

# Clear Creek Channel Restoration



**2015 Sustaining  
Colorado  
Watersheds**

**Avon, Colorado  
October 7, 2015**

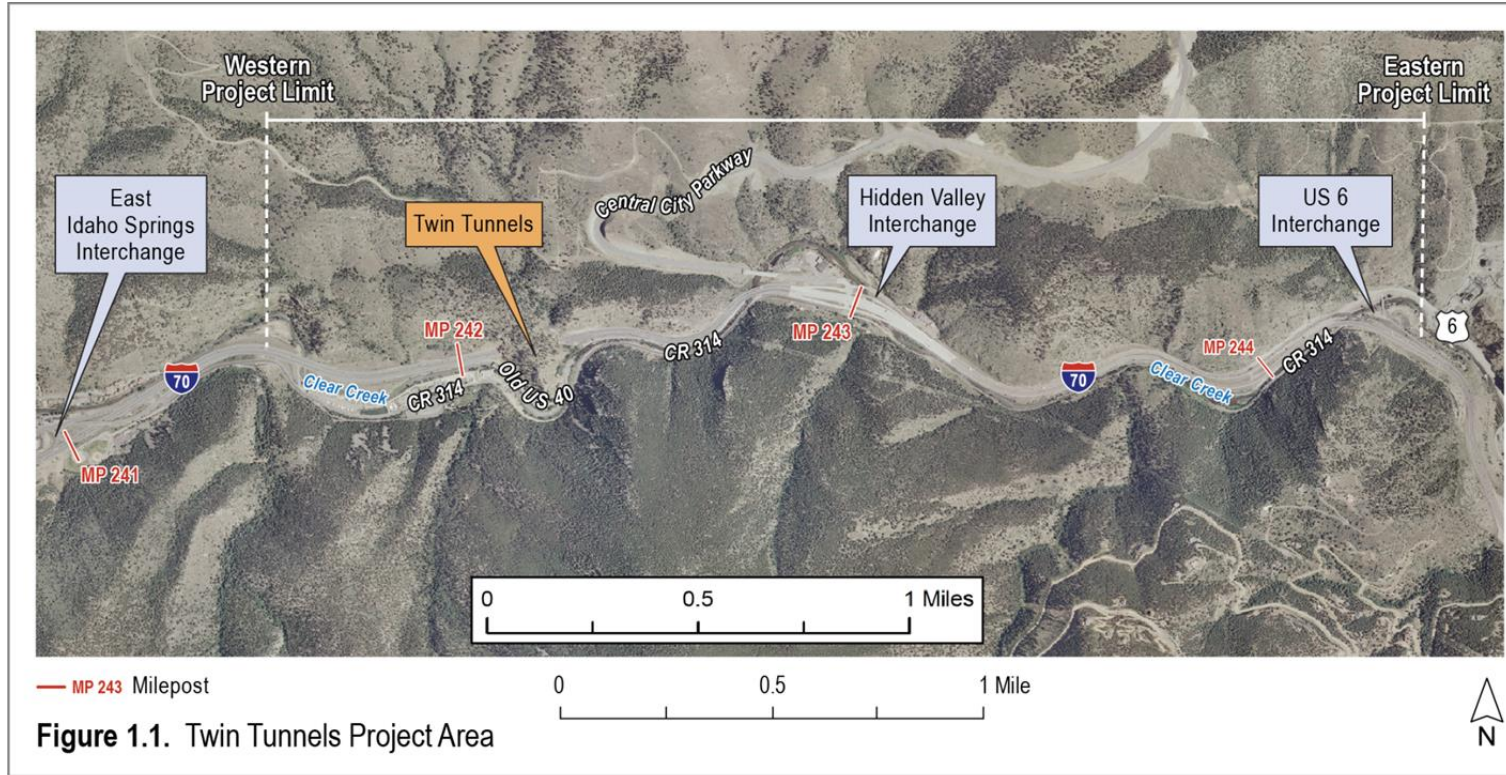
**Josh Hollon PE, CFM**



- **PROJECT**
- **GOALS**
- **PARTNERSHIPS**
- **COORDINATION**
- **CHANNEL ELEMENTS**



**PROJECT**  
GOALS  
PARTNERSHIPS  
COORDINATION  
CHANNEL  
ELEMENTS







PROJECT

GOALS

PARTNERSHIPS  
COORDINATION

CHANNEL  
ELEMENTS

- **Do the right thing for people and the environment**
- **Maximize uses**
- **Balance regional transportation needs with local recreational needs**

PROJECT

GOALS

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- **Successfully implement the complete vision for the trailhead**
- **Solidify a long-term successful partnership around the Creek**
- **Create a fish habitat research opportunity**



# PARTNERSHIPS

PROJECT  
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**COLORADO**  
Department of  
Transportation

**TWIN TUNNELS**  
A KRAEMER/OBAYASHI JOINT VENTURE



**ATKINS**



# COORDINATION

PROJECT  
GOALS  
PARTNERSHIPS  
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CHANNEL  
ELEMENTS

- Rafting Community
- City of Idaho Springs
- Army Corps of Engineers
- Mountain Area Land Trust  
(MALT)
- SWEEP
- ALIVE





# CLEAR CREEK EXISTING CONDITION

PROJECT  
GOALS  
SCHEDULE  
PARTNERSHIPS  
COORDINATION  
**CHANNEL  
ELEMENTS**



# LEVERAGING OPPORTUNITIES

PROJECT  
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TWIN TUNNELS CONTRACTOR  
ALREADY ON-SITE WITH LARGE  
EARTH MOVING EQUIPMENT

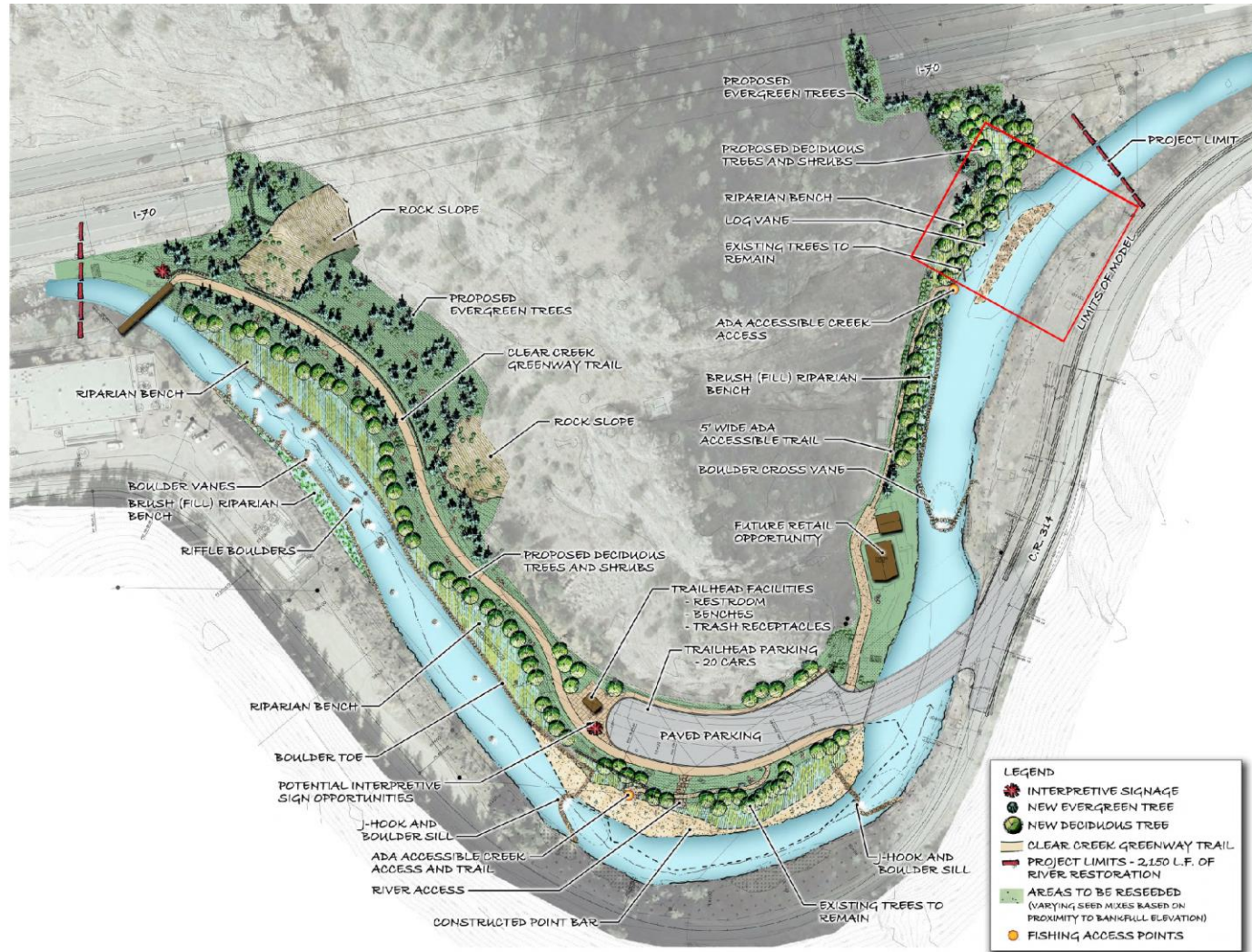
PIGGY BACK ON TWIN  
TUNNELS DESIGN EFFORT

PERMITTING INITIATED AS  
PART OF TWIN TUNNELS  
PROJECT



# CHANNEL IMPROVEMENTS

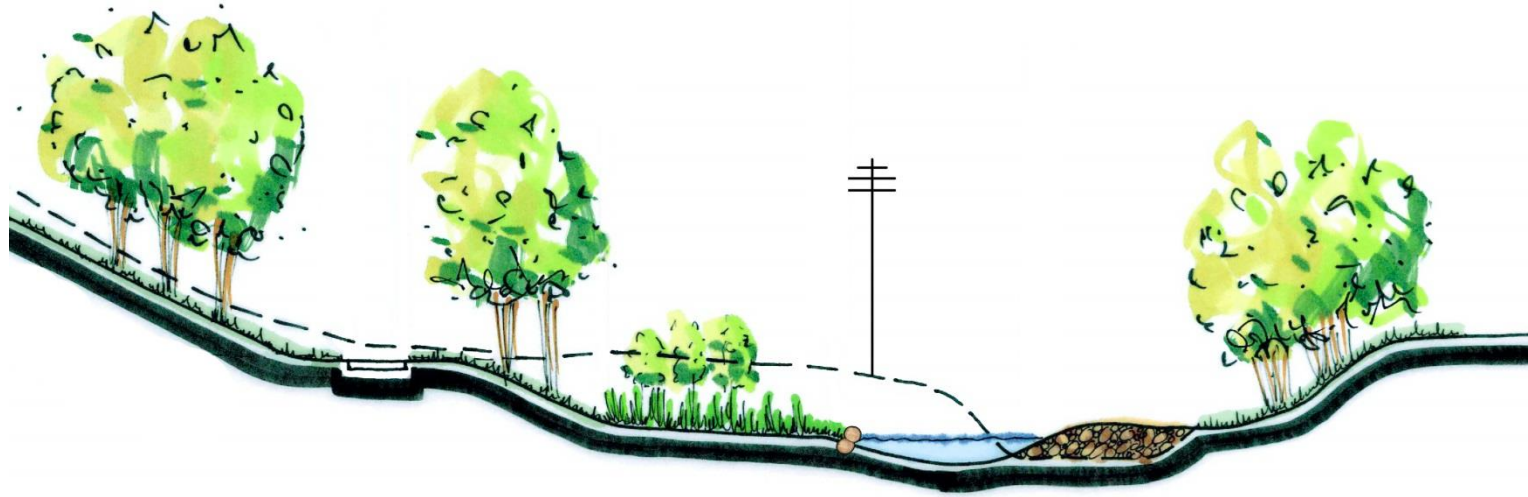
PROJECT  
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## OLD GAME CHECK STATION TRAILHEAD AND RIVER RESTORATION - CONCEPTUAL PLAN



PROJECT  
GOALS  
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# ELEMENTS CONSIDERED

PROJECT  
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AQUATIC AND  
TERRESTRIAL  
HABITAT  
RESTORATION

IMPROVE  
FISHING  
ACCESS

RE-ESTABLISH  
NATIVE  
ECOSYSTEM

IMPROVE THE  
FLOOD PLAIN

ADD  
SINUOSITY

USE NATIVE  
MATERIALS



# EXAMPLES OF RESTORATION TECHNIQUES

PROJECT  
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- Collaborative Design Effort
- Science and Experience used to Develop the Design
  - Boulder Toe
  - Rock Ribs
  - Boulders Clusters
  - J-Hook
  - Cross Vane

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**Boulder Toe**



**PROJECT  
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**Rock Rib**



**PROJECT  
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**Boulder Cluster**



**PROJECT  
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**Habitat Boulders**



**PROJECT  
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**J-Hook**



**PROJECT  
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**J-Hook, downstream pool**



PROJECT  
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**Cross Vane**



**PROJECT  
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**Cross Vane**



**PROJECT  
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**Log Vane**

































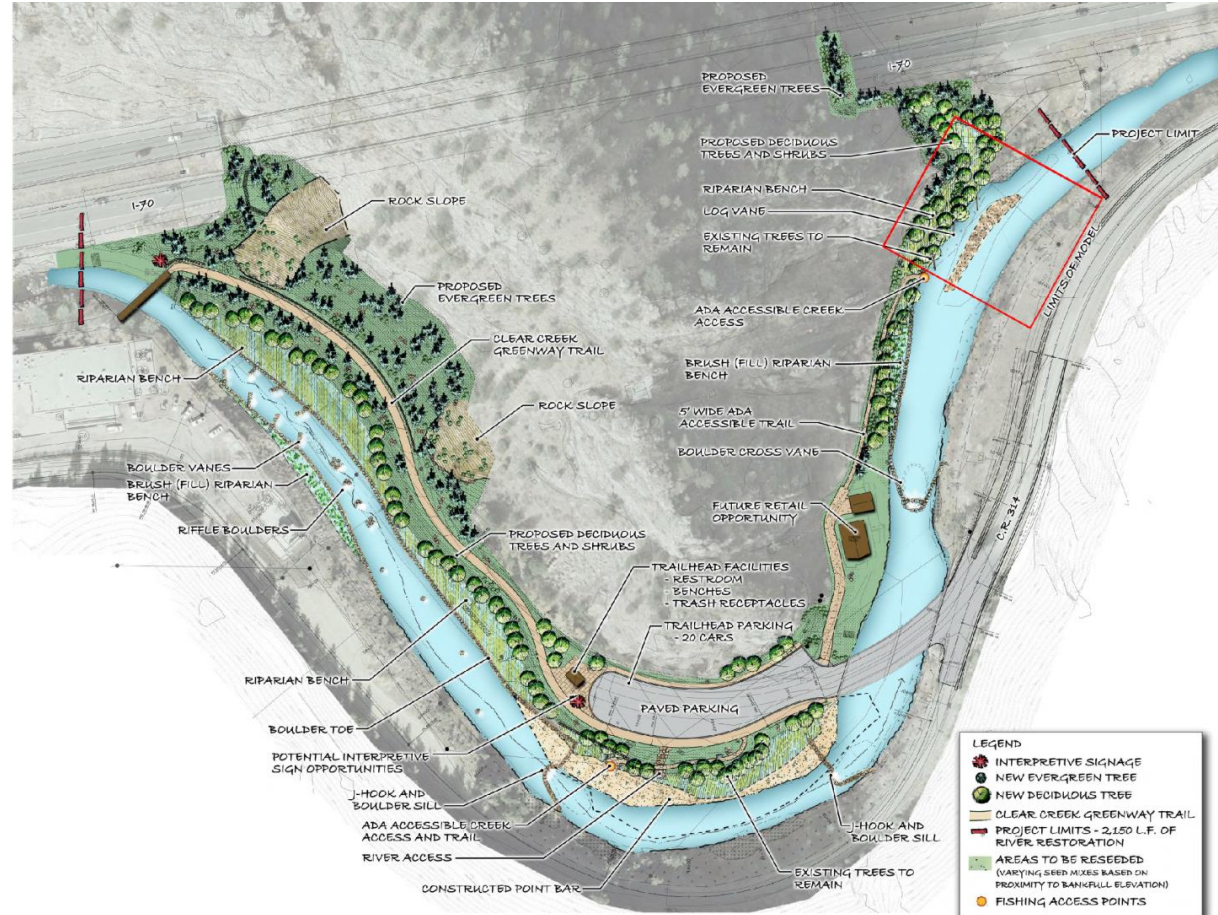






# CHANNEL IMPROVEMENTS

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## OLD GAME CHECK STATION TRAILHEAD AND RIVER RESTORATION - CONCEPTUAL PLAN

Clear Creek County, Colorado





# SUMMARY

**PROJECT  
GOALS  
PARTNERSHIPS  
COORDINATION  
CHANNEL  
ELEMENTS**

**IMPROVE  
FISHERIES**

**RESTORE  
CLEAR CREEK  
TO NATURAL  
CONDITION**

**INTEGRATED  
RESEARCH  
COMPONENT**

**PARTNERSHIP**

**INCREASED  
USER ACCESS  
TO CLEAR  
CREEK**

**FUNDING AND  
COST SAVINGS**

# QUESTIONS

