



Draft Environmental Assessment

Fountain Creek Stabilization and Erosion Control Project

Woodland Park, Colorado

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FEMA

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FEMA Reviewers, please NOTE:

The attached document is a Final Draft: This document is ready for final FEMA review.

ACRONYMS AND ABBREVIATIONS iv

SECTION ONE INTRODUCTION 1-1

1.1 Background 1-1

1.2 Purpose and Need 1-2

SECTION TWO ALTERNATIVES 2-1

2.1 Alternatives Considered and Not Retained 2-1

2.2 Alternatives Considered and Retained 2-1

2.2.1 Alternative 1 – No Action 2-1

2.2.2 Alternative 2 – Open Channel Stabilization 2-1

2.2.3 Alternative 3 – Concrete Box Culvert and Open Channel Stabilization 2-3

SECTION THREE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES 3-1

3.1 Topography, Geology, and Soils 3-1

3.1.1 Baseline Conditions 3-1

3.1.2 Environmental Consequences 3-1

3.2 Land Use and Zoning 3-2

3.2.1 Land Use 3-2

3.2.2 Executive Order 11988, Floodplain Management 3-3

3.2.3 Prime Farmland 3-5

3.3 Traffic and Circulation 3-5

3.3.1 Baseline Conditions 3-5

3.3.2 Environmental Consequences 3-6

3.4 Public Health and Safety 3-6

3.4.1 Baseline Conditions 3-6

3.4.2 Environmental Consequences 3-7

3.5 Socioeconomics 3-8

3.5.1 Economics 3-8

3.5.2 Executive Order 12898, Environmental Justice 3-9

3.6 Visual Resources 3-10

3.6.1 Baseline Conditions 3-10

3.6.2 Environmental Consequences 3-10

3.7 Air Quality 3-10

3.7.1 Baseline Conditions 3-10

3.7.2 Environmental Consequences 3-11

3.8 Public Services 3-11

3.8.1 Baseline Conditions 3-11

3.8.2 Environmental Consequences 3-12

3.9 Noise 3-13

Table of Contents

3.9.1	Baseline Conditions.....	3-13
3.9.2	Environmental Consequences	3-13
3.10	Hydrology and Water Quality.....	3-13
3.10.1	Baseline Conditions.....	3-13
3.10.2	Environmental Consequences	3-14
3.11	Biological Resources.....	3-15
3.11.1	Executive Order 11990, Wetlands	3-15
3.11.2	Vegetation	3-16
3.11.3	Terrestrial Wildlife.....	3-17
3.11.4	Aquatic Wildlife.....	3-17
3.11.5	Threatened, Endangered, and Special-Status Species.....	3-18
3.12	Cultural Resources	3-21
3.12.1	Baseline Conditions.....	3-22
3.12.2	Environmental Consequences	3-23
3.13	Review of Environmental Databases	3-24
3.13.1	Baseline Conditions.....	3-24
3.13.2	Environmental Consequences	3-24
3.14	Cumulative Impacts.....	3-25
3.15	Coordination and Permits.....	3-26
SECTION FOUR SUMMARY		4-1
SECTION FIVE AGENCIES CONSULTED.....		5-1
5.1	Agencies Consulted During the Preparation of the Environmental Assessment	5-1
5.2	Agencies Consulted by the Subapplicant	5-1
SECTION SIX REFERENCES		6-1
SECTION SEVEN LIST OF PREPARERS.....		7-1
SECTION EIGHT PUBLIC INVOLVEMENT		8-1
8.1	Public Notices	8-1
8.1.1	Initial Public Notice	8-1
8.1.2	Final Public Notice.....	8-2
8.2	Public Comments	8-3

Tables

Table 3-1: Soil Component Characteristics	3-2
Table 4-1: Summary of Alternatives by Environmental Resource	4-2

Appendices

Appendix A	Exhibits
	Exhibit 1: Project Location
	Exhibit 2: Alternative 2 Project Area
	Exhibit 3: Typical Channel Section
	Exhibit 4: Alternative 3 Project Area
	Exhibit 5: Typical Channel Section with Concrete Box Culvert
	Exhibit 6: FEMA Flood Insurance Rate Map
	Exhibit 7: Area of Potential Effects
Appendix B	Site Visit Photographs
Appendix C	FEMA Eight-Step Decision Making Process
Appendix D	Agency Correspondence
Appendix E	Results of Cultural Resource Investigations

Acronyms and Abbreviations

APE	Area of Potential Effects
BMP	Best Management Practice
CDOW	Colorado Division of Wildlife
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
City	City of Woodland Park
CY	cubic yard
EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.
EO	Executive Order
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
IREA	Intermountain Rural Electric Association
LOMR	Letter of Map Revision
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act of 1969
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1996 (as amended)
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PDM	Pre-Disaster Mitigation
SHPO	State Historic Preservation Officer
SWPPP	Storm Water Pollution Prevention Plan
UNCC	Utility Notification Center of Colorado
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
URS	URS Group, Inc.

SECTION ONE INTRODUCTION

1.1 BACKGROUND

Woodland Park, Teller County, Colorado, is 18 miles west of Colorado Springs (Appendix A, Exhibit 1) at an elevation of 8,465 feet. The 2000 U.S. Census data indicates the population of Woodland Park is 6,515, making it the most populous city in Teller County (US Census 2010). The City of Woodland Park (City) has reported that the population is approximately 7,600 as of 2009 (Woodland Park 2010). Woodland Park is near the headwaters of Fountain Creek and in the Fountain Creek watershed. The watershed spans three counties (El Paso, Pueblo, and Teller) and encompasses approximately 927 square miles.

The segment of Fountain Creek that runs through Woodland Park is an intermittent stream and is subject to flash flooding. The channel has become an incised and severely eroded ravine because of the flash floods, channel modifications that have reduced conveyance capacity, and highly erodible soils (Appendix B, Photos 1 and 2). The reach of Fountain Creek from its confluence with the East Fork of Fountain Creek upstream to Sheridan Avenue has eroded extensively, degraded vertically, and migrated laterally (Appendix B, Photo 2). The erosion has encroached on residential properties at the Whispering Pines Mobile Home Park and on critical infrastructure, such as sewer lines and electric utility poles (Appendix B, Photos 2, 3, 4, and 5).

Destructive heavy rainfall/flash flood events occur approximately every 2 years. The City projects that a failure of the sewer and water lines in the vicinity of the creek could occur with a 10-year flood event due to erosion (Woodland Park 2010).

Previous attempts to control erosion have included covering the sewer lines with fill dirt and installing riprap (e.g., rock, used concrete) in areas with severe erosion. However, these methods have proven to be ineffective at alleviating the bank erosion and channel degradation because subsequent peak flows have washed the material away.

The City, through the Colorado Division of Emergency Management, has requested Federal Emergency Management Agency (FEMA) Pre-Disaster Mitigation (PDM) Program funding to stabilize the streambed and banks and to mitigate erosion problems along the 1000-foot reach of Fountain Creek from its confluence with the East Fork of Fountain Creek upstream to Sheridan Avenue. A similar project was completed in 1999 along a reach of Fountain Creek upstream of Sheridan Avenue (Appendix B, Photo 6).

FEMA has proposed funding the project through the PDM Program. As a Federal action, the proposed project is subject to the National Environmental Policy Act of 1969 (NEPA) (42 U.S. Code [U.S.C.] §§ 4321–4327). The Council on Environmental Quality's (CEQ's) implementing regulations for NEPA (Title 40, Code of Federal Regulations [CFR] Parts 1500–1508) require an investigation of the potential environmental impacts of a proposed Federal action and an evaluation of alternatives as part of an Environmental Assessment (EA). The FEMA regulations that establish the agency-specific process for implementing NEPA are set forth in 44 CFR Part 10. This EA was conducted in accordance with both CEQ and FEMA NEPA regulations.

1.2 PURPOSE AND NEED

The purpose of FEMA's PDM program is to substantially reduce the risk of future damage, hardship, loss, or suffering in communities from natural disasters, such as floods, by providing the affected communities with cost-share funds to reduce future losses. Lateral migration of the eroding stream channel has resulted in the channel's encroachment on residential properties and critical infrastructure, including sewer lines and electric utility poles. The City has identified the need to alleviate the bank erosion and channel degradation within the 1,000-foot reach of Fountain Creek from its confluence with the East Fork of Fountain Creek upstream to Sheridan Avenue. The purpose of the project is to stabilize the Fountain Creek channel, which is necessary to protect local residential structures and to prevent the failure of critical infrastructure in Woodland Park.

SECTION TWO ALTERNATIVES

The CEQ has developed regulations for the preparation of environmental impact documents in compliance with NEPA. The CEQ requires an investigation and evaluation of practicable alternatives as part of the NEPA process. This section describes the alternatives that were considered but not retained for further evaluation and the alternatives that were considered and retained for further evaluation.

2.1 ALTERNATIVES CONSIDERED AND NOT RETAINED

Because the American Discovery Trail is next to the western bank of Fountain Creek in the project area, the City rejected all alternatives that would adversely affect the natural beauty of the area. Therefore, alternatives that would use gabions, keystone, or other concrete structures to stabilize the creek banks were removed from consideration.

2.2 ALTERNATIVES CONSIDERED AND RETAINED

The following three alternatives were considered and retained for further evaluation:

- Alternative 1 – No Action
- Alternative 2 – Open Channel Stabilization
- Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

2.2.1 Alternative 1 – No Action

With the No Action Alternative, the bank erosion and lateral migration of the Fountain Creek channel would not be reduced. The City would continue to replace riprap in erosion areas to reduce the loss of bank soils and protect critical components of the City's infrastructure.

2.2.2 Alternative 2 – Open Channel Stabilization

This alternative includes:

- Installing an open-channel bank stabilization system within the 1,000-foot reach of Fountain Creek from its confluence with the East Fork of Fountain Creek upstream to Sheridan Avenue (Appendix A, Exhibit 2)
- Relocating a gravity sewer line and sewer force main
- Stabilizing electric utility poles/realigning the adjacent channel
- Improvements to American Discovery Trail/installing approximately 1,000 feet of round rail fence
- Landscaping/re-vegetating the project area

The project area of Fountain Creek begins downstream of the existing box culvert at Sheridan Avenue and extends approximately 1,000 feet downstream to the confluence with the East Fork of Fountain Creek (Appendix A, Exhibit 2). The estimated construction footprint is approximately 80 feet wide with an average excavation depth of approximately 4 feet. Construction would require the excavation of approximately 5,000 cubic yards (CY) of soil with approximately 1,000 CY of surplus excavated soil. Any excess excavated soil would be stockpiled at an existing Woodland Park stockpile area near the wastewater treatment plant or hauled off by the contractor to an approved stockpile area. If any off-site fill material is required, it would be obtained from an approved borrow area. The project would disturb approximately 2 acres of land. Construction is estimated to be completed within 24 months.

The alternative would stabilize the Fountain Creek channel using a grouted stacked boulder wall with riprap bottom installed as a stepped terrace along the channel banks. The channel design would be similar to the approach used in the adjoining upstream reach of Fountain Creek (Appendix B, Photos 6 and 7).

Exhibit 3 (Appendix A) shows a schematic of a typical stabilized channel cross section with approximate dimensions. The actual dimensions and design would vary as needed depending on the existing channel morphology, necessary modifications, and various design constraints for each stream segment. The improved channel would extend approximately 1,000 linear feet.

A geotextile fabric would be placed at the bottom of the channel and covered with approximately 6 inches of gravel bedding. A minimum of 24 inches of grouted 12-inch riprap would be placed over the bedding material and grouted to the 12-inch riprap on the channel banks. The grouted riprap would then be covered by grouted stacked boulders (approximately 24 to 30 inches in diameter) to form the stepped terrace walls.

Additionally, the project would involve installing approximately 10 grouted drop/check structures. The structures would be constructed using 12-inch riprap and 24- to 48-inch boulders positioned along the project reach based on channel morphology and gradient. The structures would be approximately 10 feet long. A riprap structure would be constructed at the downstream end of the project area as the channel transitions to unimproved stream channel. The channel transition would look similar to the current drop/check structures with riprap transition in the adjoining upstream reach.

A gravity sewer line and sewer main may require relocation within the channel or to the existing right-of-way. The need for relocation would be determined at final design. Relocation would involve lowering the sewer force main and sewer gravity line to protect these structures from channel erosion. The concrete encasement currently surrounding the force main would also need to be reconstructed.

The channel near the at-risk electric utility poles would be realigned to the west of its current course. The ground near the main pole (Appendix B, Photo 5) and loop pole would be reconstructed and stabilized using compacted soil and riprap to provide a stable location for the placement of the poles and anchors. These actions would increase the distance between the

poles and stream channel, stabilize the stream channel and area around the poles, and prevent erosion.

The American Discovery Trail is located along the western bank of Fountain Creek in the project area (Appendix B, Photo 8). A 3-foot section of the trail in the project area has been eroded by the lateral movement of the channel. Alternative 2 would reconstruct approximately 1,100 feet of the multi-use trail as a 12-foot-wide gravel trail, as shown in Appendix A, Exhibit 3. This alternative would include installing approximately 1,000 linear feet of round rail fence at the creek edge near the American Discovery Trail as a safety barrier between the trail and the channel.

The disturbed grounds would be re-graded and landscaped. Approximately 1.5 acres of disturbed land, including the channel terrace, would be reseeded with a native grass mixture.

Post-project maintenance would involve annual spring and fall walk-through inspections to look for erosion or dislodging of riprap, undermining of riprap or drop structures, and cracking or eroding of grout. The inspection would also include checking the condition of vegetation on the benches and looking for debris accumulation. A post-storm event inspection would also be conducted following flows with depths greater than 1 foot to check for any significant damage. The City would repair any damage noted during these inspections. Annual maintenance and associated costs would be the responsibility of the City.

2.2.3 Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

Alternative 3 would involve installing approximately 800 linear feet of box culvert and approximately 200 linear feet of open channel stabilization in the same project area as Alternative 2 (Appendix A, Exhibit 4). The existing dual-chamber, 16-foot-wide, 6-foot-tall concrete box culvert at the upstream end of the project area (Appendix B, Photo 8) would be extended approximately 800 feet downstream. Placement of the culvert would require some excavation, channel modification, and fill material. As with Alternative 2, any off-site fill material would be obtained from an approved borrow area. Exhibit 5 (Appendix A) shows a typical cross section of the stream with a box culvert. Safety gates would be placed over the downstream opening to prohibit anyone from entering the culvert (Appendix B, Photo 8). Once placed, the culvert would be covered with soil and reseeded with a native grass mixture. Any excess soils would be disposed at the City's stockpile area or hauled off site by the contractor to an approved stockpile area.

The open channel bank stabilization system would be installed from the end of the box culvert extension to the confluence with the East Fork of Fountain Creek (Appendix B, Photo 9). The open channel bank stabilization would be constructed using the same design described for Alternative 2 (a grouted stacked boulder wall with riprap bottom installed as a stepped terrace along the channel banks [Appendix A, Exhibit 3]). The open channel segment would include grouted drop/check structures and a riprap transition downstream end of the project area as the channel transitions to unimproved stream.

The relocation/stabilization of electric utility poles, construction/improvement of a 12-foot-wide gravel multi-use trail, installation of approximately 1,000 feet of round rail fence, and post-project maintenance would be similar to that described for Alternative 2. The box culvert segment and the terraced areas of the open-channel segment would be reseeded with a native grass mixture. As with Alternative 2, this alternative may require the relocation of a gravity sewer line and a sewer force main. The need to relocate these structures would be determined at final design.

The exact lengths of the box culvert and open channel segments would be determined at final design.

SECTION THREE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 TOPOGRAPHY, GEOLOGY, AND SOILS

3.1.1 Baseline Conditions

The project reach of Fountain Creek is within the city limits of Woodland Park, Teller County, Colorado, at an elevation of 8,465 feet. Teller County is in the Southern Rockies, Crystalline Mid-Elevation Forests Ecoregion. Ecoregions denote areas of general similarity in ecosystems and environmental resources, based on spatial analysis of patterns of characteristics such as geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology (Omernik 1987).

The Southern Rockies are composed of high-elevation, steep, rugged mountains where vegetation, soils, and land use follow a pattern of elevation bands. The Crystalline Mid-Elevation Forests are found at elevations of 7,000 to 9,000 feet with crystalline and metamorphic soil substrates. Typical physiography includes partially glaciated low mountain ridges, slopes, and outwash fans. Land uses include wildlife habitat, livestock grazing, logging, mineral extraction, recreation, and residential, which is increasing (Chapman et al. 2006). The Crystalline Mid-Elevation Forests Ecoregion contains moderate- to high-gradient streams. However, within the project area, Fountain Creek is a relatively low-gradient stream.

Two soil types in the vicinity of the project area were identified during a search of the Natural Resources Conservation Service (NRCS) database (NRCS 2010): Boyett-Frenchcreek Complex and Plome-Pimsby Complex. In general, the soils are well-drained sandy loam composed of alluvium (NRCS 2010). The soil in the project area is easily erodible and poorly consolidated and made up of decomposed granite with very low compactibility (Woodland Park 2010). Table 3-1 lists characteristics of the soil components.

3.1.2 Environmental Consequences

3.1.2.1 *Alternative 1 – No Action*

The No Action Alternative would involve only maintenance, routine clearing of culverts that become clogged with debris, and repairing damage after a flood event. This alternative would, therefore, not have any effect on soils in the project area. Soils in the project reach of Fountain Creek would continue to be transported downstream during rain and snow-melt events.

3.1.2.2 *Alternative 2 – Open Channel Stabilization*

Alternative 2 would disturb approximately 2 acres of soil. Construction of the open channel stabilization would require the excavation of approximately 5,000 CY of soil with approximately

Affected Environment and Environmental Consequences

Table 3-1: Soil Component Characteristics

Component Name	Typical Elevation (feet)	Landform	Parent Material	Slope (percent)	Typical Profile
Boyett	6,800 to 8,000	Ridges on stream terraces	Old alluvium over material weathered from arkosic sandstone and/or granite	5 to 15	Sandy loam to gravelly sandy loam
Frenchcreek	6,800 to 8,000	Swales on stream terraces	Alluvium derived from granite and/or arkosic sandstone	2 to 15	Gravelly sandy loam to very gravelly loamy sand
Plome	8,200 to 8,600	Grabens	Alluvium	5 to 20	Sandy loam to gravelly coarse sandy loam
Pimsby	8,200 to 8,600	Grabens	Alluvium	5 to 20	Sandy loam to very gravelly sandy loam

Source: NRCS 2010

1,000 CY of surplus excavated soil. Alternative 2 would have long-term beneficial effects on the soils along the stream by stabilizing the banks and preventing soil erosion.

3.1.2.3 Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

The effects of Alternative 3 would be similar in scale to Alternative 2 (disturbance of approximately 2 acres of soil). Alternative 3 would have long-term beneficial effects on the soils in the project area. The open-channel stabilization and box culvert would stabilize the banks and prevent future soil erosion.

3.2 LAND USE AND ZONING

3.2.1 Land Use

3.2.1.1 Baseline Conditions

Land use in the vicinity of the project area is residential with some homes in the Whispering Pines Mobile Home Park immediately adjacent to the eastern bank of Fountain Creek. Immediately downstream of the project area, land use becomes mixed residential and commercial.

3.2.1.2 Environmental Consequences

Alternative 1 – No Action

The No Action Alternative would have a long-term negative impact on land use in the project area. Future lateral movement of the channel could result in land use changes as upland areas,

Affected Environment and Environmental Consequences

including areas currently occupied by residential structures and critical infrastructure, become part of the channel.

Alternative 2 – Open Channel Stabilization

Implementation of this alternative would not change the land use in the project area. However, Alternative 2 would stabilize the Fountain Creek channel and prevent further lateral erosion and resulting loss of useable land.

Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

Implementation of Alternative 3 would not change the land use in the project area. The open channel stabilization and box culvert would stabilize the Fountain Creek channel and prevent further lateral erosion and resulting loss of useable land.

3.2.2 Executive Order 11988, Floodplain Management

3.2.2.1 Baseline Conditions

The intent of Executive Order (EO) 11988, Floodplain Management, is to require Federal agencies to take actions to minimize occupancy of and/or modification of floodplains. EO 11988 requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

The City is a participant in the National Flood Insurance Program (NFIP). The FEMA Flood Insurance Rate Map Panel 08119C0206D (Letter of Map Revision [LOMR] effective date March 11, 2010) indicates that the project area is in an area designated as Zone AE and shaded Zone X (Appendix A, Exhibit 6). Zone AE, also known as the “100-year floodplain,” has a 1-percent probability of flooding every year. Stream flow in Fountain Creek upstream of the confluence with the East Fork during a 100-year flood event is estimated at 800 cubic feet per second (cfs) (personal communication, William Alspach, Appendix D). Shaded Zone X, also known as the “500-year floodplain,” has between a 1- and 0.2-percent probability of flooding every year, with average flood depths usually less than 1 foot. None of the residential structures in the vicinity of the Project Area, including manufactured homes in the Whispering Pines Mobile Home Park, are located in the 100-year or 500-year floodplain.

The stream channel in the project area has been considerably altered by erosion. In the 1970s, Fountain Creek in the project areas was a grassy swale. However, the creek in the project area currently has an eroded channel with vertical banks that are 3 to 8 feet high. In the upstream half of the project area, the banks are very steep, and the floodplain areas are relatively narrow and confined to the main stream channel or floodway (Appendix B, Photo 1). In the downstream half of the project reach, the channel is wider and more shallow (Appendix B, Photo 4). In this area, the 100-year floodplain boundaries extend beyond the floodway to a total width of approximately 75 feet (Appendix A, Exhibit 6). The floodplain associated with Fountain Creek

Affected Environment and Environmental Consequences

has previously been affected by channel modifications upstream and downstream of the project area.

To satisfy the intent of EO 11988, FEMA uses an Eight-Step Decision-Making Process to evaluate projects that have features in a 100-year floodplain (Appendix C). The process involves considering alternatives to locating a project in a floodplain or minimizing impacts to the floodplain. NEPA compliance involves the same basic decision-making process to meet its objectives; therefore, the Eight-Step Decision-Making Process has been satisfied through the implementation of the NEPA process.

EO 11988 and the Eight-Step Decision-Making Process have public notification requirements that include a minimum of two public notifications regarding Alternative 2. The City published an Initial Public Notice in the *Pikes Peak Courier View* on December 1 and December 8, 2010 (see Section 8.1.1). The Final Public Notice was published as part of the Draft EA review process (see Section 8.1.2).

3.2.2.2 Environmental Consequences

Alternative 1 – No Action

The No Action Alternative would not involve construction activities; therefore, the alternative would have no on effect on the Fountain Creek floodplain.

Alternative 2 – Open Channel Stabilization

Alternative 2 is designed to alleviate the destructive erosive effects of seasonal high peak flows on the Fountain Creek streambed and banks. The implementation of this alternative would stop the lateral migration and vertical degradation (erosion) of the channel and change the channel cross-section morphology (Appendix A, Exhibit 3). In the upstream half of the project reach, the channel improvements would have no effect on the floodplain boundaries because the floodplain would continue to be confined to the channel. However, the channel modifications in the downstream portion of the project area could result in minor changes to the existing floodplain boundaries, though this is not the goal of this alternative. The City has indicated that a LOMR would be submitted post-project because it is likely that water surface elevation levels will be changed by more than 6 inches (personal communication, William Alspach, Appendix D). For the majority of the project area, the floodplain is currently confined to the Fountain Creek banks (Appendix A, Exhibit 6), and would remain un-changed post-project. In addition, the floodplain has previously been affected by channel modifications upstream and downstream of the project area. Therefore, FEMA has determined that Alternative 2 would have minor effects on the floodplain; the changes to the resource would be measurable, but small and localized.

Although, there would likely be minor effects on the floodplain, this alternative would not change the nearby land use or promote additional occupancy/development in the floodplain. Alternative 2 would not result in any structures being added or taken out of the floodplain. The stepped terrace channel stabilization would be constructed to be resilient to flooding. Therefore,

Affected Environment and Environmental Consequences

Alternative 2 satisfies the criteria set forth in EO 11988 and 44 CFR Part 9. By preparing this EA, FEMA is meeting the requirement of EO 11988 to determine the effects of its actions on the natural and beneficial values of floodplains. Since this alternative would involve construction within a designated floodplain, the City would need to obtain a Floodplain Development Permit from the local floodplain administrator.

Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

Alternative 3 is designed to alleviate the destructive erosive effects of seasonal high peak flows on the Fountain Creek streambed and banks. The implementation of this alternative would stop the lateral migration and vertical degradation (erosion) of the channel and change the channel cross-section morphology (Appendix A, Exhibits 3 and 5). Flows up to and including the 500-year flood event would be entirely confined to the concrete box culvert in the upstream portion of the project area. The effects of the changes in the downstream open channel segment would be similar to the effects of discussed for Alternative 2. The channel modifications would result in changes to the existing floodplain boundaries and/or water surface elevation levels, although this is not the goal of this alternative. Alternative 3 would require the City to submit a LOMR post-project.

Although, there would be effects on floodplain features, Alternative 3 would not change the nearby land use or promote additional occupancy/development in the floodplain. Therefore, Alternative 3 satisfies the criteria set forth in EO 11988 and 44 CFR Part 9. By preparing this EA, FEMA is meeting the requirement of EO 11988 to determine the effects of its actions on the natural and beneficial values of floodplains. Since Alternative 3 would involve construction within a designated floodplain, the City would need to obtain a Floodplain Development Permit from the local floodplain administrator.

3.2.3 Prime Farmland

Since no farmland, including prime farmland, is located in the project area, none of the alternatives have the potential to affect prime farmland, and the intent of the Farmland Protection Policy Act of 1981 (7 U.S.C. §§ 4201–4209) is met. Therefore, impacts on prime farmland were not considered further, and NRCS Form AD-1006 was not completed.

3.3 TRAFFIC AND CIRCULATION

3.3.1 Baseline Conditions

The following roads are adjacent to the project area (Appendix A, Exhibit 2):

- Sheridan Avenue
- Laura Lane
- Unnamed private dirt road

Affected Environment and Environmental Consequences

Sheridan Avenue is a paved two-lane residential road just north of the project area. The road is a through street that allows access to the northern end of the project area. Laura Lane is a gravel/dirt road approximately 1.5 blocks long that allows access to the southern end of the project area. This road provides access to two residences and has light traffic volumes. An unnamed private dirt road allows access to the Whispering Pines Mobile Home Park from Sheridan Avenue.

The American Discovery Trail is located along the western bank of Fountain Creek in the project area. The trail is a multi-use trail that is a part of the National Trails System and spans more than 5,000 miles from the Atlantic Coast in Delaware to the Pacific Coast in northern California. Currently, a 3-foot section of the trail in the project area has collapsed from erosion and cannot be safely traversed (Woodland Park 2010).

3.3.2 Environmental Consequences

3.3.2.1 *Alternative 1 – No Action*

The No Action Alternative would have no immediate impact on roads in the area of the project. However, if the creek continues to migrate laterally, the southern end of Laura Lane could be undermined by erosion and lateral channel migration. The American Discovery Trail would remain in need of repair.

3.3.2.2 *Alternative 2 – Open Channel Stabilization*

Construction activities associated with Alternative 2 would occur within and adjacent to the Fountain Creek channel. No roads would need to be closed to complete the construction activities. However, there could be minor traffic delays due to the ingress and egress of construction equipment and materials. The American Discovery Trail would be repaired and improved by converting it to 12-foot-wide gravel trail with a round-rail fence. Therefore, Alternative 2 would have a long-term positive impact on the trail.

3.3.2.3 *Alternative 3 – Concrete Box Culvert and Open Channel Stabilization*

Traffic and circulation impacts associated with Alternative 3 would be similar to those discussed for Alternative 2.

3.4 PUBLIC HEALTH AND SAFETY

3.4.1 Baseline Conditions

The existing creek channel is eroding, laterally migrating, and encroaching on residences and critical infrastructure. Currently, a portion of the eastern bank is close to undermining outbuildings associated with the manufactured homes near the creek. Photos 1, 2, and 10, (Appendix B) show the channel in relation to the outbuildings and manufactured homes that are at highest risk. Additionally, the erosion has changed the once grassy swale into a deep channel

Affected Environment and Environmental Consequences

with vertical banks. The undermining of structures and infrastructure and the incised channel pose safety issues for local residents.

3.4.2 Environmental Consequences

3.4.2.1 *Alternative 1 – No Action*

The No Action Alternative would have no impact on public health and safety in the project area. Residences and outbuildings would continue to be undermined by the lateral migration of the creek channel, and the channel banks would continue to erode. Fencing is not currently in place and users of the American Discovery Trail would be at continued risk of injury from fall hazards as the channel continues to undercut and weaken the bank. Additionally, there would be continued risk of a sewer line break as a result of erosion or high peak flows, which could present a health hazard.

3.4.2.2 *Alternative 2 – Open Channel Stabilization*

Alternative 2 would stop the lateral migration of the creek channel by using the granite step technique to transform the banks from eroded undercut banks with steep dropoffs to granite boulder banks installed as a stepped terrace. The gradually sloping terraces and stepped boulders would decrease the fall hazard, allow a person in the channel to climb to safety during a flood event, and prevent the undermining of outbuildings and residences.

Alternative 2 would have a beneficial long-term effect on public health and safety by protecting against a sewer line break as a result of erosion. Additionally, this alternative would include the installation of approximately 1,000 linear feet of round rail fence along the creek to provide a safety barrier between the trail and the channel. Therefore, Alternative 2 would have a long-term positive impact on public health and safety to Woodland Park residents and users of the American Discovery Trail.

3.4.2.3 *Alternative 3 – Concrete Box Culvert and Open Channel Stabilization*

Alternative 3 would stop the lateral migration of the banks and undermining of the structures as a result of the installation of approximately 800 feet of concrete box culvert, which would be covered with compacted soil. No exposed channel banks would be present in the culvert segment, which would mitigate fall hazards. Safety gates would be installed at the downstream end of the culvert to prevent access. Alternative 3 would have a beneficial long-term effect on public health and safety by protecting against sewer line break due to erosion. The 200-foot open-channel stabilization segment would have impacts to health and safety similar to those discussed for Alternative 2. Therefore, Alternative 3 would have a long-term positive impact on public health and safety in Woodland Park.

3.5 SOCIOECONOMICS

3.5.1 Economics

3.5.1.1 *Baseline Conditions*

Woodland Park is a resort town and business center for the surrounding area, and tourism fuels the local economy (Woodland Park 2010). The median family income in Woodland Park in 1999 dollars was \$59,583, and the population in 2000 was 6,515 (U.S. Census Bureau 2010).

The City projects that a catastrophic loss of utility infrastructure could occur with a 10-year flood event (Woodland Park 2010) and require reconstruction of the sewer line, which would be cost-prohibitive for the City. In addition, the at-risk power lines are located at edge of the Fountain Creek bank where bank collapse is inevitable without mitigation. The interruption of service to residents and businesses could cause economic impacts (Woodland Park 2010).

3.5.1.2 *Environmental Consequences*

Alternative 1 – No Action

Under the No Action Alternative, the temporary measures to stabilize the creek channel and the cost of maintenance would continue to have a negative economic impact on the residents of Woodland Park. There would be a continued risk of loss of infrastructure and the resulting economic impacts of the cost of repairs and disruption of services.

Alternative 2 – Open Channel Stabilization

Alternative 2 would have a long-term beneficial effect on socioeconomics of Woodland Park by providing a long-term solution to the channel erosion in Fountain Creek. Approximate annual maintenance costs would be reduced from \$11,500 to \$600. This alternative would also have a long-term beneficial economic effect for the property owners along the creek by preventing the loss of land and structures to the lateral migration of the creek. Alternative 2 would mitigate risk of future economic impacts from the loss of critical infrastructure by preventing future erosion and channel migration.

Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

The maintenance costs for the concrete box culvert would be similar to the open-channel erosion control maintenance costs. Therefore, economic impacts associated with Alternative 3 would be similar to those discussed for Alternative 2.

3.5.2 Executive Order 12898, Environmental Justice

3.5.2.1 Baseline Conditions

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs Federal agencies to “make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

In 2000, the population of Woodland Park was 6,515 (U.S. Census Bureau 2010). At that time, approximately 95 percent of the population was white, 3.5 percent was Hispanic/Latino, and 0.9 percent was Asian. The project area contains a similar minority population. Woodland Park has a poverty rate of 1.8 percent for families and 3.7 percent for individuals; both rates are below the national average (U.S. Census Bureau 2010).

The Whispering Pines Mobile Home Park is a considered low-income housing area (personal communication, Eric W. Smith, Appendix D).

3.5.2.2 Environmental Consequences

Alternative 1 – No Action

The No Action Alternative would have a continued negative impact on the Whispering Pines Mobile Home Park because lateral erosion would continue to encroach on the property, resulting in loss of useable land. There would be a potential to damage or destroy outbuildings, fences, landscaping, and manufactured homes. Additionally, the potential for utility infrastructure failure would continue to have a negative impact on residents of Woodland Park.

Alternative 2 – Open Channel Stabilization

Construction of Alternative 2 would reduce costs (for both private citizens and public agencies) associated with intermittent, temporary repairs to the Fountain Creek channel. The cost reduction would be a long-term positive impact on all residents of Woodland, including low-income and minority populations. Therefore, construction of Alternative 2 would not have a disproportionate adverse effect on any minority or low-income populations.

Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

The impacts related to Environmental Justice associated with Alternative 3 would be similar to those discussed for Alternative 2.

3.6 VISUAL RESOURCES

3.6.1 Baseline Conditions

Woodland Park is surrounded by the Pike National Forest in the Front Range of the Rocky Mountains with views of Pikes Peak and the Rampart Mountain Range. The project area is located in a residential portion of Woodland Park. Intermittent pine trees line the creek corridor. Photographs taken during the site visit (Appendix B) show the visual aesthetic of the project area.

3.6.2 Environmental Consequences

3.6.2.1 *Alternative 1 – No Action*

The No Action Alternative would have no impact on visual resources. Within the project area, Fountain Creek would remain a severely eroded channel with large concrete riprap.

3.6.2.2 *Alternative 2 – Open Channel Stabilization*

Alternative 2 would have a short-term adverse impact on the visual resources near the project area as a result of construction activities and presence of construction equipment. Post-project, the bare, incised channel would be converted to a natural-looking granite boulder bank with a stepped terrace and reseeded native grasses. Therefore, Alternative 2 would have a long-term beneficial effect on the visual resources within the project area. Appendix B, Photos 1 and 6, shows the current and expected post-project channel appearance, respectively.

3.6.2.3 *Alternative 3 – Concrete Box Culvert and Open Channel Stabilization*

Alternative 3 would convert approximately 800 linear feet of the open incised channel to a native, grass-covered concrete box culvert. The remainder of the project reach would be a granite-stepped channel as described for Alternative 2. The conversion of the devegetated, incised channel with large riprap to a grass-covered box culvert would not be considered a negative impact on the visual resources within the project area. The open-channel segment would have a beneficial effect on the visual resources. Therefore, Alternative 3 would have an overall long-term beneficial effect on visual resources in the project area.

3.7 AIR QUALITY

3.7.1 Baseline Conditions

The National Ambient Air Quality Standards, established by the United States Environmental Protection Agency (USEPA), define the allowable concentrations of pollutants that may be reached but not exceeded in a given period in order to protect human health (primary standard) and welfare (secondary standard) with a reasonable margin of safety. The standards include maximum concentrations for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and

Affected Environment and Environmental Consequences

particulate matter (10 microns or less and 2.5 microns or less). Teller County is considered an attainment area for all air quality parameters (USEPA 2010).

Established under the Clean Air Act of 1970 (42 U.S.C. §§ 7401–7661), the General Conformity Rule (40 CFR. § 51.853) ensures that the actions taken by Federal agencies in nonattainment and maintenance areas do not interfere with a State implementation plan for air quality. Woodland Park is part of the Colorado Springs Attainment/Maintenance Area for carbon monoxide (Colorado Department of Public Health and Environment [CDPHE] 2010).

3.7.2 Environmental Consequences

3.7.2.1 *Alternative 1 – No Action*

The No Action Alternative would have no impact on air quality in the project area.

3.7.2.2 *Alternative 2 – Open Channel Stabilization*

Heavy machinery used to construct the natural granite-stepped channel would contribute to an increase in exhaust fumes and fugitive dust (particulates) during the construction period. These increases would be short-term and minor. An Air Pollutant Emission Notice would need to be filed with the CDPHE Air Pollution Control Division prior to beginning construction activities. The project would not result in permanent air emissions and would not require any additional permits because the project area is in the Colorado Springs Attainment/Maintenance Area for carbon monoxide (Personal Communication, Mr. Adam Wozniak, Engineer, Air Pollution Control Division, February 2, 2011, Appendix D). If dust emissions become an issue for the local residents, the contractor would be required to implement dust abatement procedures such as applying water to the disturbed areas to control fugitive dust. These measures would meet the requirement of the Clean Air Act and the General Conformity Rule.

3.7.2.3 *Alternative 3 – Concrete Box Culvert and Open Channel Stabilization*

Air quality impacts would be similar to those discussed for Alternative 2.

3.8 PUBLIC SERVICES

3.8.1 Baseline Conditions

Woodland Park utilities in the project area include Intermountain Rural Electric Association (IREA) overhead power lines. Overhead cable and telephone service lines, owned by U.S. Cable and Qwest, are also affixed to the electric utility poles. Buried water distribution lines, sanitary gravity sewer lines, and a force main are located in or near the project area.

Two IREA power lines are located along the eastern bank of Fountain Creek where bank collapse is inevitable without mitigation. These lines service more than 3,400 customers and include businesses (including major employers) and residents in the vicinity of the project area.

Affected Environment and Environmental Consequences

A gravity trunk sewer line lies along the western bank of Fountain Creek and serves approximately 1,448 customers, including 235 commercial customers. Two gravity flow trunk manholes have been completely exposed by erosion. A sewer force main crosses Fountain Creek near the downstream end of the project area and serves 3,200 customers, including 230 commercial customers. The force main has previously been covered with large rocks to prevent further exposure. The gravity flow trunk connects to the sewer force main, which pumps sewage up gradient to the waste water treatment plant.

3.8.2 Environmental Consequences

3.8.2.1 *Alternative 1 – No Action*

The No Action Alternative would not change the conditions or use of any utilities in the project area. Erosion and lateral migration of the creek channel would continue with each flow event, putting critical utility infrastructure at risk of damage or failure. The interruption of service to residents and businesses as a result of erosion or a high-water event would have substantial economic impact.

The City has projected that a 10-year flood event could cause failure of the sewer lines. Reconstructing the lines would be difficult and expensive and would interrupt service to residents and businesses.

3.8.2.2 *Alternative 2 – Open Channel Stabilization*

Alternative 2 includes the stabilization of electric utility poles and realignment of the adjacent channel. Additionally, the alternative may require relocation of a gravity sewer line and a sewer force main. The need for the relocation and placement of the sewer lines would depend on their current location relative to final alignment of the channel. Any interruption of services associated with relocation activities would be temporary and would be done in a manner that would minimize adverse effect on the local users. Stabilization of the electric utility poles would be coordinated with IREA, U.S. Cable, and Qwest.

Colorado law requires anyone who engages in any type of excavation must provide advance notice to the underground facility owners in order to minimize the risk of damaging any type of underground utility. The notice must be at least three business days prior to any excavation (Utility Notification Center of Colorado [UNCC] 2010). Therefore, the UNCC would need to be contacted at least three days prior to any excavation activities associated with this alternative. UNCC can be reached by calling 8-1-1 or 1-800-922-1987 (UNCC 2010). Additionally, caution would be used so that overhead utility lines in the area are not contacted during construction activities.

Alternative 2 would have a beneficial long-term effect on local utilities by stabilizing anchors for electric utility poles and protecting City sewer lines that have been exposed by erosion.

Affected Environment and Environmental Consequences

3.8.2.3 *Alternative 3 – Concrete Box Culvert and Open Channel Stabilization*

Impacts related to utilities would be similar to Alternative 2.

3.9 NOISE

Sounds that disrupt normal activities or otherwise diminish the quality of the environment are considered noise. Noise events that occur during the night (10 p.m. to 7 a.m.) are more annoying than those that occur during normal waking hours (7 a.m. to 10 p.m.).

3.9.1 Baseline Conditions

Noise events within the project area are presently associated with traffic, climatic conditions (e.g., wind, thunder), nature (e.g., birds), and other typical urban type noises (e.g. children playing, lawn mowing, yard and house maintenance activities). There are no sensitive noise receptors (i.e., hospitals, daycares, or nursing homes) in the vicinity of any project activities.

3.9.2 Environmental Consequences

3.9.2.1 *Alternative 1 – No Action*

The No Action Alternative would have no impact on noise levels in the project area.

3.9.2.2 *Alternative 2 –Open Channel Stabilization*

For Alternative 2, heavy machinery would be used to install the natural granite steps and other project features; therefore, noise levels would increase in the project area during the construction period. To minimize noise impacts, construction activities would be limited to daytime hours (7 a.m. to 9 p.m.). Additionally, all equipment would have standard noise reducing components, such as mufflers, to minimize noise levels. With these noise control measures, noise impacts in the project area would be considered to be temporary and minor. Once construction activities have been completed, noise levels in the project area would return to pre-project levels.

3.9.2.3 *Alternative 3 – Concrete Box Culvert and Open Channel Stabilization*

Noise impacts would be similar to those described for Alternative 2.

3.10 HYDROLOGY AND WATER QUALITY

3.10.1 Baseline Conditions

Woodland Park is located near the headwaters of the Fountain Creek and is in the Fountain Creek watershed, which drains south across three counties (El Paso, Pueblo, and Teller), has an area of approximately 927 square miles, and empties into the Arkansas River at Pueblo, Colorado. The entire course of Fountain Creek is considered a water of the U.S. (personal communication, Joshua Carpenter, engineer, United States Army Corps of Engineers [USACE],

Affected Environment and Environmental Consequences

January 18, 2011 Appendix D). Sedimentation in the Fountain Creek watershed has increased due to flooding, erosion, and increasing urbanization and associated loss of natural cover and increased impervious surface area (Pikes Peaks Council of Government 2003).

Within the project area, Fountain Creek is an intermittent stream that contains water only after storm events. In Woodland Park, Fountain Creek has experienced severe bank erosion and channel degradation. Lateral migration of the eroding stream channel has resulted in the channel's encroachment on residential properties and infrastructure. The erosion appears to be a result of increased storm runoff due to additional upstream impervious surface area, with highest storm flows typically occurring between May and August (Teller County 2008). The 100-year flood event flow in Fountain Creek upstream of the confluence with the East Fork is estimated at 800 cfs (personal communication, William Alspach, January 10, 2011, Appendix D). Flooding problems in Woodland Park are typically the result of modification to the natural channels have been modified by development and their conveyance capacities diminished. Additionally, highly erodible soils are deposited downstream and contribute to the blockage of culverts and local drainage structures and have led to channel aggradation in several reaches of Fountain Creek (Teller County 2008).

3.10.2 Environmental Consequences

3.10.2.1 *Alternative 1 – No Action*

The No Action Alternative would have no immediate impact on the hydrology and water quality in Fountain Creek. However, erosion and sedimentation would continue to occur due to lateral erosion and channel degradation.

3.10.2.2 *Alternative 2 – Open Channel Stabilization*

Alternative 2 would reduce continued erosion and degradation within the project reach, which would reduce downstream deposition of sediment. Therefore, Alternative 2 would have a long-term positive impact on the hydrology and water quality in Fountain Creek.

The USEPA's National Pollutant Discharge Elimination System (NPDES) program requires a permit for all construction activities that disturb more than one acre, which would apply to Alternative 2. Prior to the initiation of construction activities, Woodland Park would need to obtain a NPDES permit from the CDPHE Water Quality Control Division. As part of the permitting process, Woodland Park would also need to prepare a Storm Water Pollution Prevention Plan (SWPPP) describing Best Management Practices (BMPs) that would be used to prevent and/or minimize soil erosion and the movement of sediment during the construction of the project features. In addition, a Clean Water Act Section 401 Water Quality Certification would need to be obtained from the CDPHE.

Mobile fueling would likely occur for heavy equipment working in the channel. Equipment would need to be refueled and serviced at designated construction areas that are located away from the creek to prevent the transport of petroleum products into the creek. Appropriate spill

Affected Environment and Environmental Consequences

control measures would be implemented, including the use of secondary containment and spill kits. If a spill or leak occurred, the City would notify the CDPHE and FEMA for appropriate response actions. Cleanup activities would be completed in accordance with CDPHE regulations.

The USACE Albuquerque District, Pueblo Office was consulted regarding this alternative (personal communication, Joshua Carpenter, January 18, 2011, Appendix D) and advised:

- The entire course of Fountain Creek is considered a water of the U.S.
- Alternative 2 is not eligible for a Section 404 Nationwide Bank Stabilization Project Permit because the project area exceeds 500 feet
- The City would need to coordinate with the USACE to obtain a Clean Water Act Section 404 Individual Permit

The Section 404 Individual Permit would specify any required mitigation, project conditions, and BMPs that would need to be implemented. Because Alternative 2 would stabilize the banks, prevent erosion, and prevent downstream sedimentation, it would likely be considered a beneficial effect and not require any additional mitigation.

3.10.2.3 Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

Alternative 3 would reduce continued erosion and degradation in the reach of Fountain Creek within the project area and downstream deposition of sediment. Therefore, Alternative 3 would have a long-term positive impact on the water quality in Fountain Creek. Minor changes to hydrology could result from increased flow velocity in the concrete box culvert. The downstream open-channel stabilization would be designed to handle increased velocity.

Equipment fueling and permitting requirements would be the same as those discussed for Alternative 2.

3.11 BIOLOGICAL RESOURCES

3.11.1 Executive Order 11990, Wetlands

Wetlands provide significant ecological functions, including:

- Providing habitat for numerous aquatic and terrestrial wildlife species
- Aiding in the dispersal of floodwaters
- Improving water quality through retention and assimilation of pollutants from stormwater runoff
- Recharging the aquifer

Wetlands also possess aesthetic and recreational values. EO 11990, Protection of Wetlands, requires Federal agencies to take action to avoid or minimize the loss of wetlands.

Affected Environment and Environmental Consequences

3.11.1.1 Baseline Conditions

The United States Fish and Wildlife Service (USFWS) Wetlands Mapper (USFWS 2010a) shows there are no wetlands located within or in the vicinity of the proposed project area. Site reconnaissance confirmed that no wetland areas occur within the project area.

3.11.1.2 Environmental Consequences

Since no wetlands are located within or in the vicinity of the proposed project area, none of the alternatives have the potential to impact wetlands. Therefore, regardless of the alternative selected, the intent of EO 11990 would be met by this project.

3.11.2 Vegetation

3.11.2.1 Baseline Conditions

Vegetation within the project area consists primarily of native grasses and widely spaced large pine trees. As shown in Appendix B, Photo 1, the incised banks are mostly bare soil with sparse vegetation.

3.11.2.2 Environmental Consequences

Alternative 1 – No Action

The No Action Alternative would have no direct impact on vegetation. Vegetation within the vicinity of the creek would continue to be lost during lateral migration of the Fountain Creek channel.

Alternative 2 – Open Channel Stabilization

Alternative 2 would have short-term adverse effects on upland vegetation within the approximately 2-acre project area during the construction phase. Upon completion of construction, the soil-covered sections of the terraces would be revegetated using a native grass seed mix. Therefore, Alternative 2 would have a long-term beneficial effect on vegetation along this reach of Fountain Creek by stabilizing the banks and reseeding native grass along the bank terraces. No trees would be removed as part of this project.

Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

Alternative 3 would have short-term adverse effects on upland vegetation within the approximately 2-acre project area during the construction phase. Upon completion of construction, the box culvert segment would be covered with compacted soil and reseeded with a native grass mixture. The open-channel segment would be reseeded with native grass along the bank terrace and other disturbed areas. Therefore, Alternative 3 would have a long-term beneficial effect on vegetation along this reach of Fountain Creek by stabilizing the banks and

Affected Environment and Environmental Consequences

revegetating disturbed areas with native grasses. No trees would be removed as part of this project.

3.11.3 Terrestrial Wildlife

3.11.3.1 Baseline Conditions

The Migratory Bird Treaty Act of 1918 (MBTA) (16 U.S.C. §§ 703–711) prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations. The USFWS consults on issues related to migratory birds.

Wildlife resources within the project area are limited to species that are tolerant of an urban environment and include songbirds, reptiles, amphibians, and small mammals. The project area and vicinity consists primarily of city streets and residential lawns with scattered pine trees. Therefore, the project area provides only limited habitat for urban wildlife species.

3.11.3.2 Environmental Consequences

Alternative 1 – No Action

The No Action Alternative would not have any impacts on wildlife including migratory birds.

Alternative 2 – Open Channel Stabilization

Construction activities associated with Alternative 2 have the potential for short-term adverse impacts to wildlife species present within the project area by displacing individuals and/or loss of habitat from noise disturbance. Construction is expected to take approximately 24 months. Disturbed areas would be revegetated with native grass species following project activities. No trees would be removed as part of this project. Therefore, nesting and fledging habitat of migratory birds would not be adversely affected, and coordination with the USFWS regarding the MBTA would not be required.

Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

Impacts on wildlife species would be similar to Alternative 2. However, the existing culvert would need to be inspected for any active bird nests prior to construction activities. If active nests were discovered, USFWS would be notified, and disturbance (i.e., construction activity) would not be allowed in the immediate vicinity until fledging occurred and chicks had left the nests.

3.11.4 Aquatic Wildlife

3.11.4.1 Baseline Conditions

Within the project area, Fountain Creek is an intermittent stream that contains water only after storm events and does not provide habitat for any aquatic species. Roughly 5 miles downstream

Affected Environment and Environmental Consequences

of the project area, between Woodland Park and Colorado Springs, Fountain Creek becomes perennial and would provide habitat for aquatic species.

3.11.4.2 Environmental Consequences

Alternative 1 – No Action

The No Action Alternative would not have any significant impact on aquatic wildlife. However, because of the possibility of a sewer line break due to erosion and/or high peak flows, downstream aquatic wildlife would continue to be at risk from an unplanned sewage release.

Alternative 2 – Open Channel Stabilization

With the implementation of BMPs, Alternative 2 would not have any significant impact on downstream aquatic wildlife.

Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

Impacts on aquatic wildlife would be similar to those discussed for Alternative 2.

3.11.5 Threatened, Endangered, and Special-Status Species

3.11.5.1 Baseline Conditions

Federally Listed Species

The USFWS (USFWS 2010b; 2011) lists the following federally listed species as having the potential to occur in Teller County:

- Mexican spotted owl (*Strix occidentalis lucida*) – threatened
- Preble’s meadow jumping mouse (*Zapus hudsonius preblei*) – threatened
- Pawnee montane skipper (*Hesperia leonardus montana*) – threatened
- Mountain plover (*Charadrius montanus*) – proposed threatened
- Greenback cutthroat trout (*Oncorhynchus clarki stomias*) – threatened
- Ute ladies’-tresses (*Spiranthes diluvialis*) – threatened

Habitat requirements and designated critical habitat for these species are as follows:

- **Mexican spotted owl.** Old growth or mature forests that contain complex structural components are the primary habitat used by the Mexican spotted owl. Canyons with riparian or conifer communities also represent important habitat for the spotted owl. Although not within the project area, limited areas of eastern and southern Teller County have been designated as critical habitat for the Mexican spotted owl (USFWS 2011).

Affected Environment and Environmental Consequences

- **Preble's meadow jumping mouse.** The Preble's meadow jumping mouse occupies well-developed riparian habitat that is located adjacent to both a water source and relatively undisturbed grassland. It will also use upland habitat as far as 100 yards beyond the 100-year floodplain. The Preble's meadow jumping mouse typically hibernates between September/October and May. In Teller County, a small riparian area along Trout Creek (South Fork of South Platte River watershed) has been designated as critical habitat for the Preble's meadow jumping mouse (USFWS 2011).
- **Pawnee montane skipper.** The butterfly tends to inhabit dry, open Ponderosa pine woodlands with sparse vegetation between elevations of 6,000 and 7,500 feet. Only 38 square miles of known habitat exists worldwide, which is located entirely within the South Fork drainage of the South Platte River (in parts of Douglas, Teller, Park, and Jefferson counties) (USFW 2011). Host plants include blue grama grass (*Bouteloua gracilis*) (used by its caterpillar) and prairie gay feather (*Liatris Spicata*) (primary nectar source for the butterfly)
- **Mountain plover.** Short vegetation, bare ground, and flat topography define nesting and wintering habitat of the mountain plover. In Colorado, mountain plovers typically nest from late March to late April. Fall migration normally occurs in August and September. The occurrence of mountain plovers has been documented in western Teller County in recent years (USFWS 2011).
- **Greenback cutthroat trout.** Although greenback cutthroat trout are listed as having the potential to occur in Teller County, the USFWS does not include Teller County in its current distribution (USFWS 2011). However, its current distribution includes adjoining El Paso County. Fountain Creek in the project area does not contain potential habitat for the greenback cutthroat trout.
- **Ute ladies'-tresses.** The Ute ladies'-tresses is a perennial terrestrial orchid that occurs along riparian edges, gravel bars, old oxbows, high flow channels, and moist wet meadows along perennial streams. Although the Ute ladies'-tresses is listed as having the potential to occur in Teller County, the USFWS (2011) does not include Teller County in its current distribution. However, it is known to occur in several counties that abut Teller County.

Although the following five species do not occur in Teller County, the USFWS lists them as species that could be adversely affected by projects in Teller County that contribute to flow depletions in the South Platte River Basin (USFWS 2010b; 2011):

- Whooping crane (*Grus americana*) – endangered
- Least tern (*Sternula antillarum*) – endangered
- Piping plover (*Charadrius melodus*) – threatened
- Pallid sturgeon (*Scaphirhynchus albus*) – endangered

Affected Environment and Environmental Consequences

- Western prairie fringed orchid (*Platanthera praeclara*) – threatened

Water depletions within the South Platte, North Platte, and Laramie River basins may affect each of these species and/or their critical habitat associated with the Platte River in Nebraska. Since the project area is located entirely within the Arkansas River drainage, it does not have the potential to contribute to flow depletions within the Platte River in Nebraska. Therefore, these five species have not been carried forward in the discussion of federally listed threatened and endangered species.

State-Listed Species

Colorado has 16 State-listed threatened and endangered species that are not federally listed (Colorado Division of Wildlife [CDOW 2011a]). Of these 16 species, only the plains sharp-tailed grouse (*Tympanuchus phasianellus jamesi*) has the potential to occur in Teller County (CDOW 2011b). Although the occurrence status is listed as “known to occur” in Teller County, the present population in Colorado is limited to a few hundred birds in Douglas County (CDOW 2011c). Therefore, no State-listed threatened or endangered species has the potential to occur within the project area and/or be adversely affected by project activities. Impacts to State-listed threatened and endangered species were therefore not further considered. Colorado has no State-level recognition or protection for plant species (Colorado State University 2011).

3.11.5.2 Environmental Consequences

Alternative 1 – No Action

The No Action Alternative would involve no construction activities. Therefore, the alternative would not adversely affect any Federal or State-listed threatened or endangered species or their habitat.

Alternative 2 – Open Channel Stabilization

Evaluation of the potential effects of Alternative 2 on the six federally listed threatened and endangered species is based on the site reconnaissance and other baseline information obtained from the USFWS and CDOW.

- **Mexican spotted owl.** The project area does not contain habitat that would be used by the Mexican spotted owl and is more than 20 miles from the designated critical habitat.
- **Preble’s meadow jumping mouse.** Designated critical habitat for the Preble’s meadow jumping mouse in Teller County is limited to riparian habitat along Trout Creek in the South Platte River watershed. The project area is in the Arkansas River watershed and does not contain habitat that would be used by the Preble’s meadow jumping mouse.

Affected Environment and Environmental Consequences

- **Pawnee montane skipper.** Known habitat for the Pawnee montane skipper is entirely within South Platte River watershed. Since the project area is located in the Arkansas River watershed, it would have no impact on the Pawnee montane skipper or its habitat.
- **Mountain plover.** Habitat within the project area is not the type of habitat that the mountain plover would use for nesting.
- **Greenback cutthroat trout and Ute ladies'-tresses.** Although the greenback cutthroat trout and Ute ladies'-tresses are listed as having the potential to occur in Teller County, the current distribution of species does not include Teller County. Since this alternative would not have a downstream adverse impact, and neither species is located in the county, Alternative 2 would not affect either species.

Based on the information presented above, FEMA has determined that Alternative 2 would have “No Effect” on the Mexican spotted owl, Preble’s meadow jumping mouse, Pawnee montane skipper, mountain plover, greenback cutthroat trout, and Ute ladies'-tresses. FEMA sent a letter to the USFWS (January 20, 2011) notifying the agency of the determination (Appendix D).

FEMA contacted CDOW regarding this project. In a letter dated January 18, 2011 (Appendix D), the CDOW indicated their concurrence with the determination that Alternative 2 would have “No Effect” with regards to State-listed endangered or threatened species or habitat.

Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

Potential impacts of Alternative 3 on federally listed threatened and endangered species would be the same as for Alternative 2.

3.12 CULTURAL RESOURCES

The National Historic Preservation Act of 1966 (NHPA) (16 U.S.C. §§ 470 et seq.) constitutes the primary Federal policy on protecting historic properties and promoting historic preservation in cooperation with States, Tribal governments, local governments, and other consulting parties. The NHPA established the National Register of Historic Places (NRHP) and designated the State Historic Preservation Officer (SHPO) as the entity responsible for administering State-level programs. The NHPA also created the Advisory Council on Historic Preservation, the Federal agency responsible for overseeing the process described in Section 106 of the NHPA and for providing commentary on Federal activities, programs, and policies that affect historic properties.

Section 106 of the NHPA and its implementing regulations (36 CFR Part 800) contain the procedures for Federal agencies to follow to take into account the effect of their actions on historic properties. The Section 106 process applies to any Federal undertaking that has the potential to affect historic properties, defined in the NHPA as properties that are listed in or eligible for listing in the NRHP. Although buildings and archaeological sites are most readily recognizable as historic properties, the NRHP contains a diverse range of resources that includes

Affected Environment and Environmental Consequences

roads, landscapes, and vehicles. Under Section 106, Federal agencies are responsible for identifying historic properties within the Area of Potential Effects (APE) for an undertaking, assessing the effects of the undertaking on those historic properties, if present, and considering ways to avoid, minimize, and mitigate any adverse effects. Because Section 106 is a process by which the Federal Government assesses the effects of its undertakings on historic properties, it is the primary regulatory framework that is used in the NEPA process to determine impacts on cultural resources.

3.12.1 Baseline Conditions

Jeremy Lazelle, a URS Archaeologist, and Linda Mackey, a URS Architectural Historian, both qualified under the *Secretary of the Interior's Professional Qualification Standards* (36 CFR Part 61) in their respective disciplines, conducted an assessment of the project's potential to affect historic properties within the APE. A records search of COMPASS, Colorado's On-line Cultural Resource Database, revealed that no cultural resources 50 years of age or older have been documented in the project vicinity. This information was supplemented by a desktop search of readily available resources to identify any cultural resources of interest in the project area. In December 2010, Mr. Lazelle, accompanied by archaeology field technician Benjamin Stewart and archaeologist Elizabeth Roberts, visited the site to delineate the APE and determine if any historic properties were readily apparent within the APE. A surface examination was performed under Colorado Non-Collection Survey Permit 2010-22, and digital photographs of the project area were taken (Appendix E). Data collected online and during the site visit was reviewed by Mr. Lazelle and Ms. Mackey to determine if historic properties were present in the APE.

For above-ground resources, the APE extends outward from Fountain Creek to the western boundary of the parcels fronting Fountain Creek on the western bank, and to the eastern boundary of the parcels fronting Fountain Creek on the eastern bank and from East Sheridan Avenue downstream for 1,000 feet to the confluence of the East Fork of Fountain Creek. For archaeological resources, the APE consists of the footprint – or area of ground disturbing activity – of Alternative 2. Both APEs are shown in Appendix A, Exhibit 7.

3.12.1.1 Above-ground Resources

The initial desktop review of the project area revealed that the Whispering Pines Mobile Home Park, located along the eastern boundary of the project area, was established in 1993. The remaining buildings along the western boundary of the project area appear to consist of residential buildings dating from the late 1940s to the present day. The architectural styles vary, but the buildings appear to be variations of the ranch form. These resources do not appear to possess the historic significance required to be eligible for listing in the NRHP, either as individual resources or collectively as a historic district.

During the December 2010 site visit, two residential buildings within the above-ground APE were identified as of interest by field personnel. Both buildings are modest wood-frame, single-story dwellings finished with split-wood lapped siding evocative of the rustic style (Appendix E,

Affected Environment and Environmental Consequences

Photos 11 through 16). According to the Teller County Assessor's records (Teller County 2011), both dwellings are on the legal parcel addressed as 904 Rosemont Road and were built in 1954. The records also show adjusted dates of 1998 and 1994 for the buildings and indicated that both were remodeled in 2004. The source of these dates is unclear, but the physical characteristics of the buildings are consistent with the third quarter of the twentieth century despite the rustic qualities. The buildings also have contemporary windows and doors, roofing materials, and decks. Based on this information, the two dwellings do not appear to possess the historic significance required to be eligible for listing in the NRHP. Colorado SHPO Survey forms for these two properties were prepared and submitted on February 23, 2011 by FEMA to the SHPO (Appendix E).

3.12.1.2 Archaeological Resources

In December 2010, a non-collection pedestrian survey with a visual examination of exposed banks within the APE (Appendix A, Exhibit 7) was completed by URS archaeologists as identified above. The results of the survey were negative for cultural resources, and additional investigations were determined to be unnecessary. Survey results were documented on a Colorado Limited-Results Cultural Resource Form and submitted on February 23, 2011 by FEMA to the SHPO (Appendix E).

3.12.2 Environmental Consequences

3.12.2.1 Alternative 1 – No Action

The No Action Alternative would have no impact on cultural resources. Activities within and along this project segment of Fountain Creek would be limited to maintenance and repair actions similar to those already being implemented by the City. Additionally, no historic properties were identified within the project area. Therefore, FEMA has determined that no historic properties would be affected by the No Action Alternative.

3.12.2.2 Alternative 2 – Open Channel Stabilization

The above-ground and archaeological surveys did not result in the identification of any historic properties. Therefore, FEMA has determined that no historic properties will be affected by Alternative 2 (undertaking). In a letter dated April 28, 2011 (Appendix D), the SHPO concurred with this determination.

On March 31, 2011, FEMA sent letters to the following tribes, seeking their comments on potential impacts to archaeological sites, burials, and traditional cultural properties near the project area:

- Arapaho Tribe of the Wind River Reservation, Wyoming
- Cheyenne-Arapaho Tribe, Oklahoma
- Northern Cheyenne Tribe, Montana

Affected Environment and Environmental Consequences

- Southern Ute Indian Tribe, Colorado
- Ute Mountain Tribe of the Ute Mountain Reservation, Colorado

The letters are included in Appendix D. No response was received from any of the tribes.

If unexpected discoveries are made during the course of project execution, FEMA will proceed in compliance with State and Federal laws protecting cultural resources, including Section 106 of the NHPA, and all work shall cease in the immediate vicinity of the find until appropriate parties are consulted and a treatment plan is established.

3.12.2.3 Alternative 3 – Concrete Box Culvert and Open Channel Stabilization

Alternative 3 would have the same APE as was identified and evaluated for Alternative 2. Since no historic properties were identified within the APE, Alternative 3 would have no effect on historic properties, and no further consultation with the SHPO or the tribes is necessary.

If unexpected discoveries are made during the course of project execution, FEMA will proceed in compliance with State and Federal laws protecting cultural resources, including Section 106 of the NHPA, and all work shall cease in the immediate vicinity of the find until appropriate parties are consulted and a treatment plan is established.

3.13 REVIEW OF ENVIRONMENTAL DATABASES

3.13.1 Baseline Conditions

A substance is classified as hazardous if it has the potential to damage the environment and/or be harmful to humans and other living organisms. The presence of a hazardous substance/waste within, in the vicinity, and/or upgradient of a project area is important in determining development constraints and viability of an action.

To determine whether any facilities in the vicinity or upgradient of the project area have known and documented environmental issues or concerns, Environmental Data Resources, Inc. (EDR) completed a search of 68 Federal and State environmental databases. The EDR report includes environmental database records for the Proposed Action project area, immediately adjacent properties, and the standard EDR search radius (EDR 2010).

3.13.2 Environmental Consequences

Both action alternatives would involve the stabilization of the Fountain Creek using a granite boulder-stepped channel or a concrete box culvert and granite boulder-stepped channel. For this type of erosion control project, items of concern include:

- Presence of a hazardous substance/waste within or in the immediate vicinity of the proposed project area
- Presence of an upgradient leaking underground storage tank that is not considered “closed” or does not have a “no further action” status

Affected Environment and Environmental Consequences

- Presence of an upgradient solid waste landfill.

Based on the review process and criteria discussed above, no sites were identified that would potentially affect the project area or be affected by the implementation of either action alternative. Therefore, the presence of a hazardous substance/waste does not represent a concern for any of the alternatives.

3.14 CUMULATIVE IMPACTS

CEQ regulations define a cumulative impact as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions” (40 CFR § 1508.7). Cumulative impacts are not wholly different from direct or indirect impacts of an action and are merely a way of placing seemingly isolated or insignificant direct and indirect impacts in context with respect to overall impacts, both over time and in an area larger than that evaluated for direct and indirect impacts. Cumulative impacts are discussed in terms of being additive, synergistic, or reductive.

Projects in addition to the two action alternatives that could contribute to cumulative impacts within and in the vicinity of the project area include an improvements to a channel reach located immediately adjacent and upstream of the project area that consisted of installing erosion control, grouted stacked boulder banks with riprap bottom, and a concrete box culvert that crosses under Sheridan Avenue and extends approximately 100 feet downstream to the current project area. Other stream improvements on Fountain Creek in the vicinity of the project area include downstream bank stabilizations and an additional upstream culvert.

The action alternatives and the upstream erosion control projects would have cumulative beneficial effects on hydrology, soils, floodplain management, and visual resources along Fountain Creek in Woodland Park. These projects would have an additive effect (beneficial effect) on soils and water quality by collectively reducing the amount of soil erosion and downstream sedimentation, which diminishes water quality in Fountain Creek. The channel improvements would also have a cumulative effect on the floodplain by decreasing the size of the 100-year floodplain associated with Fountain Creek. Similarly, the combined effects of the previous and proposed improved segments would improve the overall aesthetic of the Fountain Creek corridor in Woodland Park.

A determination of no cumulative impact was made for all other resources because the impacts are either minor and temporary (occurring only during construction) or site-specific beneficial effects that did not meet the criteria of being additive or synergistic on a larger scale when added to other past, present, and reasonably foreseeable actions. Other construction projects in Woodland Park may have cumulative air quality and noise impacts if constructed concurrently and in the vicinity of the project area. However, in discussions with Woodland Park officials, no projects were identified that are planned to be constructed in the vicinity of the project area.

3.15 COORDINATION AND PERMITS

This section lists Federal, State, and local agencies that were contacted and consulted during the preparation of this EA and includes any additional coordination and permits that are required prior to implementation of the one of the action alternatives. Based on the results of the evaluation of the affected environments and environmental consequences, which are described in Section 3, no other agency correspondence, coordination, or permits (except those described below) would be required for either action alternative.

- **U.S. Fish and Wildlife Service.** No additional coordination with USFWS would be required for either action alternative.
- **Colorado State Historic Preservation Office.** No additional coordination with the SHPO would be required for either action alternative.
- **Colorado Division of Wildlife.** No additional coordination would be needed with the CDOW.
- **Floodplain Administrator.** Both action alternatives would require a Floodplain Development Permit from the local Floodplain Administrator prior to any construction activities.
- **U.S. Army Corps of Engineers.** For both alternatives, Woodland Park would need to coordinate with USACE to obtain a Clean Water Act Section 404 Individual Permit.
- **Colorado Department of Public Health and Environment.** An NPDES permit (including a SWPPP) and a 401 Water Quality Certification would need to be obtained from the CDPHE, regardless of the action alternative selected. An Air Pollutant Emission Notice would need to be filed with the CDPHE Air Pollution Control Division for either alternative.
- **Tribal Coordination.** No additional coordination with the tribes would be required for either action alternative.

SECTION FOUR SUMMARY

The results of an evaluation of the potential environmental impacts of three alternatives are presented in this EA: Alternative 1 – No Action, Alternative 2 – Open Channel Stabilization, and Alternative 3 – Concrete Box Culvert and Open Channel Stabilization. The two action alternatives represent the extremes of the open channel and box culvert/open channel alternatives. The final length of the open channel segment and the box culvert segment would be determined at final design. Impacts associated with the selected alternative would fall within the bounds of those identified and discussed in this EA.

Table 4-1 is a summary of the potential environmental impacts of each alternative.

Table 4-1: Summary of Alternatives by Environmental Resource

Environmental Resource	Alternative 1 – No Action	Alternative 2 – Open Channel Stabilization	Alternative 3 – Concrete Box Culvert and Open Channel Stabilization
Topography, Geology, and Soils	No impact. Soils in the project reach of Fountain Creek would continue to be transported downstream as a result of erosion.	Beneficial effect. Alternative 2 would have long-term beneficial effects on the soils along the stream by stabilizing the banks and preventing soil erosion. Alternative 2 would disturb approximately 2 acres of soil. Construction of the open channel stabilization would require the excavation of approximately 5,000 CY of soil.	Same as Alternative 2.
Land Use and Zoning	Long-term negative impact. Future land use within the project area would change as a result of erosion as upland areas (including land currently occupied by residential structures) become part of the channel.	No impact. Current land use within the project area would not change.	Same as Alternative 2.
Floodplain Management	No impact. No construction activities would occur in the Fountain Creek floodplain.	Minor effects. Alternative 2 could change the existing floodplain boundaries by modifying the channel morphology. It is likely that water surface elevations will be altered by more than 6 inches, which would require that the City submit a LOMR post-project.	The alternative would change the existing floodplain boundaries and/or water surface elevation levels by installing a concrete box culvert and modifying the channel morphology. The City would need to submit a LOMR post project.
Prime Farmland	No impact. No farmland, including prime farmland, is located within the project area.	No impact. No farmland, including prime farmland, is located within the project area.	Same as Alternative 2.
Traffic and Circulation	No impact. Laura Lane could eventually be undermined by soil erosion. The American Discovery Trail would remain in need of repair.	Short-term minor impact. No roads would need to be closed to complete the construction activities, but there could be minor traffic delays due to the ingress and egress of construction equipment and materials. The American Discovery Trail would be repaired and improved by converting it to 12-foot-wide gravel trail with a round-rail fence (beneficial effect).	Same as Alternative 2.

Table 4-1: Summary of Alternatives by Environmental Resource

Environmental Resource	Alternative 1 – No Action	Alternative 2 – Open Channel Stabilization	Alternative 3 – Concrete Box Culvert and Open Channel Stabilization
Public Health and Safety	No impact. Continued health and safety risks as a result of lateral migration of the channel's encroachment on residential properties, the American Discovery Trail, and utility infrastructure.	Beneficial effect. Alternative 2 would stop the lateral migration of the creek channel; prevent the undermining of residential properties; remove dangerous, steep, undercut banks; and install rail fence to provide a safety barrier. Therefore, Alternative 2 would have a long-term positive effect on public health and safety in Woodland Park.	Beneficial effect. Alternative 3 would stop the lateral migration of the creek channel; prevent the undermining of residential properties; remove dangerous, steep, undercut banks; install a rail fence; and install safety gates on the concrete box culvert. Therefore, Alternative 3 would have a long-term positive impact on public health and safety in Woodland Park.
Socioeconomics/ Environmental Justice	No impact. Temporary measures to stabilize the creek channel would continue to be a negative economic impact. There would be continued risk of loss of infrastructure with the economic impacts of the cost of repairs and disruption of services. Continued potential negative impact on the Whispering Pines Mobile Home Park and utility infrastructure.	Beneficial effect. Alternative 2 would reduce maintenance costs, prevent loss of land and structures from erosion, and mitigate the risk of future economic impacts associated with the repair of infrastructure and disruption of services. Construction of Alternative 2 would not have a disproportionate adverse effect on any minority or low-income populations.	Same as Alternative 2.
Visual Resources	No impact. The project reach of Fountain Creek would remain a severely eroded ravine with large concrete riprap.	Beneficial effect. Alternative 2 would convert the current severely eroded channel with large concrete riprap to a natural-appearing granite boulder bank, installed as a stepped terrace with reseeded native grasses. Therefore, Alternative 2 would have a long-term beneficial effect on the visual resources in the project area. There would be short-term adverse impact on the visual resources near the project area from construction activities and equipment.	Beneficial effect. Alternative 3 would convert the current severely eroded channel with large concrete riprap to a native grass-covered concrete box culvert (800 feet), which would not be considered an adverse visual impact. In addition, 200 feet of channel would be converted to a granite boulder channel. There would be short-term adverse impact on the visual resources near the project area from construction activities and equipment.

Table 4-1: Summary of Alternatives by Environmental Resource

Environmental Resource	Alternative 1 – No Action	Alternative 2 – Open Channel Stabilization	Alternative 3 – Concrete Box Culvert and Open Channel Stabilization
Air Quality	No impact. No construction activities would occur.	Short-term and minor impacts during construction associated with increased exhaust/dust. If necessary, dust emissions would be controlled by applying water.	Same as Alternative 2.
Public Services and Utilities	No impact. Critical utility infrastructure would continue to be at risk of damage or destruction from erosion, with the potential for damages/repairs to put a significant financial burden on the City.	Beneficial effect. Alternative 2 would have a long-term beneficial effect on public services and local utilities by stabilizing electric utility poles and protecting city sewer lines, thereby reducing risk of interruptions to service.	Same as Alternative 2.
Noise	No impact. No construction activities would occur.	Short-term and minor noise impacts limited to the duration of construction activities during daylight hours.	Same as Alternative 2.
Hydrology/Water Quality	No impact. Continued erosion and sedimentation would occur as a result of lateral erosion and channel degradation.	Beneficial effect. Alternative 2 would benefit long-term water quality by reducing erosion, sedimentation, and downstream deposition. BMPs would be used to minimize short-term soil erosion during the construction of project features. Appropriate permits would be obtained prior to construction activities.	Same as Alternative 2.
Wetlands	No impact. No wetlands are located within or in the vicinity of the proposed project area.	No impact. No wetlands are located within or in the vicinity of the proposed project area.	Same as Alternative 2.
Vegetation	No impact. No construction activities would occur.	Beneficial effect. Alternative 2 would stabilize the banks, allowing vegetation to return, and native grass would be reseeded. No trees would be removed. Existing vegetation would be disturbed during construction.	Same as Alternative 2.

Table 4-1: Summary of Alternatives by Environmental Resource

Environmental Resource	Alternative 1 – No Action	Alternative 2 – Open Channel Stabilization	Alternative 3 – Concrete Box Culvert and Open Channel Stabilization
Wildlife Resources	No impact. No construction activities would occur.	Short term minor impact. Alternative 2 could cause short-term effects associated with displacement of individuals and loss of utilized habitat. Post-project wildlife habitat for some species would be improved. No trees would be removed and migratory bird habitat would therefore not be adversely affected.	Same as Alternative 2.
Aquatic Wildlife	No impact. Downstream aquatic wildlife would continue to be at risk because of the potential for sewer line break and leakage.	No impact. With the implementation of BMPs and the SWPPP, Alternative 2 would not have any significant impact on aquatic wildlife.	Same as Alternative 2.
Threatened and Endangered Species	No impact. No construction activities would occur.	No impact. None of the federally listed or State-listed threatened or endangered species have the potential to be adversely affected.	Same as Alternative 2.
Cultural Resources	No impact. No construction activities would occur.	No impact. No historic properties were identified in the project APE.	Same as Alternative 2.
Hazardous Material / Hazardous Waste	No impact. No construction activities would occur.	No impact. No sites were identified that would potentially impact the project area or be affected.	Same as Alternative 2.

APE = Area of Potential Effects

LOMR = Letter of Map Revision

BMP = Best Management Practice

SWPPP = Storm Water Pollution Prevention Plan

City = City of Woodland Park

CY = cubic yard

SECTION FIVE AGENCIES CONSULTED**5.1 AGENCIES CONSULTED DURING THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT****Federal Emergency Management Agency, Region VIII, Denver, CO**

Mr. Steven Hardegen, Regional Environmental Officer (303) 235-4798
Mr. Richard Myers, Deputy Regional Environmental Officer (303) 235-4926

U.S. Fish and Wildlife Service, Denver, CO

Ms. Susan C. Linner, Field Supervisor (303) 236-4774
Ms. Tara Nicolaysen, Endangered Species Specialist (303) 236-4259
Ms. Leslie Ellwood, Endangered Species Specialist (303) 236-4747

Colorado Division of Wildlife, Colorado Springs, CO

Ms. Tonya Sharp, Wildlife Manager (719) 227-5200

Colorado Historical Society, Office of Archaeology & Historic Preservation, Denver, CO

Mr. Edward Nichols, State Historic Preservation Officer (303) 866-3355

City of Woodland Park, CO

Mr. William Alspach, Director of Public Works (719) 687-5213

U.S. Army Corps of Engineers, Pueblo, CO

Mr. Joshua Carpenter, Engineer (719) 543-6914

Colorado Department of Public Health and Environment, Denver, CO

Adam Wozniak, Engineer (303) 692-3100

5.2 AGENCIES CONSULTED BY THE SUBAPPLICANT**Intermountain Rural Electric Association, Woodland Park, CO**

Mr. James Ferguson, District Manager (719) 687-9277

P²G Enterprises LLC, Woodland Park, CO

Mr. George Good, Floodplain Administrator (970) 522-9700

Colorado Department of Emergency Management, Centennial, CO

Marilyn Gally, State Hazard Mitigation Officer (720) 852-6600

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SECTION SEVEN LIST OF PREPARERS

This EA was prepared by URS Group, Inc., for FEMA Region VIII in Denver, Colorado.

URS staff includes:

- Mr. Quentin Bliss, Senior Environmental Planner
- Ms. Susan Volkmer, Environmental Planner
- Mr. Justin Williams, Environmental Planner
- Mr. Jeremy Lazelle, Archaeologist
- Ms. Elizabeth Roberts, Archaeologist
- Ms. Linda Mackey, Architectural Historian

SECTION EIGHT PUBLIC INVOLVEMENT

8.1 PUBLIC NOTICES

The Initial Public Notice was published in the *Pikes Peak Courier View* on December 1, 2010, and December 8, 2010 (Section 8.1.1). The Final Public Notice (Section 8.1.2) will be published in the *Pikes Peak Courier View* and the Draft EA will be available for public review.

8.1.1 Initial Public Notice

Public notification is hereby given by the Department of Homeland Security's Federal Emergency Management Agency (FEMA) of the intent to prepare an Environmental Assessment (EA) for a proposed project submitted by the City of Woodland Park, Teller County, Colorado to stabilize the banks of Fountain Creek from Sheridan Avenue (38.988073, -105.049773) for a distance of approximately 1000 feet to the confluence of the East Fork of Fountain Creek. A portion of the funding would be provided by FEMA's Pre-Disaster Mitigation Program. This program assists State and local governments with implementing cost-effective hazard mitigation planning and project activities that complement a comprehensive mitigation program.

Fountain Creek is a perennial stream that flows through the city of Woodland Park. In the 1970s, the creek was a grassy swale and development along its banks was not considered a risk. However, the watershed is subject to sudden, intense rainfall and flash flooding which has scoured the swale into a severely eroded ravine. As flows move down stream, decomposed granite soils are scoured from the stream bed and banks and transported downstream for deposit. Currently, the lateral and horizontal erosion is threatening the City's sewer infrastructure, power lines, and homes along the creek.

The President's Council on Environmental Quality (CEQ) has developed regulations to implement the National Environmental Policy Act (NEPA). These regulations require an investigation of the potential environmental impacts of a proposed federal action, and an evaluation of alternatives as part of the environmental assessment process. FEMA also has regulations that establish the agency-specific process for implementing NEPA. An EA will be prepared in accordance with both FEMA and CEQ NEPA regulations. Three alternatives will be considered in the EA:

The NO ACTION ALTERNATIVE, which considers the consequences of taking no action to stabilize the banks along a portion of Fountain Creek within the city.

The PROPOSED ACTION ALTERNATIVE would provide bank stabilization and erosion protection along an approximately 1000 foot segment of Fountain Creek from Sheridan Avenue to the confluence of the East Fork of Fountain Creek. The project would use a natural granite boulder stepped technique similar to a completed upstream segment.

The ALTERNATIVE ACTION would involve a combination of a box culvert and open channel bank stabilization and erosion control to contain flows from Sheridan Avenue to the confluence

of the East Fork of Fountain Creek. The open channel portion would use a natural granite boulder stepped technique similar to a completed upstream segment.

Other alternatives considered included acquisition of at risk properties.

The President of the United States has issued Executive Orders that require Federal Agencies to focus attention on the environment and on human health and safety when considering the funding of an action. Executive Order 11988 – Protection of Floodplains requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. With this initial public notice, FEMA is informing the public that the Proposed Action will occur within areas that are within the 100-year floodplain of Fountain Creek.

During the NEPA review process FEMA will also evaluate potential impacts to other environmental laws and regulations, such as, EO 11990 – Protection of Wetlands, and 12898 – Environmental Justice, and compliance with the Endangered Species Act and National Historic Preservation Act.

A public comment period related to the alternatives as outlined above or other possible alternatives will end on December, 15, 2010. In addition to this initial comment period, a final comment period will be opened for public review of the Draft EA.

Interested parties may obtain more detailed information about the alternatives from the City of Woodland Park by calling Bill Alspach at 719.687.9246 or by email at walspach@city-woodlandpark.org. Additionally, comments or question regarding the EA process can be directed to Rick Myers, FEMA Region VIII Deputy Environmental Officer by calling 303.235.4926 or by email at Richard.myers@dhs.gov.

8.1.2 Final Public Notice

Notification is hereby given to the public that it is the intent of the Department of Homeland Security's Federal Emergency Management Agency (FEMA) to provide funds to Woodland Park, Colorado, to provide bank stabilization and erosion protection along an approximately 1,000-foot segment of Fountain Creek from Sheridan Avenue to the confluence of the East Fork of Fountain Creek (38.988073, -105.049773). Lateral migration of the eroding stream channel has resulted in the channel's encroachment on residential properties and critical infrastructure, including sewer lines and electric utility poles.

FEMA is required under the National Environmental Policy Act (NEPA) to consider all reasonable alternatives for achieving the intended purpose of the proposed project. The purpose of the proposed project is to alleviate the bank erosion and channel degradation within this 1,000 foot reach of Fountain Creek in order to protect local residences and to prevent the failure of critical infrastructure. In the Draft Environmental Assessment (EA), the following three alternatives were considered: (1) a No Action Alternative, which considered the consequences of taking no action, (2) Alternative 2, which would provide bank stabilization and erosion

protection using an open channel natural granite boulder stepped technique similar to a completed upstream segment, and (3) Alternative 3, which would involve a combination of a box culvert and open channel bank stabilization and erosion control. The open channel portion would use a natural granite boulder stepped technique similar to a completed upstream segment. The selected action will likely implement a combination of box culvert and a natural granite boulder stepped technique.

The President of the United States has issued Executive Orders that require Federal agencies, when considering an action for funding, to focus attention on the environment and human health with respect to Floodplain Management, Executive Order 11988; Protection of Wetlands, Executive Order 11990; and Environmental Justice, Executive Order 12898. Compliance with Executive Orders, other environmental laws, and NEPA has been documented in the Draft EA. FEMA or the grant Applicant has coordinated with the following agencies: Federal Emergency Management Agency, U.S. Fish and Wildlife Service, Colorado Division of Wildlife, Colorado Historical Society, City of Woodland Park Public Works Department, Colorado Department of Public Health and Environment, and Colorado Division of Emergency Management.

Based on agency comments and the EA process, there does not appear to be any significant adverse environmental impact on the human or natural environment associated with either action alternative. Therefore, an Environmental Impact Statement will not be prepared, and if no comments are received, a Finding of No Significant Impact (FONSI) will be signed fifteen (15) days from the date of this notice, and the project will proceed.

Interested parties may submit comments, request additional information, or request a copy of the FONSI by contacting FEMA's Region VIII Office at the Denver Federal Center, P.O. Box 25267, Denver, Colorado, 80225, or by calling 303.235.4798 between 8:00 a.m. and 4:30 p.m. Mountain Time, Monday through Friday. Comments or requests should be submitted in writing to Mr. Richard Myers, FEMA Region VIII Deputy Environmental Officer, by calling 303.235.4926, or by e-mail at richard.myers@dhs.gov.

The Draft Environmental Assessment is posted in the official notice posting area at the Woodland Park Public Library, 218 E. Midland Avenue, Woodland Park, Colorado. The library can be contacted at 719.687.9281. The Draft EA can also be viewed and downloaded from FEMA's website at <http://www.fema.gov/plan/ehp/envdocuments/ea-region8.shtm>.

8.2 PUBLIC COMMENTS

No comments were received during the initial public comment period in December 2010.