Camp Creek Drainage Improvement Project

Alternatives Summary

Common Implications of Alternatives

All Alternatives Would...
- Reduce the area of Pleasant Valley that is at risk of flooding during large flood events
- Remove 224 residential properties and 13 commercial lots from the 100-year floodplain
- Reduce the amount of water flowing on 31st Street roadway during large flood events
- Provide sediment collection improvements at north end of Garden of the Gods. Removal of sediment from this area will need to performed on an as-needed basis
- Improve pedestrian and traffic safety by providing guardrails, flattening side slopes and/or covering the channel
- Cover the channel between Echo Lane and West Platte Avenue
- Propose refinements to the existing bike route system near Camp Creek and to Gateway Road by widening the road to accommodate vehicles and bike lanes
- Improve emergency access by reducing the potential for water on roadways during larger flood events
- Not impact existing on-street parking
- Not require residential property acquisition
- Require Gateway Road to be raised at least 5 feet near Camp Creek and a larger bridge or culvert installed to reduce risk that Gateway Road would be over-topped by water during large storm runoff events
- Manage erosion of the natural channel in the Garden of the Gods
- Have an option to realign Camp Creek near the confluence with Fountain Creek in conjunction with adjacent properties
- Require relocation of portions of the trails within Garden of the Gods

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| #1 Channel Reconstruction Creek Stabilization | • No upstream detention  
• Full 100-year Camp Creek flow contained and conveyed in the 31st Street channel | • Enhances the 31st Street channel by making it deeper to achieve increased capacity.  
• Replaces existing culverts and bridges with larger bridges to minimize restrictions in the 31st Street Channel.  
• Channel lining similar to existing lining with articulating block bottom. May support some grass vegetation on bottom (similar to existing).  
• Includes guardrails along the outside edges of the channel for traffic safety. Short walls below street level may be required to achieve required channel depth in limited areas.  
• Includes raising Gateway Road a minimum of 5 feet near Camp Creek and increasing the size of its bridge to improve safe public access during storm runoff events. | • 100-year floodplain contained in channel through Pleasant Valley neighborhood.  
• No change to existing bike lanes.  
• No change to location of outside street curbs.  
• Provides improved emergency access to Pleasant Valley neighborhood during a 100-year rainfall event.  
• Requires less construction in Gardens of the Gods and Rock Ledge Ranch Historic Site than Alternatives #2 and #3. |
| #2 Grass-Lined Channel Creek Stabilization Detention | • Upstream detention  
• All of the detained 100-year Camp Creek flow contained and conveyed in the 31st Street channel  
• Uses 31st Street for channel freeboard | • Reconstructs the 31st Street channel section to be wider and have flatter side slopes than the existing channel.  
• Channel side slopes lined with native grasses and small shrubs.  
• Replaces culverts and bridges to maximize restrictions in the 31st Street channel.  
• Eliminates the bike lanes along 31st Street. Bike lanes relocated to 30th Street in the PPACG Non-Motorized Transportation Plan currently being developed.  
• Adds a paved trail within the channel section.  
• Channel bottom lined with rock which may support some vegetation (similar to existing).  
• Includes boulder walls within the channel section to achieve required channel depth and capacity and to provide protection from erosion in frequent runoff events.  
• Detention Option a. Includes one large, landscaped, earthen detention pond in the northern portion of Garden of the Gods Park created by constructing an up to 28-foot high earthen landscaped dam and excavation north of the dam.  
• Detention Option b. Includes two medium-sized, landscaped, earthen detention ponds. One created by raising Gateway Road to an elevation approximately 5 feet below adjacent 30th Street as it spans the Camp Creek Valley (14-foot maximum raise) and one by constructing an up to 19-foot high earthen landscaped dam and performing excavation in the northern end of the park. | • 100-year floodplain contained in channel and streets through Pleasant Valley neighborhood.  
• More natural appearance for 31st Street channel than Alternatives #1 and #3.  
• Foothills Trail completed along 31st Street. The on-street bike lanes currently used for this link would be replaced by a trail within channel section. Trail to be constructed above the expected level of flow during a 5-year flood event.  
• Requires more construction in Garden of the Gods Park than Alternative #1.  
• Provides improved emergency access to Pleasant Valley neighborhood during 100-year flood event.  
• Requires moving street closer to sidewalks to implement without walls or guardrails.  
• Trail in channel crosses streets at street level at bridges. |
| #3 Boxy Culvert Creek Stabilization Detention Ballpark Cost Estimate: $35 million |
|---------------------------------|---------------------------------|---------------------------------|
| - Upstream detention            | - Replaces the 31st Street open channel with an underground box culvert. |
| - All of the detained 100-Year Camp Creek flow contained in the 31st Street box culvert | - Adds a trail and native landscaping in the 31st Street median area over the box culvert. |
| - Detention Option a. Includes a landscaped, earthen detention pond in Garden of the Gods Park created by raising Gateway Road to an elevation approximately 5 feet below adjacent 30th Street as it spans the Camp Creek Valley (approximately 14-foot maximum raise). | - Eliminates the bike lanes along 31st Street. Bike lanes relocated to 30th Street in the PPACG Non-Motorized Transportation Plan currently being developed. |
| - Detention Option b. Includes a landscaped, earthen detention pond in the northern end of Garden of the Gods Park created by constructing an up to 19-foot high, earthen, landscaped dam and performing excavation north of the dam. | - 100-year floodplain eliminated throughout Pleasant Valley neighborhood. |
| - Foothills Trail completed along 31st Street. The on-street bike lanes currently used for this link would be replaced by a trail within native landscaped median. | - No change to location of outside street curbs. |
| - Provides emergency access to Pleasant Valley neighborhood during 100-year flood event. | - Requires more construction in Gardens of the Gods Park than Alternative #1. |
| - More natural median area appearance than Alternative #1. | - Eliminates open channel safety risk along 31st Street. |

Note regarding Alternatives:

1. The community’s comments on the three Alternatives will help guide the identification of a Preferred Alternative and further refinements of the Preferred Alternative.

February 25, 2014