

CAMP CREEK



DRAINAGE IMPROVEMENT PROJECT

Community Workshop #2



Opening and Introductions

Mike Chaves, City Project Manager



Wilson Team Introductions

Vance Fossinger, Consultant Project Manager





Vance Fossinger, PE
Project Manager
Hydraulics & Hydrology
Expert



Bob McGregor, PE
Hydraulic & Hydraulics
Expert



Dan Krueger, PE
Deputy Project Manager
Roadway Expert



Priscilla Marbaker, PLA
Parks and Aesthetics
Planning and Design Expert



Susan Watkins
Public Involvement Expert



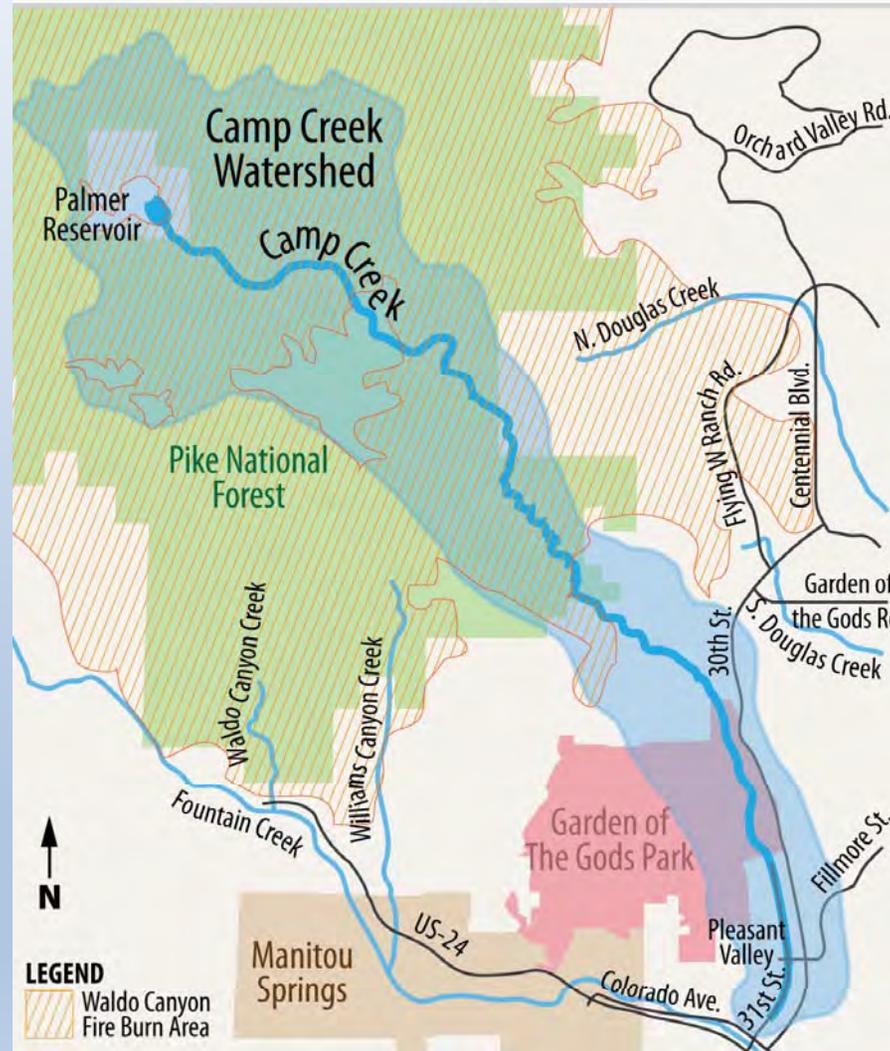
Tweed Kezziah
Public Involvement Expert

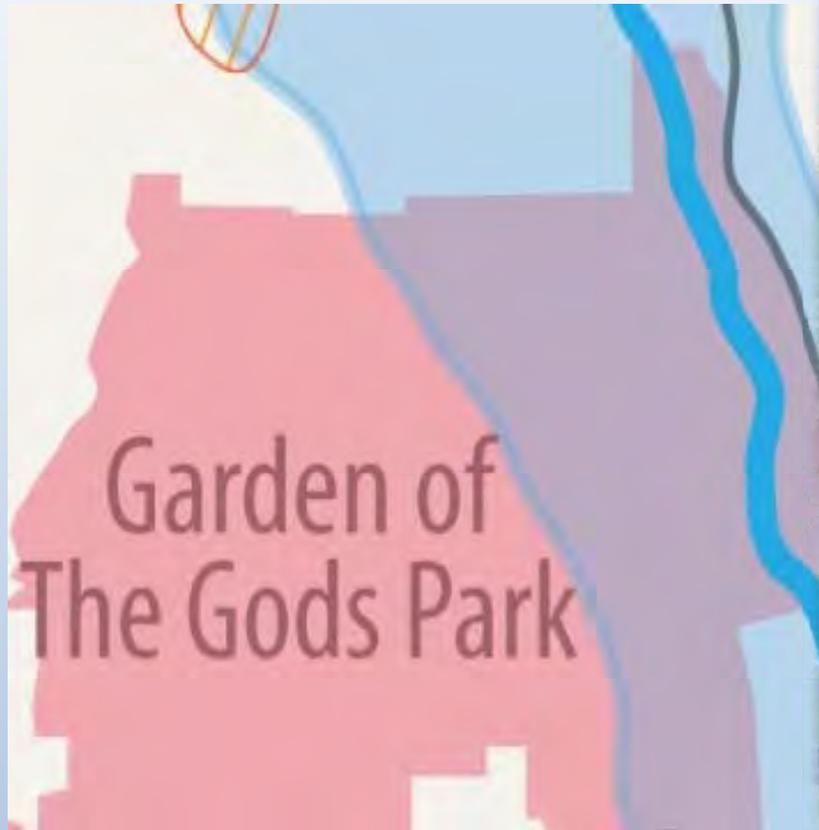
Primary Meeting Goals

- Provide an update on project activities
- Introduce design concepts
- Ask for your input on design concepts

Project Review

The Camp Creek Watershed





Garden of the Gods Park

Rock Ledge Ranch Historic Site



Pleasant Valley



31st Street Channel



Planning Phase Purpose

Thoughtfully plan solutions that:

- Protect the corridor from flooding and erosion
- Improve public safety
- Are technically sound
- Are responsive to community needs and values
- Are sensitive to special characteristics of Garden of the Gods Park and Rock Ledge Ranch Historic Site

Project Givens

- **Proposed solutions must conform to all relevant public property deed restrictions and to all applicable federal and state laws and regulations.**
- **Solutions must recognize existing agreements and master plans.**
- **Drainage, bridge and road improvements in the corridor must be addressed as part of an integrated solution.**
- **Solutions will strive to honor values expressed by the community regarding impacted neighborhoods, Garden of the Gods, and Rock Ledge Ranch Historic Site.**
- **The City of Colorado Springs will do its best to leverage federal, state and local funding for this project.**
- **The City encourages everyone interested in this serious problem to participate in the public involvement process for developing solutions.**
- **The City of Colorado Springs will make the final decision regarding short- and long-term solutions and phased implementation.**

Decision Process

Sept. – Oct.: Identify Issues

Nov. – Dec.: Develop Alternatives

December 12th: Review/Respond to Alternatives

Dec. – Jan.: Refine Alternatives

January: Review/Respond to Alternatives

Jan. – Feb.: Develop Preferred Alternative(s)

February: Review Preferred Alternative(s)

Meeting Agenda

- ❖ Presentation of information
- ❖ Presentation of concepts
- ❖ Small group work
- ❖ Next steps
- ❖ Report out of small group results



Go Broncos!

Meeting Ground Rules

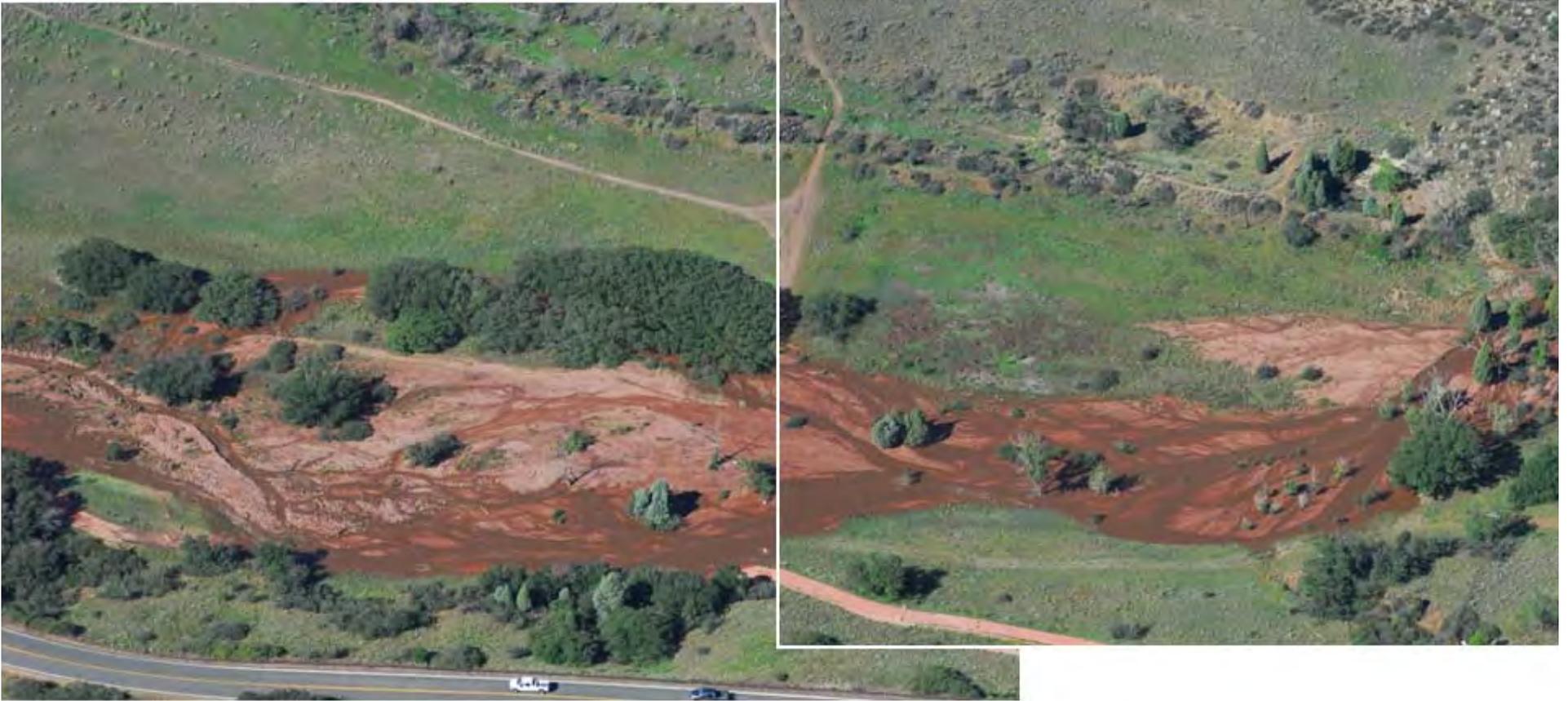
Adopted October 22, 2013

We will:

- Say what we think
- Listen with respect to the opinions and beliefs of others
- Be open to compromise. We will advocate for what's most important to us and accept what we can live with, even though it may not be our first choice
- Defer our questions until after the project team members have completed their presentations

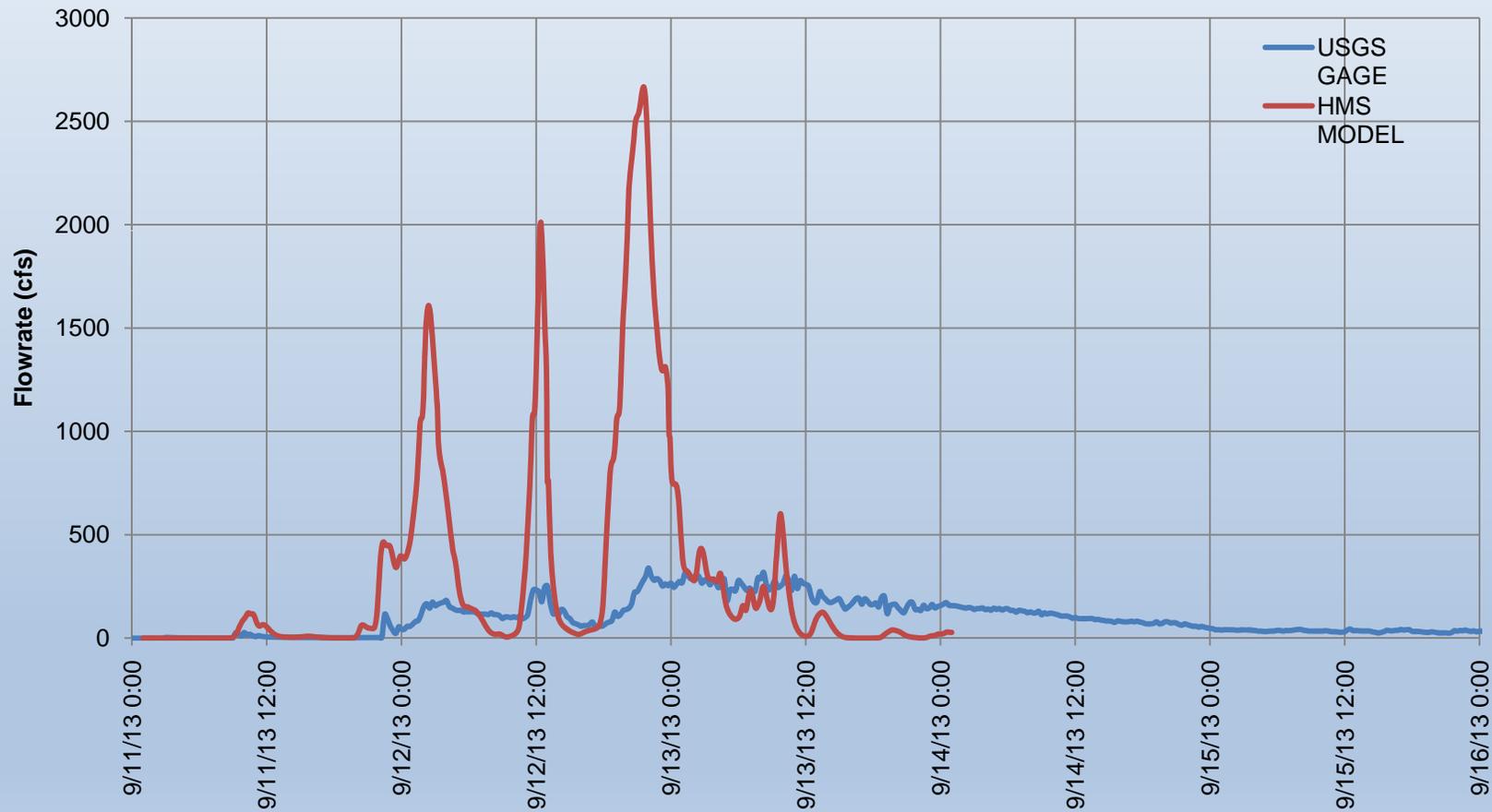
PRESENTATION OF INFORMATION

Planned Sediment Removal In North End of Garden of the Gods



- Will restore Camp Creek channel section
- Winter 2013-2014 City maintenance activity

Hydrology Challenges



Hydrology Status

- Working to calibrate hydrologic model
- FEMA 100-year pre-fire flow rate = 4,600 cubic feet per second
- Current modeling indicates 100-year post-fire flow rate of slightly less than 4,600 cubic feet per second
- Current 100-year flow rates used to develop and analyze design concepts = 4,600 cubic feet per second
- Calibrated flow rates will be used to develop and analyze design alternatives presented in January

PRESENTATION OF CONCEPTS

Camp Creek Design Concepts

- Purpose of presentation
- Special challenges for Camp Creek
- Overview of alternative concepts

Camp Creek Design Concepts

Based on:

- ✓ community issues from interviews
- ✓ responses at Oct. 22 community meeting
- ✓ professional analysis and development

Explored suggestions but not able to include all

Concepts are options to consider, not
recommendations

Purpose of Presentation

- ❖ Describe multiple conceptual ideas for meeting the challenges of Camp Creek
- ❖ Present facts about each concept
- ❖ Create community discussion
- ❖ Obtain community response
- ❖ Guide us in developing the solution

Camp Creek Special Challenges

Waldo Canyon fire has produced new challenges:

- ✓ Heavier sediment loads from Queen's Canyon
- ✓ Heavier erosion of Camp Creek channel in Garden of the Gods
- ✓ Safe passage of 100-year flood in a changing environment

Camp Creek Special Challenges

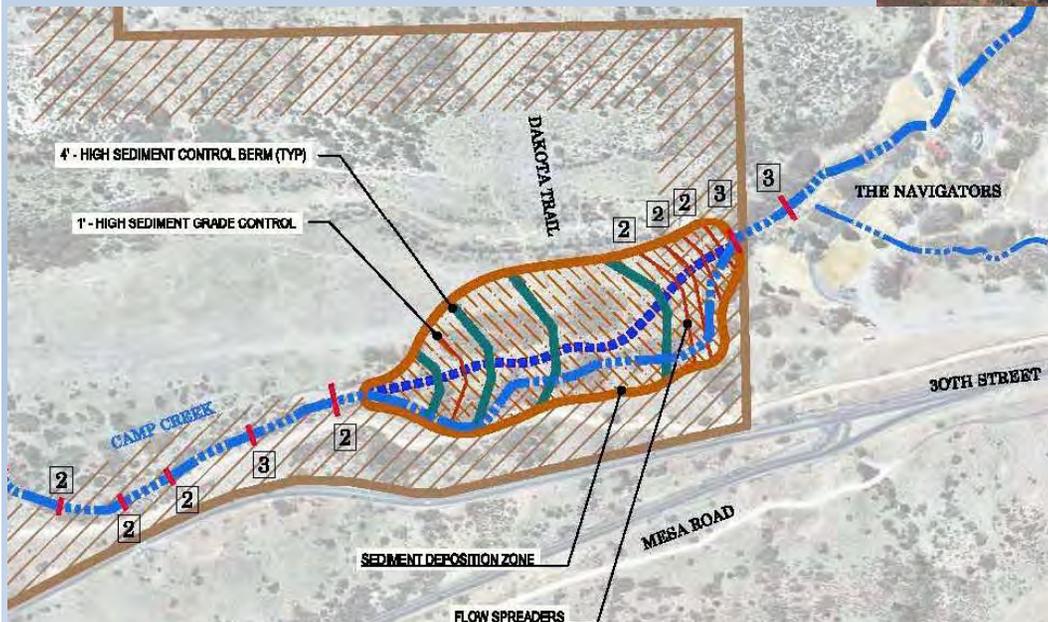
Heavier Sediment Loads

Heavier sediment loads from Queen's Canyon are now being deposited in Garden of the Gods and then carried downstream to cause more damage



Managing Heavier Sediment Loads

- Manage sediment where it deposits naturally
- Add low-lying structures (up to 4 feet high) to further encourage sediment deposition in northern part of Garden of the Gods
- Regular maintenance to remove sediment



Camp Creek Special Challenges

Channel Erosion in Garden of Gods

Heavier erosion of Camp Creek Channel in Garden of the Gods



Managing Creek Bed Erosion in Garden of the Gods

Natural channel stabilization methods

- Use 2 to 3-foot channel drop structures to prevent further erosion
- Carefully select up to 32 stream bottom locations to mitigate high rates of erosion



Before



After

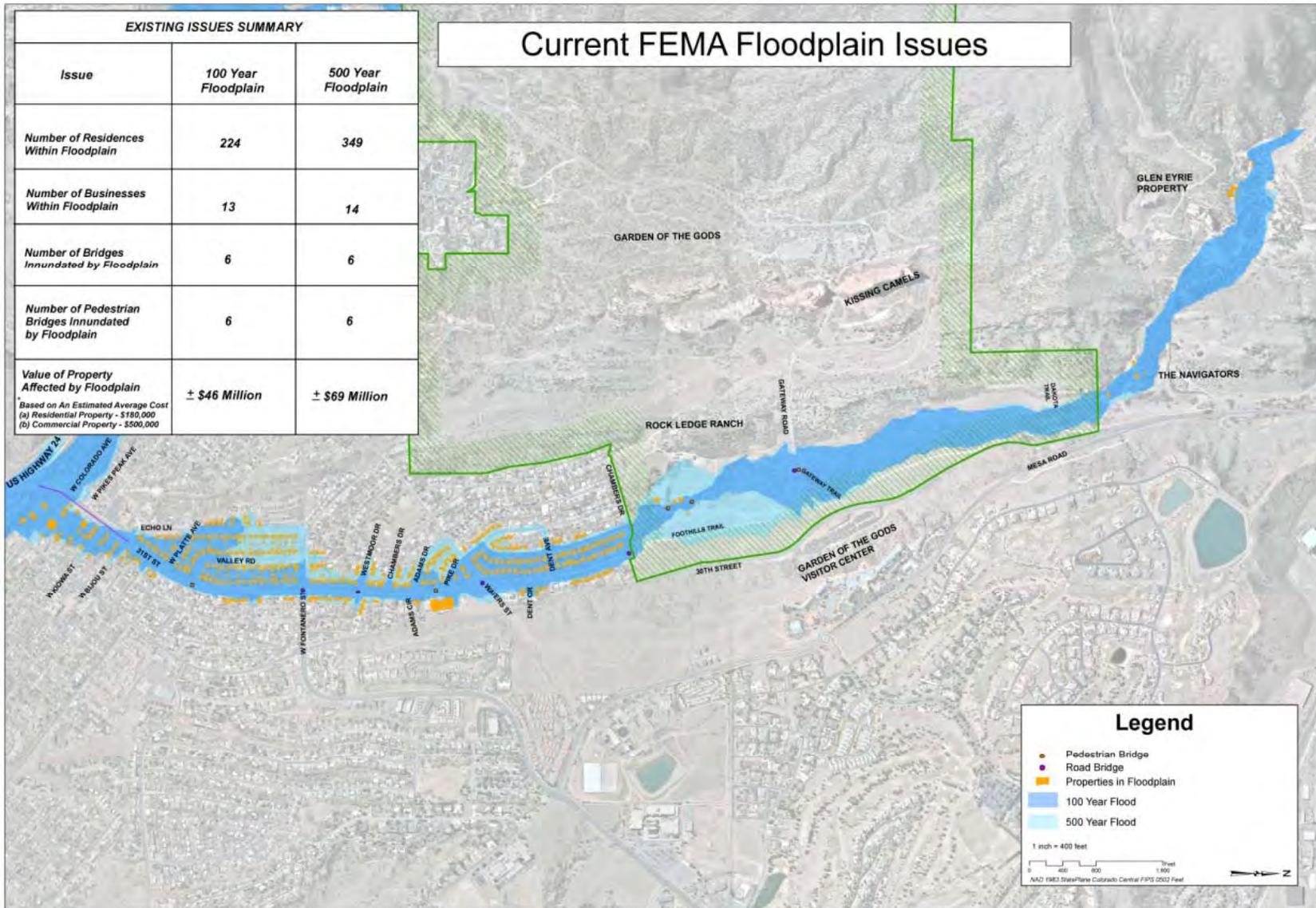
Camp Creek Special Challenges

Safe Passage of 100-year Flood

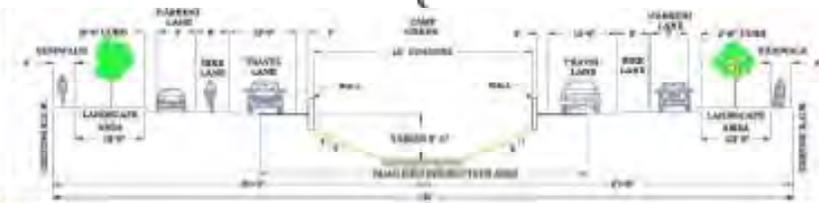
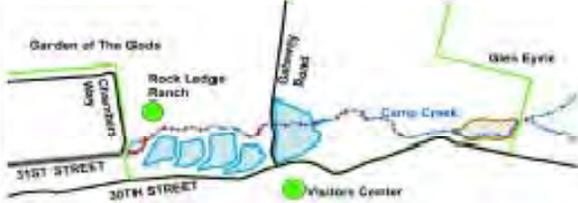
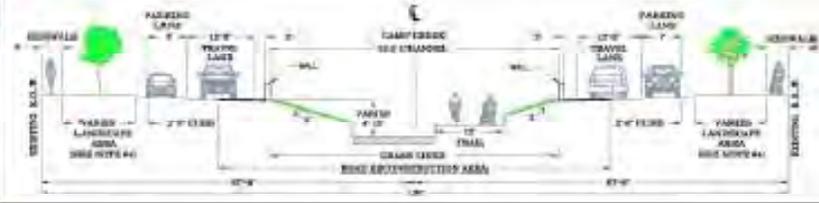
EXISTING ISSUES SUMMARY		
Issue	100 Year Floodplain	500 Year Floodplain
Number of Residences Within Floodplain	224	349
Number of Businesses Within Floodplain	13	14
Number of Bridges Inundated by Floodplain	6	6
Number of Pedestrian Bridges Inundated by Floodplain	6	6
Value of Property Affected by Floodplain	± \$46 Million	± \$69 Million

Based on An Estimated Average Cost
 (a) Residential Property - \$180,000
 (b) Commercial Property - \$500,000

Current FEMA Floodplain Issues



Summary of Camp Creek Concepts

		CAMP CREEK CONCEPTS GRAPHIC SUMMARY	
CONCEPT		31 ST STREET (ECHO TO CHAMBERS WAY)	GARDEN OF THE GODS
40-FOOT WIDE CHANNEL	A Channel Reconstruction Creek Stabilization		
	B Channel Reconstruction Creek Stabilization Detention		
52-FOOT WIDE CHANNEL	C Grass-Lined Channel Creek Stabilization Detention		
52-FOOT WIDE PARKWAY	D Box Culvert Creek Stabilization		
	E Box Culvert Creek Stabilization Detention		

Facing the Flood Flow Challenge in Camp Creek

Concepts as presented will be refined based on
feedback from community



Concept A

31st Street Segment



Before

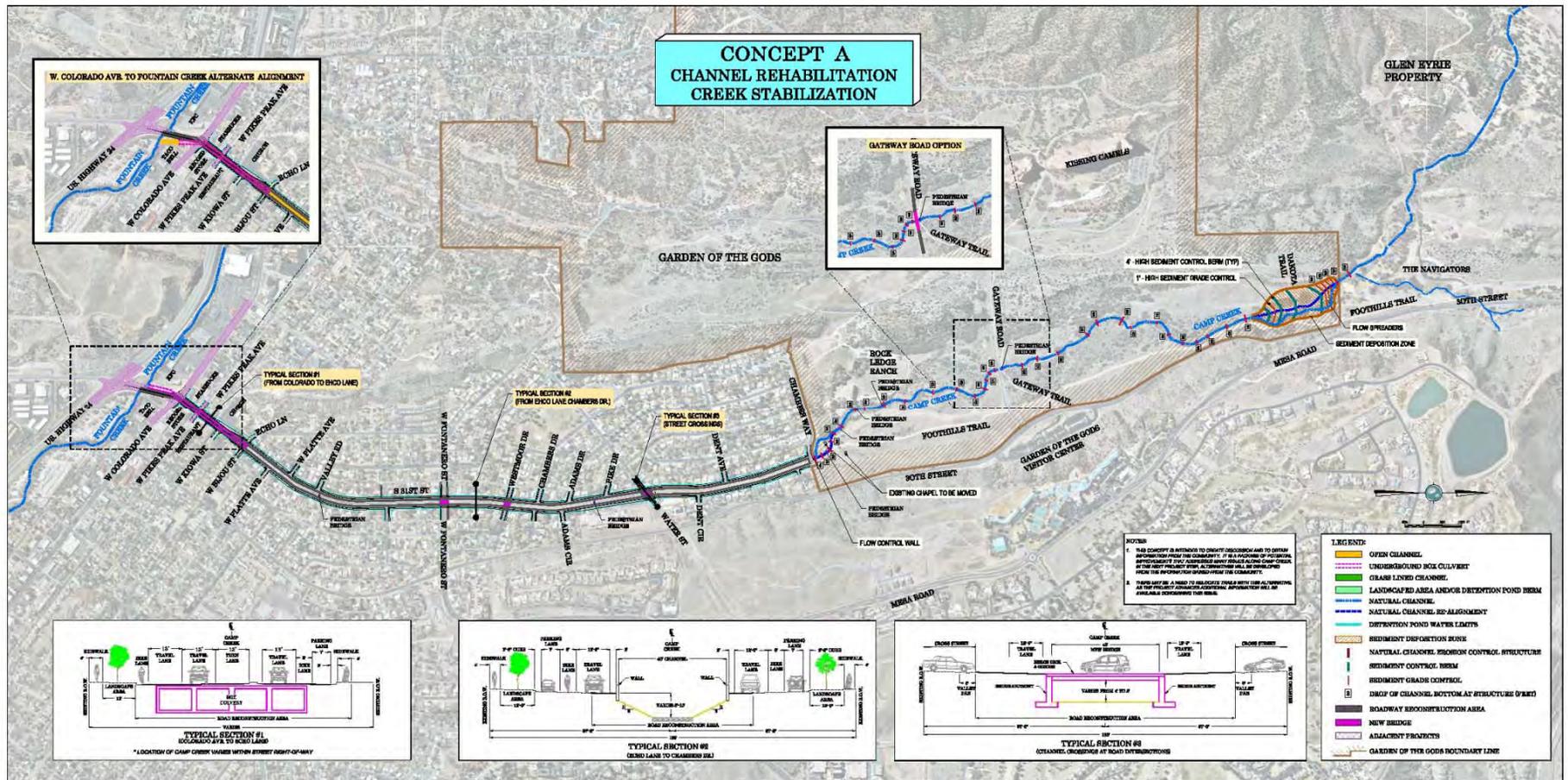
Concept A

31st Street Segment



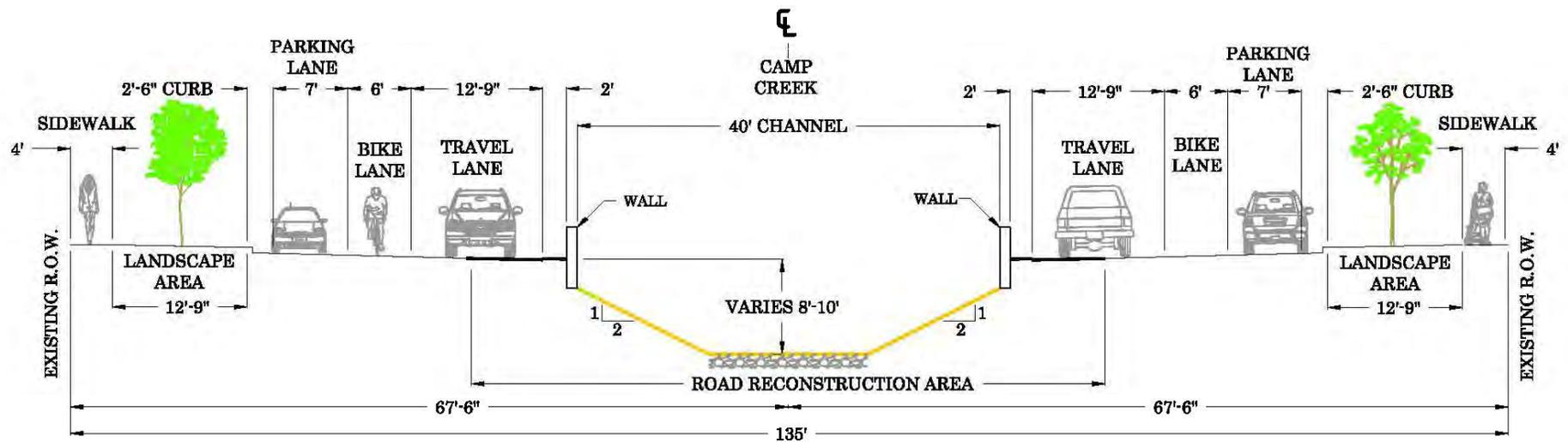
After

Concept A



Concept A

31st Street Segment Echo Lane to Chambers



Concept A

Garden of the Gods



Concept A

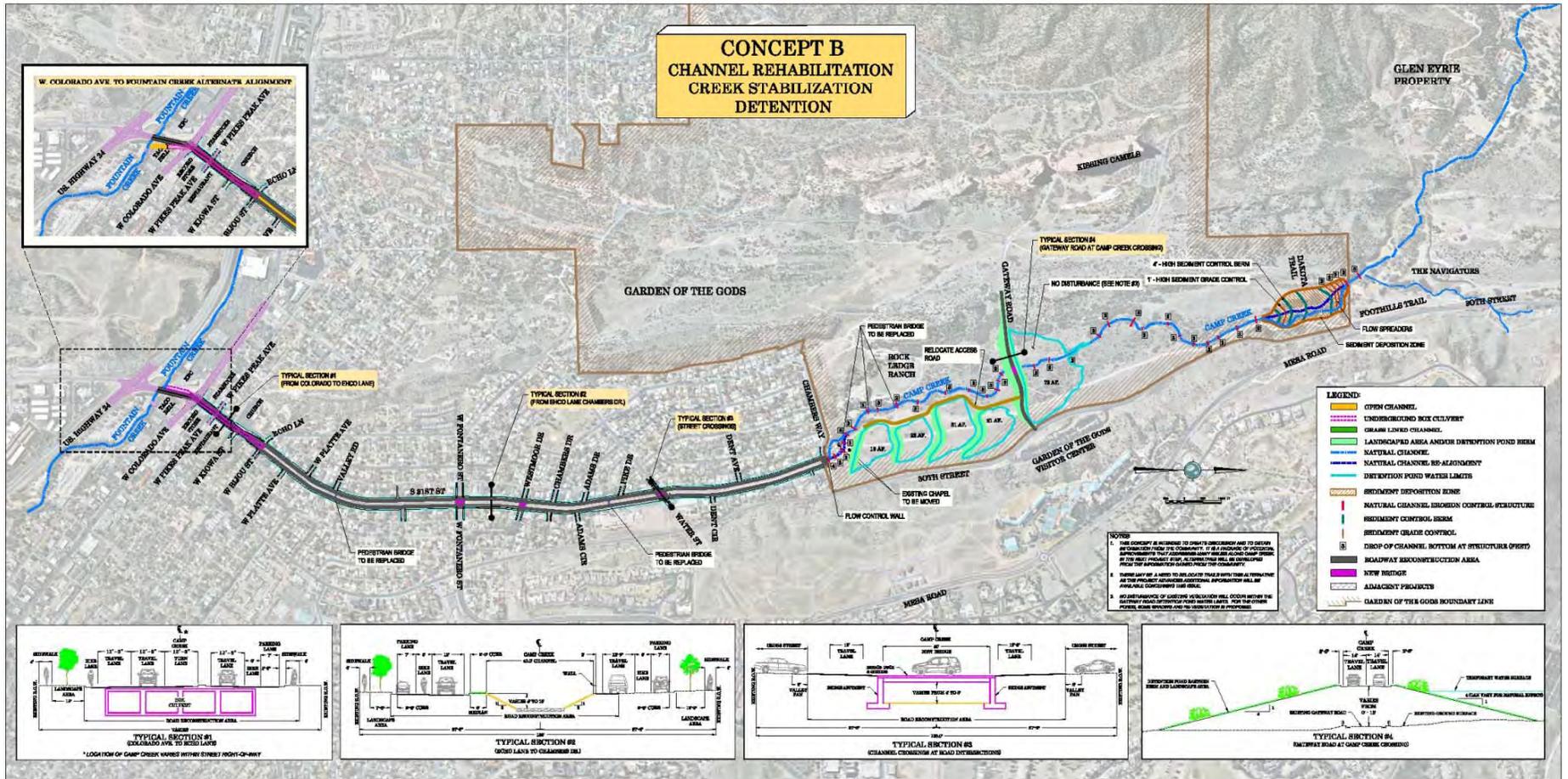
- Reconstruction of 31st Street channel and bridges from Chambers Way to Echo Lane
 - Stays within current 40-foot top width
 - Requires more depth and steeper interior side slopes
 - Includes street level walls to fully contain a 4,600 cubic feet per second 100-year flood
 - Improves channel safety
 - Retains existing bike lanes
 - Provides full emergency access to Pleasant Valley neighborhood in 100-year flood
- Reconstruction of 31st Street buried culvert from Fountain Creek to Echo Lane
- No detention in Garden of the Gods
- Removes houses and businesses from 100-year flood plain

Concept B

31st Street Segment



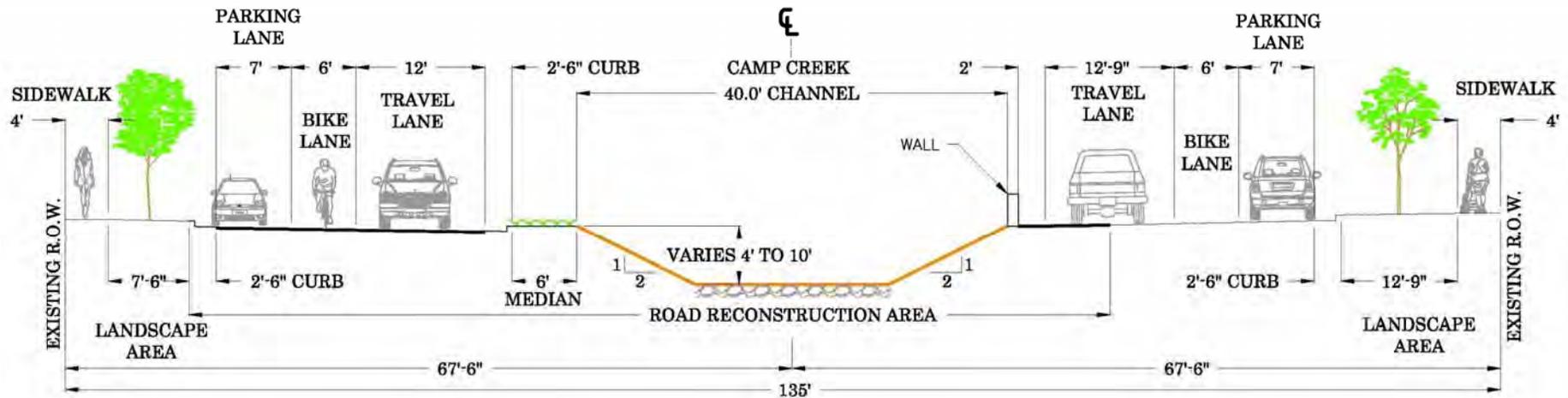
Concept B



Concept B

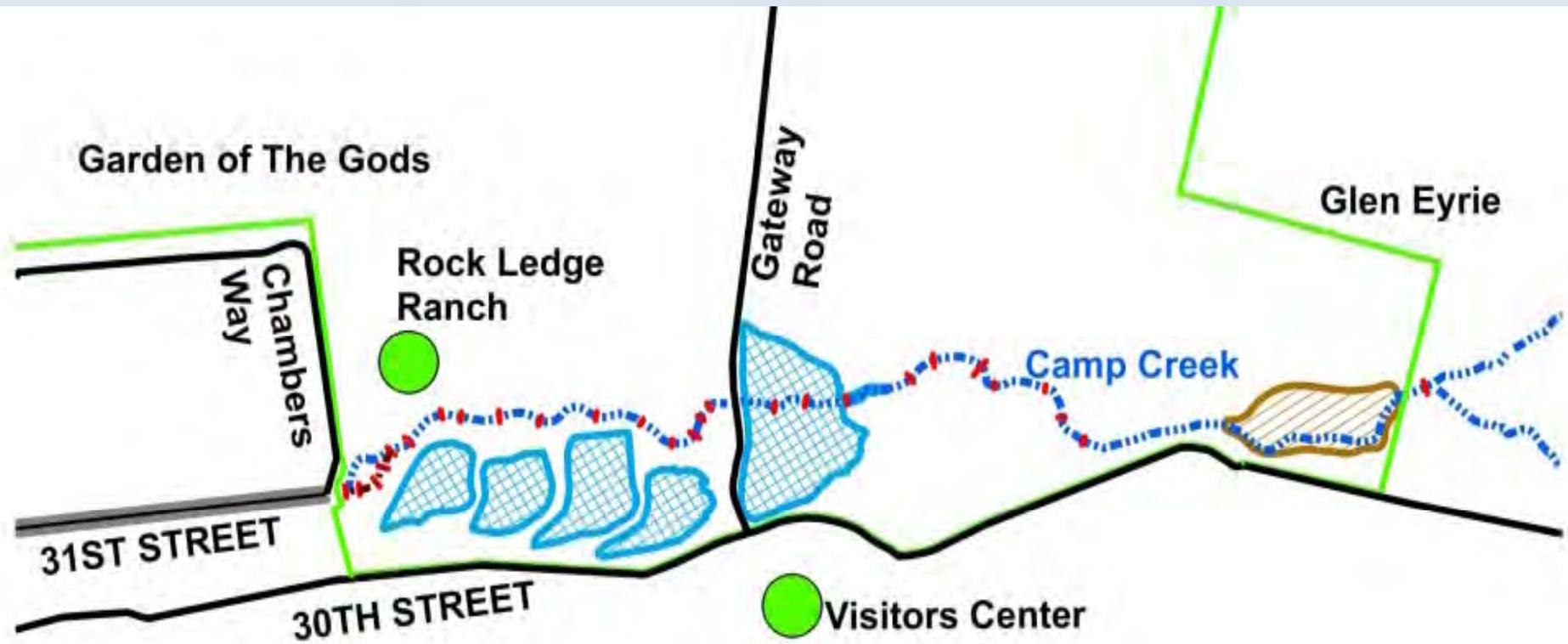
31st Street Segment

Echo Lane to Chambers Way



Concept B

Garden of the Gods



Concept B

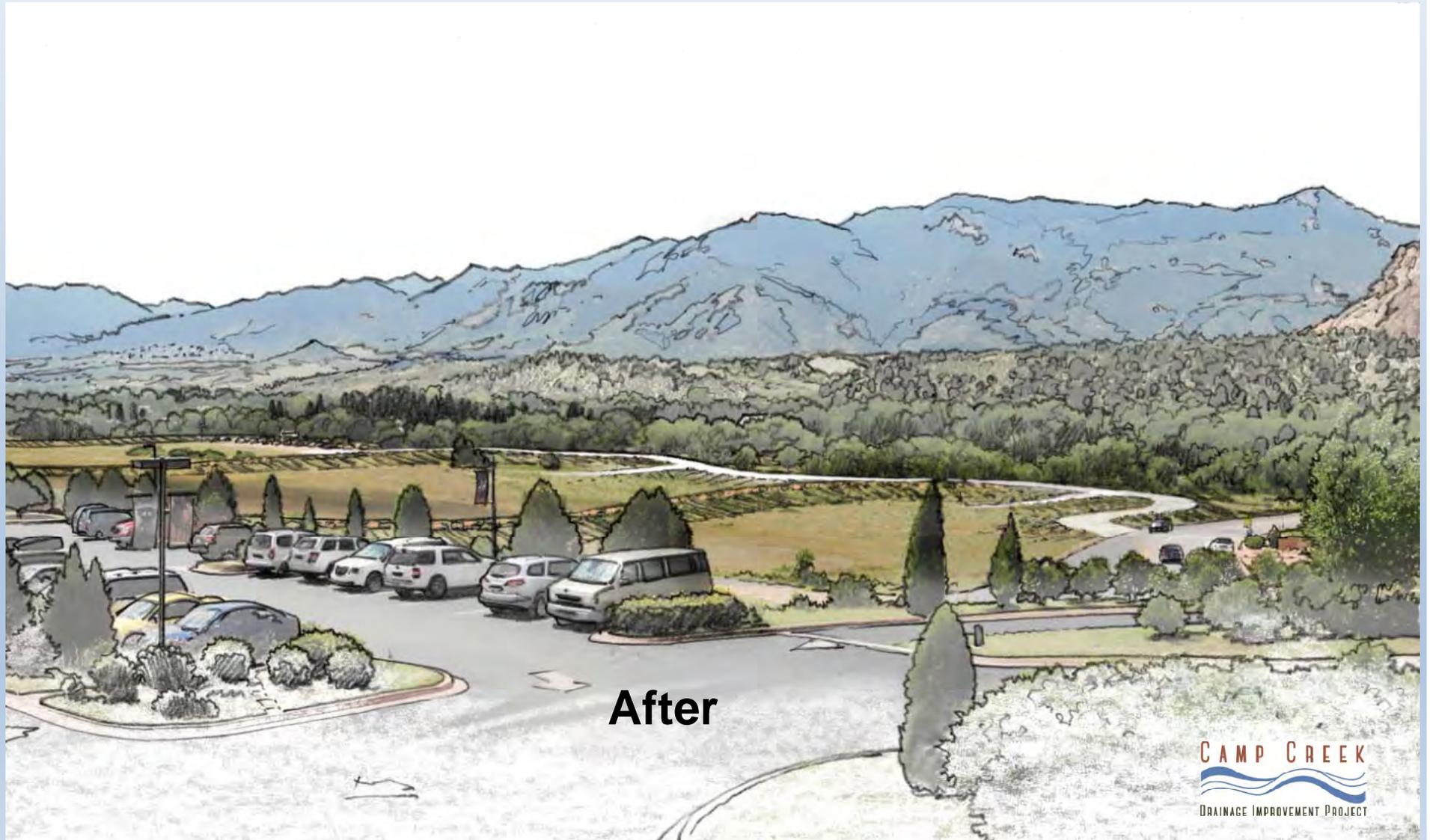
Parking Lot Detention



Before

Concept B

Parking Lot Detention



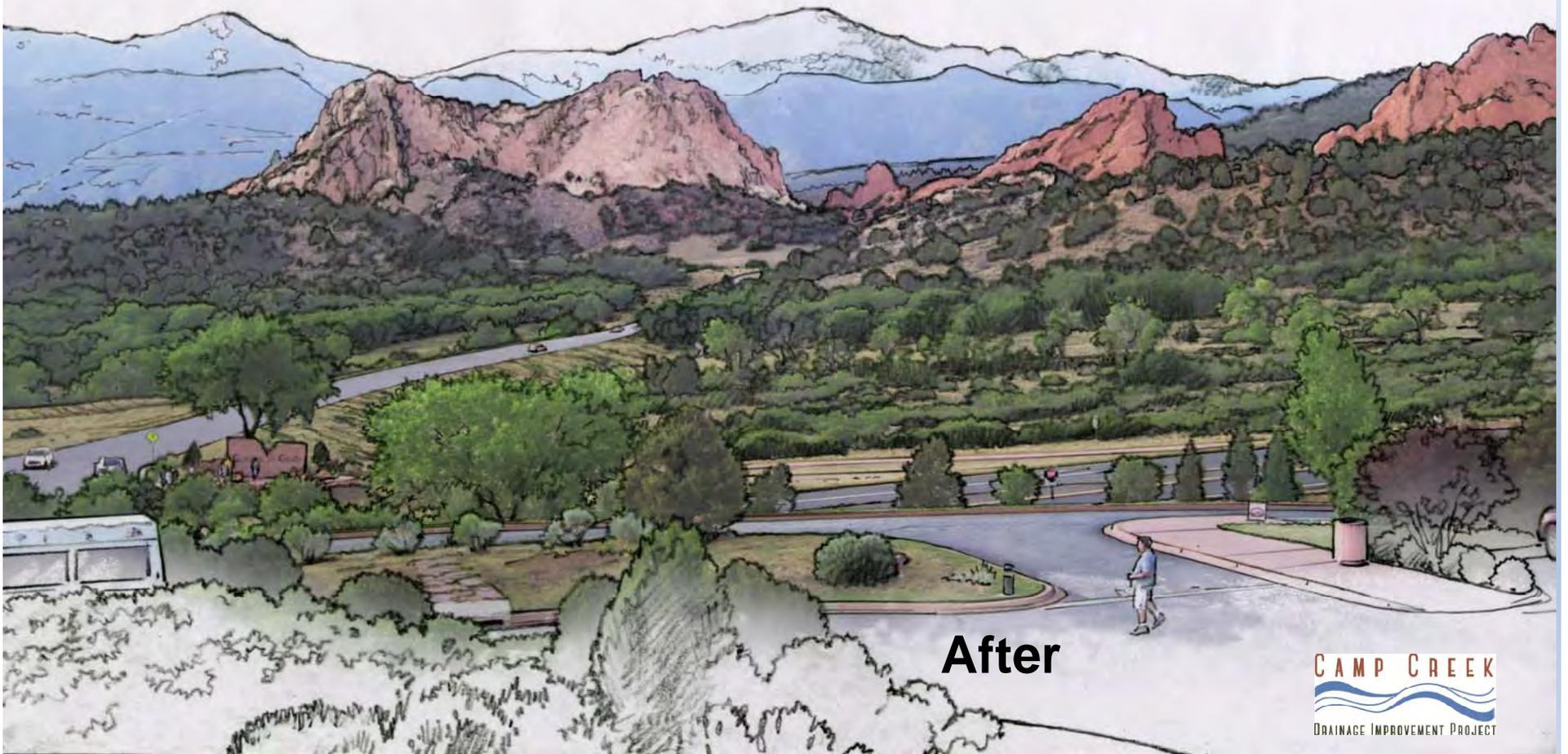
Concept B

Gateway Road Detention



Concept B

Gateway Road Detention



After

Concept B

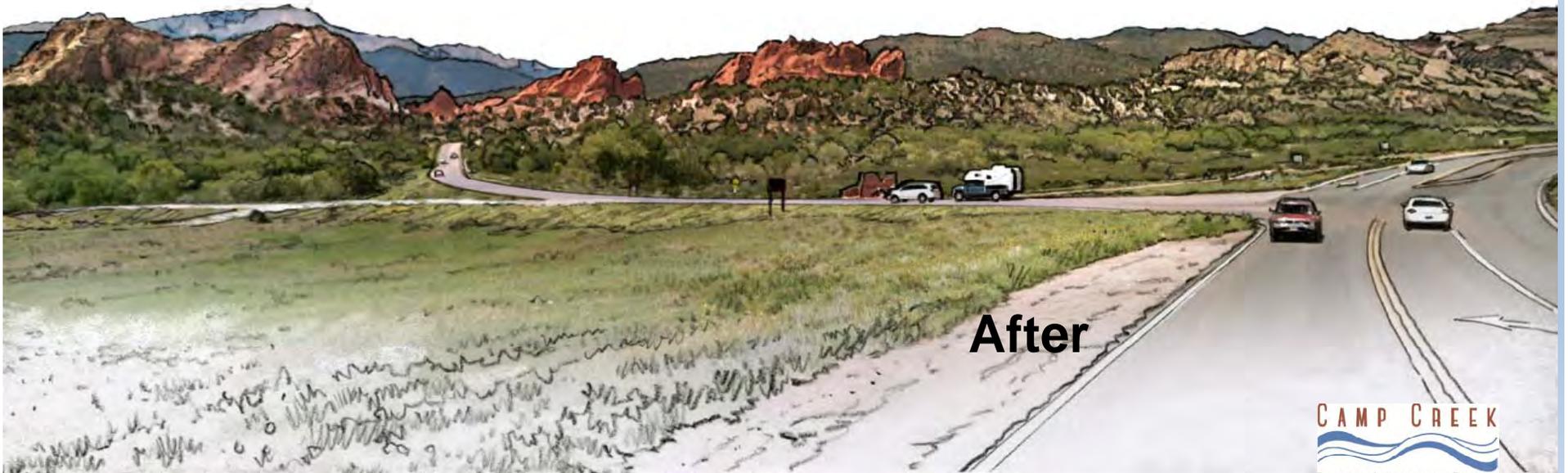
Gateway Road Detention



Before

Concept B

Gateway Road Detention



Concept B

Major Flood Management Features

- Reconstruction of 31st Street channel and bridges from Chambers Way to Echo Lane
 - Open channel stays within current 40-foot top width
 - Requires more depth and steeper interior side slopes
 - Includes street level walls on west side to contain smaller 2,500 cubic feet per second 100-year flood
 - Open channel on east side retains current open channel character, may require reduction in landscape area next to sidewalk
 - Improves channel safety
 - Retains existing bike lanes
 - Emergency access more difficult on east side of 31st Street due to street flooding
 - Provides full emergency access to balance of Pleasant Valley neighborhood in 100-year flood
- Reconstruction of 31st Street buried culvert from Fountain Creek to Echo Lane
- Detention in Garden of the Gods in Rock Ledge Ranch parking area and at Gateway Road
- Removes houses and businesses from 100-year flood plain

Concept C

31st Street Segment



Before

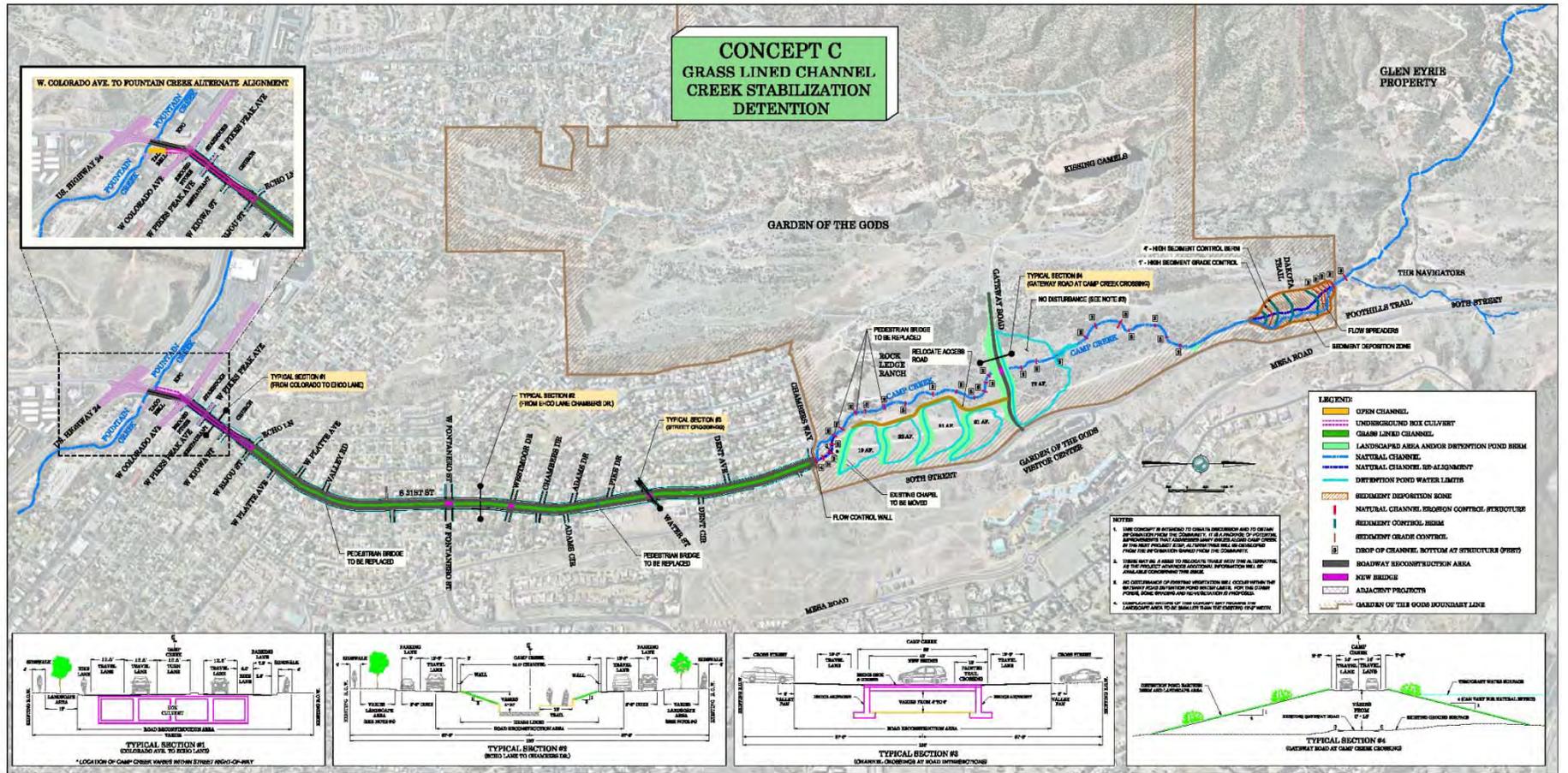
Concept C

31st Street Segment



After

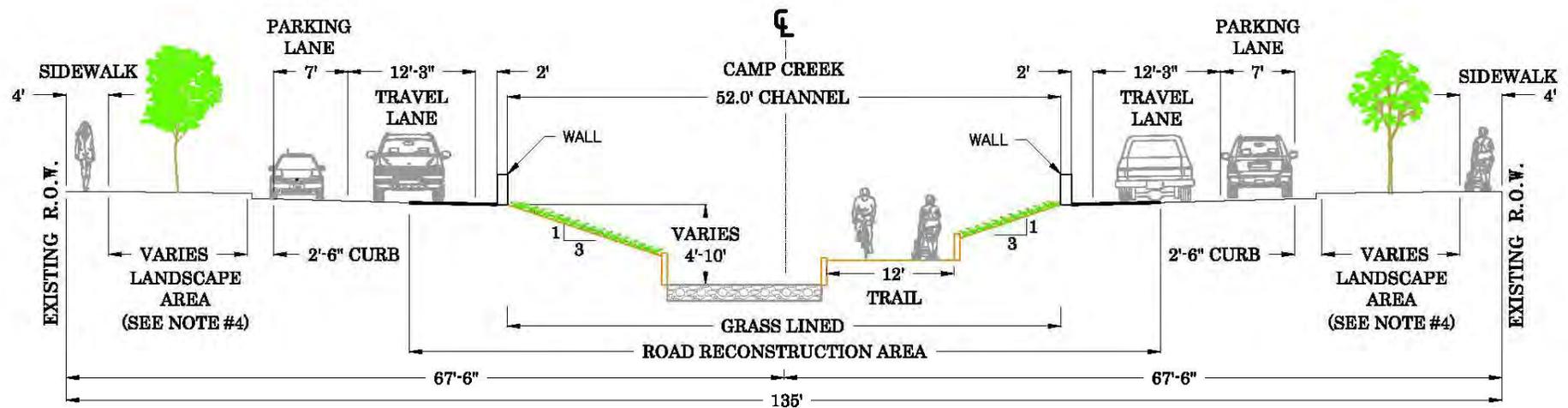
Concept C



Concept C

31st Street Segment

Echo Lane to Chambers



Concept C

Garden of the Gods



Concept C

Major Flood Management Features

- Reconstruction of 31st Street channel and bridges from Chambers Way to Echo Lane
 - Widen top width of open channel by 12 feet to a new top width of 52 feet
 - Moves bike lanes into channel, street crossings could be safety risk
 - Grass-lined channel is deeper and requires walls to make room for flood flows and bike path
 - Includes street level walls on both sides to contain smaller 2,500 cubic feet per second 100-year flood
 - Improves channel safety for pedestrians and vehicular traffic
 - Provides full emergency access to balance of Pleasant Valley neighborhood in 100-year flood
- Reconstruction of 31st Street buried culvert from Fountain Creek to Echo Lane
- Detention in Garden of the Gods in Rock Ledge Ranch parking area and at Gateway Road
- Removes houses and businesses from 100-year flood plain

Concept D

31st Street Segment



Before

Concept D

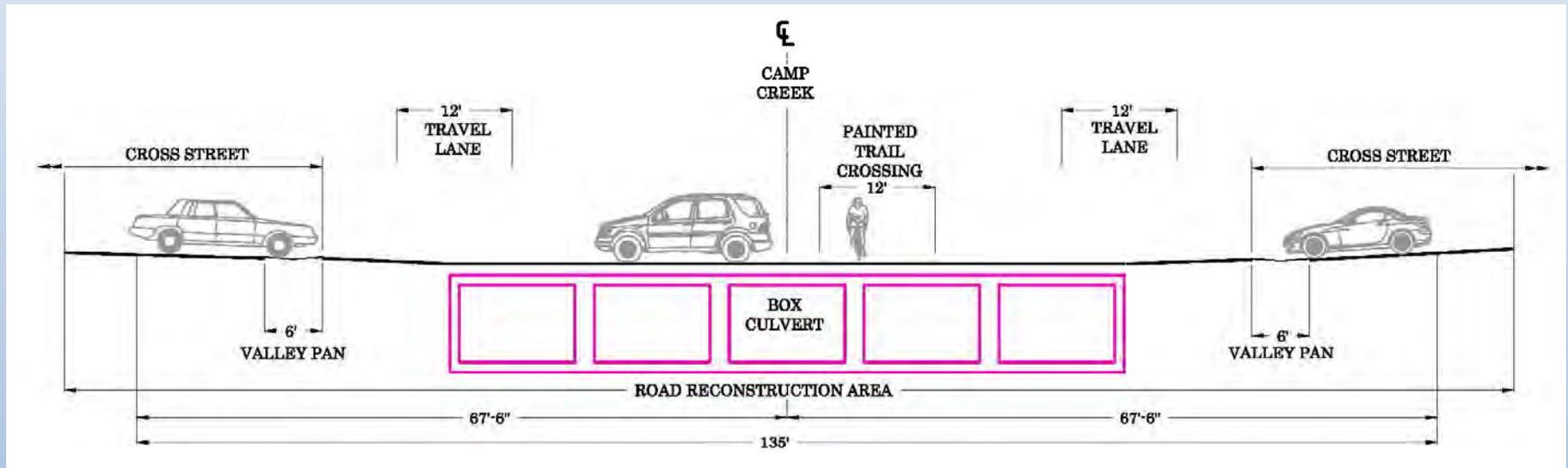
31st Street Segment



After

Concept D

31st Street Segment Road Intersections



Concept D

Garden of the Gods



Concept D

Major Flood Management Features

- Replaces open channel in 31st Street with buried culvert and surface parkway from Chambers Way to Echo Lane
 - Buried culvert carries full 4,600 cubic feet per second 100-year flood flow
 - Moves bike lanes into center parkway, street crossings could be safety risk
 - Provides full emergency access to Pleasant Valley neighborhood in 100-year flood
- Reconstruction of 31st Street buried culvert from Fountain Creek to Echo Lane
- No detention in Garden of the Gods
- Removes houses and businesses from 100-year flood plain

Concept E

31st Street Segment



Before

Concept E

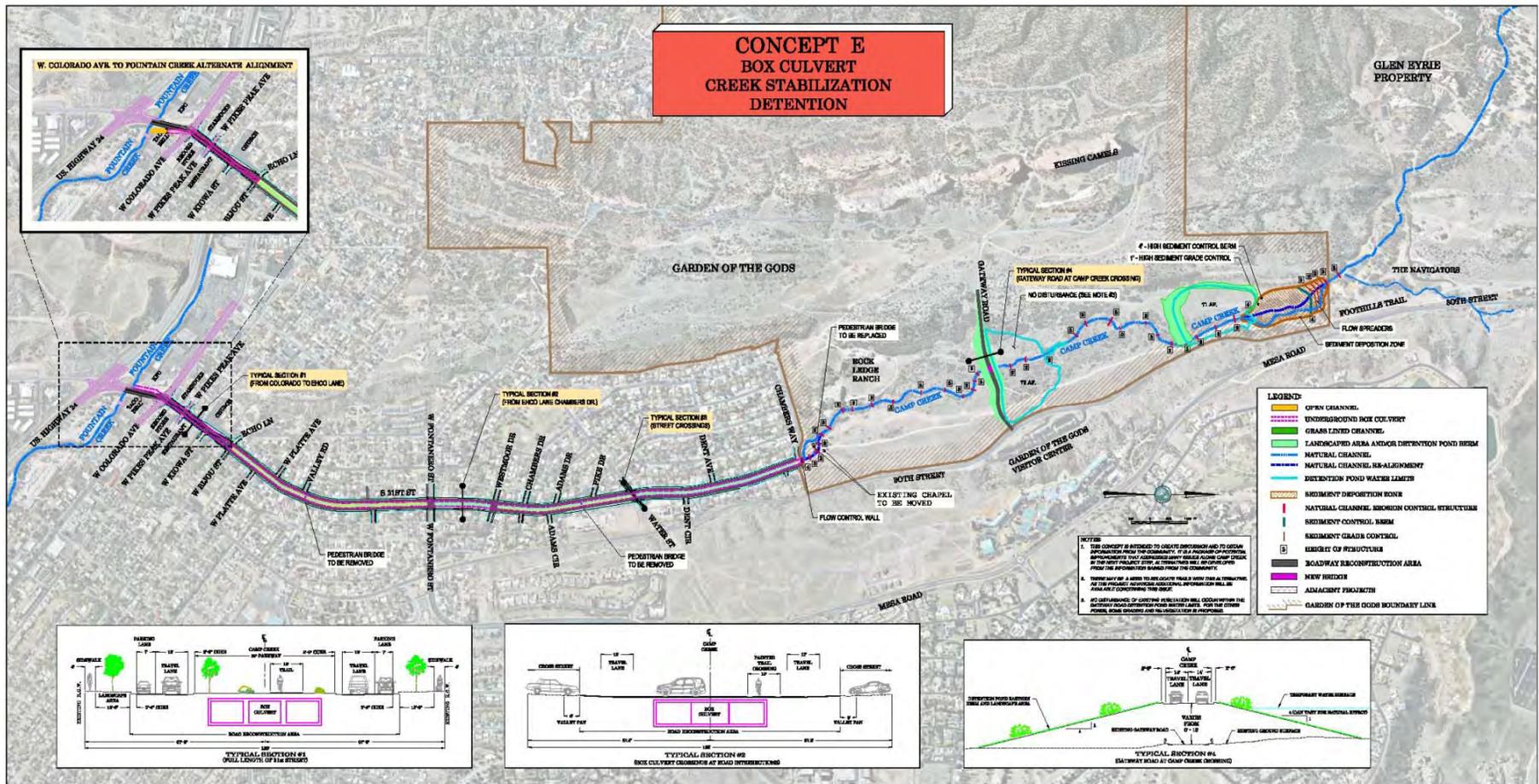
31st Street Segment



After

Concept E

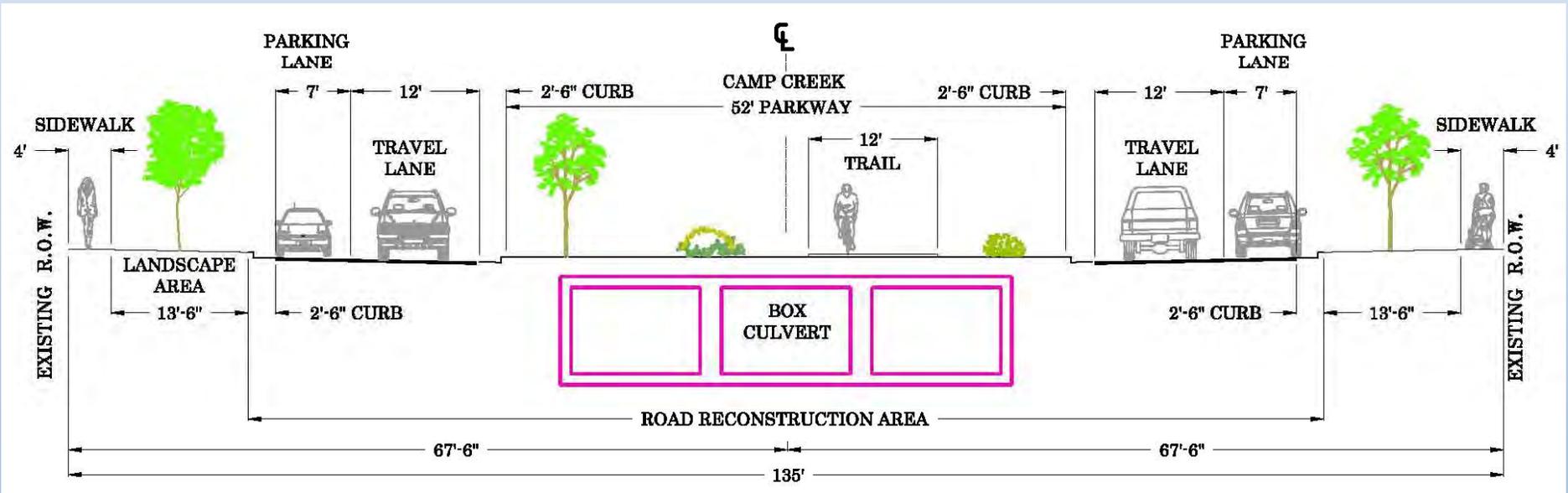
Garden of Gods Segment



Concept E

31st Street Segment

Fountain Creek to Chambers



Concept E

Garden of the Gods



Concept E

Northern Garden of the Gods Detention Area



Before

Concept E

Northern Garden of the Gods Detention Area



After

Concept E

Major Flood Management Features

- Replaces open channel in 31st Street with buried culvert and surface parkway from Chambers Way to Echo Lane
 - Detention allows for sizing of new buried culvert to convey 2,500 cubic feet per second
 - Moves bike lanes into center parkway, street crossings could be safety risk
 - Provides full emergency access to Pleasant Valley neighborhood in 100-year flood
- Reconstruction or repair of 31st Street buried culvert from Fountain Creek to Echo Lane
- Detention in Garden of the Gods at Gateway Road and near northern boundary
- Removes houses and businesses from 100-year flood plain

Small Group Instructions

Task #1: Review and discuss the 5 concepts in your group

Task #2: For each concept, let us know what you like about each concept and why and let us know what you don't like and why

Put all the information on your group response form

Task #3: On back of form, list any elements your group would like to see in any solution and any elements you would NOT like to see in any solution

Task #4: Choose a member of your group to report out

Design Criteria

- Based on community priorities, environmental needs and technical requirements
- Applied as alternative designs are developed
- Alternatives reviewed at January community meeting

Next Steps

- All results from tonight compiled
- Meeting summary e-mailed / mailed to all
- All meeting results posted on website
- Alternative designs guided by tonight's response

Next community meeting:
6 p.m. Tuesday, January 28th
Coronado High School Cafeteria

CAMP CREEK

DRAINAGE IMPROVEMENT PROJECT

Thanks for coming tonight!

