Decision Process

September – October 2013
Community issues, concerns and priorities were identified through interviews with community groups, individuals and agencies and through a Community Meeting on October 22.

November – December 2013
The Project Team developed five design concepts. The concepts addressed community issues and concerns and reflected engineering standards and recommendations.

December 12, 2013
A Community Meeting was held to get community response to the five design concepts and to review design criteria.

December 2013 – February 2014
The Project Team prepared three alternative solutions, based on community response to the five design concepts and sound engineering practices.

February 25, 2014
A Community Meeting was held to get community response to the three alternatives.

February – March 2014
The Project Team considered the community’s response to the alternatives and applied the established design criteria to identify and refine the Recommended Plan.

April 29, 2014
The community reviewed and responded to the Recommended Plan at a Community Open House.
Camp Creek Drainage Improvement Project
31st Street

Grass and rock lined channel and multi-use trail along 31st Street

Existing view south on 31st Street

New vegetation is shown at approximately 10-15 years of typical non-irrigated growth.
New vegetation is shown at approximately 10-15 years of typical non-irrigated growth.
LEGEND

PROPOSED REALIGNED UNDERGROUND CULVERT
EXISTING UNDERGROUND CULVERT TO BE LINED
PORTION OF EXISTING CULVERT TO BE REMOVED

31ST STREET BRIDGE (CULVERT) OVER CAMP CREEK
RECOMMENDED ALTERNATIVE

REASONS FOR RECOMMENDED ALTERNATIVE

- MINIMIZES DISTURBANCE TO TRAFFIC AND ROADWAY SURFACE. MUCH OF THE WORK IS UNDERGROUND
- FACILITATES FUTURE WIDENING OF 31ST STREET AS PROPOSED IN THE US-24 WEST ENVIRONMENTAL ASSESSMENT
- MINIMIZES FULL REPLACEMENT OF EXISTING FACILITIES
- ALLOWS FOR A PHASED APPROACH
  - LINING WHEN NEEDED OR FUNDED
  - RE-ALIGN DOWNSTREAM END WITH THE FUTURE US-24 WEST AT 31ST STREET INTERSECTION PROJECT
Extension of the Underground Culvert  
(W Bijou Street to north of Valley Road)

The Camp Creek Improvement Plan called for the underground portion of Camp Creek to be extended from the Bijou Street/Echo Lane intersection to West Platte Avenue. Detailed design analysis has indicated that it is more appropriate to extend the underground portion of Camp Creek to the north end of the curve between Valley Road and Willamette Avenue. Consistent with the Camp Creek Improvement Plan, the existing channel will be replaced with a large concrete box culvert covered by a median. The 12-foot-wide Foothills Trail and native landscaping will be constructed on the surface of the median.

Benefits to extension of the underground culvert include:
- Lessens the need for vertical walls along the channel;
- Eliminates the need for a separate pedestrian bridge near Valley Road;
- Reduces the curved portion of the naturalistic channel, resulting in reduced risk of erosion; and
- Reduces impacts to residents’ trees and parking strips in the area.
Roundabout at the 31st and Fontanero Intersection

While the Camp Creek project has primarily been focused on drainage improvements, refinements to the road design of the 30th Street and Fontanero intersection are needed to improve public safety. Traffic studies performed for the City's 30th Street Project have indicated that replacing the existing four-way stop at the intersection of 31st Street and Fontanero Street with a roundabout would significantly improve the flow of traffic through both the 30th and 31st Street intersections with Fontanero Street.

Because of the close proximity of the intersections, traffic backups frequently occur. During the Camp Creek community involvement process, a number of Pleasant Valley neighborhood residents expressed concerns about the 31st Street and Fontanero Street intersection. As traffic volumes increase over time, the backups will get worse and will require improvements such as a traffic signal or roundabout.

To address traffic concerns in tandem with the 31st Street drainage improvements, construction of a roundabout provides a more favorable solution than a traffic signal. Benefits associated with the roundabout concept include:

- Reduced wait time for the primary traffic movements made at that intersection (northbound-to-eastbound and westbound-to-southbound);

- Expected decrease in cut-through traffic from 30th Street to 31st Street north of Fontanero Street;

- Reduced braking and acceleration noise;

- Reduced traffic congestion in the Pleasant Valley neighborhood;

- Reduced air pollution due to fewer idling vehicles; and

- The potential to create a focal point or gateway for the neighborhood.

A concept design for a roundabout has been developed for the intersection. The design fits the roundabout within the existing street right-of-way. The size of the proposed roundabout would be somewhat larger than the one in place at Mesa Road and Kissing Camels Drive.
REASONS FOR REMOVING WATER STREET BRIDGE AND HAVING TWO OFFSET BRIDGES

- Creates fewer impacts and costs associated with relocating three very large water mains at Water Street Creek crossing
- Discourages cut-through traffic
- Eliminates need for separate pedestrian bridge with mid-block crossing
- Improves traffic circulation near school

CITY TO CONSIDER REMOVING WESTMOOR DRIVE CROSSING IN THE FUTURE

EXISTING WATER STREET BRIDGE TO BE REMOVED

PROPOSED NORTH BRIDGE

PROPOSED SOUTH BRIDGE (ALTERNATIVE 1)

HOWBERT ELEMENTARY SCHOOL

31ST STREET

WESTMOOR DR

W FONTANO STREET

30TH STREET

CITY TO CONSIDER REMOVING WESTMOOR DRIVE CROSSING IN THE FUTURE

EXISTING WATER STREET BRIDGE TO BE REMOVED

PROPOSED NORTH BRIDGE

PROPOSED SOUTH BRIDGE (ALTERNATIVE 1)

HOWBERT ELEMENTARY SCHOOL

31ST STREET

WESTMOOR DR

W FONTANO STREET

30TH STREET

REMOVE WATER STREET BRIDGE AND REPLACE WITH TWO OFFSET BRIDGES

SOUTH BRIDGE LOCATION ALTERNATIVE 1 (PIKE DRIVE)
REASONS FOR REMOVING WATER STREET BRIDGE AND HAVING TWO OFFSET BRIDGES

- Creates fewer impacts and costs associated with relocating three very large water mains at Water Street Creek Crossing
- Discourages cut-through traffic
- Improves traffic circulation near school

CITY TO CONSIDER REMOVING WESTMOOR DRIVE CROSSING IN THE FUTURE

EXISTING WATER STREET BRIDGE TO BE REMOVED

PROPOSED SOUTH BRIDGE (ALTERNATIVE 2)

PROPOSED NORTH BRIDGE

PROPOSED PEDESTRIAN BRIDGE (ALTERNATIVE 2)

HOWBERT ELEMENTARY SCHOOL

SOUTH BRIDGE LOCATION ALTERNATIVE 2 (ADAMS DRIVE)
GARDEN OF THE GODS FLOOD MITIGATION FACILITY
FLOODPLAIN / FLOODWAY WORK MAP
MARCH 2016

- The dashed blue lines below represent the approximate limits of the existing 100-year regulatory FEMA flood hazard zone.
- The solid blue lines below represent the anticipated limits of the 100-year regulatory FEMA flood hazard zone after the Garden of the Gods Flood Mitigation Facility is constructed and a Letter of Map Revision is requested and approved by FEMA.
- FEMA Flood Insurance Rate Map Change Process
  - Design for work causing a change to the flood hazard zones is completed and technical analysis and draft maps showing how the planned work will affect the flood hazard zones are submitted to FEMA (complete).
  - FEMA reviews the submittal and issues a Conditional Letter of Map Revision (CLOMR) if they determine that their standards are met. A CLOMR does not affect flood insurance requirements (A CLOMR for the Garden of the Gods Flood Mitigation Facility has been issued by FEMA).
  - The work is completed, checked, and certified to be complete to FEMA along with technical analysis and draft maps showing how the work as constructed will affect the flood hazard zones.
  - FEMA reviews the submittal and issues a Letter of Map Revision (LOMR) if they determine that their standards are met. The LOMR then becomes the regulatory map that flood insurance requirements are determined from.
Naturalistic Channel Stabilization in Garden of the Gods Park and Rock Ledge

The 2012 Waldo Canyon Fire caused more frequent and larger flows in Camp Creek. This coupled with extended periods of rainfall in 2013 and 2015 caused significant erosion of the creek through Garden of the Gods Park and Rock Ledge Ranch.

The City and the Natural Resource Conservation Agency funded project that constructed 32 rock vane structures along the creek in 2016 to improve its stability. The vane structures act as small steps along the creek bed to reduce the speed of the flow and also direct flow away from erodible creek banks. The project also reshaped and planted grass and shrubs on eroded creek banks.

Nearby exhibits include before and after photos of few locations included in the project.
Naturalistic Channel Stabilization in Garden of the Gods Park and Rock Ledge

Site 1
Prior to Stabilization
After Stabilization

Site 2
Prior to Stabilization
After Stabilization
Status of Garden of the Gods Flood Hazard Mitigation Facility

• Funding for the project by FEMA and the City is in place

• Construction plans have been prepared

• FEMA has issued a Conditional Letter of Map Revision (CLOMR) to allow construction of the facility in the 100-year FEMA regulatory floodplain

• Minor details for approval of the plans by the State Dam Engineer are being worked through

• The need for additional Cultural & Natural Resource Studies was identified and is currently delaying the projected start of construction date
  
  o Portions of the studies have been completed
  
  o Additional work is required
    
  o With multiple agencies involved (Federal, State, and City) the process to complete the studies is complex and time consuming

• The projected start of construction is early 2019

• Construction of the project is expected to take less than a year
Detention/Sedimentation Pond Features

- To be located in the northern portion of Garden of the Gods Park.

- Approximately 175 acre-feet storage capacity, 125 acre-feet for water and 50 acre-feet for sediment.

- Will be constructed by building up soil to form a dam and digging down upstream of the dam to gain more storage capacity.

- The sloped areas associated with the pond will be constructed at 4-foot-horizontal to 1-foot-vertical where practical with some variations to help the facility look more natural and facilitate re-establishment of vegetation.

- The area disturbed by the construction will be planted with native shrubs and grasses.

- The top of the dam will be approximately 28 feet higher than the bottom of the existing Camp Creek channel.

- The north portion of the pond will be designed to encourage sediment to be deposited. The City will remove the sediment as needed.

- The design, construction and operation of the dam will be regulated under the jurisdiction of the State Engineer.
Camp Creek Drainage Improvement Project
Detention in north portion of Garden of the Gods

Detention and Sediment Management Area viewed from Mesa Road Overlook

Existing view from Mesa Road Overlook

New vegetation is shown at approximately 10-15 years of typical non-irrigated growth.
Camp Creek Drainage Improvement Project
Detention in north portion of Garden of the Gods

Detention and Sediment Management Area viewed looking south from 30th Street

Existing view looking south on 30th Street just south of Glen Eyrie entrance

New vegetation is shown at approximately 10-15 years of typical non irrigated growth...
Camp Creek Drainage Improvement Project
Detention in north portion of Garden of the Gods

Detention and Sediment Management Area looking north from 30th Street

Existing view looking north on 30th Street just north of Visitors Center entrance