



Draft Environmental Assessment

Westerly Creek Reach 2 Flood Mitigation Project

City of Aurora, Colorado

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FEMA

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FEMA Reviewers, please NOTE:

The attached document is a Draft: This document is intended to be a working document for FEMA review. We anticipate comments and encourage your feedback on all aspects of the report.

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Acronyms and Abbreviations

AFB	Air Force Base
APE	Area of Potential Effect
BMPs	Best Management Practices
CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Discharge Permit System
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CPW	Colorado Parks and Wildlife
CRS	Community Rating System
CY	cubic yard
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Federal Insurance Rate Map
FMA	Flood Mitigation Assistance
FONSI	Finding of No Significant Impact
IPaC	Information, Planning, and Conservation System
LOMR	Letter of Map Revision
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1996
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
ROW	Right-of-way
SHPO	State historic Preservation Officer
the Plan	Westerly Creek (Lower) Drainageway Update – Major Drainageway Planning
UDFCD	Urban Drainage and Flood Control District
UNCC	Utility Notification Center of Colorado
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USCB	U.S. Census Bureau

Acronyms and Abbreviations

USFWS	U.S. Fish and Wildlife Service
WOUS	Waters of the United States

SECTION ONE INTRODUCTION

1.1 PROJECT AUTHORITY

The City of Aurora has applied to the Federal Emergency Management Agency (FEMA) for assistance with flood mitigation measures under FEMA's Flood Mitigation Assistance (FMA) Program, subapplication number FMA-PJ-08-CO-2011-001. FEMA provides FMA funds to assist states and communities in implementing measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the Nation Flood Insurance Program (NFIP).

In accordance with 44 Code of Federal Regulations (CFR) Part 10.9, Subpart B, FEMA Agency Implementing Procedures, this Environmental Assessment (EA) has been prepared pursuant to Section 102 of the National Environmental Policy Act (NEPA) of 1969, as implemented by the regulations promulgated by the President's Council on Environmental Quality (CEQ) (40 CFR Parts 1500-1508). The purpose of the EA is to analyze the potential environmental impacts of the proposed action, and to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

1.2 PROJECT LOCATION

The upper portion of Westerly Creek drainage crosses the former Lowry Air Force Base (AFB). Two flood detention dams (Kelly Road Dam and Westerly Creek Dam) are located on the former AFB. Kelly Road Dam was constructed in the 1950s to mitigate development effects within the AFB and to provide protection for downstream residences. From Westerly Creek Dam, the creek flows 4.2 miles through an urbanized area of Aurora and the City and County of Denver to its confluence with Sand Creek. Flows in the creek originate from local drainage in a watershed that has experienced near complete build-out. The portion of Westerly Creek evaluated in this EA is in the City of Aurora, in Adams County, Colorado. The project is along Westerly Creek from East 17th Avenue downstream to East 23rd Avenue.

The proposed project area is part of a larger project (Lower Westerly Creek Project) that extends from the confluence with Sand Creek upstream to the outlet of the Westerly Creek Dam (upstream of Lowry Avenue) (Kiowa 2010). The overall drainage project includes five separate reaches, and is being coordinated in partnership with Aurora and Denver. Work within three of the reaches has already been completed. The reach where the proposed FEMA funds would be used is identified as Reach 2, which extends from East 17th Avenue downstream to East 23rd Avenue. Because of the extensive development that has occurred on the Anschutz Medical Campus, there was a need to make Montview Boulevard less vulnerable to flooding, as it is a major route used by emergency vehicles going to the medical campus. During the development of the proposed project, Aurora partnered with the Urban Drainage and Flood Control District (UDFCD) and Denver to analyze the basin and recommend potential solutions to the flood problems associated with Westerly Creek in the project area.

The reach downstream from East 23rd Avenue to Sand Creek was designed to convey flows associated with a 100-year flood event. The floodplain in this reach of Westerly Creek (Stapleton

redevelopment area) now includes a rebuilt channel, parks, open space, recreational facilities, and trails. No new improvements are warranted in this reach of Westerly Creek.

1.3 BACKGROUND AND HISTORY

The City of Aurora (the City), Colorado lies within three counties (Adams, Arapahoe, and Douglas) and is located on the eastern side of the Denver metropolitan area in north-central Colorado (**Appendix A, Exhibit 1**). Westerly Creek is a drainageway in an urbanized area of Aurora and the City and County of Denver (**Appendix A, Exhibit 2**). Flows in the creek originate from local drainage in a watershed that has experienced near complete build-out. Some sections have no natural drainageway, as the flows are conveyed in a buried box culvert, and there are structures where the creek previously existed. These changes were made during early development in the watershed.

Flooding along Westerly Creek primarily occurs following sudden downpours, which normally occur during the months of May through August. However, there is little documentation of historic floods or damage estimates for Westerly Creek. The largest recorded flood event in the Westerly Creek drainageway occurred in June 1965. This flood significantly damaged buildings and transportation infrastructures (City of Aurora 2011).

The upper portion of Westerly Creek drainage crosses the former Lowry AFB. Two flood detention dams (Kelly Road Dam and Westerly Creek Dam) are located on the former AFB; Kelly Road Dam was constructed in the 1950s to mitigate development effects at the AFB and to provide protection for downstream residences. Then, after hydrological studies conducted in the 1970s found that Kelly Road Dam would be overtopped during a 100-year flood event, the U.S. Army Corps of Engineers (USACE) and the UDFCD constructed the Westerly Creek Dam on the southern end of the Lowry AFB property in 1991. This dam has the capacity to fully contain flows associated with a 100-year flood event that originate upstream of the dam (Kiowa 2009). **Appendix A, Exhibit 3** shows the location of the detention dams relative to the Westerly Creek project area.

In the early 1980s, a 10-year flood conveyance drainage improvement project was constructed from East 11th Avenue downstream to Stapleton Airport, and this formed the drainage system that presently exists in the proposed project area. The drainage system includes a mixture of open channels and underground box culverts. Prior to construction of the 1980s project, flooding was almost an annual event along Westerly Creek, including the project area. Most of the flooding was “nuisance flooding” contained in the streets and alleys; however, the inundation of buildings also occasionally occurred. Since the construction of the 10-year conveyance project from East 11th Avenue to Stapleton Airport, no flooding claims have been reported in nearly 25 years (Kiowa 2009).

The existing twin 6- x 8-foot box culverts in the proposed project area beneath Montview Boulevard were installed as part of these 10-year storm improvements. Montview Boulevard is considered a major arterial roadway that serves as an access route to the state-of-the-art Anschutz Medical Campus, which serves 500,000 patients a year. During storm events of a magnitude greater than the 10-year event, flows in lower Westerly Creek are restricted at the existing

Montview Boulevard box culverts, and water overtops the road, disrupting traffic including emergency vehicles, and flooding the surrounding properties (City of Aurora 2011).

A Major Drainageway Plan (the Plan) for Westerly Creek area downstream from Kelly Dam was completed in 2010 (Kiowa 2010). The Plan confirmed the existing box culverts at Montview Boulevard only have the capability to convey the 10-year storm event. The Plan stated the conveyance structure associated with an arterial roadway, such as Montview Boulevard, needs to convey flood flows associated with a 100-year storm event. The Plan also mentions the restriction of storm flows at Montview Boulevard, which creates backwater flooding upstream of the road crossing, and could result in the inundation of approximately 48 structures during a 100-year flood event.

SECTION TWO PURPOSE AND NEED

The purpose of the FMA Program is to assist states and communities in implementing measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP. The purpose of the Proposed Action evaluated in this EA is to reduce the risk of Montview Boulevard being flooded and reduce the potential that residential and commercial structures would be flooded by storm events up to and including a 100-year flood event.

Based on the continuing risk of flooding, Aurora has identified the need to mitigate future flood events associated with Westerly Creek in the vicinity of Montview Park from East 23rd Avenue upstream to East 17th Avenue. The primary need is to reduce the potential for Montview Boulevard to be overtopped during flood events up to and including a 100-year flood event, which will maintain traffic flows on this major arterial, including emergency vehicles going to the medical campus, during flood events. In addition, Aurora identified the need to eliminate flooding upstream of Montview Boulevard, where storm flow is restricted resulting in backwater flooding that threatens structures during a 100-year event.

SECTION THREE ALTERNATIVES

This section describes the alternatives that were considered in addressing the purpose and need stated in Section Two. In this EA, two alternatives are evaluated: the No Action Alternative and the Proposed Action Alternative. Two additional alternatives were considered and dismissed as not viable.

3.1 ALTERNATIVES NOT RETAINED FOR DETAILED STUDY

The following alternatives were initially considered but were determined to be nonviable and were not retained for further evaluation.

3.1.1 Construction of Upstream Detention Dam

With this alternative, a detention dam/basin would be constructed upstream of the project area. As stated in **Section 1.2**, two detention dams presently exist upstream of the project area (within the former Lowry AFB). These two dams have the capacity to store flows associated with flood events up to and including the 100-year flood event. Therefore, for this alternative to be viable, a detention dam would need to be constructed between the former AFB (East 11th Avenue) and the project area. This portion of the drainage does not have sufficient undeveloped land for a detention dam. The acquisition and demolition of structures to obtain the land needed for a detention dam would be unfavorable to the public and cost prohibitive. Therefore, this alternative was not retained for further evaluation.

3.1.2 Acquisition and Demolition of Structures within the Floodplain

This alternative would involve the acquisition and demolition of 48 structures presently within the existing 100-year floodplain. This alternative would reduce property damage associated with future flood events, as there would be no structures in the floodplain that could be inundated by flood waters. However, it would not reduce the risk of Montview Boulevard being overtopped during flood events greater than the 100-year flood, so this alternative would not satisfy the identified needs of the project. Additionally, this alternative was considered to be cost prohibitive and would be viewed unfavorably by the public. Therefore, it was not retained for further evaluation.

3.2 ALTERNATIVES STUDIED IN DETAIL

As required by NEPA, the No Action Alternative was considered. Alternative 2, the Proposed Action, consists of increasing the conveyance capacity of Westerly Creek between East 17th Avenue and East 23rd Avenue.

3.2.1 Alternative 1 – No Action

The No Action Alternative provides a baseline for comparison in determining the potential environmental effects of the Proposed Action. Under the No Action Alternative, no improvements would be made to the Westerly Creek channel and the Montview Boulevard box culverts would not be upgraded.

3.2.2 Alternative 2 – Westerly Creek Reach 2 Flood Mitigation Project (Proposed Action)

The purpose of the proposed project is to reduce the risk of flooding within the reach of the Westerly Creek that extends from East 17th Avenue downstream to East 23rd Avenue in Aurora, Colorado. Proposed project components include replacing the existing twin 6-foot x 8-foot box culverts at Montview Boulevard (an important arterial road) with a 60-foot bridge, lowering the channel beneath the road approximately 5 feet, and creating a 3.5-foot-deep, 10-year low-flow channel in the bottom of the channel. A 10-foot-wide pedestrian/bike trail crossing with 8.5-foot vertical clearance would be included in the bridge design. In addition, channel improvements would be made to approximately 2,700 linear feet of Westerly Creek from just downstream of East 17th Avenue to just upstream of East 23rd Avenue. The channel would be lowered in grade, realigned, and widened to improve conveyance. More specifically, from Montview Boulevard to just upstream of East 23rd Avenue, approximately 1,300 linear feet of channel would be lowered at a design slope of 0.5 percent. The lowered channel would tie into the channel at the bottom of an existing drop structure near East 23rd Avenue, and the drop structure would be removed. The new channel improvements would minimize impacts on the already improved west bank and focus on lowering the channel and improving the east bank (City of Aurora 2011).

Upstream from Montview Boulevard, in Montview Park, approximately 1,400 feet of channel would be lowered approximately 5 feet (design slope 0.5 percent). Approximately 5 feet of vertical drop, involving two new drop structures (approximately 3-foot), would be required to tie the new channel elevation at Montview Boulevard into the existing grade downstream of the box culvert at East 17th Avenue. The locations of the proposed drop structures are shown in **Appendix A, Exhibit 4**. The channel in Montview Park would also be widened to a bottom width of approximately 50 feet and a top width of approximately 110 feet. A low-flow channel would be created in the bottom of the modified channel. Side slopes would be 4 horizontal feet to 1 vertical foot (4:1). A 10-foot-wide pedestrian/bike trail would be constructed along the creek in Montview Park (City of Aurora 2011). A typical cross-section of the modified channel is provided in **Appendix A, Exhibit 5**.

Overall, the project would disturb approximately 4 acres and include the excavation of approximately 12,000 cubic yards (CY) of soil and vegetation (grass and willows). The project would also involve installing 200 linear feet of chain-link fence, approximately 3,600 square feet of asphalt paving, approximately 900 CY of riprap, and approximately 1,300 CY of grouted boulder channel lining; lowering a 6-inch water line; installing 50 linear feet of storm sewer and two stormwater inlets; installing trail lighting; and planting trees, shrub, and grass (approximately 3.0 acres) (City of Aurora 2011). Excavated soils would be disposed of at an existing licensed facility such as the Denver Arapahoe Disposal landfill. It is understood that minor changes may occur during final design. Such changes are acceptable, provided they achieve the projects objectives and fall within the bounds of the impacts identified and discussed in **Section 4** of this EA.

Best management practices (BMPs) would be used to control and minimize erosion during construction and until vegetation has been reestablished in the project area. BMPs would include erosion control blankets, mechanical reinforcement of soil, and dewatering of the channel prior to modification. The construction period is anticipated to be approximately 9 months.

SECTION FOUR AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

This section contains the results of the evaluation of the potential effects of the No Action Alternative and the Proposed Action on the human and natural environments.

4.1 PHYSICAL RESOURCES

The physical resources considered in this EA are soils, air quality and climate change, and visual resources. Since the No Action Alternative involves no construction and the Proposed Action activities would not extend deep enough to disturb geologic resources, neither alternative would affect geology and it will not be discussed further in this document. In addition, the project is in an urban area that is essentially developed and does not contain any prime farmland. Since neither alternative has the potential to affect prime farmland, it is also not discussed further in this document.

4.1.1 Affected Environment

The project area is in Aurora, Colorado in Adams County, which is approximately 10 miles east of downtown Denver. Aurora is considered part of the Denver metropolitan area, which is in the Front Range of the Rocky Mountains. The Front Range is a transition zone in the north-central portion of the State between the Rocky Mountains and the Great Plains.

4.1.1.1 Soils

According to the Natural Resources Conservation Service (NRCS) database (NRCS 2012a), the primary soil mapping unit in the project area is Ascalon sandy loam. In general, this soil is a well-drained sandy loam composed of alluvium (NRCS 2012a). However, with the amount of development and redevelopment that has occurred in and surrounding the project area, the soils presently in the project area would be classified as urban soils. Urban soils are those that have been changed due to human activities, such as dredging, land filling, land leveling, and surface removal (NRCS 2012b).

4.1.1.2 Air Quality and Climate Change

The National Ambient Air Quality Standards established by the U.S. Environmental Protection Agency (EPA) define the concentrations of air pollutants that should not be exceeded in a given period to protect human health (primary standards) and welfare (secondary standards) with a reasonable margin of safety. These standards include maximum concentrations of ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and particulate matter with a diameter of up to 10 microns.

The Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division, is the primary authority for protecting air quality in Colorado under the Colorado Air Pollution Prevention and Control Act. The Denver metropolitan area, including Aurora and the project area, is a non-attainment area for 1-hour and 8-hour ozone and a maintenance area for carbon monoxide (EPA 2012). A non-attainment area is an area that exceeds one or more of the air quality standards. A maintenance area is a non-attainment area that, through implementation of mitigation measures, has achieved attainment of the air quality standards.

The CEQ has recently released guidance on how Federal agencies should consider climate change in their decisions. Guidance for NEPA documents suggests that quantitative analysis should be done if an action would release more than 25,000 metric tons of greenhouse gases per year (CEQ 2010).

4.1.1.3 Visual Resources

The project area is an urban greenbelt that includes Montview Park and Westerly Creek Park. The area surrounding the Westerly Creek greenbelt is highly developed and includes both commercial/industrial facilities and residential properties. Photographs of the viewshed are provided in **Appendix B**.

4.1.2 Environmental Consequences

4.1.2.1 Alternative 1 – No Action

Soils

The No Action Alternative would have no direct effect on soils in the project area because no project-related disturbance would occur. Stream erosion and deposition patterns that presently exist would continue.

Air Quality and Climate Change

The No Action Alternative would not include any construction activities. General maintenance of the creek and culverts within the reach would continue. These maintenance activities would have no effect on air quality in the project or surrounding areas. Additionally, the No Action Alternative would have no effect on global climate change because no activities would occur that would generate large quantities of greenhouse gases.

Visual Resources

The No Action Alternative would maintain the current visual components of the project area; therefore, this alternative would not affect the visual aesthetics of the project area.

4.1.2.2 Alternative 2 – Westerly Creek Reach 2 Flood Mitigation Project (Proposed Action)

Soils

Approximately 4 acres of soils would be disturbed from replacing the box culverts with a 60-foot bridge, and modifying a 2,700-foot reach of Westerly Creek. Approximately, 12,000 CY of soils would be excavated for the new bridge and modification of the stream channel. The excavated soils would be stored in an existing licensed disposal facility, such as the Denver Arapahoe Disposal landfill. The City of Aurora requires a Stormwater Quality Discharge Permit for any site exporting more than 500 CY of soil. Therefore, the City would be required to get this permit prior to beginning project activities. Additionally, for disposal sites within the Aurora City limits, a separate permit would be required for the accepting site.

During construction, BMPs would be implemented to minimize soil erosion. Following construction, all disturbed areas that have not been hardened (approximately 3 acres) would be revegetated with a mixture of grasses and shrubs that would minimize post-project soil erosion.

With appropriate BMPs and an aggressive revegetation program, the disturbance of approximately 4 acres of soil would not have a significant impact.

Air Quality and Climate Change

No permanent sources of increased air emissions would be associated with the Proposed Action. Soil disturbance during excavation and construction activities could result in a temporary increase of particulates (dust) in the air. If dust became a problem during construction, the contractor would be required to water down the work area to reduce the dust levels.

Operation of the construction equipment would also add to exhaust-related air pollutants such as nitrogen oxide, carbon monoxide, and ozone within the local area. Increases of these air pollutants would be localized and temporary and would have a minor effect on local air quality. Because the construction is expected to take more than 6 months, a State Air Pollution Permit would be required (personal communication from Michael Harris, Air Pollution Control Division of Colorado Department of Public Health and Environment to Quentin Bliss of URS Group, Inc. on February 7, 2012) (**Appendix C**). The Proposed Action is not anticipated to affect global climate change because no permanent sources of emissions would be constructed as part of the project.

Visual Resources

The Proposed Action would have a short-term adverse impact on the visual resources near the project area as a result of construction activities and the presence of construction equipment. Post-project, flooding and sediment deposition would no longer occur, and disturbed areas would be revegetated with grasses, trees, and shrubs. Therefore, the Proposed Action would have a long-term beneficial effect on the visual resources in the project area.

4.2 LAND USE

4.2.1 Affected Environment

Land use in the vicinity of the project area is a mix of single-family and multi-family residential housing, recreational/open space areas, schools, and commercial/industrial properties.

4.2.2 Environmental Consequences

4.2.2.1 Alternative 1 – No Action

With the No Action Alternative, no steps would be taken to reduce the risk of flooding in the project area. Therefore, this alternative would have no impact on land use in the vicinity of the project area.

4.2.2.2 Alternative 2 – Westerly Creek Reach 2 Flood Mitigation Project (Proposed Action)

The Proposed Action would affect approximately 4 acres of land in the corridor. However, the project features would not result in any changes in land use. Therefore, the Proposed Action would have no impact on land use in the vicinity of the project.

4.3 WATER RESOURCES

Water resources evaluated in this EA include surface water, floodplains, and wetlands. The proposed excavation in the channel would not be deep enough to encounter groundwater, and the rate of percolation of surface water flowing through the project area would not be appreciably affected by project activities. Therefore, groundwater would not be affected by either alternative and is not discussed further in this document.

4.3.1 Affected Environment

4.3.1.1 Surface Water

The project area is in the South Platte watershed, which contains approximately 67 percent of Colorado's population. Water storage reservoirs have been constructed in the watershed to store water during high flow periods that is released for domestic use when the demand for water exceeds the amount of water that can be supplied by the streams.

Surface water resources in the vicinity of the project area include Westerly Creek, which is a tributary of Sand Creek and within the South Platte watershed. Sand Creek is currently listed as having high levels of selenium and E. coli bacteria. It is classified as aquatic-life-warm; Recreation – Class E and agriculture by the CDPHE. This classification would indicate that Westerly Creek currently, or with corrected water quality conditions, could sustain a wide variety of warm water biota, and the water is suitable for irrigation of crops and is not hazardous as drinking water for livestock.

The creek is fed from local drainage in a watershed that is predominantly developed. Westerly Creek's natural channel was obliterated in some sections during early development in the watershed. Westerly Creek flows north and discharges into Sand Creek approximately 1.2 miles downstream from the project area. The Westerly Creek watershed has a total area of 16 square miles.

4.3.1.2 Floodplains

Executive Order (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. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities" for the following actions:

- Acquiring, managing, and disposing of Federal lands and facilities;
- Undertaking federally financed, or assisted construction and improvements; and
- Conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities.

To satisfy the intent of the EO, FEMA employs an Eight-Step Decision-Making process when evaluating projects that have features within an identified 100-year floodplain. This process is

similar to the NEPA compliance process, which encourages public involvement starting at the early stages of project development, avoidance of floodplains and wetlands, evaluation of all practicable alternatives, assessment of potential impacts, and minimization of impacts.

Aurora participates in the NFIP. By participating in the NFIP, the City has implemented controls, zoning, and development regulations, along with effective land use planning, to reduce and control development within 100-year floodplains. In addition, the City also participates in the Community Rating System (CRS) that is supported by the NFIP. Aurora has a CRS rating of 8 which provides a discount on flood insurance for properties located in a floodplain.

The Westerly Creek Dam was built on Lowry AFB in 1991. The dam was constructed by the USACE and provides flood detention for storms up to and including the 100-year flood event. The construction of the dam has reduced the downstream floodplain. However, several local drainage inflows and major storm sewer outfalls enter the channel downstream of the dam. From East 13th Avenue downstream to Montview Boulevard, the resulting floodplain includes a number of single- and multiple-family residential properties, and some commercial and industrial properties. Westerly Creek was recently improved downstream of Montview Boulevard as part of the Stapleton redevelopment. In this reach, the floodplain is confined to the improved channel and adjacent open space areas (Kiowa 2010).

4.3.1.3 Wetlands (Executive Order 11990)/Waters of the United States

EO 11990, Protection of Wetlands, requires Federal agencies to take action to minimize the loss of wetlands. Activities disturbing jurisdictional wetlands require a permit from the USACE under Section 404 of the Clean Water Act of 1977 (33 U.S. Code [U.S.C.] § 1344).

A Wetland Delineation Report (ERO 2012) was completed for the project area. The delineation identified three wetland areas (including the Westerly Creek channel) totaling approximately 0.81 acre. Westerly Creek is considered to be a Water of the United States (WOUS) by the USACE. **Appendix A, Exhibit 6** shows the location of the wetlands in the project area.

4.3.2 Environmental Consequences

4.3.2.1 Alternative 1 – No Action

Surface Water

Under the No Action Alternative, no improvements to the conveyance of stormwater would occur along Westerly Creek. Flooding, soil erosion, and sediment deposition would continue to occur. Therefore, the No Action Alternative would continue to have an adverse impact on surface water in and downstream of the project area.

Floodplains

The No Action Alternative does not have the potential to adversely affect floodplains.

Wetlands

The No Action Alternative does not have the potential to adversely affect wetlands.

4.3.2.2 Alternative 2 – Westerly Creek Reach 2 Flood Mitigation Project (Proposed Action)

Surface Water

The Proposed Action would include the removal of existing box culverts beneath Montview Boulevard, the construction of a 60-foot bridge to replace the box culverts, and channel modifications to Westerly Creek. These components would be designed to convey stormwater runoff associated with storm events up to the 100-year event (1 percent annual chance of flooding) within the channel. The project would have no effect on the quantity of water transported downstream. The project would be expected to have a long-term positive effect on water quality by reducing the frequency and amount of soil erosion and sediment deposition associated with flood events.

Aurora requires a Stormwater Quality Discharge Permit for any site that exports more than 500 CY of soil or disturbing an area over 1 acre in size. EPA's National Pollutant Discharge Elimination System (NPDES) Program requires all construction activities that disturb more than 1 acre to obtain a permit. The Water Quality Control Division of the CDPHE administers the NPDES Program in Colorado known as the Colorado Discharge Permit System (CDPS). This project would disturb approximately 4 acres; therefore, the City would need to obtain a CDPS General Stormwater Discharges Associated with Construction Activities Permit and a City of Aurora Stormwater Discharge Permit for disturbing over 1 acre of land.

Floodplains

FEMA Flood Insurance Rate Maps (FIRMs) are available for the project area (Aurora, Arapahoe County, 08005C015K, Revised December 17, 2010; City and County of Denver, 0800460207G, November 17, 2005). Based on the available FIRMs, the project area is located in the floodplain (Zone AE) and floodway for Westerly Creek. Zone AE, also known as the "100-year floodplain," has a 1-percent probability of flooding every year. Therefore, the eight-step decision-making process was implemented for this project. Results of this evaluation are provided in **Appendix D**.

During this evaluation process, alternatives were evaluated that could be used to control flooding of Westerly Creek in the project area. The outcome of the eight-step process was that there was no practical alternative outside the floodplain of Westerly Creek.

To be in compliance with EO 11988, a public notice as shown in **Section 6.1** was published in the *Denver Post* (May 25 through 27, 2012) that informed the public and other interested parties that FEMA intended to fund a project that included activities in the base floodplain of Westerly Creek. Additionally, to ensure that local stakeholders and ethnic groups were informed of the project and had an opportunity to comment, a multi-lingual poster was posted at nine locations in the vicinity of the project area. Details of the public notice posting are provided in **Section 6.1** and **Appendix E**. Three comments were received during the initial comment period. These comments and responses are summarized in **Section 6.2**. None of the comments were substantive to the EA process or floodplains.

Project components in the floodplain include three drop structures (two constructed and one removed), installing grouted boulder stream channel downstream of the two new drop structures, removing two box culverts, and modifying 2,700 linear feet of stream channel. All of these

project features focus on reducing Westerly Creek flooding in the project area. Proposed project features have been designed to maintain the 100-year floodplain adjacent to the stream channel while maintaining or enhancing the functions and values of the stream's floodplain. Although the floodplain would be smaller post-project, the removal of obstructions would allow the remaining floodplain to function more efficiently and decrease flood damage from future flood events. Aurora will submit a Letter of Map Revision (LOMR) to FEMA that denotes the post-project floodplain boundaries.

Due to the construction activities in the floodway and 100-year floodplain, the City would be required to obtain a Floodplain Development Permit from the City of Aurora Floodplain Administrator.

Wetlands

The Proposed Action would affect approximately 0.81 acre of wetlands and WOUS. Following reconstruction of the channel, the area adjacent to the creek would be revegetated with native riparian-type vegetation. With the construction of a low-flow channel and sloping banks to encourage re-vegetation and planting of riparian-type vegetation, it is expected that the existing riparian area would re-establish post-project and there would be no net loss of wetlands or WOUS.

FEMA consulted with the USACE Omaha District, Denver Office, regarding the Proposed Action. The USACE also indicated an Individual Section 404 Permit would be required for this project due to extensive stream impacts (personal communication, Matt Montgomery, USACE with Sue Volkmer, URS Group, Inc., telephone conversation, June 25, 2012, **Appendix C**). The City of Aurora would need to obtain the permit prior to beginning construction activities, and the City would need to comply with the mitigation measures identified in the permit. The City would also need to obtain a Section 401 Water Quality Certification from the CDPHE. With implementation of mitigation measures identified in the Section 404 Permit, no net loss of wetlands or WOUS would be anticipated with this project.

FEMA's Eight-Step Decision-Making Process was used to evaluate alternatives that could avoid or minimize potential project-related impacts to wetlands. Actions and/or determinations associated with each of the steps are provided in **Appendix D**. Results of this eight-step process confirmed that there is no practicable alternative to the Proposed Action that would not affect wetlands. Since the proposed project would affect wetlands and WOUS, to be in compliance with EO 11990 and per Step 2 in the eight-step process, the public notice as shown in **Section 6.1** was published in the *Denver Post* (May 25 through 27, 2012), to inform the public and other interested parties that FEMA intends to fund a project that includes activities in wetlands and WOUS associated with the Westerly Creek. Additionally, to ensure that local stakeholders and ethnic groups were informed of the project and had an opportunity to comment, a multi-lingual poster was posted at nine locations in the vicinity of the project area. Details of the public notice posting are provided in **Section 6.1** and **Appendix E**.

4.4 BIOLOGICAL RESOURCES

The biological resources considered in this EA are vegetation, terrestrial wildlife, aquatic wildlife, and threatened and endangered species.

4.4.1 Affected Environment

Removal of the box culverts at the Montview Boulevard stream crossing would involve construction in the street right-of-way (ROW). All other project construction activities would occur within and adjacent to the Westerly Creek channel, and with the exception of the street ROW, the entire project will be within the Montview and Westerly Creek city parks.

A field reconnaissance of the project area was conducted by URS Group, Inc. biologists on March 21, 2012. Observations and other information obtained during the field reconnaissance were used to supplement existing information about biological resources within and in the vicinity of the project area.

4.4.1.1 Vegetation

Existing vegetation in the project area consists of planted grasses, planted shrubs, and 20 to 30 planted trees. As would be expected in a park setting, appearance is maintained through scheduled mowing of the grass, and pruning of trees, and shrubs. Grasses along the creek's banks are allowed to grow slightly taller than at other locations in the parks. Additionally, there is an area of willows adjacent to the creek downstream of Montview Boulevard. Photographs of typical vegetation in the project areas are included in **Appendix B**.

4.4.1.2 Terrestrial Wildlife

The project and surrounding area has experienced urban development. Habitat for wildlife species in the project area is limited and is used by species that can readily adapt to urban conditions. This environment may also represent migration corridors for a few wildlife species. The trees and larger woody shrubs provide nesting habitat for some bird species, such as robins, doves, and sparrows. 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 U.S. Fish and Wildlife Service (USFWS) consults on issues related to migratory birds.

The project area would also be expected to provide habitat for a limited number of reptiles and amphibians, which may include plains garter snake, Woodhouse toads, and northern leopard frogs.

4.4.1.3 Aquatic Wildlife

Recorded flow information for Westerly Creek during non-flood periods is lacking. The creek is classified as an intermittent stream, which would indicate that flows in the creek cease during dry periods. However, the amount of periphyton observed attached to rocks in the bottom of the creek suggests that the creek flows continually in most years. Based on a visual inspection of the creek during the field reconnaissance, it would be expected that the creek in the project area would also support aquatic macroinvertebrates and a limited number of minnow species. Minnow species reported to occur in this portion of the South Platte River drainage include longnose dace, creek chub, fathead minnow, and sand shiner (Woodling 1985).

4.4.1.4 Threatened and Endangered Species and Critical Habitat

Federally Listed Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires Federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of threatened, endangered, or proposed species or cause destruction or adverse modification of their critical habitats.

The USFWS Natural Resources of Concern Information Planning and Conservation (IPaC) System was accessed to obtain a list of threatened and endangered species that have the potential to occur within Adams County, Colorado (USFWS 2012a). The USFWS lists nine threatened or endangered species with the potential to occur or have the potential to be affected by projects in Adams County (USFWS 2012a). The species and their required habitat are summarized in **Table 4-1**.

State-Listed Species

The Colorado Parks and Wildlife (CPW) Web site was accessed for the State-listed species (CPW 2012a). Colorado has 16 State-listed threatened and endangered animal species that are not also federally listed (CPW 2012a). Of these 16 species, the western burrowing owl, plains sharp-tailed grouse, the lesser prairie chicken, and common shiner have the potential to occur in Adams County (CPW 2012b). The habitat requirements for these species are summarized in **Table 4-1**. Colorado has no State-level recognition or protection for plant species (CSU 2009).

4.4.2 Environmental Consequences

4.4.2.1 Alternative 1 – No Action

Vegetation

Under the No Action Alternative, no vegetation would be affected, as construction activities would not occur. Flooding along Westerly Creek would continue and minor impacts to vegetation would be expected during flood events.

Terrestrial Wildlife

As discussed in the previous subsection, existing vegetation would not be directly affected by the No Action Alternative; therefore, there should not be any direct impacts on wildlife in the vicinity of the project area. Wildlife in the area that is presently flooded by Westerly Creek would continue to be temporarily displaced for the duration of flood events.

Aquatic Wildlife

Under the No Action Alternative, the existing box culverts would not be replaced, no drop structures would be constructed or removed, and the stream channel would not be realigned. Therefore, the alternative would not have any impact on aquatic wildlife that presently exists within and downstream of the project area.

Threatened and Endangered Species and Critical Habitat

No changes would occur with the No Action Alternative; therefore, no federally or State-listed threatened or endangered species or their designated critical habitat would be affected by this alternative.

4.4.2.2 Alternative 2 – Westerly Creek Reach 2 Flood Mitigation Project (Proposed Action)

Vegetation

Proposed project activities that would affect the existing vegetation include:

- Installing two drop structures
- Removing one drop structure
- Removing two box culverts
- Constructing a 60-foot bridge
- Realigning and excavating the stream channel

These activities would affect approximately 4 acres of existing vegetation within the two parks, including approximately 1 acre of riparian type vegetation and 3 acres of closely mowed, planted grasses in upland areas of the parks. The proposed re-vegetation includes re-establishing the riparian vegetation along the re-contoured creek banks. The remaining disturbed areas would be re-seeded with grass species previously seeded in the parks.

Terrestrial Wildlife

To prevent impacts on nesting raptors and other migratory bird species and to be in compliance with the MBTA, tree and shrub removal would not occur during the nesting and fledging period (April 1 to August 15).

With the Proposed Action, there would be intense construction activities for approximately 9 months, and wildlife would likely not occupy the project area during construction due to noise and a lack of vegetation. Most of Westerly Creek is void of cover, which precludes the use of the stream corridor as a migration route for most terrestrial wildlife species. After construction has been completed and the disturbed areas are re-vegetated, wildlife would return to the creek corridor; therefore, the project would have no long-term effects on local wildlife.

Aquatic Wildlife

As discussed in **Section 4.2.2.2**, with the use of BMPs, the proposed project would have a short-term, minor, adverse impact on the water quality of Westerly Creek during construction but a long-term beneficial impact following construction. Therefore, the Proposed Action would have a negligible effect on the limited aquatic resources that presently occur in the creek.

Threatened and Endangered Species

Federally Listed Species

The USFWS lists nine threatened or endangered species that may occur or could be affected by projects in Adams County, Colorado (USFWS 2012a). **Table 4-1** summarizes FEMA's determination of effects for federally listed species with the potential to occur in the project area or be affected by project activities.

The whooping crane, least tern, piping plover, pallid sturgeon, and western prairie fringed orchid do not occur in Adams County but could be affected by flow depletions in the Platte River basin, which includes the South Platte watershed. Because the Proposed Action would have no effect on flows on any stream or river in the Platte River basin, FEMA has determined that the Proposed Action would have no effect on these five species.

Potential impacts on the remaining four species that may occur in Adams County are discussed below.

Preble's Meadow Jumping Mouse

The distribution range of the Preble's meadow jumping mouse includes the northern Front Range of Colorado and southeastern Wyoming. Typical habitat for the mouse is wet meadows and well-developed riparian vegetation in the vicinity of a water source. Their preferred habitat includes a combination of relatively dense grasses, forbs, and shrubs. However, the species regularly ranges from the riparian/wet meadow habitat into adjacent upland habitat to feed and hibernate (USFWS 2012b).

Hibernation extends from September or October to May. Hibernation nests occur underground both within and outside the 100-year floodplain. Hibernacula have been located under willow, chokecherry, snowberry, skunkbrush, sumac, clematis, cottonwoods, Gambel's oak, thistle, and alyssum. These mice feed on a wide range of vegetation, depending on the habitat they are occupying and the season. Reported food items in their diet include insects, seeds, fungus, and fruit (USFWS 2012b).

The USFWS indicates the Preble's meadow jumping mouse has the potential to occur in Adams County. The CPW indicates the Preble's meadow jumping mouse once occurred in Adams County but has been extirpated. Designated critical habitat for the Preble's meadow jumping mouse is located west of Aurora and Adams County (USFWS 2012b). The project area does not contain any wet meadow areas or well-developed riparian vegetation. Since the project area does not contain the type of habitat that would be used by the species, FEMA has determined that the proposed project activities would have no effect on the Preble's meadow jumping mouse.

Table 4-1: Threatened and Endangered Species that May Occur or Could Be Affected by Projects in Adams County

Common Name	Scientific Name	Federal Status	State Status	Habitat Requirements	Habitat Present in the Project Areas?	Determination
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	T	T	Wet meadows and well-developed riparian vegetation near a water source. Dense combinations of grasses, forbs, and shrubs.	No	No Effect
Least tern	<i>Sterna antillarum</i>	E	E	Bare sand and gravel bars along rivers and waste sand piles along several rivers in Nebraska.	No	No Effect
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	T	Old growth/mature forests with complex structural components (uneven-aged stands, high canopy closure, multi-storied levels, and high tree density). Canyons with riparian or conifer communities.	No	No Effect
Piping plover	<i>Charadrius melodus</i>	T	T	Bare sand and gravel bars along rivers and waste sand piles along several rivers in Nebraska.	No	No Effect
Whooping crane	<i>Grus americana</i>	E	E	Mid-river sandbars and wet meadows along the Platte River in Nebraska.	No	No Effect
Pallid sturgeon	<i>Scaphirhynchus albus</i>	E	NA	Large turbid rivers including the lower Platte River in Nebraska.	No	No Effect
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	T	NA	Riparian edges, gravel bars, old oxbows, high-flow channels, and moist wet meadows along perennial streams.	No	No Effect
Colorado butterfly plant	<i>Gaura neomexicana var. coloradensis</i>	T	NA	Elevations between 5,000 and 6,400 feet. Sub-irrigated, alluvial soils within floodplains and drainage bottoms with periodic disturbance. Early to mid-successional riparian habitat void of dense or overgrown vegetation.	No	No Effect
Western prairie fringed orchid	<i>Platanthera praeclara</i>	T	NA	Wet meadows associated with native prairies and wet riparian areas along the Platte River in Nebraska.	No	No Effect
Western burrowing owl	<i>Athene cucularia</i>	NL	T	Grasslands in or near prairie dog towns.	No	No Effect

**Table 4-1: Threatened and Endangered Species that
May Occur or Could Be Affected by Projects in Adams County**

Common Name	Scientific Name	Federal Status	State Status	Habitat Requirements	Habitat Present in the Project Areas?	Determination
Plains sharp-tailed grouse	<i>Tympanuchus phasianellus jamesii</i>	NL	E	Cropland and riparian area (especially in fall and winter), and shrublands that are void of conifers. Nesting occurs in grassland including wet meadows, ridges, and knolls.	No	No Effect
Lesser prairie chicken	<i>Tympanuchus pallidicinctus</i>	NL	E	Relatively flat rangeland in different stages of plant succession that include a diversity of native, short to mid-height grasses interspersed with low-growing shrubs. Habitat needs to be void of tall features such as trees and power lines.	No	No Effect
Common shiner	<i>Notropis cornitus</i>	NL	T	Requires streams of moderate gradient with cool, clear water with a streambed of gravel. Occupied streams often have shaded banks.	No	No Effect

Sources: USFWS (2012b-f); CPW (2012a and b); Woodling (1985)

E = Endangered

NA = Not applicable. Species located outside the state of Colorado.

NL= Not listed

T = Threatened

Mexican Spotted Owl

Old growth or mature forests that contain complex structural components (uneven-aged stands, high canopy closure, multi-storied levels, and high tree density) are the primary habitat used by the Mexican spotted owl. Canyons with riparian or conifer communities also represent important habitat for the Mexican spotted owl (USFWS 2012c). The USFWS and CPW both indicate the Mexican spotted owl has the potential to occur in Adams County (USFWS 2012c, CPW 2012b). Although designated critical habitat is located in Jefferson County (which abuts Adams County), no designated critical habitat for the Mexican spotted owl is located in Adams County (USFWS 2001). Since the project area is located entirely within two urban parks, the type of habitat used by the Mexican spotted owl does not exist in the project area. Therefore, FEMA has determined that the proposed project would have no effect on the Mexican spotted owl.

Colorado Butterfly Plant

The Colorado butterfly plant occurs at elevations of between 5,000 and 6,400 feet on sub-irrigated, alluvial soils in floodplains and drainage bottoms (USFWS 2012d). The species requires early- to mid-successional riparian habitat with no dense or overgrown vegetation. It is an early successional species that is adapted to stream channel sites that are periodically disturbed. In fact, without periodic disturbances, occupied habitat can become choked with willows, grasses, and exotic species, causing loss of the species in that location. The USFWS indicates the most immediate and severe threat to the species is residential and urban development (USFWS 2012d).

Although the project area elevation is within the range for the habitat of the Colorado butterfly plant, the project area and surrounding areas are highly developed and disturbed, and no wet meadow type habitat is present in the project area. Since the type of habitat that would be used by the species is not present in the project area, FEMA has determined that the proposed project would have no effect the Colorado butterfly plant.

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 (USFWS 2012e). Presently, the project area does not contain any gravel bars, oxbows, high-flow channels, or moist wet meadows. Since the project area does not contain habitat that would be used by the Ute ladies' tresses, FEMA has determined that the proposed project would have no effect on the Ute ladies'-tresses.

State-Listed Threatened and Endangered Species

The State-listed species for Adams County that are not also federally listed are the western burrowing owl, plains sharp-tailed grouse, lesser prairie chicken, and common shiner. **Table 4-1** lists the determinations for State-listed species.

Western Burrowing Owl

The western burrowing owl occurs in grasslands in or near prairie dog towns (CPW 2012b). A prairie dog town is located at the north end of the project area. However, the project area is in a

highly developed area, and the adjacent Westerly Creek Trail is used by pedestrians for running, walking, biking, and other activities. A dirt single-track trail also winds through the area of the prairie dog town and is most likely used by mountain bikers and runners. Based on the abundance of human activity in the area, FEMA has determined that the proposed project activities may affect, but are not likely to adversely affect, the western burrowing owl.

Plains Sharp-Tailed Grouse

The grouse uses rolling hills with scrub oak thickets and grassy glades. As an equivalent to sagebrush, they use scrub oaks, serviceberries, and willows. The bird typically occupies medium to tall grasslands for courtship and nesting (CPW 2012b). These habitat types are not present in the project area; thus, FEMA has determined that the proposed project would have no effect on the plains sharp-tailed grouse.

Lesser Prairie Chicken

These birds prefer sandy grassland areas that have an abundance of mid-grasses, sandsage, and yucca. The area needs to be void of tall features such as trees and power lines (CPW 2012b). This habitat type is not present in the project area; thus, FEMA has determined that the proposed project activities would have no effect on the lesser prairie chicken.

Common Shiner

The common shiner requires streams of moderate gradient with cool, clear water and a streambed of gravel. Occupied streams often have shaded banks (Woodling 1985). Westerly Creek has a sediment bottom and the banks are not shaded; thus, FEMA has determined that the proposed project activities would have no effect on the common shiner.

4.5 CULTURAL RESOURCES

The National Historic Preservation Act of 1966 (NHPA) (16 U.S.C. 470 et seq.) constitutes the primary Federal policy 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 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 (16 U.S.C. § 470f) 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 at 36 CFR § 800.16(l)(1) as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places.” Although buildings and archaeological sites are most readily recognizable as historic properties, the NRHP contains a diverse range of resources that includes roads, landscapes, and vehicles. Under Section 106, Federal agencies are responsible for identifying historic properties in 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, or 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.

4.5.1 Affected Environment

Gordon C. Tucker, Jr., a URS archaeologist, qualified under the Secretary of the Interior's Professional Qualification Standards for archaeology (36 CFR Part 61), conducted an assessment of the Proposed Action's potential to affect historic properties in the APE. The project area is located near the historic core of Aurora and is on the border of an older portion of Denver, where dozens of studies and surveys have been completed within a one-mile radius of the project area and have recorded more than 250 resources, mostly aboveground resources. A search of COMPASS, Colorado's On-line Cultural Resource Database, on July 12, 2012, revealed that no cultural resources surveys have been conducted in the area of direct and indirect effects.

The project area is located in northwestern Aurora, along both sides of Westerly Creek, between East 23rd Avenue and East 17th Avenue, primarily in Montview Park, a facility owned by the City of Aurora. The Westerly Creek Trail parallels the west side of the creek, and a large commercial complex with asphalt parking lots is located east of the creek. Residential neighborhoods surround the project area.

Donald Fletcher and two partners incorporated the Town of Fletcher in 1891, and the town was renamed Aurora in 1907. In its early years, Aurora was a service and supply center for the surrounding agricultural lands. Following World War I, the U.S. Army built Fitzsimons Military Hospital, which set Aurora on an enduring path of reliance on military bases as a factor in its economic well-being and growth. Following World War II, Aurora grew exponentially, with the Baby Boom and returning military personnel. Because Denver and the Rocky Mountain Arsenal blocked its growth to the west and north, respectively, Aurora expanded principally to the east and south. The population grew from approximately 75,000 in 1970, to over 150,000 in 1980, and to more than 332,000 by 2011. It is the third largest city of Colorado, behind Denver and Colorado Springs.

4.5.1.1 Aboveground Resources

No aboveground resources have been documented within ½-mile of the project area.

4.5.1.2 Archaeological Resources

No archaeological resources have been documented within ½-mile of the project area.

4.5.2 Environmental Consequences

4.5.2.1 Alternative 1 – No Action

The No Action Alternative would have no impact on cultural resources. Therefore, FEMA has determined that no historic properties would be affected by the No Action Alternative.

4.5.2.2 *Alternative 2 – Westerly Creek Reach 2 Flood Mitigation Project (Proposed Action)*

FEMA has concluded that the Undertaking will result in no historic properties affected. Furthermore, the proposed activity will prevent further erosion in this section of Westerly Creek, thereby protecting any undocumented archaeological resources.

In a letter to the State Historic Preservation Officer (SHPO) dated July 26, 2012 (**Appendix C**), FEMA determined that the proposed undertaking would have no effect on historic properties. The SHPO responded in a letter dated August 6, 2012 (**Appendix C**), concurring with these determinations. On August 18, 2012, FEMA sent letters to the following tribes seeking their comments on potential impacts to archaeological sites, burials, and traditional cultural properties in or near the project area:

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

The letters are included in **Appendix C**. 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 will cease in the immediate vicinity of the find until appropriate parties are consulted and a treatment plan is established.

4.6 SOCIOECONOMICS RESOURCES AND ENVIRONMENTAL JUSTICE

4.6.1 Affected Environment

4.6.1.1 *Socioeconomics*

Aurora, Colorado was incorporated in 1907 and covers approximately 155 square miles of land in three counties: Adams, Arapahoe, and Douglas. Aurora is Colorado's third largest city and is located just minutes from Denver International Airport. Aurora is home to major industries such as aerospace, military, high-tech, biotechnology and health care, distribution, and manufacturing (City of Aurora 2012). The Anschutz Medical Campus, approximately 2 miles east of the project area, is a major employer in this area of Aurora.

Project activities are limited to the area on Montview Boulevard where the new bridge would be constructed and along Westerly Creek in the two city parks. No commercial businesses are in the project area, and two small businesses are located east of the project area, along the north side of Montview Boulevard. Stapleton Airport (now decommissioned) has heavily influenced the past and current development of areas adjacent to the project area. The area northwest of Montview Boulevard that is adjacent to the project area is part of the Stapleton development and primarily comprises single family residences that have been constructed in the last 10 years. Other areas adjacent to the project area (south and northeast of Montview Boulevard) are a mixture of older single- and multi-family residences.

According to the U.S. Census Bureau (USCB), the population of Aurora in 2010 was 325,078 people. The average household size was 2.58 people, and 49.2 percent of the population was men; 50.8 percent was women (USCB 2012).

4.6.1.2 Environmental Justice

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.”

Of the 325,078 people in Aurora in 2010 (USCB 2012), approximately 61.1 percent are white. Minorities include Hispanics or Latinos (28.7 percent), African Americans (15.7 percent), Asians (4.9 percent), persons of two races (5.2 percent), American Indian and Alaska Native (1.0 percent), and all other minorities (less than 1 percent).

In 2010, 16.7 percent of Aurora’s population had incomes below the poverty level, which is higher than the 12.2 percent poverty level for the State (USCB 2012).

4.6.2 Environmental Consequences

4.6.2.1 Alternative 1 – No Action

Socioeconomics

The No Action Alternative would have no direct impact on the economics of Aurora because the risk of flooding in the area would not change from present conditions. There would be a continued risk of damage to infrastructure and private property from flood events and the resulting economic impacts of the cost of repairs and disruption of services for the property owners and the community.

Environmental Justice

Under the No Action Alternative, all populations in the project area and Adams County would continue to be at risk of the economic impacts associated with flooding. Therefore, the No Action Alternative would not have a disproportionately high and adverse human health or environmental effect on minority or low-income populations and meets the requirements of EO 12898.

4.6.2.2 Alternative 2 – Westerly Creek Reach 2 Flood Mitigation Project (Proposed Action)

Socioeconomics

The Proposed Action, in the long term, would reduce the risk of flooding and flood-related damage in the project area. Montview Boulevard would not be overtopped during events up to and including the 100-year event (1 percent annual chance of flooding), maintaining traffic flow along this important road. The Proposed Action would have a beneficial economic impact in the project area by reducing flood damage from future flood events.

During construction of the bridge on Montview Boulevard, traffic is expected to be restricted to a single lane each direction unless an acceptable detour is provided. This could cause minor delays, especially during periods of higher traffic volume. Montview Boulevard is not a major street used by daily commuters, which is one of the reasons it is frequently used by emergency vehicles going to the medical campus. Local businesses would not be adversely affected, as

access to the existing businesses is not in the construction area. In addition, pedestrian use along Montview Boulevard would not be adversely affected because pedestrian access would be maintained during construction of the bridge.

Environmental Justice

During construction of the bridge, local residents using Montview Boulevard could experience minor delays, as traffic would be restricted to a single lane. These delays would be minor and temporary. Pedestrian use along Montview Boulevard should not be adversely affected, as access would be maintained during construction of the bridge.

The Proposed Action would have a long-term beneficial effect on all people living and working in the vicinity of the project area, including low-income and minority persons, by reducing the risk of damage to personal property and harm to persons from future flood events. No disproportionately high and adverse impacts to low-income or minority populations would result from the Proposed Action. Therefore, the Proposed Action would comply with EO 12898.

4.7 COMMUNITY RESOURCES

The community resources considered in this EA include public health and safety, traffic and circulation, public services and utilities, and noise.

4.7.1 Affected Environment

4.7.1.1 Public Health and Safety

The potential for flooding of Westerly Creek is a safety concern for Aurora and Adams County. Flooding poses a potentially life-threatening situation for people caught in the floodwaters. Damaged and flooded roads are a public safety concern due to direct hazards and increased response times for emergency services. Standing water in residential and other structures can pose a health and safety risk for local residents due to the presence of biological hazards such as mold and water-borne diseases.

Currently, storms greater than the 10-year event cause flows from the Lower Westerly Creek to overtop Montview Boulevard due to the undersized twin box culverts beneath the road. The flooded road disrupts traffic and emergency vehicles, resulting in longer travel times and increased emergency response time.

4.7.1.2 Traffic and Circulation

Montview Boulevard is a paved two-lane road adjacent to the project area and a four-lane road just east of the project area. Montview Boulevard serves as an access corridor linking the Anschutz Medical Campus to destinations in and around Denver and Aurora. Other roads in the project area are paved residential streets providing access to homes and neighborhoods surrounding the project area. **Appendix A, Exhibit 2** shows the major roads in the project area.

4.7.1.3 Public Services and Utilities

Service and utility providers that serve residents of Aurora are shown below.

Utility	Provider
Potable Water	Aurora Water
Stormwater	Aurora Water
Sewer	Aurora Water
Cable	Comcast, CenturyLink
Telephone/Internet	Comcast, CenturyLink
Electricity	Xcel Energy
Natural Gas	Xcel Energy
Fire Protection	Aurora Fire Department
Law Enforcement	Aurora Police Department

Except for the Stapleton redevelopment area, electrical power and telephone service is provided by overhead lines. Overhead lines are located near the creek throughout most of the project area, especially near East 17th Avenue, Montview Boulevard, and along the east side of Westerly Creek. It was also noted that in the project area water lines crossed the creek and stormwater pipes discharged to the creek. In addition, natural gas and sewer lines are located in or in the vicinity of the project area, but are not expected to be affected by proposed project activities.

4.7.1.4 Noise

Sounds that disrupt normal activities or otherwise diminish the quality of the environment are designated as noise. Noise events that occur during the night (9:00 p.m. to 7:00 a.m.) are more bothersome than those that occur during normal waking hours (7:00 a.m. to 9:00 p.m.). Noise events in the project vicinity are presently associated with climatic conditions (wind, thunder), transportation noise (traffic on roads, airplanes), and “life sounds” (people talking, children playing).

Noise receptors in the vicinity of the project area would include local residents, park users and students in the new school (William Roberts Elementary School) located northwest of Montview Boulevard.

4.7.2 Environmental Consequences

4.7.2.1 Alternative 1 – No Action

Public Health and Safety

The No Action Alternative would not change the conditions in the project area. The potential for flooding would remain, and concern about the flooding of infrastructure and residential

properties would continue. If temporary road closures were needed during future flood events, the ability of emergency personnel to efficiently access certain areas could be adversely affected. Law enforcement, in addition to their normal duties, would be called on to help ensure that local traffic does not use flooded roads. Aurora, Adams County, and the State would incur the costs of repair and maintenance of structures damaged by floodwaters. These effects would be temporary but recurring.

Traffic and Circulation

The No Action Alternative could have a temporary, but potentially recurring negative impact on local traffic if road closures were to occur due to flooding. The closures would last while water covers Montview Boulevard and while the roads are being repaired if they are damaged by the flood waters.

Public Services and Utilities

The No Action Alternative would not directly affect any utilities in the project area. However, if flooding occurred, utilities associated with the residential structures and located along the roads could be adversely affected by flood waters. Law enforcement, in addition to their normal duties, would be called on to help with flood-related issues and could be unavailable to respond to other emergencies in their service area.

Noise

Under the No Action Alternative, no construction activities related to flood risk reduction would occur, and there would be no effect on noise levels in the project area.

4.7.2.2 Alternative 2 – Westerly Creek Reach 2 Flood Mitigation Project (Proposed Action)

Public Health and Safety

The Proposed Action would convey flows up to the 100-year event (1 percent annual chance) in the modified channel without overtopping Montview Boulevard and would prevent flooding of 48 residential or commercial properties. Therefore, the response time of emergency vehicles would be maintained during future flood events up to and including the 100-year event. In addition, law enforcement personnel would not be required to manage traffic during most future flood events.

The Proposed Action would prevent ponding of water upstream of Montview Boulevard, and this would reduce flooding of 48 structures that are presently flooded by ponding of water. If the flood flows are conveyed downstream, public health will be protected during future storm events due to the reduced potential for biological hazards to exist.

Traffic and Circulation

Vehicle traffic would be generated by work crews traveling to and from work sites and trucks carrying excavated soil from the project area to disposal areas. Assuming that approximately 12,000 CY of soil needs to be transported off site by 10 CY dump trucks and excavation would extend over 180 days, the hauling of excavated soils would contribute on average approximately seven trucks per day (less than one truck per hour). During the peak of channel modification

work, truck traffic associated with the project could be 2 to 3 times this average; however, this additional traffic would be considered minimal.

Short-term, the Proposed Action would have a minor negative impact on local traffic during removal of the box culverts under Montview Boulevard. The road would not be closed. The bridge would be constructed one lane at a time, requiring the closure of one lane. This could result in short delays for local traffic.

Long-term, the Proposed Action would have a positive impact on local traffic by reducing the likelihood that Montview Boulevard would be closed due to flooding up to a 100-year event (1 percent annual chance of flooding).

Public Services and Utilities

Colorado law requires that anyone who engages in any type of excavation must provide advance notice to the underground utility owners in order to minimize the risk of damaging any type of underground utility. The notice must be at least 3 business days prior to any excavation (UNCC 2012). Therefore, the City of Aurora would need to contact the Utility Notification Center of Colorado (UNCC) at least 3 days prior to any excavation activities associated with this alternative. Additionally, caution should be used during construction to avoid contact with overhead utility lines. With the use of utility location, the Proposed Action would not be expected to have any impact on public services and utilities in the project area during the construction phase. Interruption of service that is required to complete the project would be short-term and minor. Affected users would be notified prior to the interruption.

Noise

Construction activities associated with the Proposed Action would increase noise levels in the vicinity of the project. Students attending the Williams Roberts Elementary School represent sensitive noise receptors. Some of the construction activities north of Montview Boulevard would be within approximately 650 feet of the school. Noise associated with the operation of the construction equipment would be limited to the construction period. To minimize the increase in noise levels, all equipment would be fitted with noise-reducing features (e.g., mufflers), and construction activities would be limited to daytime hours (7:00 a.m. to 9:00 p.m. in the summer months and 8:00 a.m. to 6:00 p.m. during winter months). Additionally, most of the construction activities would take place next to the creek, which would help to mute some of the equipment noise. With implementation of these mitigation measures, noise impacts would be minimal and short-term.

4.8 HAZARDOUS SUBSTANCES / WASTES

4.8.1 Affected Environment

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 of, and/or upgradient of a project area is important in determining development constraints and the viability of an action.

To determine whether any facilities in the vicinity or upgradient of the project areas have known and documented environmental issues or concerns, Environmental Data Resources, Inc. searched 68 Federal and State environmental databases for the project area. Their report includes environmental database records for the project areas, immediately adjacent properties, and the standard 1-mile search radius (EDR 2012).

The Proposed Action alternative would involve replacing twin box culverts at Montview Boulevard with a 60-foot bridge, lowering the channel beneath the road, and improving approximately 2,700 linear feet of the Westerly Creek channel. For this type of flood 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.
- Presence of an upgradient solid waste landfill.

The databases did not identify any sites that would potentially affect the project area.

4.8.2 Environmental Consequences

4.8.2.1 Alternative 1 – No Action

No sites were identified in any of the databases that would potentially affect the project area. Therefore, the presence of a hazardous substance/waste does not represent a concern for the No Action Alternative.

4.8.2.2 Alternative 2 – Westerly Creek Reach 2 Flood Mitigation Project (Proposed Action)

No sites were identified in any of the databases that would potentially affect the project area. Therefore, the presence of a hazardous substance/waste does not represent a concern for the Proposed Action.

4.9 CUMULATIVE IMPACTS

Section 1508.7 of the CEQ regulations defines cumulative impacts 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.” Cumulative effects are not wholly different effects from direct or indirect effects of an action. Cumulative effects are merely a way of placing seemingly isolated or insignificant direct and indirect effects in context with respect to overall impacts, both over time (generally projects undertaken up to 5 years previously and projects that are funded, which is generally 2 to 5 years in the future) and in an area larger than that evaluated for direct and indirect effects (for this project the Westerly Creek Drainage). Cumulative effects are discussed in terms of being additive, synergistic, or reductive.

Several other projects have been undertaken or are planned in the vicinity of the Proposed Action:

- Past modifications in the Westerly Creek drainage
- Montview Park improvements
- Westerly Creek Village development
- Improvements to the Montview Boulevard corridor

Past Modification in the Westerly Creek Drainage. Modifications have already been completed on Reaches 1 and 5 of the Westerly Creek drainage (Kiowa 2009). Work on Reach 1, which is downstream of the current project area, involved channel modifications, removing structures from the floodplain, and returning the adjacent floodplain to native grasses. Past work on Reach 5 included the construction of two detention dams on the former Lowry AFB.

Montview Park Improvements. The Aurora Parks Recreation and Open Space Department has funding in the proposed 5-year budget plan to renovate the existing park features such as the playground, courts, and informal fields. The park design is to be conducted concurrently and integrated with the design of the drainage improvements. Additionally, a bike/pedestrian connection via a greenway-type corridor would be included in the plans.

Westerly Creek Village Development. This area is a mixed-use/commercial area on the north side of Montview Boulevard and east of Westerly Creek to approximately Elmira Street. This area has recently been identified as a blighted area and as such is eligible for urban renewal funds. The plans are still conceptual, but would include transportation, land use, changes in zoning, and open space.

Improvements to Montview Boulevard Corridor. The transportation project involves road improvements to include multi-modal (vehicle, bike, pedestrian) transportation to be contained within the footprint of the current Montview Boulevard alignment. Pending voter approval, this project is planned for 2012 – 2013.

Only the construction activities associated with the Montview Park improvements and transportation improvements to Montview Boulevard corridor would be additive to the Proposed Action. The park improvements and associated funding have been re-prioritized to coordinate with the Proposed Action in order to minimize impacts. The road improvements are also slated for the 2012 to 2013 timeframe, which would coincide with the Westerly Creek drainage project. These additive effects would be limited to the duration of construction activities and include soil disturbance, vegetation disturbance, and traffic restrictions. The cumulative impacts would be temporary and would not be considered significant.

Long-term cumulative effects from the Proposed Action and other actions are anticipated to be beneficial to the project area, City, County, and State because the risk of a flooding along Westerly Creek would be reduced.

4.10 COORDINATION AND PERMITS

The agency coordination and permits that would be required under the Proposed Action are described below.

- **U.S. Fish and Wildlife Service.** No additional coordination or permits would be required regarding federally listed threatened and endangered species. If trees are going to be removed during the nesting period of migratory birds, Aurora would need to coordinate with the USFWS regarding the MBTA.
- **U.S. Army Corps of Engineers.** The Proposed Action would require an Individual Section 404 Permit. The City would need to obtain this permit prior to beginning construction activities.
- **Natural Resource Conservation Service.** No farmland occurs in the project areas. Therefore, no additional coordination would be required.
- **Federal Emergency Management Agency.** Aurora will need to submit a LOMR that denotes the post-project floodplain boundaries.
- **Colorado State Historic Preservation Office.** No Additional coordination would be required regarding cultural resources.
- **Colorado Division of Wildlife.** No additional coordination would be required regarding State-listed threatened and endangered species.
- **Colorado Department of Public Health and Environment.** A State Air Pollution Permit would be required because construction is anticipated to last longer than 6 months. In addition, the City would need to obtain a CDPS General Stormwater Discharges Associated with Construction Activities Permit.
- **City of Aurora.** The City would need to obtain a Floodplain Development Permit and a Stormwater Quality Discharge Permit prior to beginning construction activities.
- **Tribal Coordination.** No Additional coordination would be required.

SECTION FIVE SUMMARY OF IMPACTS

A summary of potential environmental impacts of Alternative 1 – No Action and Alternative 2 – Westerly Creek Reach 2 Flood Mitigation Project (Proposed Action) are presented in **Table 5-1**.

Under the No Action Alternative, Aurora would make no improvements to the Westerly Creek channel and the box culverts beneath Montview Boulevard would not be upgraded to reduce the risk of flooding in the project area.

The Proposed Action would reduce the risk of flooding in the project area. Project features include:

- Replacing the existing culverts at Montview Boulevard with a 60-foot bridge
- Lowering the channel beneath the road to tie into the new channel elevation
- Widening, deepening, and lowering the grade of the Westerly Creek channel within the project area
- Constructing a low-flow channel in the bottom of the improved Westerly Creek channel
- Constructing a pedestrian/bike trail crossing on the proposed bridge

Table 5-1: Summary of Impacts

Environmental Resource	Resource Subcategory	Alternative 1: No Action	Alternative 2: Westerly Creek Reach 2 Flood Mitigation (Proposed Action)
Physical	Soils	No direct effect on soils. Stream erosion and deposition would continue during future flood events.	Approximately 4 acres of soil disturbed. BMPs implemented to minimize soil erosion. Following construction, disturbed areas would be revegetated with grasses and shrubs.
	Air Quality and Global Climate Change	No impact on air quality and climate change.	No long-term effect on air quality. Minor increases in particulates and exhaust-related air pollutants are expected during construction. A State Air Pollution Permit would be required. Emission of greenhouse gases would not contribute a measurable amount to global climate change.
	Visual Resources	No impact on visual resources.	Short-term adverse impact during construction period. Long-term beneficial impact due to decreased flood-related damage.
Land Use	Land Use	No impact.	No impact.
Water Resources	Surface Water	No direct impact on surface water.	No impact on quantity of water transported downstream. Long-term positive impact on water quality by reducing soil erosion and sedimentation associated with flood events. NPDES permit would be required from CDPHE.
	Floodplains	No impact.	Floodplain would be reduced post-project to remove structures currently in the floodplain. Remaining floodplain would function more efficiently. Floodplain development permit would be required. Aurora will submit LOMR to FEMA post-project.
	Wetlands and Waters of the U.S.	No impact.	Approximately 0.81 acre of wetland and WOUS would be affected by the project. Approximately 2,700 linear feet of Westerly Creek would be modified by this project. Project includes a re-vegetation plan to plant grasses, trees, and shrubs. Aurora would need to obtain a Section 404 Individual Permit prior to construction. The City would comply with all stipulations in the permit.

Table 5-1: Summary of Impacts

Environmental Resource	Resource Subcategory	Alternative 1: No Action	Alternative 2: Westerly Creek Reach 2 Flood Mitigation (Proposed Action)
Biological	Vegetation	No direct impact on vegetation. Vegetation would continue to be impacted during future flood events.	Approximately 4 acres of vegetation would be disturbed. Revegetation plan includes riparian vegetation along re-contoured creek banks and grass species similar to current park conditions further up the banks.
	Terrestrial Wildlife	No direct impact on terrestrial wildlife. Wildlife in area would continue to be displaced during future flood events.	Short-term impact during construction activities, as wildlife would leave the project area due to noise and lack of vegetation. No long-term impacts, as wildlife would return to the creek corridor once vegetation is re-established. No tree or shrub removal would occur between April 1 and August 15th to protect migratory and nesting birds.
	Aquatic Wildlife	No impact on aquatic wildlife.	Short-term minor adverse impact on surface water quality with the use of BMPs. Long-term beneficial impact on water quality post-construction.
	Threatened and Endangered Species	No impact on threatened and endangered species.	No effect on federally or State-listed threatened and endangered species.
Cultural	Aboveground	No impact on aboveground cultural resources.	No historic properties affected. 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 will cease in the immediate vicinity of the find until appropriate parties are consulted and a treatment plan is established.
	Archaeological	No impact on archaeological cultural resources.	No historic properties affected. 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 will cease in the immediate vicinity of the find until appropriate parties are consulted and a treatment plan is established.

Table 5-1: Summary of Impacts

Environmental Resource	Resource Subcategory	Alternative 1: No Action	Alternative 2: Westerly Creek Reach 2 Flood Mitigation (Proposed Action)
Socioeconomics and Environmental Justice	Socioeconomics	No direct impact. Continued risk of negative economic impact associated with the cost of repairs following future flood events.	Beneficial economic impact.
	Environmental Justice	No disproportionately high and adverse impacts on any minority or low-income population.	No disproportionately high and adverse impacts on any minority or low-income population. Beneficial effect on all residents, including low-income and minority populations by reducing the risk of damage to property.
Community Resources	Public Health and Safety	No impact on public health and safety. Potential for flooding and flood related damages and health risks would remain. Temporary road closures would increase emergency response times.	Emergency response times maintained for flood events up to the 10-year event. Protect public health by reducing flood risk for residential properties and associated utilities.
	Traffic and Circulations	Long-term negative impact on local traffic due to road closures associated with future flood events.	Short-term minor negative impact during construction activities. Long-term beneficial impact by reducing the likelihood that Montview Boulevard would be closed due to future flood events up to the 100-year event.
	Public Services and Utilities	No impact on public services and utilities. Utilities and services could be adversely impacted by future flood events.	Aurora would need to contact the Utility Notification Center of Colorado at least 3 days prior to any excavation activities. The contractor would need to use caution to avoid overhead power lines in the project area. If interruption of service is necessary, affected users would be notified ahead of time, and loss of service would be short-term and minor.
	Noise	No impact.	The Williams Roberts Elementary School students would be located approximately 650 feet from the construction zone. Noise associated with the operation of the construction equipment would be limited to the construction period. All equipment would be fitted with noise-reducing features such as mufflers. Construction limited to daytime hours.
Hazardous Substances/Wastes	—	No impact.	No impact.

SECTION SIX PUBLIC INVOLVEMENT

6.1 PUBLIC NOTICES

The Initial Public Notice was published in the *Denver Post* on May 25 through 27, 2012. Additionally, the initial public notice was posted in four languages (English, Spanish, Vietnamese, and Bhutanese-Nepali) in several community buildings in the vicinity of the project. The notice was posted on several websites and e-mailed to the many stakeholders associated with this project. A complete list of public notification is shown in **Table 6-1**. An example of the multi-lingual (two languages) poster is provided in **Appendix E**. The Final Public Notice (**Section 6.1.2**) was published in the *Denver Post* on September 8th, 9th, and 10th, 2012.

6.1.1 Initial Public Notice – Denver Post

Public notification is hereby given by the Department of Homeland Security’s FEMA of the intent to prepare an EA for a proposed project submitted by the City of Aurora to improve the conveyance capacity of a 2,700-foot reach of Westerly 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.

Westerly Creek is an ephemeral stream and drainage way that flows south to north through the western edge of Aurora, and the eastern edge of Denver (Latitude – 39.44502; Longitude – -104.52474). Westerly Creek flows into Sand Creek, which is a tributary to the South Platte River. Two large stormwater detention basins are located in the drainage upstream from the project area. The area surrounding the project area was initially established between 1930 and 1950. Today, it is essentially totally developed.

The President’s CEQ has developed regulations to implement the 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 EA 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. Two alternatives will be considered in the EA:

The NO ACTION ALTERNATIVE, which considers the consequences of taking no action to enhance the conveyance capacity of the Montview Boulevard Crossing and 2,700-foot reach of Westerly Creek within the project area.

The PROPOSED ACTION ALTERNATIVE would include replacing the box culverts at Montview Boulevard with 60-foot span bridge, removal of an existing drop structure, installation of two new drop structures, placement of riprap, installing grouted boulders as channel lining, widening and deepening the channel of Westerly Creek, and construction of one 10-foot wide pedestrian/bike/maintenance access trail. The new channel would include a low-flow channel. A 6 month construction period is expected

Table 6-1: Public Notice Locations

Public Access	Mode of Display	Address or Location of Display
Key Notifications		
Denver Post	Daily Circulation	www.Denverpost.com
City of Aurora	Website	www.auroragov.org
Outreach Locations		
MLK Library	Multi-lingual Public Notice Poster	9898 E Colfax Ave.
Moorehead Rec Center	Multi-lingual Public Notice Poster	2390 Havana St.
WIC Office	Multi-lingual Public Notice Poster	9000 East Colfax Avenue @ Akron/Yosemite Street, Suite 105
AMC - Lobby	Multi-lingual Public Notice Poster	15151 E Alameda Pkwy
Central Library	Multi-lingual Public Notice Poster	14949 E. Alameda Ave.
Aurora Senior Center	Multi-lingual Public Notice Poster	
Park Ridge Apartments	Multi-lingual Public Notice Poster	9282 Montview Blvd.
Bill Roberts School at Westerly Creek	Multi-lingual Public Notice Poster	2100 N Akron Way
Fletcher Post Office	Multi-lingual Public Notice Poster	1515 Dayton St.
Other Stakeholders		
Westerly Creek Connection	E-mail	NA
Westerly Creek Village	E-mail	NA
Greenway Foundation	E-mail	NA
Stapleton Area	E-mail	NA
UDFCD-MDP	E-mail	NA
City & County of Denver	E-mail	NA
Stapleton	Letter	NA
Homeowner's Associations	Letter	NA
Del Mar Parkway NBHD	Letter	NA
Fletcher Gardens Apts	Letter	NA
Northwest Aurora NBHD	Letter	NA
Stapleton United Neighbors	Letter	NA

Other alternatives considered included upstream detention of flood flows and purchase and demolition of structures within the 100-year (1 percent annual risk) flood plain. These alternatives were dismissed because they were determined to be cost prohibitive, politically unfeasible, and/or highly improbable due to lack of undeveloped land.

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. Executive Order 11990 – Protection of Wetlands requires Federal agencies to take action to minimize the loss of wetlands.

The No Action Alternative would not directly affect floodplains or wetland areas; however, it could result in impacts to the existing floodplain and wetlands located adjacent to the creek while not satisfying the identified needs.

With this public notice, FEMA is informing the public that the Proposed Action Alternative will occur within the 100-year (1 percent annual risk) floodplain of Westerly Creek and may impact wetlands along the creek.

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

A public comment period related to the alternatives as outlined above or other possible alternatives will end 15 days following the publication of this public notice. 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 Aurora by calling Mark Donelson at (303) 326-8060 or by email at mdonelson@auroragov.org. Additionally, comments or question regarding the NEPA compliance process can be directed to Richard Myers, FEMA Region VIII Deputy Regional Environmental Officer by calling 303.235.4926 or by email at richard.myers@dhs.gov.

6.1.2 Final Public Notice – Denver Post

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 Aurora, Colorado, to improve the conveyance capacity of a 2,700-foot reach of Westerly Creek that extends from 17th Avenue downstream to 23rd Avenue (Latitude – 39.44502; Longitude – -104.52474). The City of Aurora has determined that action is required along this reach of Westerly Creek to prevent flooding of Montview Boulevard and residential and commercial structures during floods up to and including the 100-year flood event. Funding would be provided through FEMA's Flood Mitigation Assistance (FMA) program, which provides funds to assist states and communities in implementing measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactures homes, and other structures insurable under the National Flood Insurance Program.

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 remove the flow restriction (twin box culverts) at Montview Boulevard to prevent flooding of Montview Boulevard and backwater flooding of residential and commercial structures upgradient of Montview Boulevard.

In the Draft Environmental Assessment (EA), the following two alternatives were considered: (1) a No Action Alternative, which considered the consequences of taking no action, and (2) Alternative 2, which includes replacement of the twin 6-foot by 8-foot box culverts with a 60-foot bridge, removal of an existing drop structure, construction of two new drop structures, and lowering, re-alignment and widening the existing stream channel. The Proposed Action would involve construction activities in the floodway and 100-year floodplain, and affect approximately 0.81 acre of wetlands and Water of the U.S. (WOUS).

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 these Executive Orders, the National Historic Preservation Act, the Endangered Species Act, other environmental laws, and NEPA has been documented in the Draft EA. FEMA or the grant Applicant has coordinated with the following agencies: U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Colorado Division of Emergency Management, Colorado Parks and Wildlife, Colorado Historical Society, and Colorado Department of Public Health and Environment. The applicant must obtain all applicable permits and comply with all permit and project conditions.

Based on The EA process and agency comments, 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 on repository for public viewing at the Aurora Municipal Center located at 15151 Alameda Parkway, the Martin Luther King Library located at 9898 E. Colfax Avenue, and the Central Library located at 14949 E. Alameda Avenue. The document can be reviewed between during normal business hours of each of these facilities. The City contact person is Mr. Mark Donelson at (303) 326-8060 or at mdonelson@aurora.org. The Draft Environmental Assessment can also be viewed and downloaded from FEMA's website at <http://www.fema.gov/plan/ehp/envdocuments/ea-region8.shtm>.

6.2 PUBLIC COMMENTS

Three comments were received during the initial public comment period. Two pertained to distribution of project information and documents. The third comment was a question about potential project impacts on the Westerly Creek floodplain upstream of the project area. The comments and responses are provided in **Appendix E**.

SECTION SEVEN AGENCIES CONSULTED**U.S. Fish and Wildlife Service, Lakewood, CO**

Ms. Susan C. Linner, Field Supervisor (303) 236-4774

Ms. Sandy Vana-Miller, Endangered Species Specialist (303) 236-4747

Colorado Parks and Wildlife, Denver, CO

Ms. Melanie Kaknes, Regional Wildlife Manager (303) 291-7137

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

Mr. Matt Montgomery, Regulatory Specialist (303) 979-4120

Colorado Department of Emergency Management, Centennial, CO

Mr. Iain Hyde, Mitigation Specialist (720) 852-6698

Colorado Department of Public Health and Environment, Denver, CO

Mr. Michael Harris, Air Quality Division-Permitting (303) 692-3150

Colorado State Historic Preservation Office, Denver, CO

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

Mark Tobias, Section 106 Compliance Manager (303) 866-4674

Cheyenne-Arapaho Tribes, Oklahoma, Concho, OK

Janice Prairie Chief Boswell, Governor Not available

Northern Cheyenne Tribe, Lame Deer, MT

Leroy Spang, President Not available

Northern Arapaho, Washakie, WY

Jim L. Shakespeare, Chairman Not available

SECTION EIGHT REFERENCES

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