Fourmile Canyon Community Meeting

Permanent Repairs for Fourmile Canyon Road

July 28, 2015

Meeting Format:

- Ground Rules
- County Presentation
- Q&A/Local Presentation
- Discussion
Introduction – 2013 Flood

Flood Damage

[Images of flood damage including roads, damaged houses, and natural disasters]
Introduction – 2013 Flood

Flood Damage

[Images of flood damage to roadways and rock excavation.]
Introduction – Temporary Paving

Flood Damaged Areas
Roadway Design – Project Limits

- 1.5 miles along Fourmile Canyon Dr.
  - North Segment (Salina Junction to approx. 0.3 miles north of Logan Mill Road)
  - South Segment (Approx. 0.16 miles south of Poorman Road to approx. 1 mile north of Highway 119)
Overview of Topics

- Roadway Safety
- Rock Excavation / Mesh
- Environmental Considerations
- Right-of-Way
Project Goals

- Permanent reconstruction of damaged roadway
- Increase safety for all users
- Increase resiliency against next flood
- Implement design consistent with Watershed Master Plan
- Minimize environmental impacts through balanced design
- Minimize impacts to the community/environment
From earlier community meetings:

- Don’t urbanize or lose the Fourmile Canyon character
- Fix roadside drainage
- Minimize cuts & walls /make visually appealing
- Concerns about tree, vegetation, & wildlife impacts
- Concerns about impacts to private property
  - Access/Flooding/Visual
- Improve Bike/Ped. Safety/Blind Corners
- Concern about increasing # of cyclists
- Mixed comment re: 4’ uphill shoulder
Roadway Design – Driving Factors

Safety/Policy
- Safety (for All Modes)
- Resiliency
- Drainage
- Watershed MP

Regulatory
- ROW Process
- Floodplain Regs.
- Federal/State Regs.
- FEMA Process

Minimize Impacts
- Community/Visual Impact
- Environmental Impact

Constructability
- Rock Exc. Challenges
- Construction of Walls
- Construction Phasing
The design continues to be revised and updated to address concerns, including:

- Minimize/avoid rock excavation
  - Rock excavation has been reduced by over 60% and more reduction is anticipated as design progresses
  - Refine clear zone/rock fall/drainage requirements to reduce cross section
  - Minimal impacts at Culbertson Cut

- Don’t use rock mesh
  - Design is being adjusted to eliminate planned rock mesh

- Don’t like the appearance of Jersey Barrier
  - Jersey barrier has been eliminated from the design
Comparison of 30% design and current design
South Section

- 59% Reduction in Rock Excavation (By Length) - Over 1,600 ft Eliminated
- 83% Reduction in Rock Excavation (By Volume)
Comparison of 30% design and current design

North Section

- 64% Reduction in Rock Excavation (By Length) - Over 1,500 ft Eliminated
- 86% Reduction in Rock Excavation (By Volume)
Roadway Design – Typical Sections

- **Existing Road Section** Included with 30% Design

- **Revised Design Section** – Planned for Use

- **Clear zone measured from edge of lane (not shoulder)**

- **Clear zone will be further reduced as drainage/safety allows**
  - Reduced ditch depth
  - Steeper rock slopes
  - Steeper side slopes
  - Refined alignment

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**Introduction**

- **Roadway**
- Rock Excavation
- Environmental
- ROW
- Q&A

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**Section Included with 30% Design**
Paved shoulders increase safety and improve maintenance

- Reduces numerous crash types including:
  - Head on crashes (15%-75%)
  - Sideswipe crashes (15%-41%)
  - Fixed object crashes (29%-49%)
- Reduces shoulder maintenance requirements
- Provides emergency stopping space for broken down vehicles
- Provides space for maintenance operations and snow storage
- Provides an increased level of compatibility between bicycles and cars
Comparison of existing and proposed roads

South Section

North Section
Comparison of existing and proposed roads

Some areas have no visible change

Some areas have the road moved to reduce impacts
Roadway Design – Walls vs. Rock Ex.

**PROS**

**Retaining Walls**
- Reduce/avoid rock
- More flexibility
- Can help resiliency
- Less visible from road

**CONS**
- More expensive
- More creek impacts
- More habitat impacts
- More visible from homes

**Rock Excavation**
- Less creek/wildlife impacts
- Improves safety
- Less guardrail
- Matches existing better

**Environmental**
- Immediate visual impacts
- Difficult construction
- Rockfall risk increased
- Expensive
Rock Excavation – Updated Design

Updated Design Information

- Rock excavation significantly reduced and/or eliminated
  - 80% reduction by volume
  - 60% reduction in total length
  - Focused attention on areas of high concern
- No rockfall mesh is anticipated (increase ditch if necessary)
  - Could be needed if absolutely necessary as determined during construction
  - No chain link fence
- Some bolts still required
  - Number needed greatly reduced
  - Will be painted a natural color and hidden
Environmental Planning and Historic Preservation (EHP) Process

- The project is funded through FEMA and is subject to the National Environmental Policy Act (NEPA)
- The EHP document is reviewed/approved by FEMA
- Other clearance/permitting processes:
  - Wetlands/Section 404 – through the USACE
  - Floodplain Development – through Boulder County
  - Riparian/SB 40 – through CPW
  - Endangered Species Act – through USFWS
  - National Historic Preservation Act – through SHPO
  - Hazardous Materials – through CDPHE
Results of the Cultural Resources Study

- Pinyon Historian and Archeologist conducted existing condition surveys in the Area of Potential Effect (APE) on May 21, 2015.
- Archaeological findings
  - No Impacts
- Historical findings
  - No rocks outcroppings are classified as historic
  - No buildings/structures will be impacted
  - Architectural inventory for parcels older than 50 years (as needed)
  - Switzerland Trail Railroad in the vicinity – no impacts
Results of the Wildlife Impacts Study

- Consideration of guardrail and retaining walls
  - Minimize retaining wall/rock exc./jersey barrier to ensure continued creek access
  - Rock Rip Rap embankment will be soil covered and re-vegetated
- Wildlife within project area includes chipmunks, rabbits, mule deer, elk, and wild turkeys, mountain lions, moose, and bears
- No regional migration corridors or migration patterns within the project area
- CPW – No concerns with planned design
Work with individual property owners

- Temporary easements for construction
  - Reduces costs, closures, & construction time
- Permanent easements for ongoing maintenance
- No new ROW anticipated
Questions?

- Comment Period Ends August 15th
Comparison of Shoulder Conditions:

➤ Clear zone drives the geometry, not the shoulder since measured from edge of lane.

➤ Clear zone will be further reduced as drainage/safety allows

- Reduced ditch depth
- Steeper rock slopes
- Steeper side slopes
- Refined vert./horiz. alignment
• Embankment slopes will have:
  - Natural finish –topsoil with vegetation
  - Ecological features – fish, riparian & critter friendly
  - Resiliency where appropriate – flood banks and buried riprap
  - No concrete