Comprehensive Stormwater Management for Stapleton Redevelopment

Case Study

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New Partners for
Smart Growth Conference

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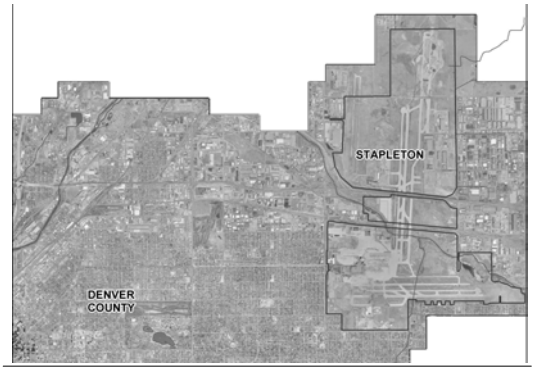
Presentation Overview

- Land Plan Vision and Goals
- Site Controls
- Regional Water Quality Facilities
- Channel Restoration and Stabilization

Stapleton Redevelopment



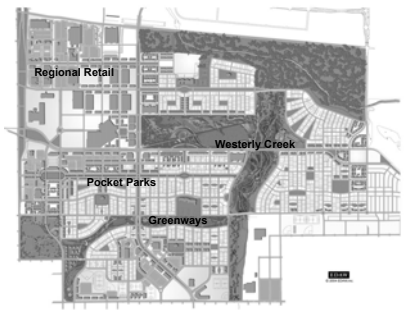
Greenbook: Environmental Vision

- Sustainability
- Natural Systems
- Integration into Multi-Use Facilities

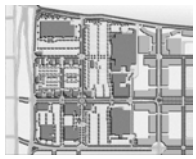
Greenbook: Stormwater Management Goals

- 100-year flood management
- Storage and management of stormwater on site
- Creation of riparian corridor
- Control non-point source pollution and improve water quality
- Creation of water amenities: streams, ponds and wetlands
- Irrigation of natural areas with recycled water

South Stapleton Redevelopment



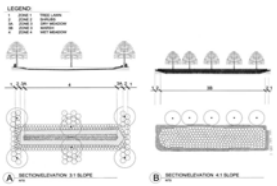
Regional Retail



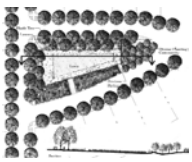
- Duplicative Use

Streetscape / Water Quality

- On-site Detention and Water Quality
- Reuse of existing storm drains



Pocket Parks



- Multiple Use Facility

Park Amenity / Water Quality

- Treatment Train Approach
- Sand Bed Infiltration

Greenways

- Multiple Use

Park Amenity / Water Quality

- Linear Corridor
- Reuse of Ex. Pipe
- "Staplestone" Forebay

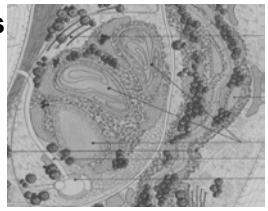
Recycled concrete

Stapleton Drainage Basins

Stapleton Storm Drains

29TH Street Outfall

Water Quality Ponds



MLK Outfall

Westerly Creek Floodplain

Westerly Creek Hydrology

- Q base flow = 3 cfs
- Q low flow = 200 cfs
- Q peak annual = 800 cfs
- Q 100 = 6,000 cfs

Existing Site Conditions: South

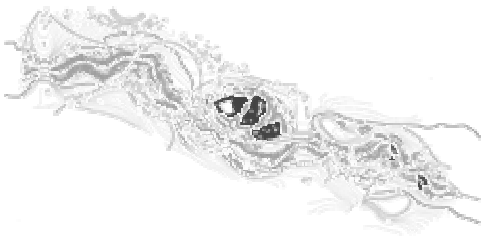
Existing Site Conditions: Central

Existing Site Conditions: North

"Construct of Nature" Objectives

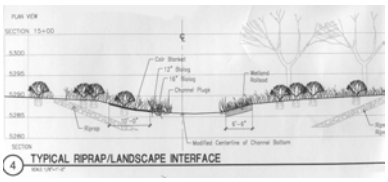
- **Character**
  - Preserve
  - Wildlife Corridors
  - Diverse Trail Experience
  - Sculptural Signature Elements
- **Free to Evolve**
  - Meandering Channel
  - Natural Stabilization
  - Multiple Habitat Types
  - Successional Plant Communities

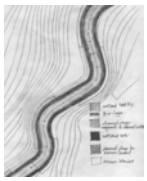
Design Framework



Westerly Creek Site Aerial

Channel Section





Drop Structure

Drop Structure

Low Flow Channel

Bio-Engineering - Biologs

Overbank Areas



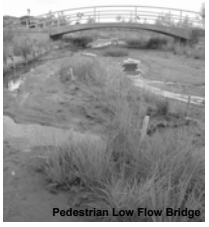

Side Pocket Wetlands



Bridges


Vehicular Bridge


Pedestrian Signature Bridge


Pedestrian Low Flow Bridge

Trails

Concrete Trails

Wildlife, Learning and Amenities

Contemplative Viewing Areas

Raccoon Tracks

Wildlife Viewing

Meadowlark

Riparian Planting

Boulder Jetties

Stapleton Redevelopment Aerial