

# Southern Delivery System

## 1041 Permit Public Hearing Pueblo Board of County Commissioners

December 9, 2008



# *Presentation Agenda*

**Jerry Forte**, Colorado Springs Utilities  
Our commitment to Pueblo

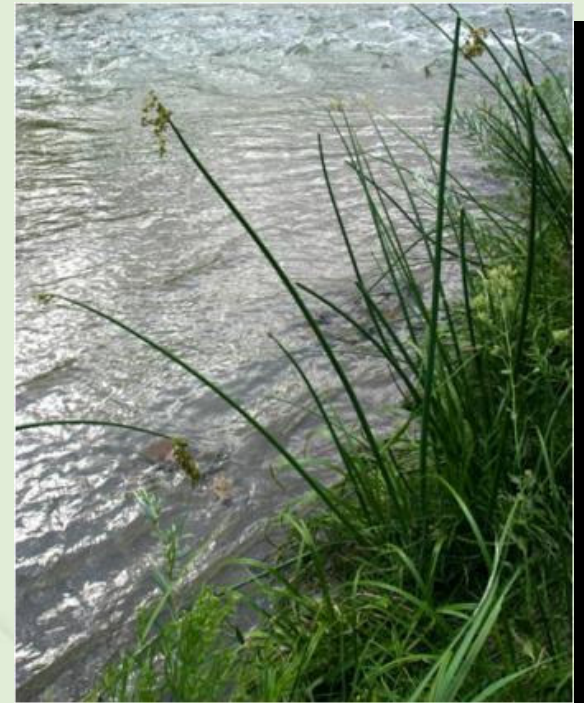
**Bruce McCormick**, Colorado Springs Utilities  
1041 Milestones and SDS overview

**Bruce Spiller**, CH2M HILL  
Construction details and impacts

**Mark Glidden**, CH2M HILL  
SDS impacts on Fountain Creek

**Carol Baker**, Colorado Springs Utilities  
A vision for the future of Fountain Creek

**John Fredell**, Colorado Springs Utilities  
Benefits to Pueblo County



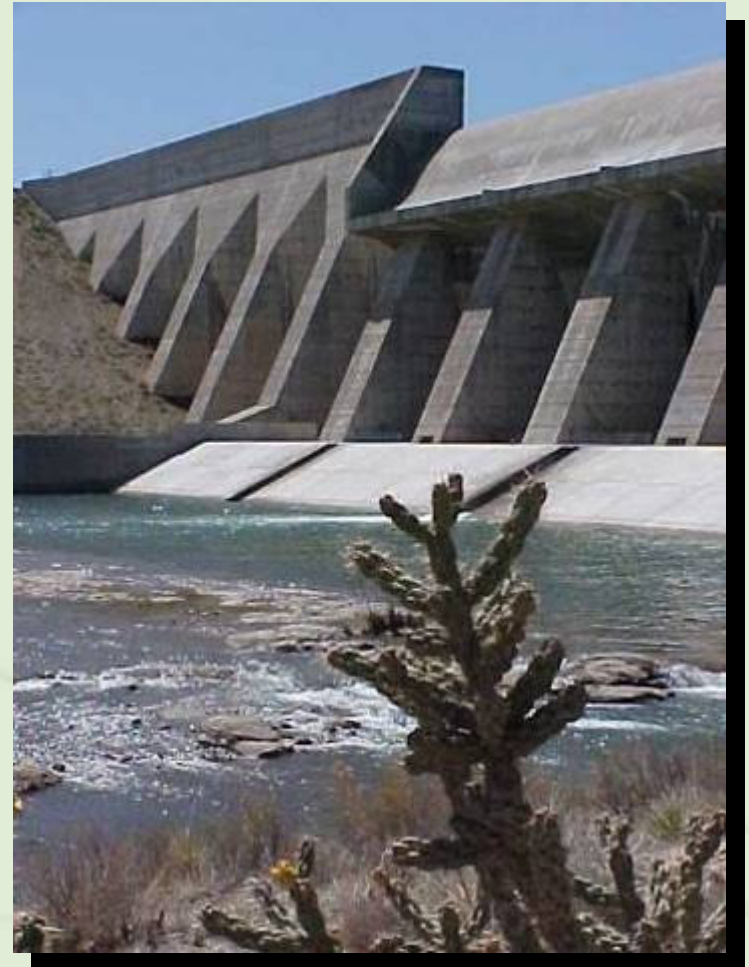
- Our future depends on it
  - Growing Community
  - Drought Protection
  - System Reliability



## *Our Commitments to Pueblo County*

We will:

- Build SDS in environmentally responsible manner
- Mitigate SDS impacts
- Use water rights we own
- Ensure that Pueblo County won't pay for SDS
- Continue doing our part to improve Fountain Creek





# 1041 Permit Milestones

- **1041 Permit Milestones:**
- Requested FONSI
  - March 26
- Application Submitted
  - August 20
- FONSI Determination
  - August 28
- Reviews with Pueblo County staff
  - September – November
- Completeness Determination
  - October 24
- Public Meetings
  - Lake Pueblo State Park: Oct. 16
  - Pueblo West: Oct. 23 & Oct. 27
  - Fountain Creek: Oct. 30
- Public Hearing
  - December 9 and 11

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## Southern Delivery System Pueblo County 1041 Permit Application

Submitted to  
**Pueblo County**  
Department of Planning and Development

229 W. 12th Street  
Pueblo, CO 81003

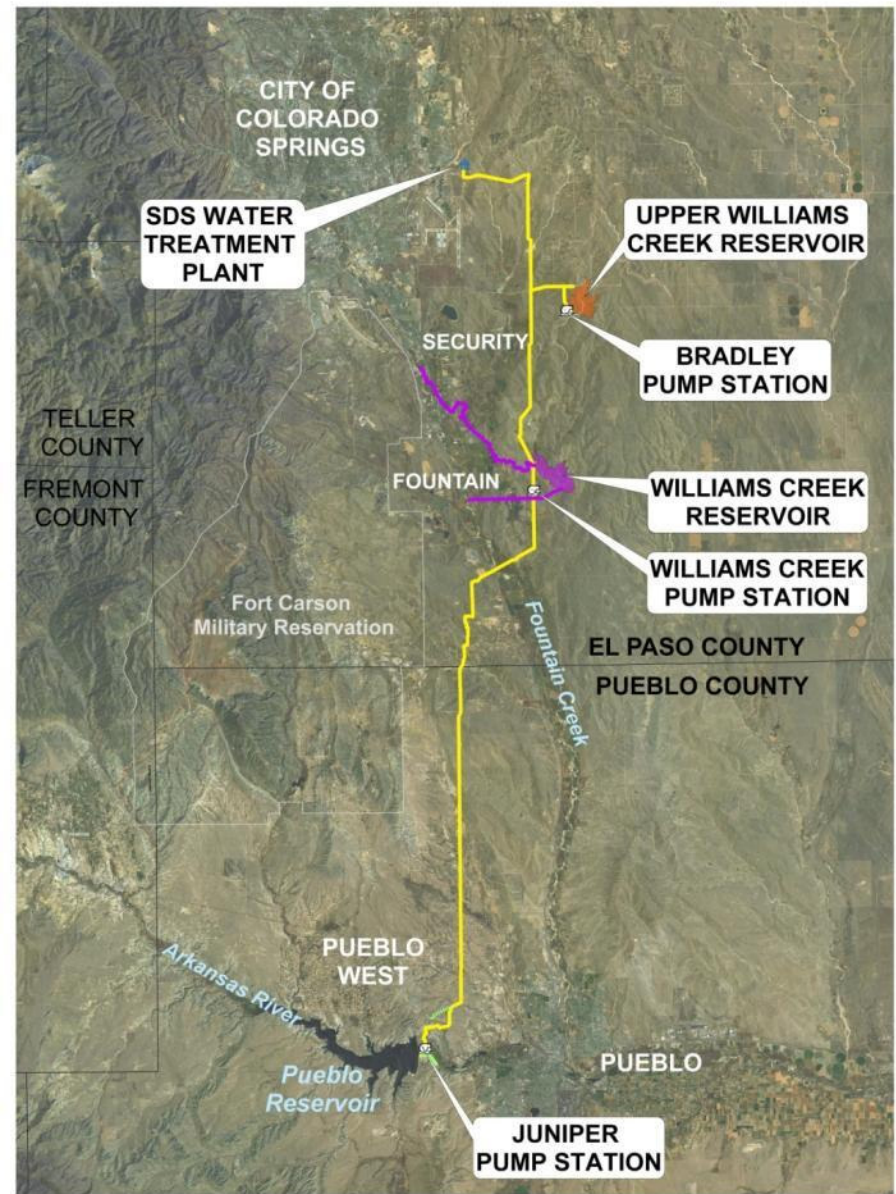
Submitted by



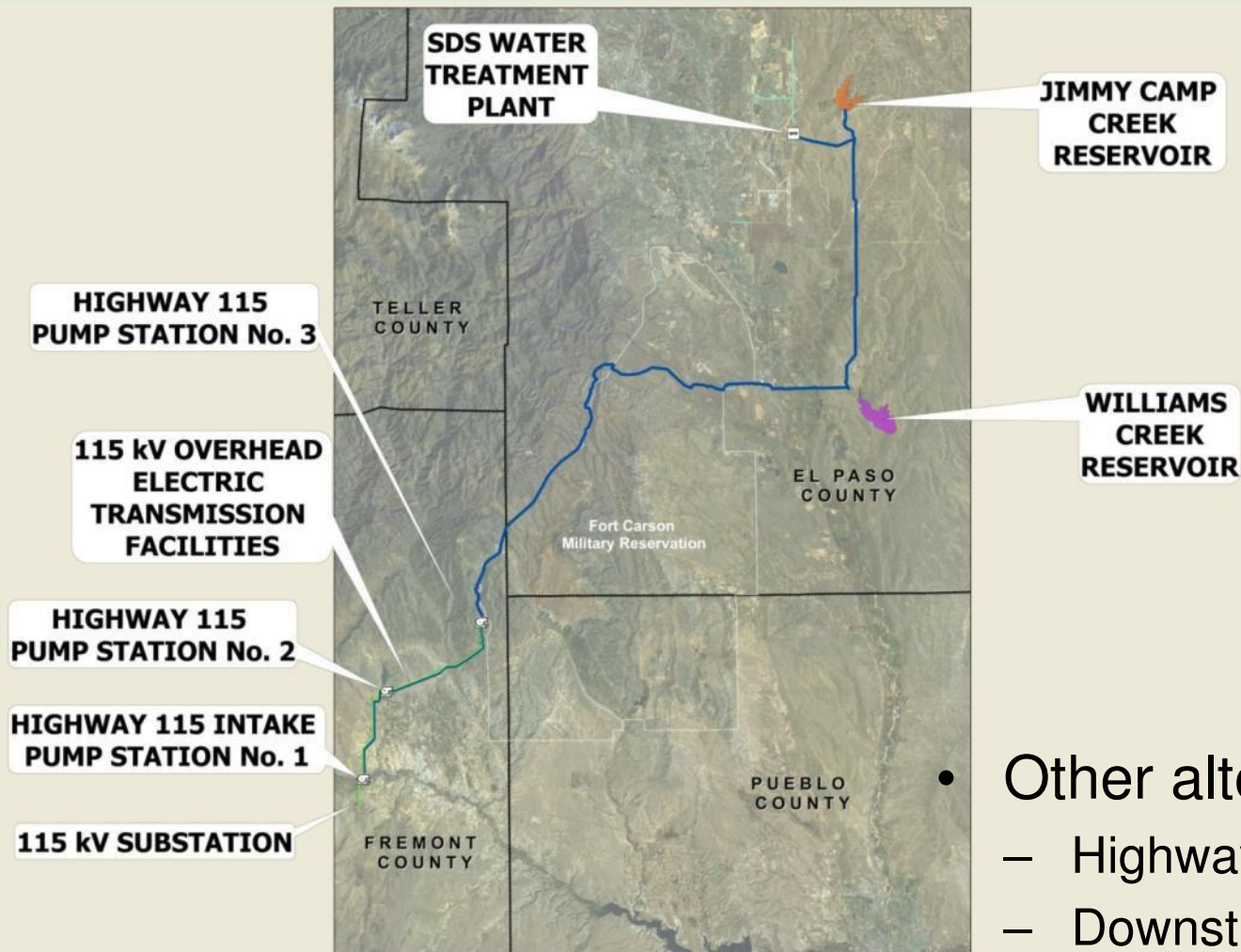
August 2008

## *SDS: Proposed Action*

- Proposed Action:
  - Regional water delivery system
  - Storage in Pueblo Reservoir
  - River Outlet Works modifications
  - 53-mile raw water buried pipeline
  - 1 water treatment facility
  - 3 raw water pump stations
  - 2 reservoirs



## *SDS: Other Alternatives*



- Other alternatives:
  - Highway 115 (Fremont County)
  - Downstream Intake

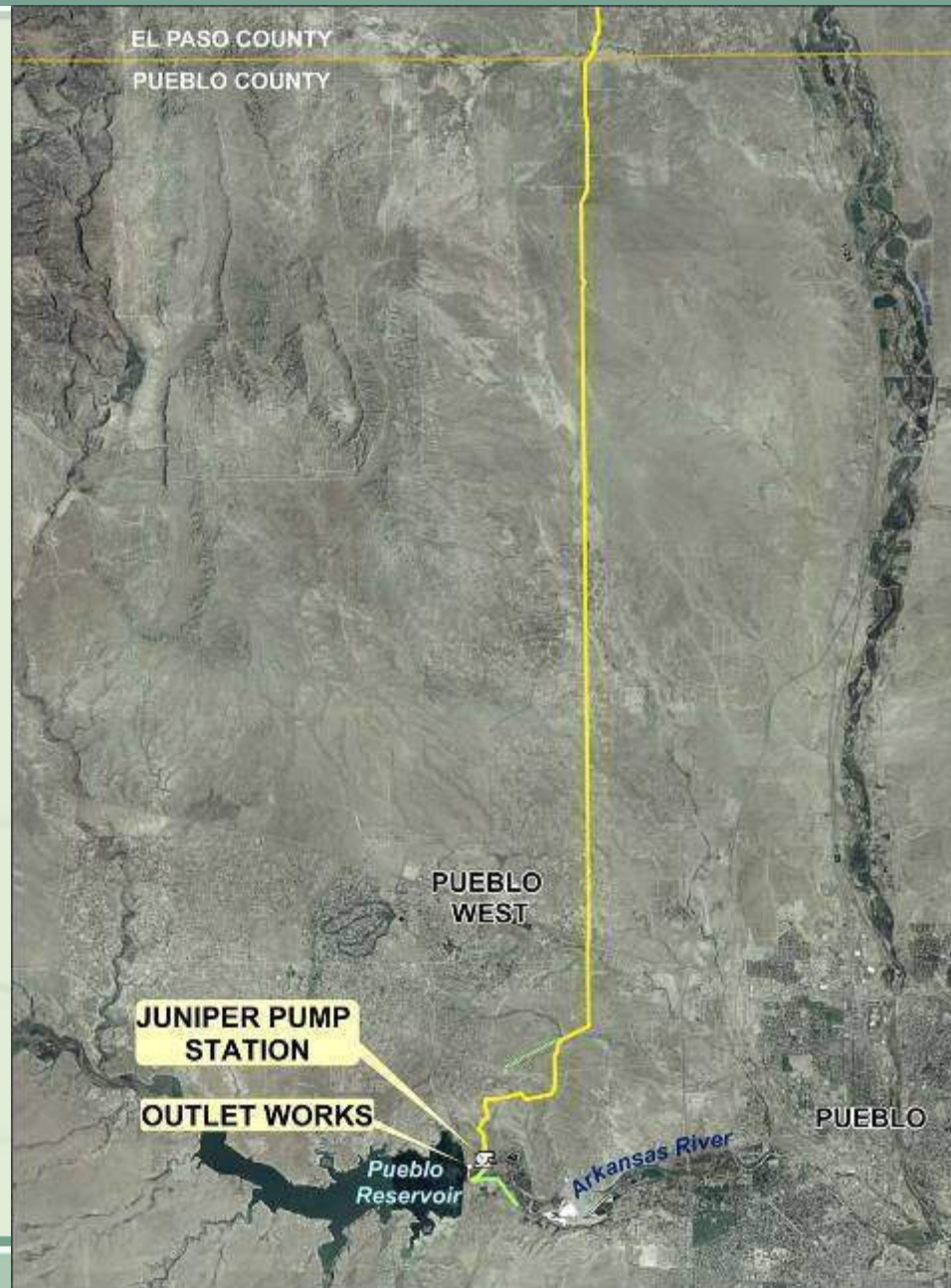


# *Construction Details, Effects, Mitigation*

## *Bruce Spiller – CH2M HILL*



## *SDS: Proposed Action in Pueblo County*





## Existing Facilities



**Proposed North  
River Outlet  
Works**

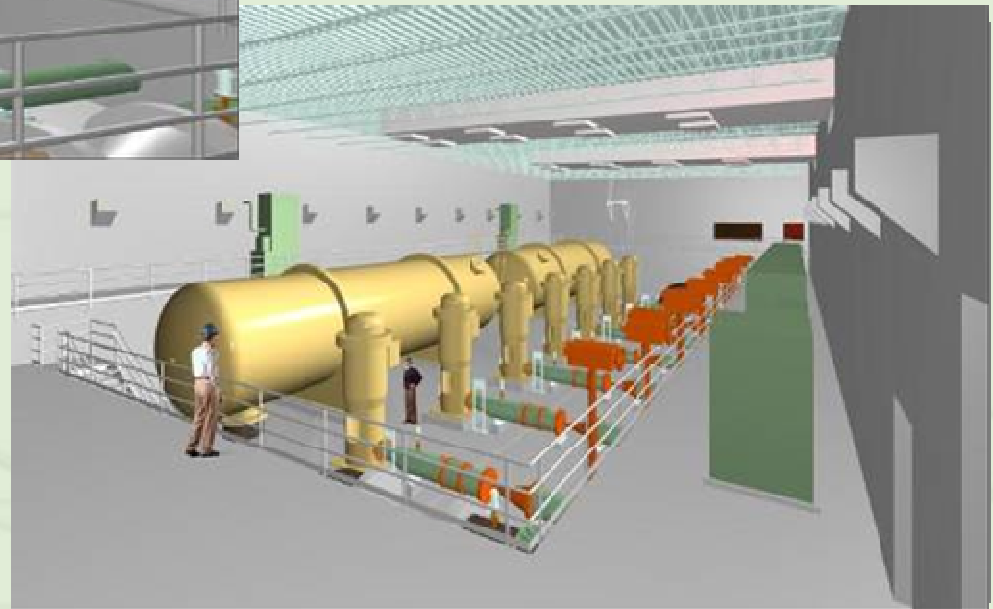




## *Following the Water: Pipeline*



## *Following the Water: Juniper Pump Station*



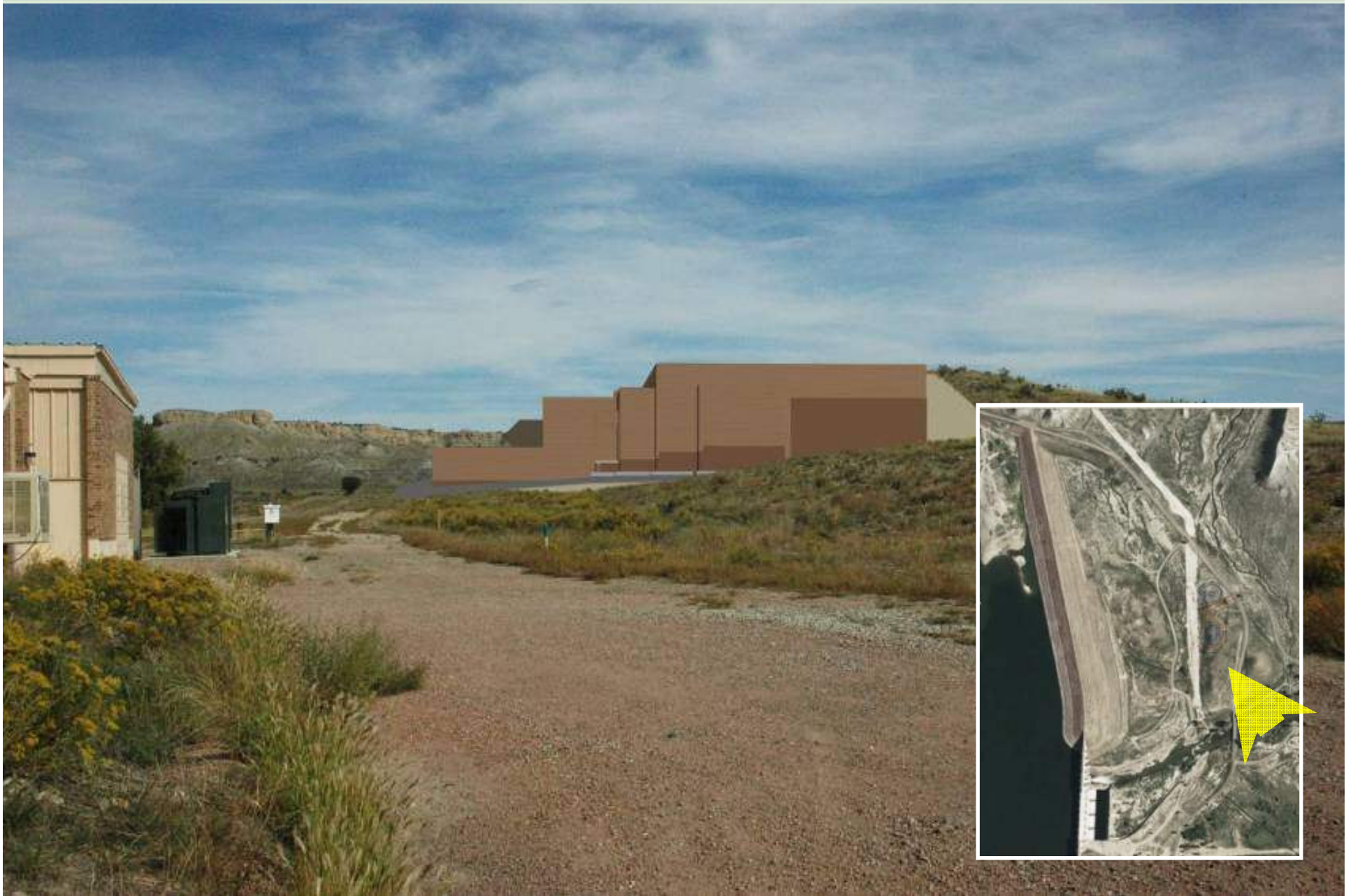


## *Following the Water: Juniper Pump Station*











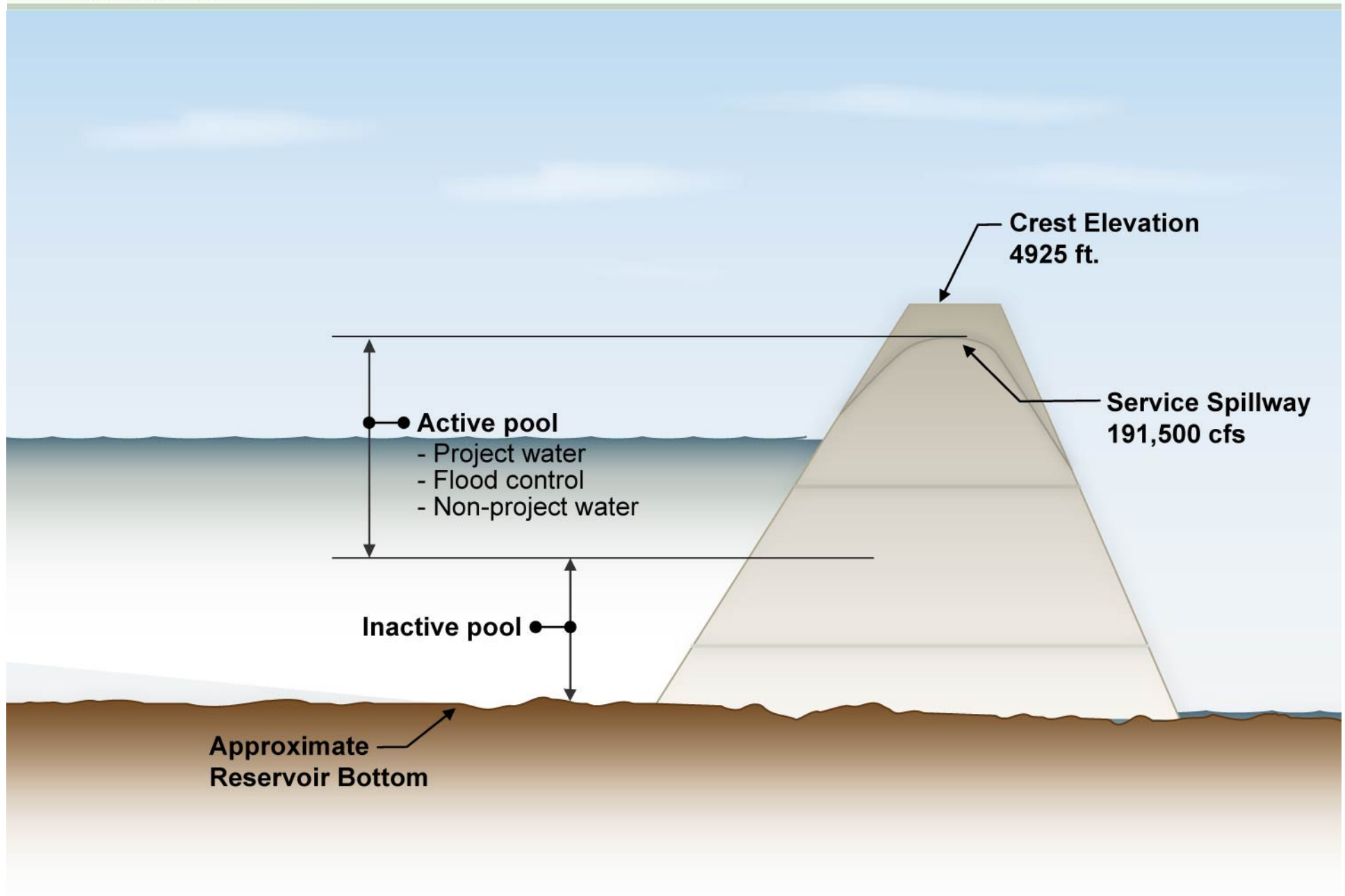


## *Impacts to Lake Recreation*

- Boating and fishing
  - No impact from construction
  - Fluctuations in water level should have no impact
- Hiking and biking
  - Trails crossed during construction will be detoured
  - No long-term impact

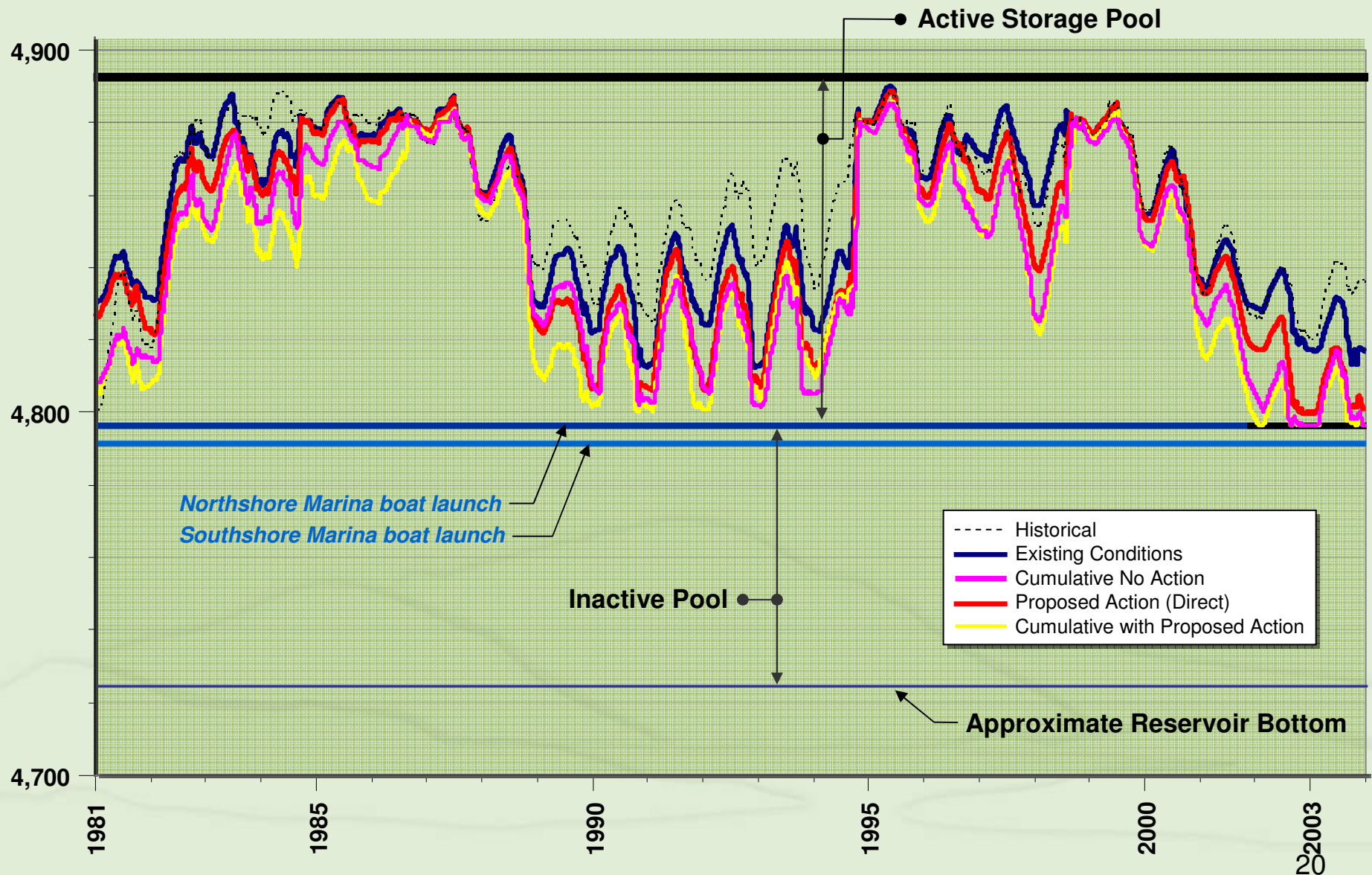


# Pueblo Reservoir Storage





# Pueblo Reservoir Levels



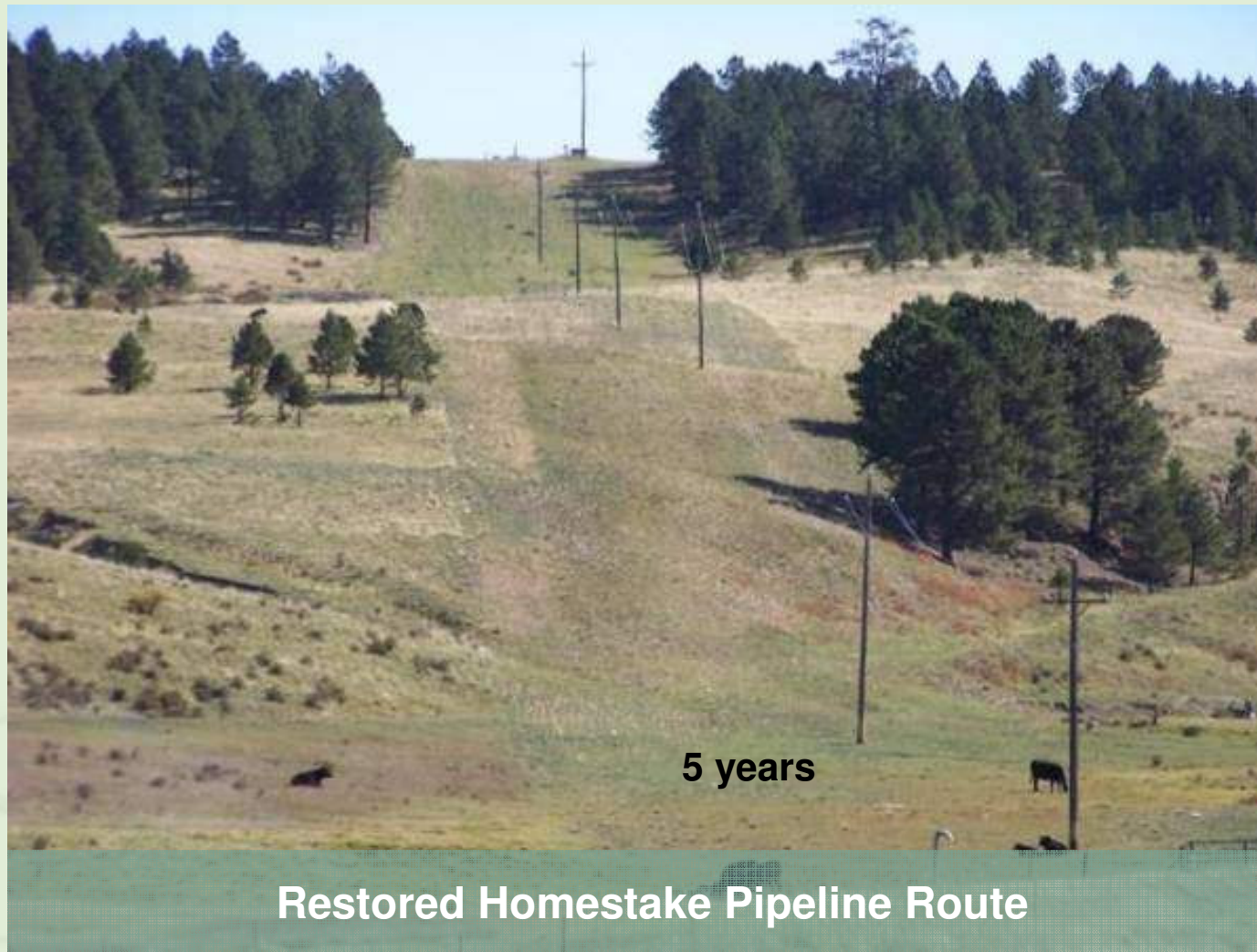
## **Typical Pipeline Installation Methods**



**Restoration to Natural Contours**

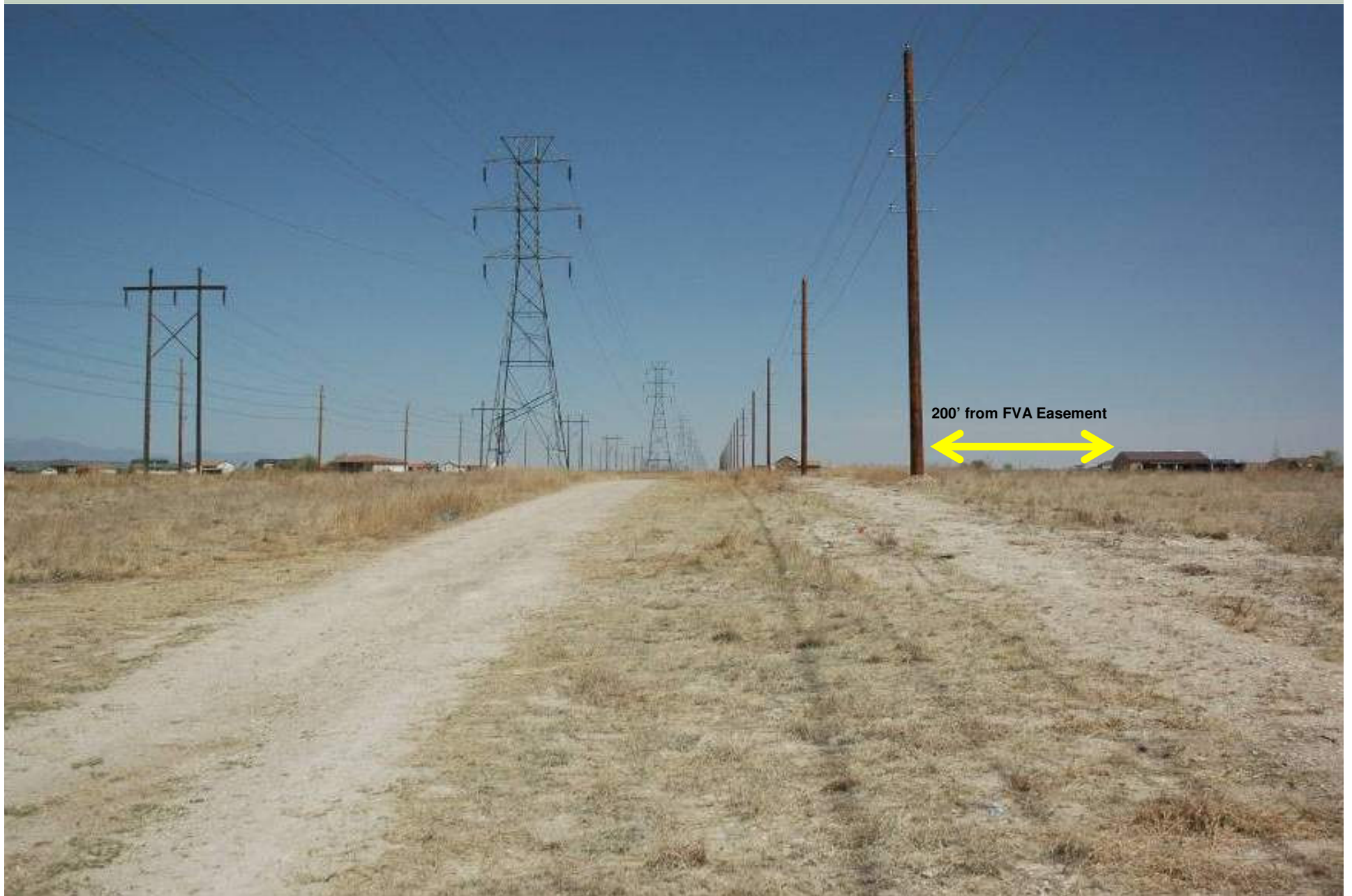
- Top 6 inches of soil stockpiled, put back in place
- Revegetation with native plants
- Natural contours restored







## *Existing Utility Corridor*





- Noise
  - Normal Construction Hours
    - 7 a.m.- 7 p.m.
  - Monday through Saturday
- Dust control
- Environmental controls
- Traffic control
- Safety
- Communications



## *Dust Controls*





## *Environmental Control*







- During design
  - Open houses, mailed notices
  - Contract documents
- During construction
  - Public Information Team
  - Message boards
  - 24-Hour hotline

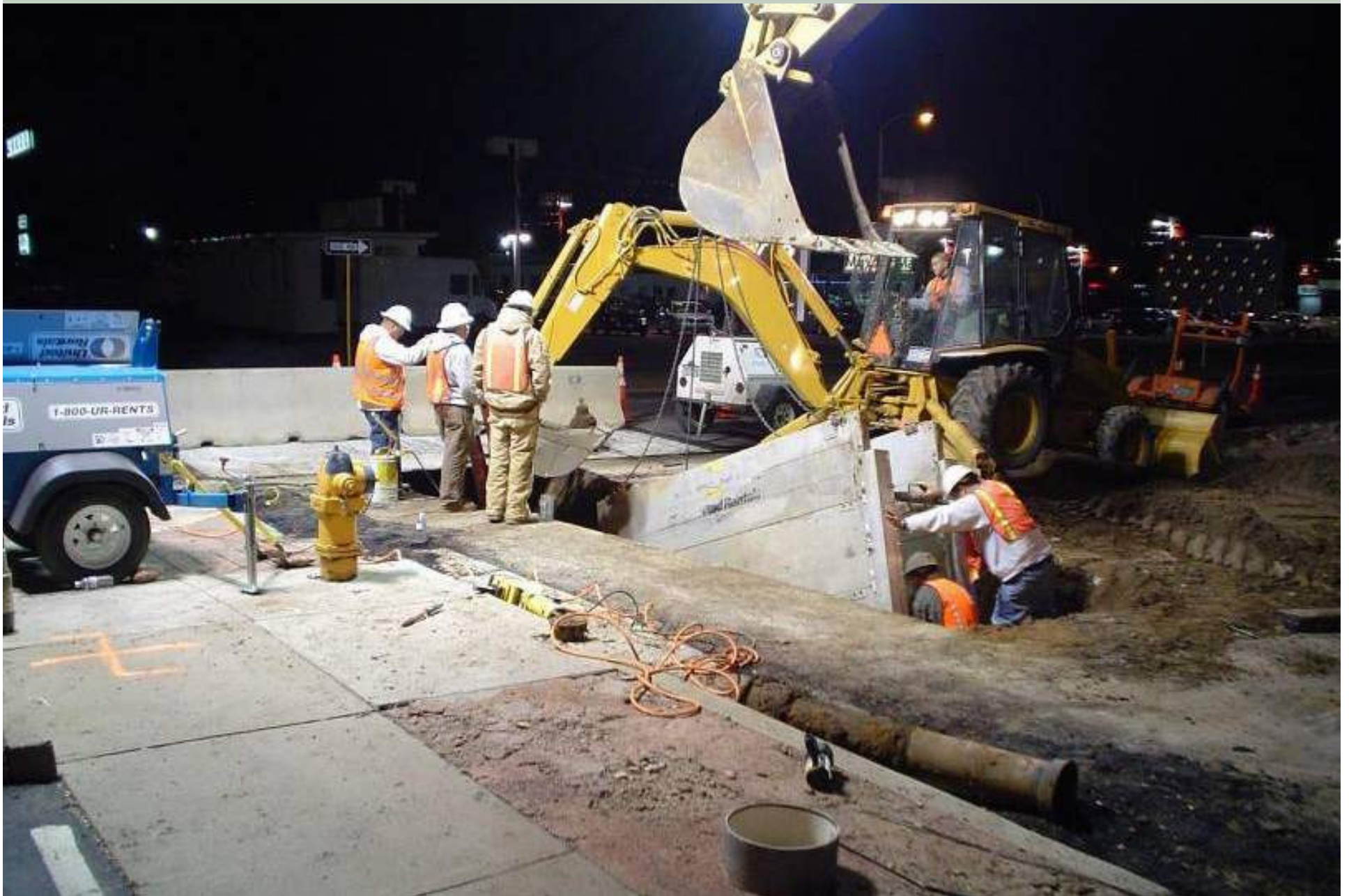


## *Trenchless Street Crossings*





## *Traffic Control/Night Work*



## *Construction Zone Fencing*



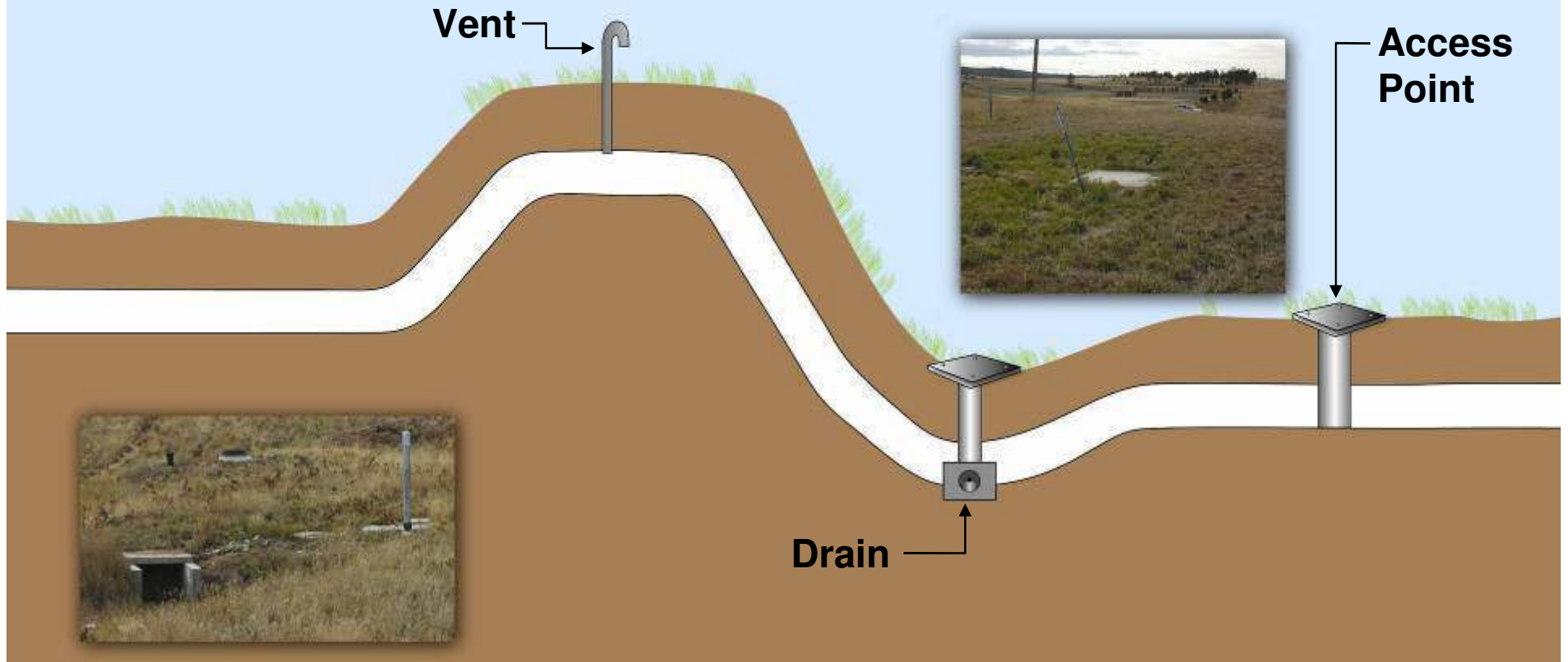


## *Construction Zone Fencing*





# Pipeline Appurtenances



## *Air Vents at High Points*



## *Drains at Low Points*





## *Access Hatch*



## *Easements and Land Acquisition*

- Property owners already contacted
- Won't start acquisitions until after 1041 Permit approval and Record of Decision
- Primarily obtaining easements
- Landowners fairly compensated





# **SDS: Impacts on Fountain Creek**

Mark Glidden – CH2M HILL



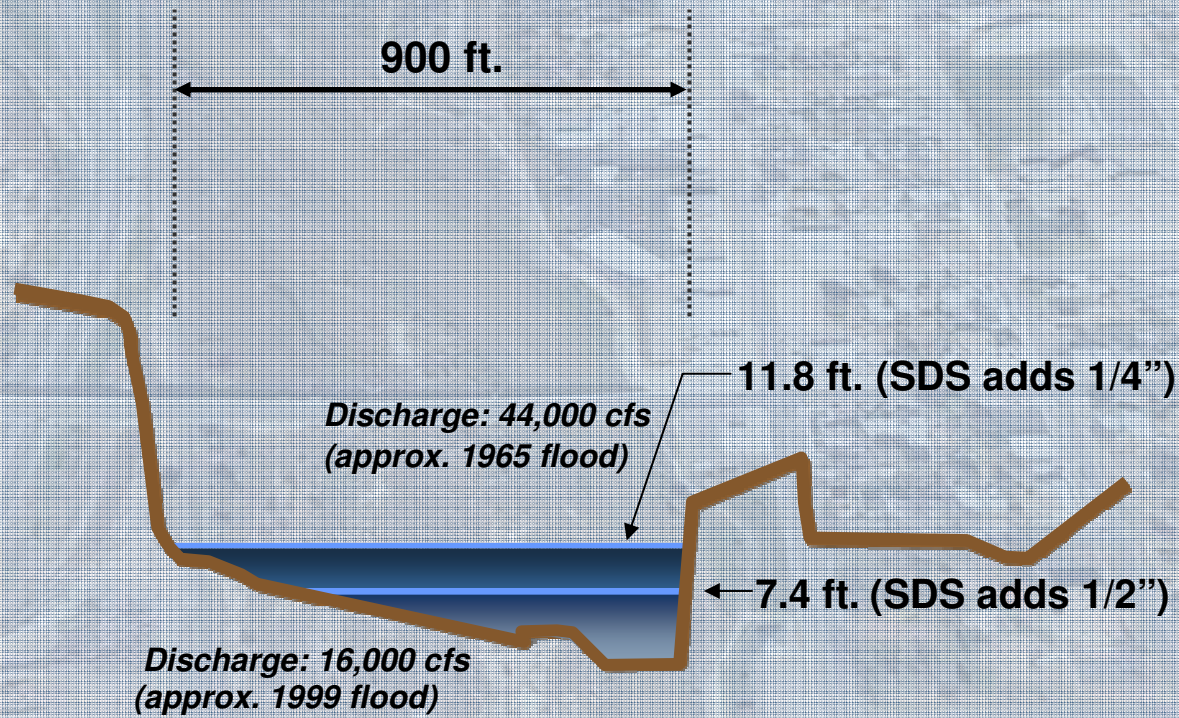
## *SDS Effects on Fountain Creek*

- Water Level | Flooding
  - Increased water flow
  - No increased flood threat
  - Some minor benefit
- Water Quality
  - Return flows dilute natural contaminants
- Erosion & Sedimentation
  - Minimal increase
- Mitigation



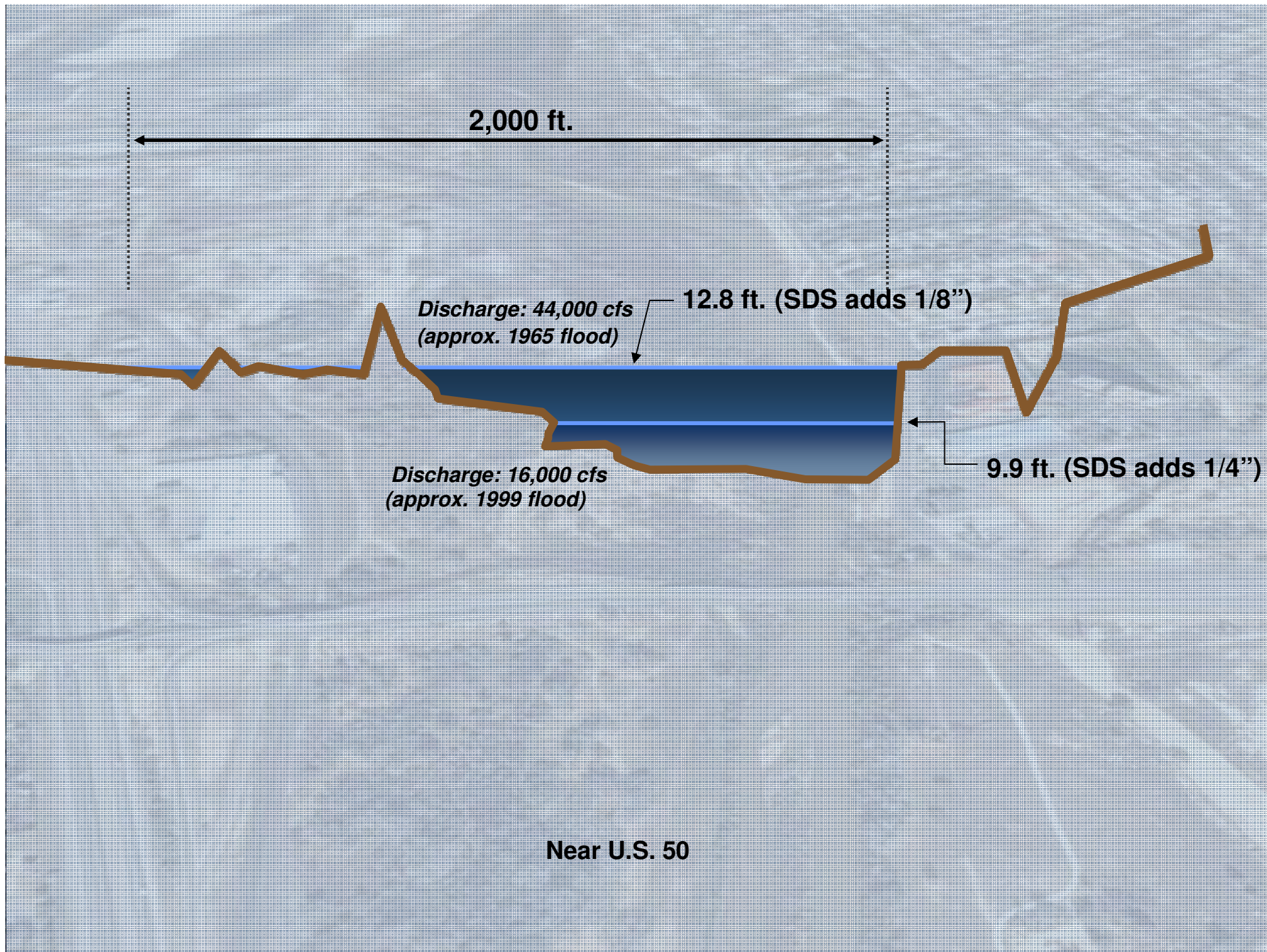






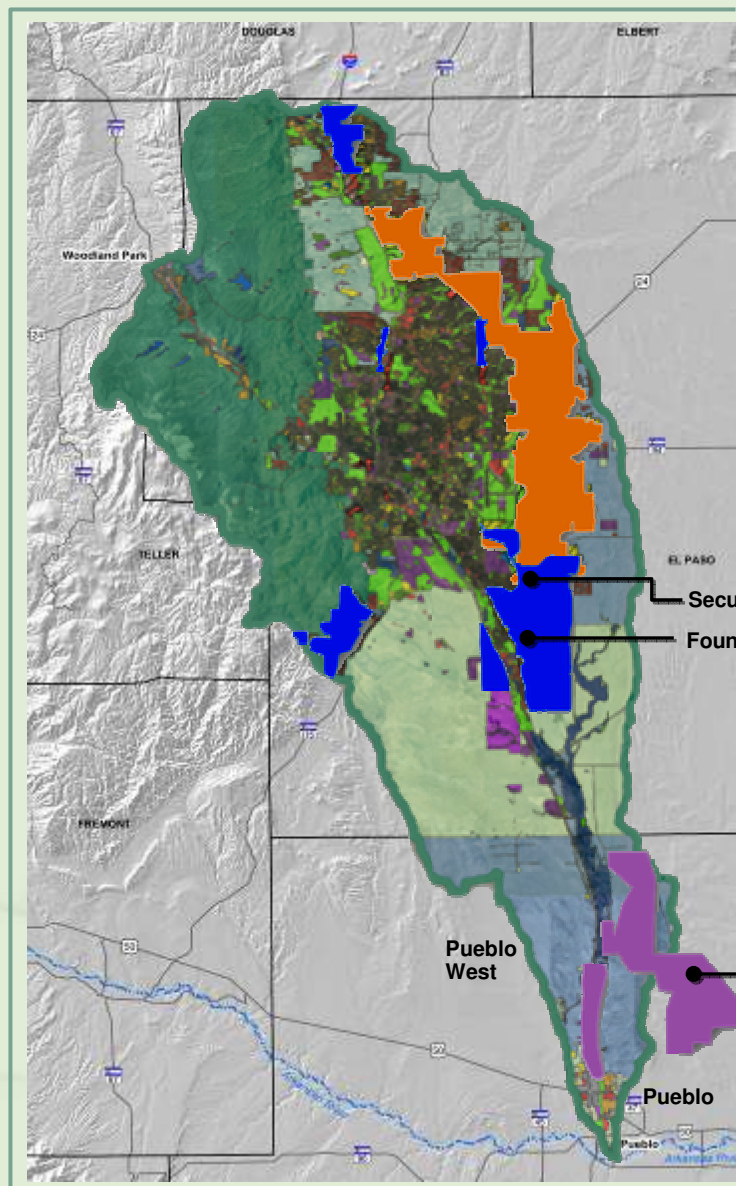
Near Eighth Street










# Growth Overview



 Colorado Springs

 El Paso County

 Pueblo



**Fountain Creek (*Before*)**



**Fountain Creek (*After*)**

**Drainage basin planning  
studies being conducted  
to continue finding  
opportunities to mitigate  
stormwater impacts**



**Colorado Springs Airport  
Flood Control Pond**



## *Current Run-off Management Measures*

- Impose requirements for drainage improvements in new developments
- Develop stormwater quality programs
- Administer floodplain development
- Conduct Drainage Basin Planning Studies for 35 tributaries to Fountain Creek



## *Potential Run-off Management Measures*

- Low impact development practices
  - Promote infiltration
  - Reduce impervious surfaces
- Additional stormwater quality control measures
  - Public outreach
  - Enhanced erosion control measures
- Implement Fountain Creek Vision Task Force recommendations



- SDS generally has minor beneficial impacts
  - Return flows dilute high concentrations of some contaminants
- Treatment plants release water that meets applicable stream standards
  - Intended to assure that desired uses are achieved
    - Contact recreation, agricultural water supply and warm water aquatic life





## *General Water Quality Trends*

- Wastewater Treatment Plant upgrades
  - Reduced levels of ammonia, phosphorous and Biologic Oxygen Demand significantly
- SDS has minor beneficial impact to Fountain Creek



- Impairments remain from other sources
  - Above standards in certain stream segments
    - E. coli
    - Salinity
    - Selenium



- Substantially Improved Performance
  - No major spills for two years
  - Spills among lowest in nation
- Significant investment :
  - \$120 million on wastewater improvements since 2000
  - J.D. Phillips Water Reclamation Facility
  - Fountain Creek Recovery Project
  - Secured > 2,500 manhole covers
  - Upgraded wastewater pipes



J. D. Phillips Water Reclamation Facility



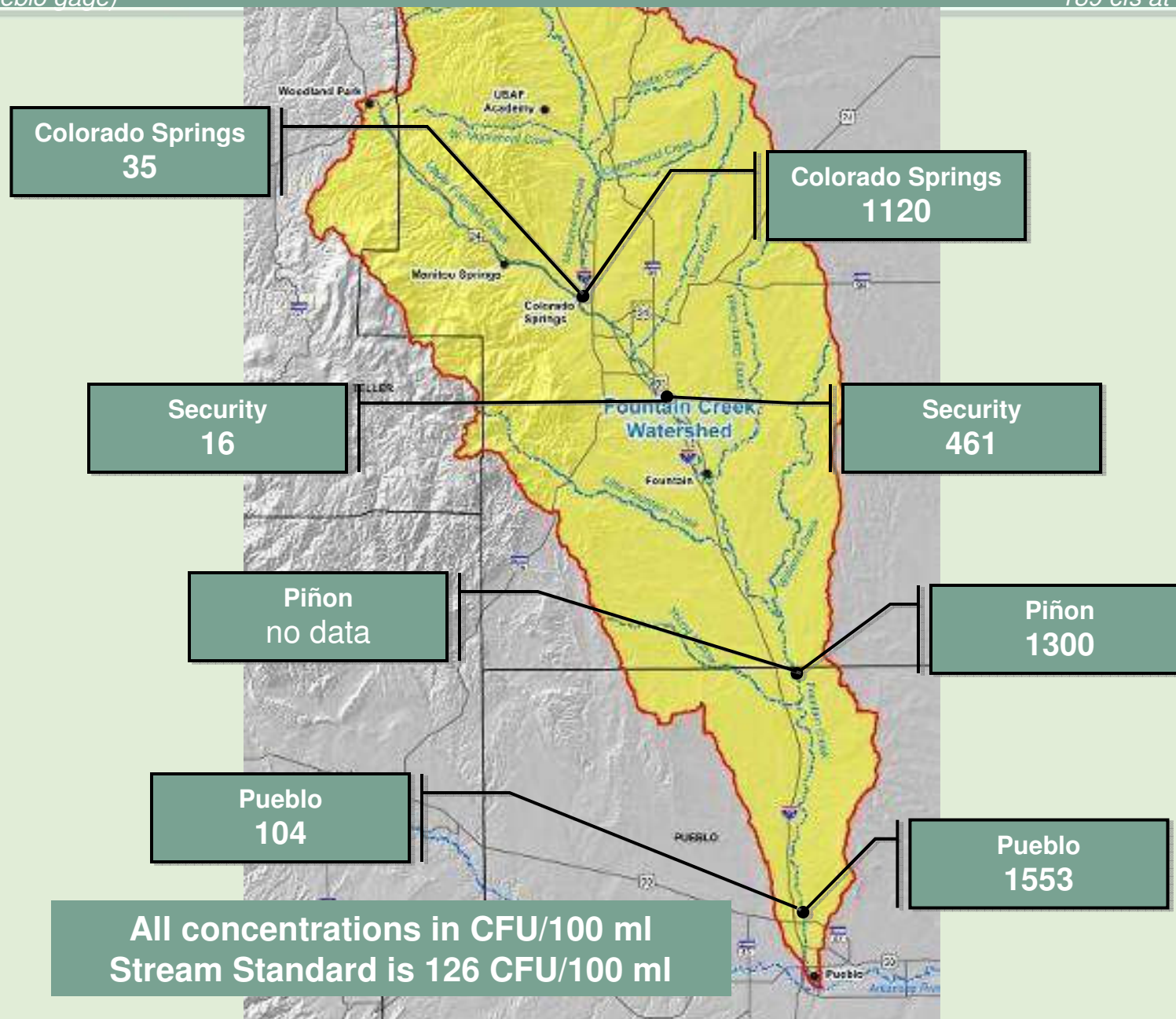
## Low Flows

(as represented by flows on 2/8/06 -  
101 cfs at Pueblo gage)

## E. Coli Concentrations

## Storm Flows

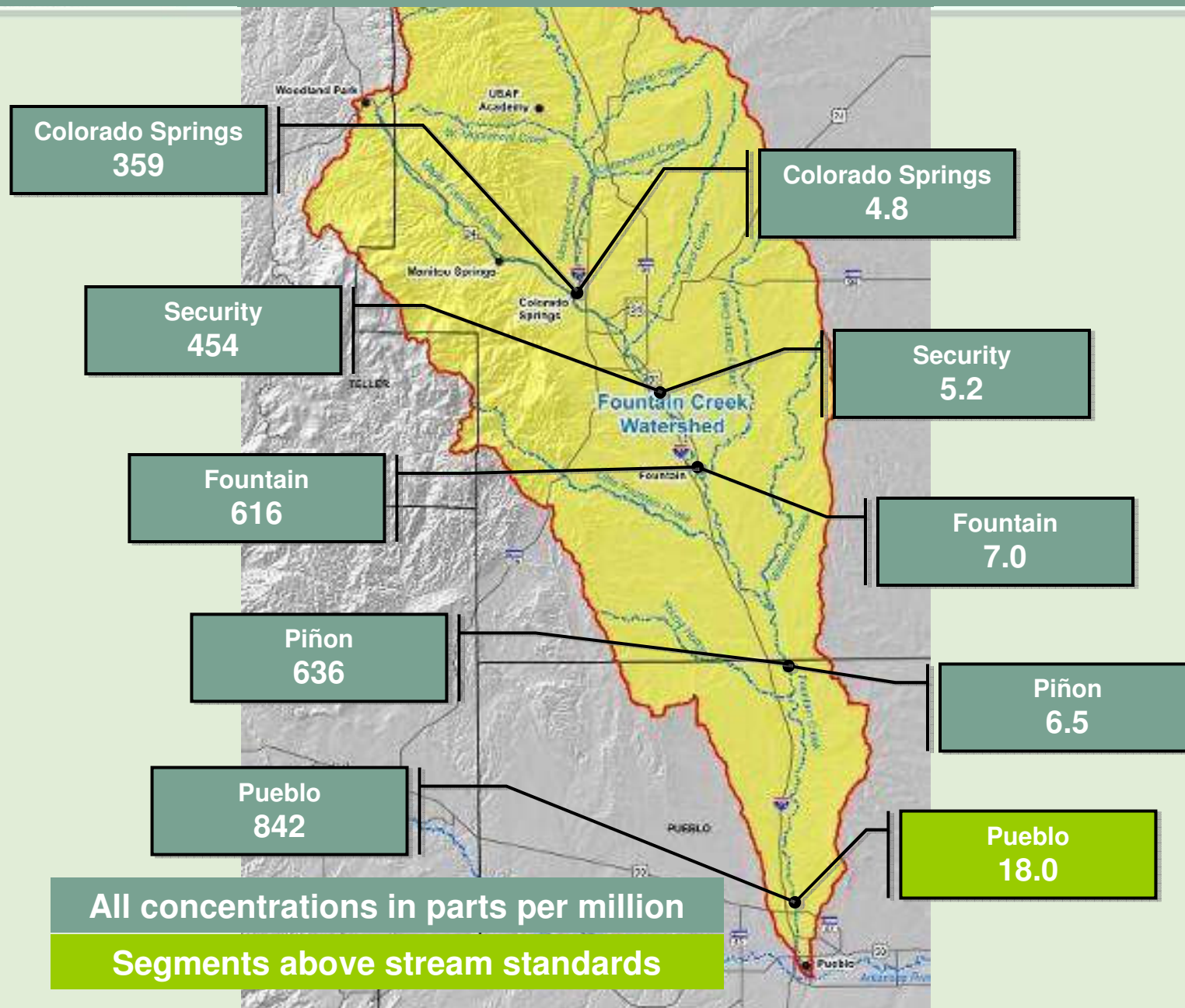
(as represented by flows on 9/13/06 -  
189 cfs at Pueblo Gage)



*Salinity*

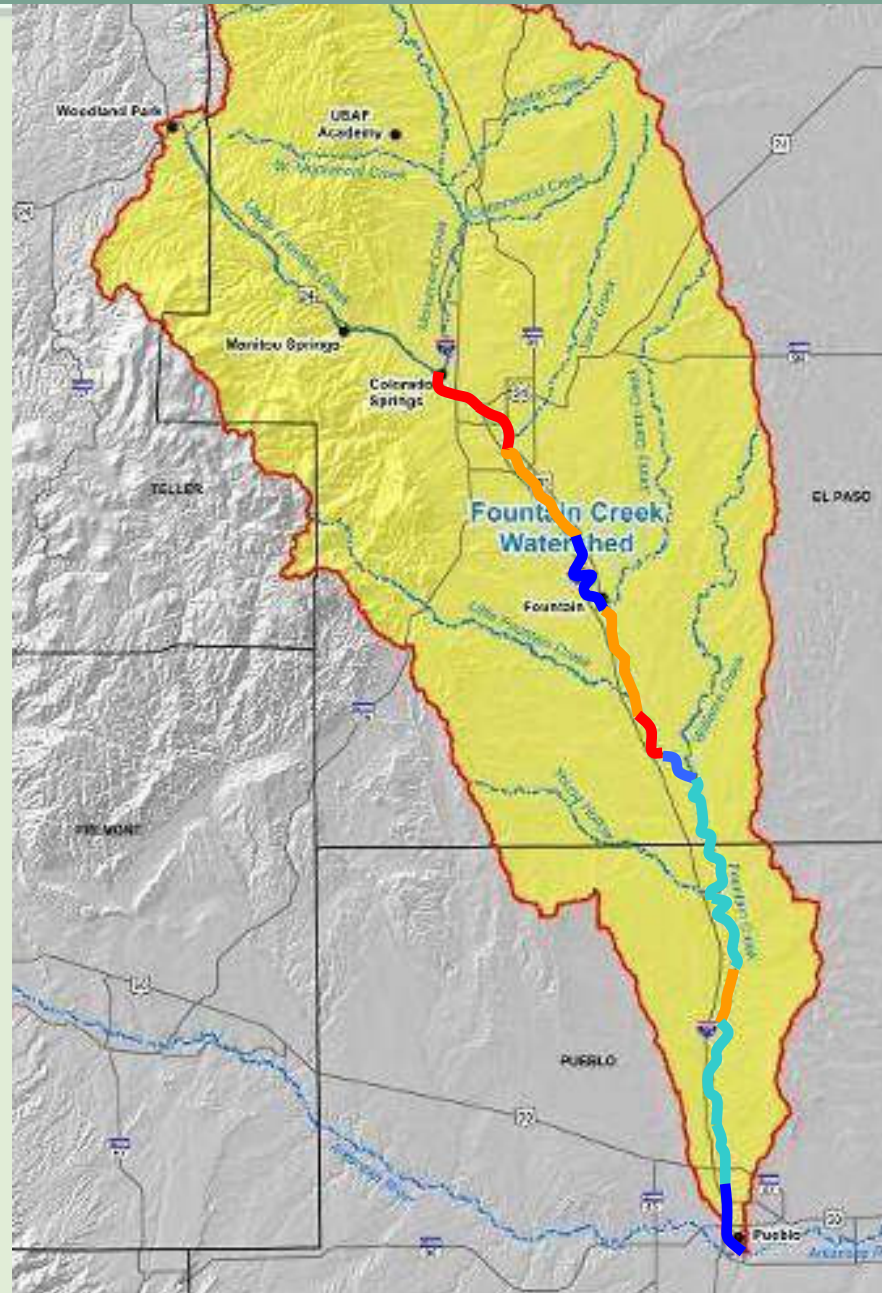
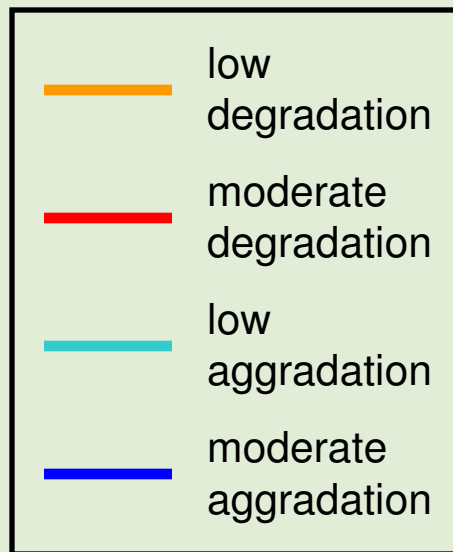
*Average Concentrations*

*Selenium*





# Sediment Trends





- SDS EIS
  - SDS Assessment of Geomorphic Effects
  - Fountain Creek Watershed Study  
Geomorphology Report
- 

### General Conclusions:

- Storm flows carry significantly more sediment than base flows
- Increased contribution from upper watershed
- Potential for increase in long-term deposition
- Mitigation measures will further reduce deposition



# Fountain Creek Corridor Master Plan

Carol Baker – Colorado Springs Utilities

### **Significant Regional Efforts Underway on Fountain Creek:**

- USGS Studies
- Pueblo and Colorado Springs Stormwater Enterprises
- Corps Watershed Study
- Sen. Salazar's Crown Jewel
- Vision Task Force
- Fountain Creek Foundation
- Fountain Creek District
- Fountain Creek Corridor Master Plan





- Partnership between Lower Ark Water Conservancy District & Colorado Springs Utilities
- Goal: Regional **solutions** for 44 miles of Fountain Creek
- Each contributed \$300K



1. Improve Fountain Creek –  
Reduce flooding, sedimentation  
and improve water quality
2. Create healthy ecosystems
3. Sustain productive agricultural  
lands
4. Lay out trail from Colorado  
Springs to Pueblo
5. Gain public and private support



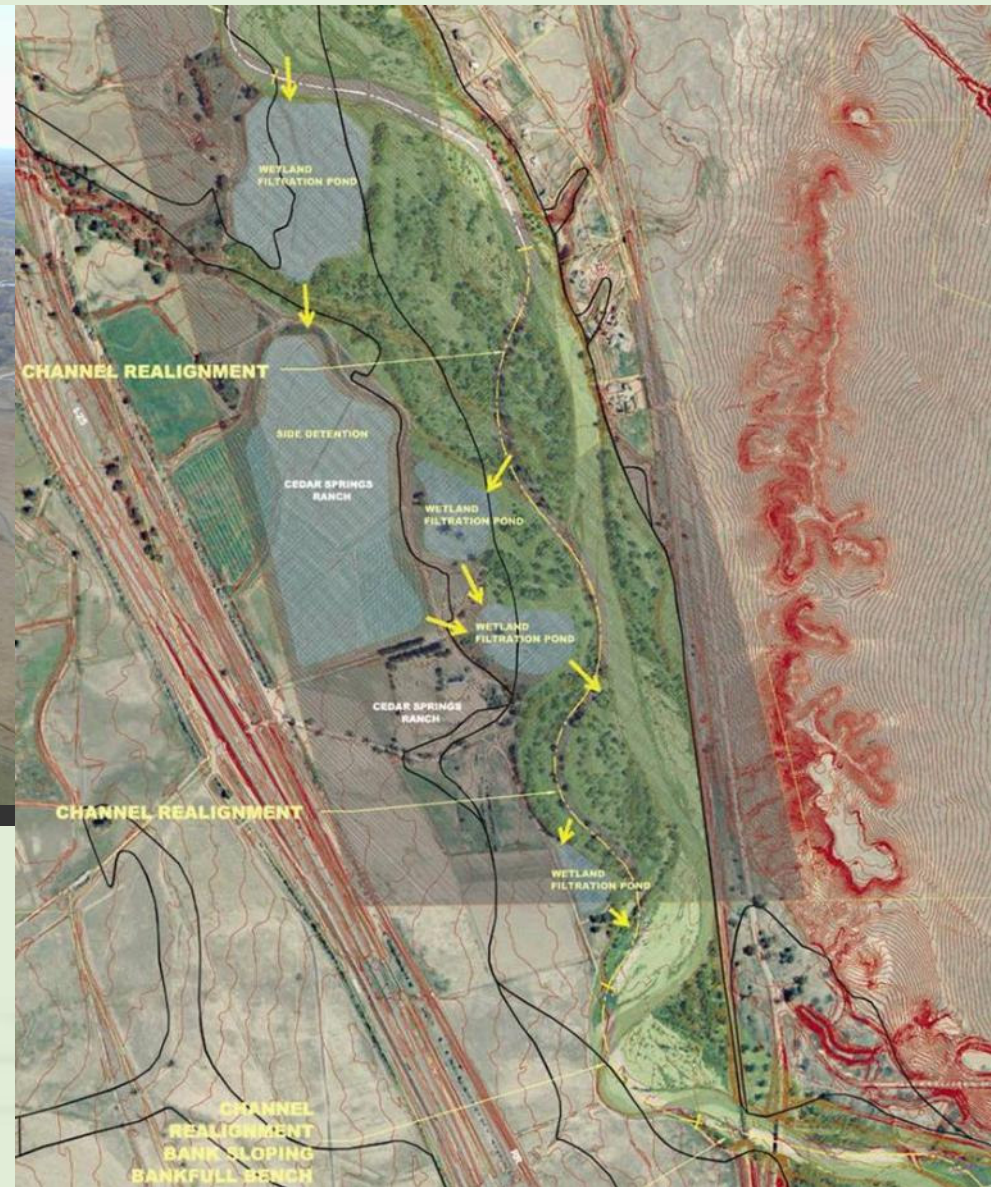




**What good looks like**



# Replicating Nature







## Many Hands Make Light Work

Taking care of bank  
erosion sites

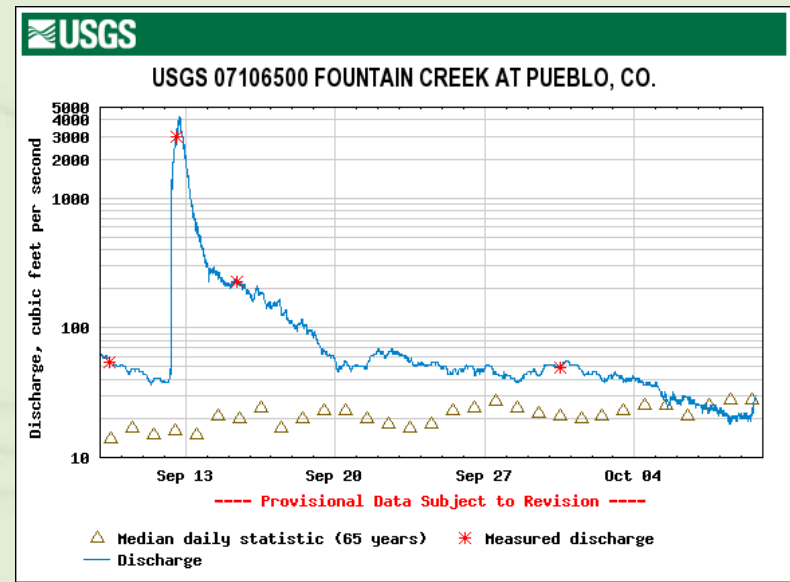
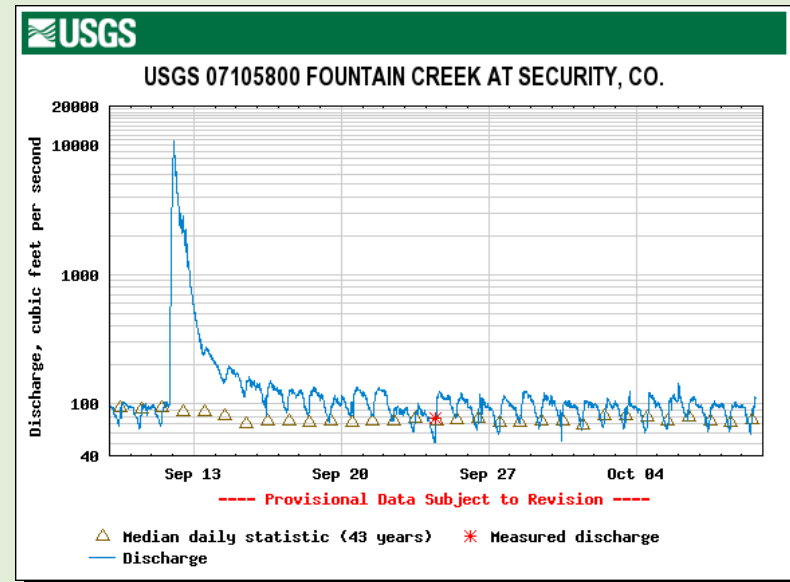
- Educate & empower landowners to make repairs
- Potential matching funds (NRCS)

## Mini-dams

- Reduce Flooding
- Improve Water Quality
- Reduce Erosion
- Reduce Sediment

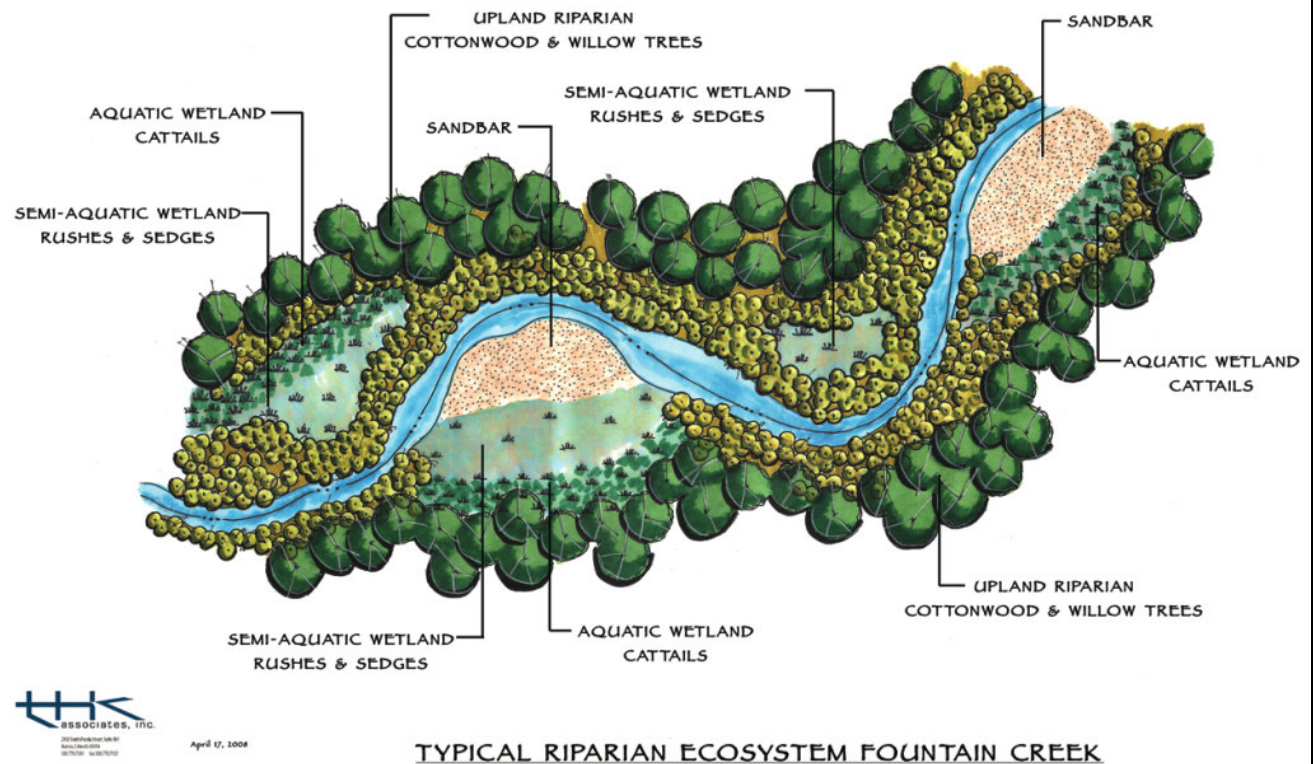
## Identified to date

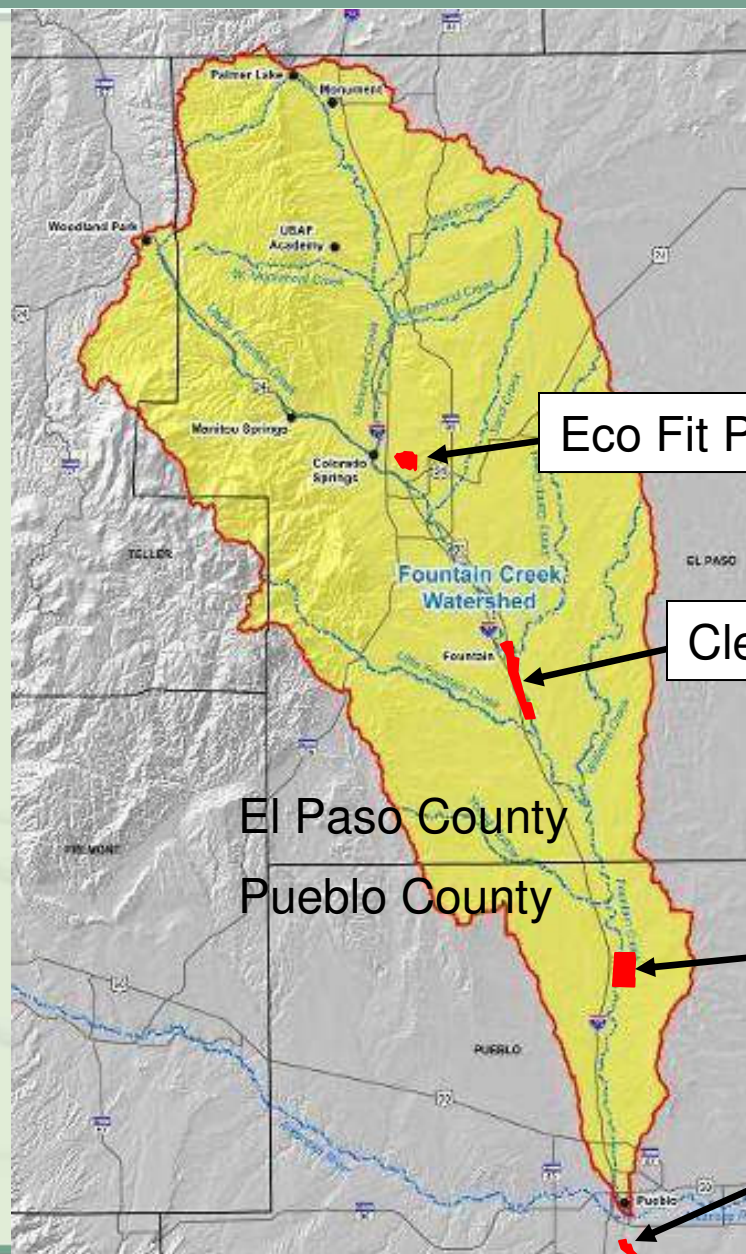
- 440 acres side detention
- 530 acres new wetlands





- Fountain Creek Vision Task Force Working Groups
- Army Corps of Engineers
- Local land owners
- Colorado Springs City Council
- Pueblo City Council
- Pueblo Board of County Commissioners





Eco Fit Park

Clear Springs Ranch

El Paso County  
Pueblo County

Environmental  
Stewardship Center

Confluence Park



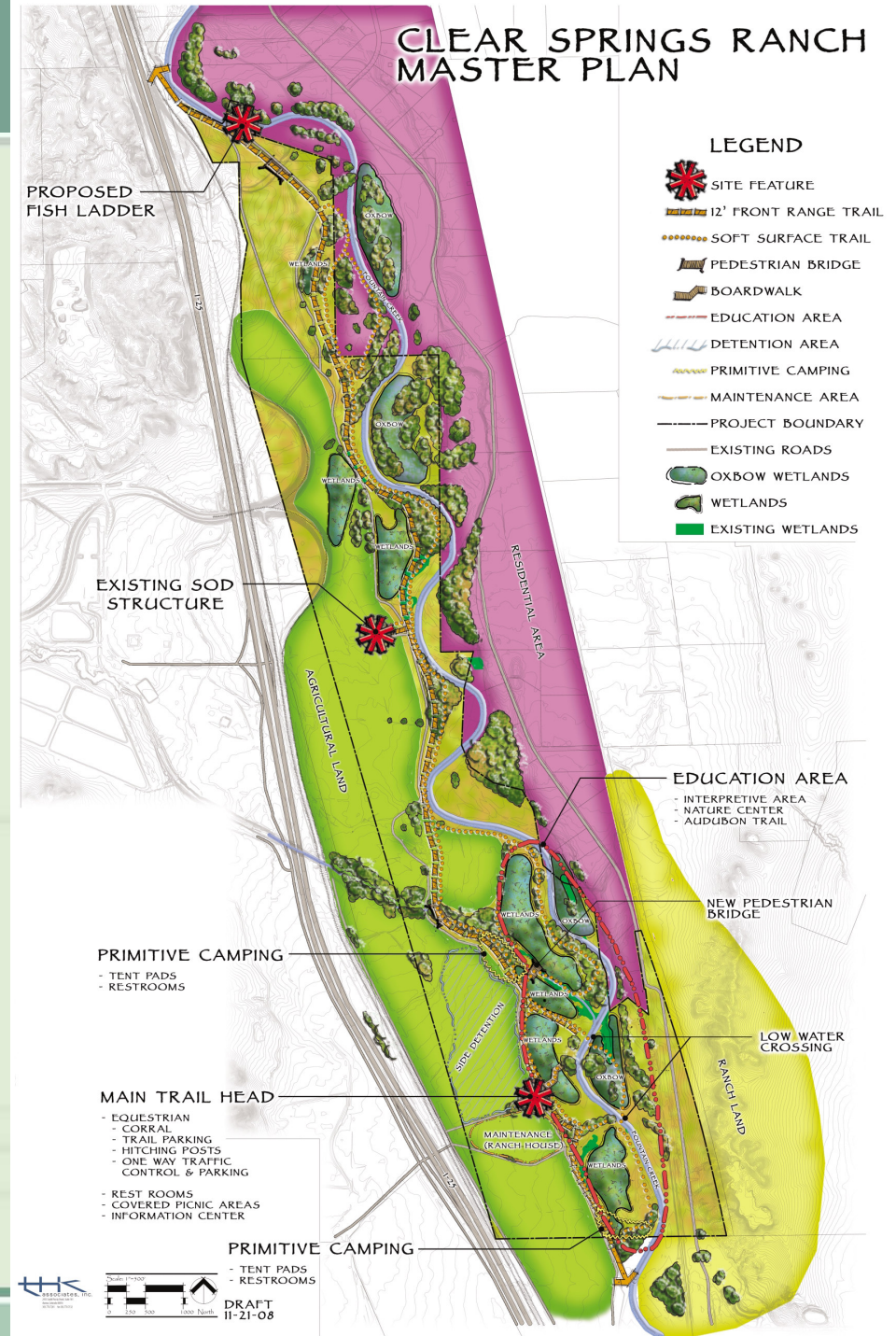
# Fountain Creek Eco-Fit Environmental Center El Paso County



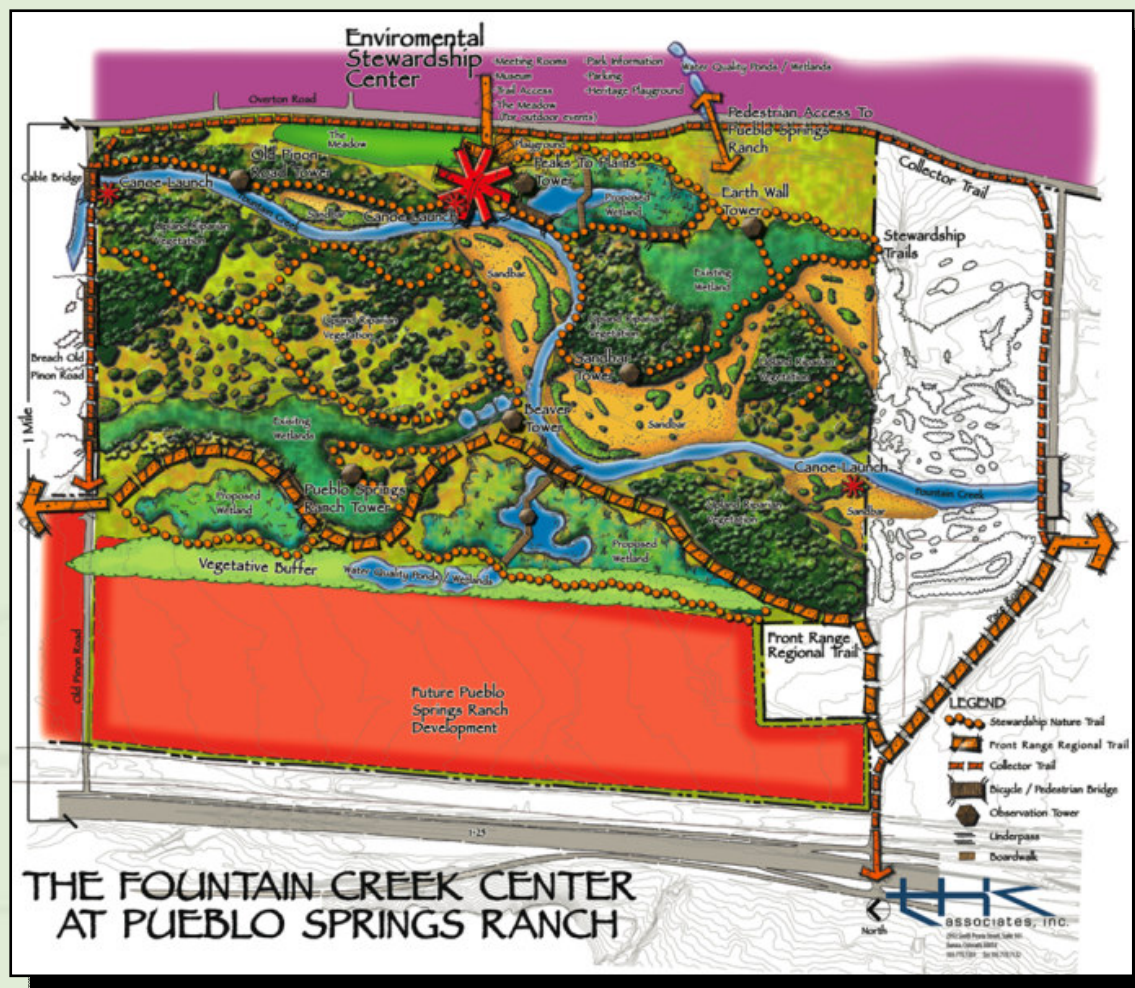


# Clear Spring Ranch Environmental Center

## Centered Between CS & Pueblo



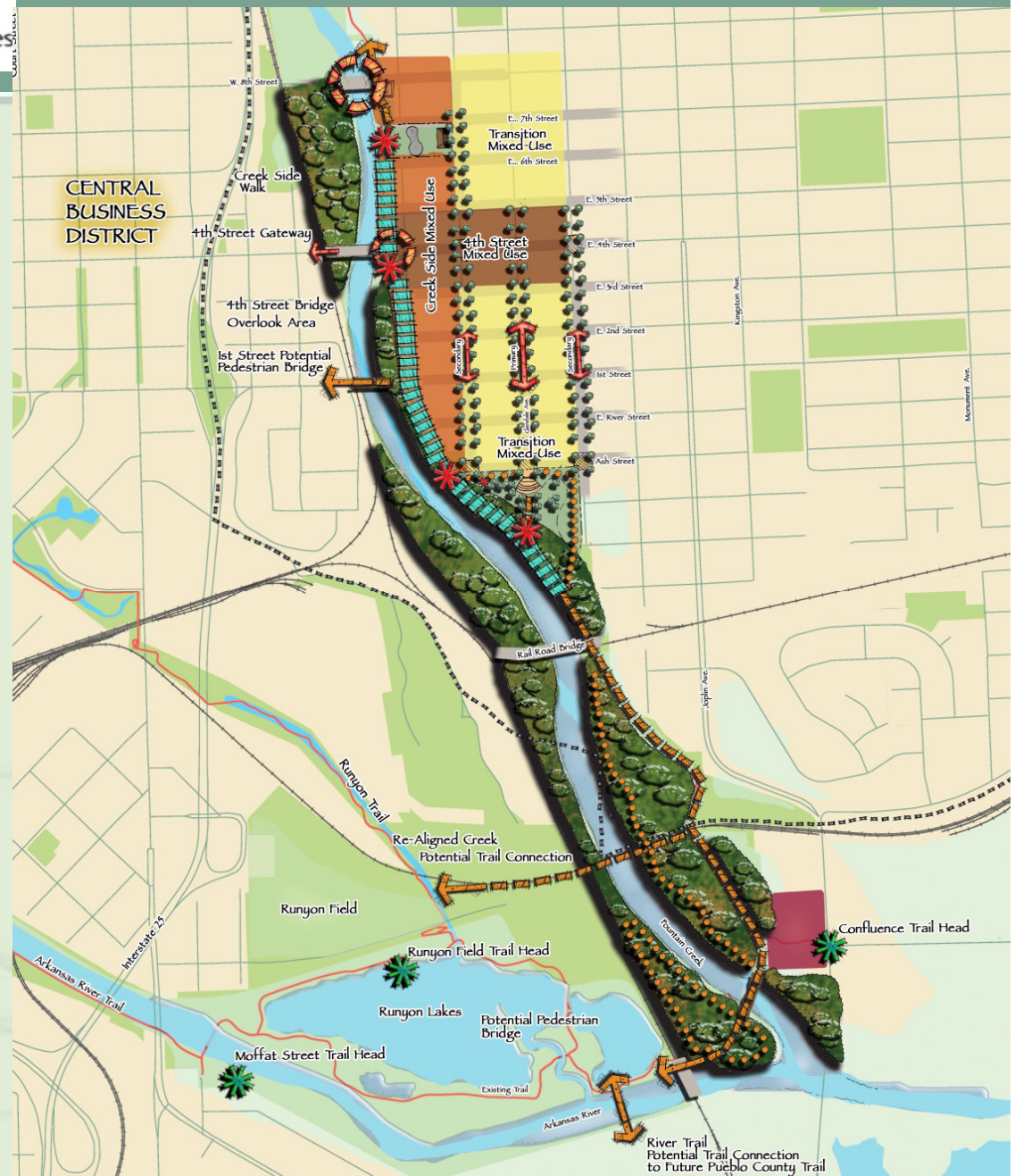
## Fountain Creek Environmental Stewardship Center Pueblo County





## Confluence Park in Pueblo

- Amenity from 8<sup>th</sup> St to Arkansas River
- FC showpiece & restoration
- Ties east side neighborhood to FC
- Ties to economic revitalization plans
- Reviewed by Pueblo Planning Dept., comments incorporated



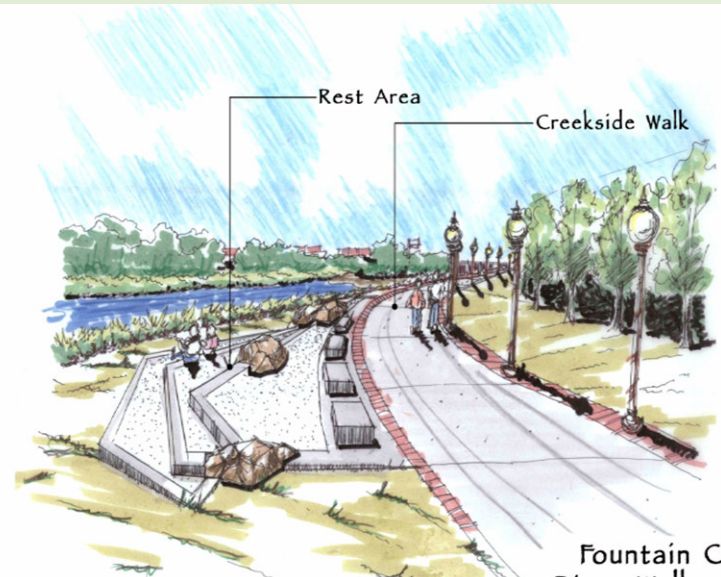


## Utilizes

- Sediment mined by Streamside Systems
- Composted solids from the Pueblo Wastewater Treatment Plant

## Results

- Better contours
- Healthier flood plain vegetation
- Fortified levees
- Greater levee capacity



CONFLUENCE PARK  
IN PUEBLO

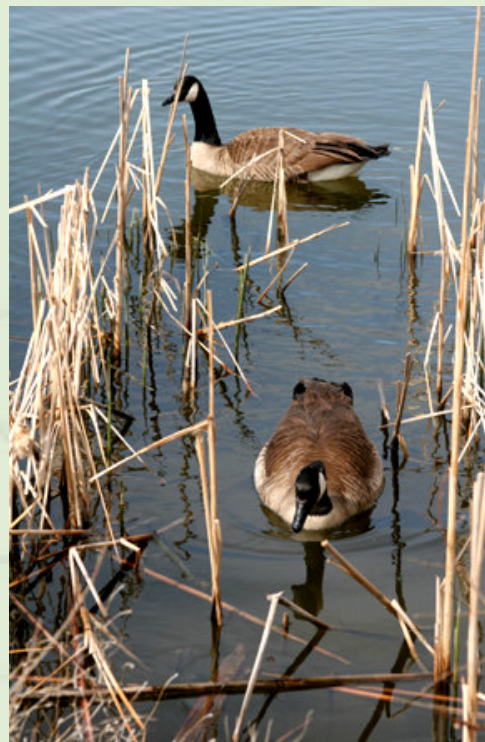
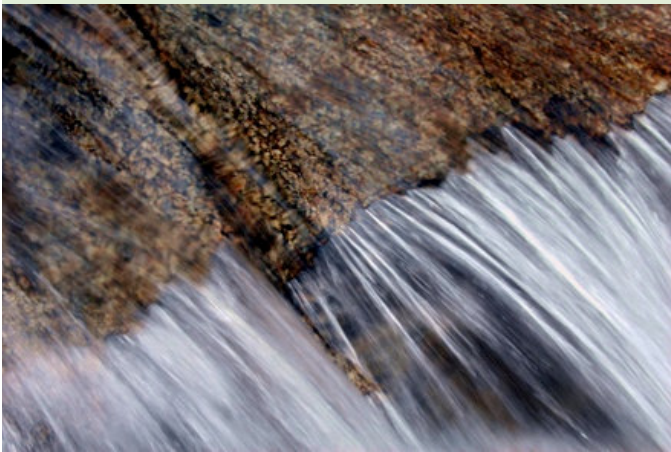


- Colorado Springs
- Pueblo
- Army Corps of Engineers
- Fountain Creek Foundation
- Colorado Department of Transportation
- Great Outdoors Colorado (Lottery)
- Colorado Water Conservation Board
- El Pomar Foundation
- Federal Funds
- Others





- Corridor Master Plan
- Funding / Partnerships







# **Benefits to Pueblo County**

**John Fredell – SDS Project Director**

## *SDS Benefits to Pueblo County*

- Benefits to Pueblo West
- Economic Benefits
- Pueblo Flow Management Program
- Improvements to Fountain Creek



- Pueblo West only participates in Proposed Action
- Expands water delivery system
- Provides redundancy
- Opportunity to use North Outlet Works





- Jobs
- \$172 million construction in Pueblo County in Phase I
- \$600 million construction In Pueblo and El Paso Counties
- Procurement of goods and services



## *Pueblo Flow Management Program Benefits*

- Protects flow below Pueblo Dam
  - Benefits:
    - Kayak Course
    - Legacy Project
- Protects in-basin water users



## *Fountain Creek Improvements*

- Right thing to do
- Colorado Springs is already taking action
- Separate regulatory processes for mitigation
  - NEPA (Reclamation)
  - 1041 Permit (Pueblo County)





## **Preferred Alternative must be built in a manner consistent with the FEIS**

### **Mitigation Categories**

- Surface water
- Vegetation
- Wildlife
- Recreation
- Wetlands
- Stream bank | channel stability
- Water quality
- Others



## **Surface Water**

Continued participation in:

- Upper Arkansas Voluntary Flow Management Program
- Pueblo Flow Management Program



### **Vegetation**

- Survey for protected vegetation prior to construction
- Replace mature trees
- Monitor vegetation re-establishment
- Control weeds





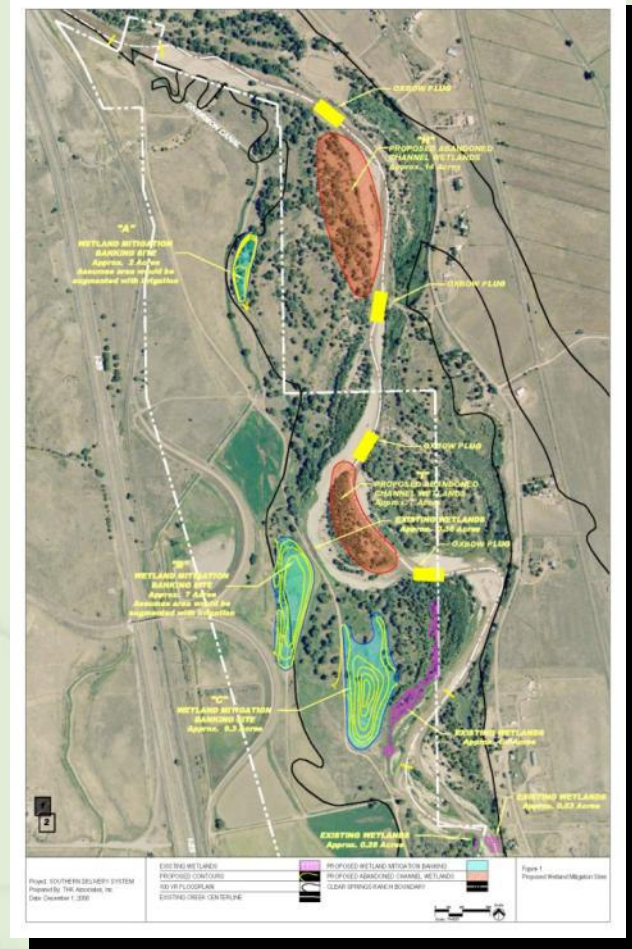
## **Recreation**

- Detours for trail closure
- Restore developed parks



- Wetlands

- Avoid impacts when possible
- Minimize impacts if can't avoid
- Mitigate impacts that occur during construction
- Create new areas of wetlands
- Working with CDOT on possible additional wetland creation

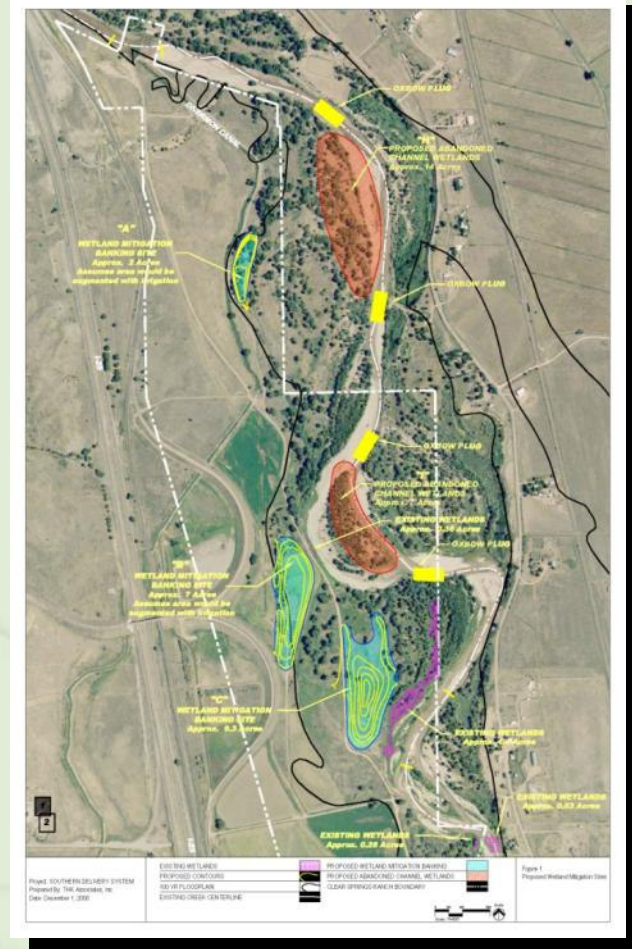


## Stream Bank / Channel Stability

- Increase stream curves
- Bank stabilization
- Sediment control / removal

## Water Quality

- Water quality monitoring
- Adaptive management





## Aquatic Life

- Monitor effects on aquatic life in Fountain Creek and Arkansas River between Pueblo Dam and Las Animas Gauge
- Select measures to protect aquatic life, if necessary

## Wildlife

- Submit mitigation plan to Colorado Wildlife Commission
- Evaluate opportunities to enhance angling, boating, recreation on Lake Henry, Lake Meredith, and Holbrook Reservoir



## Wildlife (continued)

- Revegetate habitat
- Conduct clearance surveys for state species of concern
- Conduct raptor and migratory bird nest surveys
- Develop construction schedules to avoid impacts to nesting raptors and nesting migratory birds
- Conduct pre-construction surveys for swift fox den sites
- Mitigate impacts on state-listed amphibians
- Impose seasonal restrictions on construction to avoid sensitive large game habitat
- Install wildlife crossovers along pipeline excavations
- Replace nesting habitat for Lewis' woodpecker



## Pueblo County Staff Report

- 1041 mitigation and NEPA mitigation not linked
- Four categories of mitigation
  - Infrastructure and pipeline construction
  - Environmental
  - Operational
  - Socio-economic





## Pueblo County Staff Report Recommends

- Staff work with applicant
- Mitigation should be monetary
- Mitigation amount and details should be negotiated with applicant
- SDS staff ready to get started



Comments | Questions