

Going Beyond BMPs to Enhance Property Values & Water Quality

Commissioned by
Cherry Creek Basin Water Quality Authority



Urban Drainage and Flood Control District Annual Conference

April 28, 2005

Basin Authority Members

2 Counties

- Arapahoe
- Douglas

6 Cities

- Aurora
- Castle Rock
- Centennial
- Greenwood village
- Lone Tree
- Parker

Basin Authority 2003 Watershed Plan

Vision....

Integrate watershed goals for

- community development,
- water supply
- recreation
- wildlife habitat, and
- open space

with the Authority's water quality mission.

Challenge

- **Protect \$1B-\$3B recreation resource for local economy**
- **Achieve 15 ug/L Chl a water quality standard**
- **Stormwater runoff produces 60% - 80% of annual P nutrient load**
- **Baseline BMPs will not achieve water quality standards**

Opportunity

Manage Stormwater as a Resource to produce:

- **Urban Watershed Enhancements**

- ✓ Stream Esthetics
- ✓ Water Quality
- ✓ Wildlife Habitat
- ✓ Recreation

- **Increased Property Values**



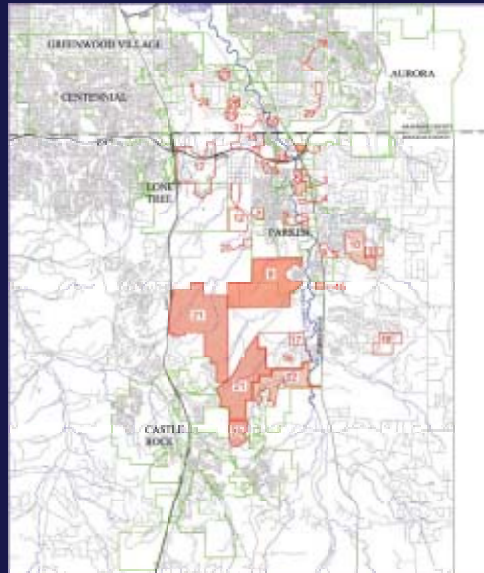
Precedents

Cherry Creek Watershed

- **The Canyons: 2,500 Housing Units**
- **Castle Oaks Phase I: 950 housing Units**
- **Liberty Village: 1,200 Housing Units**

**Properties
with
beyond BMP practices**

- 21 The Canyons
- 22 Liberty Village
- 23 Castle Oaks



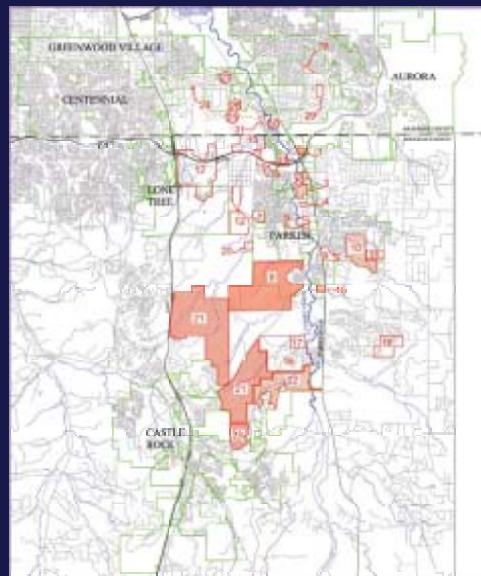
Basin Authority P Facilitator Program

- **Facilitate Partnerships**
 - ✓ Developers
 - ✓ Land Use Agencies
- **Identify Incentives**
 - ✓ Go beyond BMPs

Getting Started.... Finding Willing Developers

- Contacted 23 emerging developments
- 18 developers expressed moderate to high interest
- Selected 2 projects for case studies
 - Crown Point – 50 Ac Commercial
 - Ascent Pointe – Mixed Use 6,350 residential units

Candidate Properties



Design Principles

- Re-establish and enhance natural processes
- Mimic and use the features and functions of the natural drainages
- Strategies should address water quality as well as quantity

■ ■ ■

Design Principles

- Return water to the aquifer
- Avoid creating concentrations of runoff
- Limit site disturbance
- Keep it simple
- Minimize infrastructure
- Integrate into the fabric of the community

Challenges into Opportunities

ECOLOGY

COMMUNITY



ART

ECONOMICS

ECOLOGY

Creating a safe healthy place to live

Protecting natural resources

Building **COMMUNITY** through

process;

designs that create place;

and, opportunities for education.

PROCESS

Expanding the focus of agencies to
understand mutual goals

Designs that create place

Understanding some of the
elements that enrich
our lives

ART

Understanding some of the
elements that enrich
our lives

ECONOMICS

Efficiency
Value added for developer, community,
and homeowner
Reduce costs

Crown Point Demonstration Project



Initial Plan



Modified Plan

- Visual interest
- Comfort



Ascent Pointe Demonstration Project

- Recreation
- Roadways
- Public Space
- Park



Recreation



Golf course integrated into the community



Recreation

ECOLOGY

- increases water quality
- returns water to the aquifer
- provides habitat for fish, birds, wildlife

COMMUNITY

- opportunity for experiential education



Recreation

ART

- transitional element
- beauty of golf course and views from trails and homes

ECONOMICS

- increased property values



Roadways

Design a parkway experience



- responds to existing topography
- treats as two "separate roadways"
- makes use of allowable buffer zones



Roadways



on curves drains to adjacent swale and center median



draining to a center median

Roadways

ECOLOGY

- increases water quality
- returns water to the aquifer

COMMUNITY

- knits community together rather than providing visual barriers

ART

- provides a signature landscape

ECONOMICS

- decreased maintenance costs

Public/Civic Spaces



Austin Texas, town center



Public/Civic Spaces



Caley constructed wetlands in Greenwood Village



Waterworks Garden
King County WA



Public/Civic Spaces

ECOLOGY

- increases water quality through slow percolation of runoff
- returns water to the aquifer
- Provides habitat for fish, birds, and other wildlife

COMMUNITY

- provides a social gathering space near the center of the community

ART

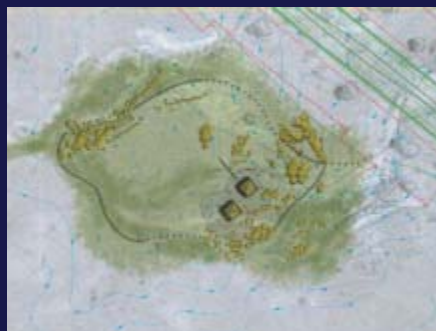
- focal point for the town center

ECONOMICS

- town center attraction



Wetlands Park



Wetlands Park



Greenwood Gulch



Wetlands Park



Wetlands Park

ECOLOGY

- increases water quality through slow percolation of runoff
- returns water to the aquifer
- Provides habitat for fish, birds, and other wildlife

COMMUNITY

- trails and access to Chambers Road would make this an attractive place for picnics and social gatherings

ART

- blends with the natural landscape and adds to views from the parkway

ECONOMICS

- proximity to parks and open space increases property values

Anticipated Benefits of 2 Demonstrations

Water Quality

- Standard BMPs reduce P load 716 lbs P per yr
- Enhanced BMPS remove additional 353 lbs P per yr
- Savings from additional P removal \$700,000 to \$980,000 without any public investment

Anticipated Benefits of 2 Demonstrations

Community Values

- recreation
- wildlife habitat
- enhanced property value



What's in Store for 2005 ?

- Enhanced Roadway BMPs
- Low Impact Development design concerns
- Smaller single family developments with limited opportunities
- Developer/Land Use Agency Workshop

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Discussion