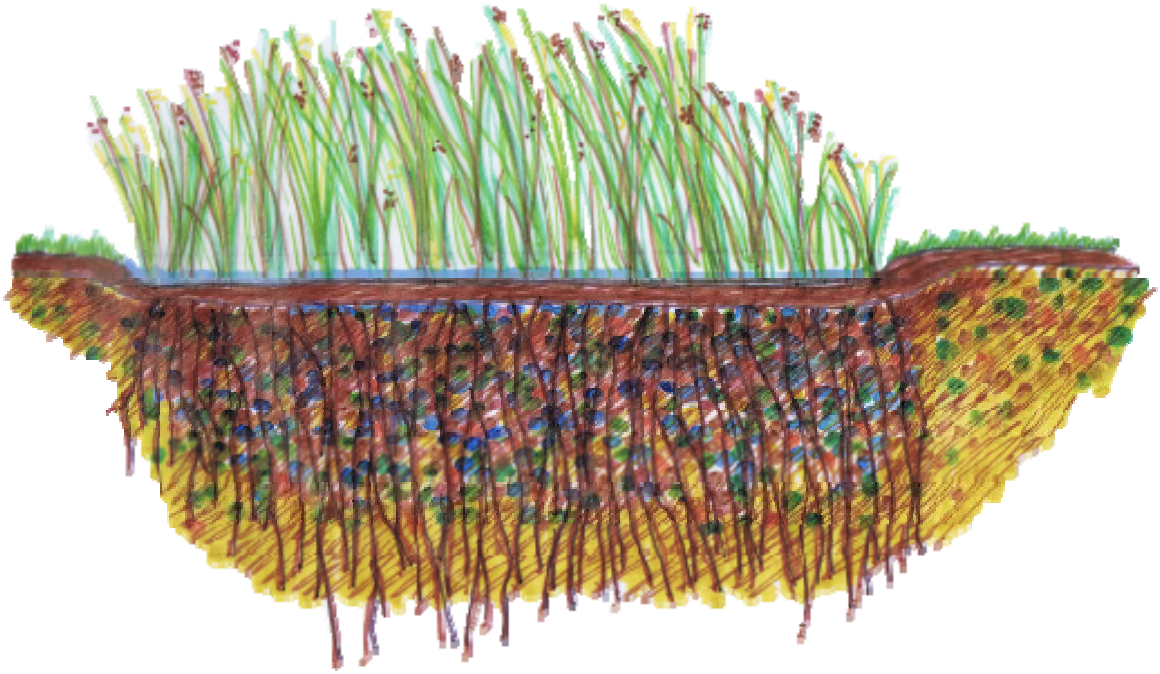
Grasses, Sedges, and Rushes Rain Garden

To filter the water coming from the drain, grasses, sedges, and rushes were suggested for better filtration.

Davis's sedge, brown bog sedge, Frank's sedge, meadow sedge, and bur sedge are suggested for the border.

Northern creek oats, switch grass, raven's foot sedge, Emory's sedge, yellow-fruited sedge, fringed sedge, crested sedge, palm sedge, Short's sedge, soft rush, heavy sedge, squarrose sedge, tussock sedge, and fox sedge are suggested



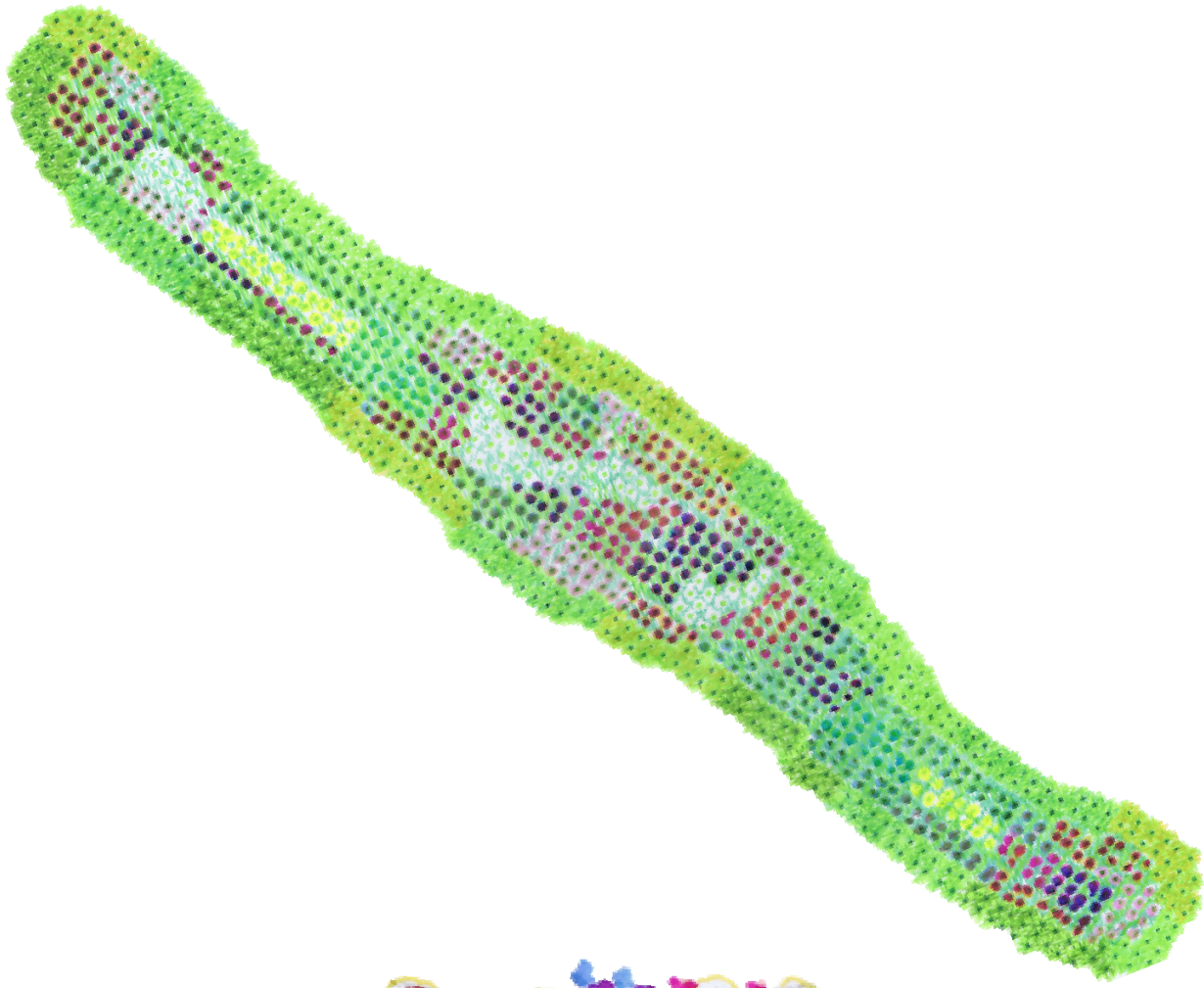


Bioswale

Considering the newly planted trees located near the bioswale, planting in phases would be suggested. Once the trees are established, shade plants should be planted near the trees.

Border plants of southern blue flag, prairie sundrops, smooth phlox, Frank's sedge, meadow sedge, and bur sedge should be planted.

Smooth phlox, white turtlehead, and bur sedge are suggested for the areas under the trees.



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