Capital City Bikeway: A Case Study in Green Infrastructure

Introduction

Context

Green Infrastructure

Jackson Street
Context

Capital City of Minnesota
Various historic districts
Typical right-of-way 60’

Context

8 80 Initiative
Not just about a bikeway
City adopted Bicycle Plan
Downtown Loop – “area for additional study”
Sidewalk level bike facility planned
"The Donut"
Meaningful Engagement

ONE ON ONE CONVERSATIONS

Design Process
Design Process

Green Infrastructure

Becoming part of the norm

“Daylighting” typically hidden systems

Integrated systems

Specialists

Watershed District involvement

City stormwater credit fulfillment

Interdisciplinary conversations
Green Infrastructure

Porous asphalt along the length of the trail

City interest in experimentation
Green Infrastructure

Bioretention BMPs incorporate weathering steel weirs to increase volume of stormwater filtered

BMPs along high-traffic pedestrian areas can be used as educational tools

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### Stormwater BMP Species

- **PLANT NAME:** Cornus sericea ‘Kelsey’, Kelsey Dwarf Dogwood  
  **CHARACTERISTICS:** Low growing deciduous groundcover 30” tall. Adapted to moist, well-drained soil.  
  **SEASONAL INTEREST:** Bright green leaves and masses of white flowers appearing in late spring, red branches provide winter interest.

- **PLANT NAME:** Panicum virgatum ‘Shenandoah’, Switchgrass  
  **CHARACTERISTICS:** Grows to 36” tall in average, medium to wet soils in full sun to part shade.  
  **SEASONAL INTEREST:** Foilage emerges bluish-green turning burgundy-red by late June. Reddish-pink cloud like flowers. Good winter interest.

- **PLANT NAME:** Juncus effusus, Soft Rush  
  **CHARACTERISTICS:** Tolerates erosion and wet soil, 24-36” height.  
  **SEASONAL INTEREST:** Cylindrical upright green stems in spreading basal clumps.

- **PLANT NAME:** Echinacea purpurea, Purple Coneflower  
  **CHARACTERISTICS:** Clump forming native perennial, 24-36” height.  
  **SEASONAL INTEREST:** Showy, daisy-like, purple coneflowers, summer.

- **PLANT NAME:** Iris versicolor, Blue Flag Iris  
  **CHARACTERISTICS:** Sword-shaped, blue-green leaves, 24-30” height.  
  **SEASONAL INTEREST:** Bold purple flowers in late spring.

- **PLANT NAME:** Lithis pycnostachya, Prairie Blazing Star  
  **CHARACTERISTICS:** Grows to 24-48” tall in average, dry to medium, well-drained soils in full sun.  
  **SEASONAL INTEREST:** Round, fluffy, deep rose-purple flower heads, Strong vertical accent stems.

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Planting Palette
Green Infrastructure

The BMPs fulfilled the District's cost cap:

- Filtration volume of 40,724 cubic feet
- Removes 775 pounds of TSS
- 2.34 pounds of particulate phosphorus annually

Green Infrastructure

Requires consideration of utility and subterranean conflicts:

- Can take pressure off of aging systems
- Filtration vs infiltration
- Aesthetic benefits
Green infrastructure should be considered in every project as we think about creating resilient cities and landscapes.