Town of Jamestown Stream Corridor Recovery Design

Programmatic Environmental Assessment
DR-4145 Colorado Severe Storms, Flooding, Landslides, and Mudslides
*Colorado | **March 2014***

FEMA

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FIGURES

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APPENDICES

ACRONYMS AND ABBREVIATIONS

BMP	Best Management Practice
CDBG-DR	Community Development Block Grant – Disaster Recovery
CDNR	Colorado Department of Natural Resources
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CFLHD	Central Federal Lands Highway Division
CFR	Code of Federal Regulations
CPW	Colorado Parks and Wildlife
DHS	Department of Homeland Security
DURT	Disaster Unified Review Team
EA	Environmental Assessment
EO	Executive Order
ESA	Endangered Species Act
EWP	Emergency Watershed Protection
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
GPD	Grants Program Directorate
HMA	Hazard Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
HUD	U.S. Department of Housing and Urban Development
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1996
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSHA	Occupational Health and Safety Administration
PA	Public Assistance
PDM	Pre-Disaster Mitigation Program
PEA	Programmatic Environmental Assessment
PFHD	Provisional Flood Hazard Delineation
PPE	Personal Protective Equipment
ROW	Right of Way
SCMP	Stream Corridor Master Plan
SEA	Supplemental Environmental Assessment
SFHA	Special Flood Hazard Area

SHPO	State Historic Preservation Officer
SRIA	Sandy Recovery Improvement Act
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service

SECTION ONE | INTRODUCTION

1.1 OVERVIEW

In the spirit of Unified Federal Review as outlined in The Sandy Recovery Improvement Act (SRIA), Section 6: Unified Federal Review mandated the establishment of an "…expedited and unified interagency review process to ensure compliance with environmental and historic requirements under Federal law relating to disaster recovery projects, in order to expedite the recovery process, consistent with applicable law."

The Federal Government, through multiple agencies and their programs, proposes to repair, relocate and replace infrastructure; acquire and demolish properties; and restore, relocate or otherwise engineer river channels in the Town of Jamestown that were damaged as a result of a Presidentially Declared Major Disaster in the State of Colorado: DR-4145. Infrastructure, properties and river channels may be built, upgraded or repaired under funding programs from various federal Agencies. This Programmatic Environmental Assessment (PEA) has been prepared to identify Federal resources with the potential to fund projects in the Town of Jamestown and to analyze the potential environmental consequences associated with the proposed Federal action and the no action alternative in accordance with the National Environmental Policy Act (NEPA) (42 United States Code [USC] 55 parts 4321 et seq., 2000), the Council on Environmental Quality (CEQ) implementing regulations (40 Code of Federal Regulations [CFR] 30 parts 1500 et seq., 2004), 44 CFR Emergency Management and Assistance Ch. I Part 10, and 23 CFR 771.

1.2 BACKGROUND

Geography, climate, and development trends have triggered many damaging floods in Colorado since settlers first came west and populated buildable land adjacent to streams and water sources. During these events, along with loss of life, residents and businesses lose capital and access to property and critical infrastructure. Additionally, roadway damages may cause local governments to be unable to provide emergency services including fire, police, and ambulance, creating a potential threat to life, public health and safety. Intervention is needed to make roads safe and useable, and to restore infrastructure and properties. In an effort to restore or mitigate these impacts, federal agencies may provide funds for stream corridor enlargement or expansion, redesign, stabilization, or relocation, as well as funds for infrastructure restoration, realignment or stabilization, and additional funds for property relocation or demolition.

One of the most costly and widespread floods in Colorado history devastated Jamestown in September 2013. Sustained heavy rains (14 inches in 48 hours) and post-wildfire conditions led to massive flooding and debris flows. The worst flooding occurred from September 11-13, 2013. James Creek and Little James Creek both left their banks and formed new channels, undercutting houses and roads. Several homes, bridges, culverts, and roads were washed away, isolating residents and forcing helicopter evacuations. The Town's water treatment plant and water distribution system were also severely damaged, leaving the town without water for months after

the disaster. The severity of the incident was exacerbated by the 2003 Overland fire, which burned away vegetation on the mountainside north of the town, creating favorable conditions for mudflows and debris flows carrying trees and boulders. By the end of the floods, the Town had lost 20% of the homes, 50% of the roads, multiple bridges, the water treatment plant, and the Jamestown Volunteer Fire Department's fire hall. The floodwaters and debris flows deposited thousands of cubic yards of sediment and debris along the Town's main corridor, on private property, and inside homes and garages. Nearly everyone in the community was forced to relocate.

Because of the severe flooding and debris flows that occurred in Jamestown during DR-4145, stream corridor recovery projects are needed to:

- **Restore infrastructure and properties in the Town to a safe, sustainable, and permanent function and capacity;**
- **Mitigate the impacts and losses caused by future flood and debris flows events on Jamestown's essential services, infrastructure and property; and**
- **Protect the health, safety, and welfare of Jamestown's residents from future floods and debris flows.**

The Jamestown Stream Corridor Recovery Design project area encompasses the entirety of the Town of Jamestown, located in Boulder County, Colorado, as shown in Figure 1. Figure 2 depicts the Town's boundaries and major roadways. For specific analysis of the stream corridor, eight reaches have been identified as seen in Figure 3. These reaches were identified during the development of the Jamestown Stream Corridor Master Plan (SCMP) Technical Memorandum which can be accessed on the Town's website at http://jamestownco.org/.

The Town of Jamestown hired AMEC Environment and Infrastructure to complete the SCMP Technical Memorandum to help guide the reconstruction of the floodplain. Following the September 2013 flooding and debris flows the Town issued a temporary moratorium for 120 days on the issuance of building permits, demolition permits, floodplain development permits for building or other activities in the floodplain, and other permits and approvals for any rebuilding or new construction or development. The intent of the temporary moratorium was to allow the Town time for an evaluation of the physical impacts the flood had on Jamestown in order to understand the areas that were or may be impacted by flooding, geological hazards or changes in the soil conditions and topography as a result of the flood. The moratorium expired on January 23, 2014.

The purpose of the SCMP study was to analyze flood conditions in Jamestown with the ultimate goal of using the analysis to determine the delineation of the new floodplain reflecting conditions after the September flood. The analysis included development of a hydraulic model and the use of that model to develop a provisional flood hazard delineation. The analysis was also used as the basis for developing designs for stream alignment and stabilization to mitigate flood risk and thereby allow as many private properties to be rebuilt as possible.

Construction projects based on the preliminary designs developed during the SCMP process were funded by the Emergency Watershed Protection (EWP) program, administered by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS); FEMA's Public Assistance (PA) program; FEMA's Hazard Mitigation Grant Program (HMGP); and the U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant – Disaster Recovery (CDBG-DR) program. Because these projects were funded by federal agencies, an assessment is required to analyze the potential environmental consequences in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 55 parts 4321 et seq., 2000), the Council on Environmental Quality (CEQ) implementing regulations (40 Code of Federal Regulations [CFR] 30 parts 1500 et seq., 2004), 44 CFR Emergency Management and Assistance Ch. I Part 10, and 23 CFR 771.

This assessment must be compliant with the NEPA. The NEPA and its implementing regulations direct federal agencies to take into consideration the environmental consequences of proposed actions during the decision-making process. All federal agencies must comply with the NEPA before making Federal funds available. The Federal Emergency Management Agency (FEMA) has taken the lead in determining that the projects proposed for funding have reached the level where an Environmental Assessment is required and can be grouped by type of action or location. FEMA proposes that the groups of actions proposed for the Town of Jamestown river corridor can be evaluated in a PEA for compliance with NEPA and its implementing regulations without the need to develop an individual agency Environmental Assessment (EA) for every action.

In the spirit of Unified Federal Review as outlined in SRIA coordination between FEMA and other federal agencies was conducted in order to facilitate a comprehensive strategy to address recovery efforts for the Town of Jamestown. Much of this coordination took place as part of Disaster Unified Review Team (DURT) meetings. An example of progress from these meetings includes a finding of *Not Likely to Adversely Affect* for the Preble's meadow jumping mouse in the Town of Jamestown from the U.S. Fish and Wildlife Service (FWS). The programmatic nature of this document is a result of Unified Review coordination as federal agencies with the potential to provide recovery funding have been asked to participate in the development of this PEA. Interagency coordination correspondence can be found in Appendix A.

The interagency environmental analysis found that the projects identified in the PEA will not have a significant impact on the quality of the environment. A Finding of No Significant Impact (FONSI) was issued in March 2014. The FONSI is available in Appendix C.

Figure 1: Project Location within Boulder County

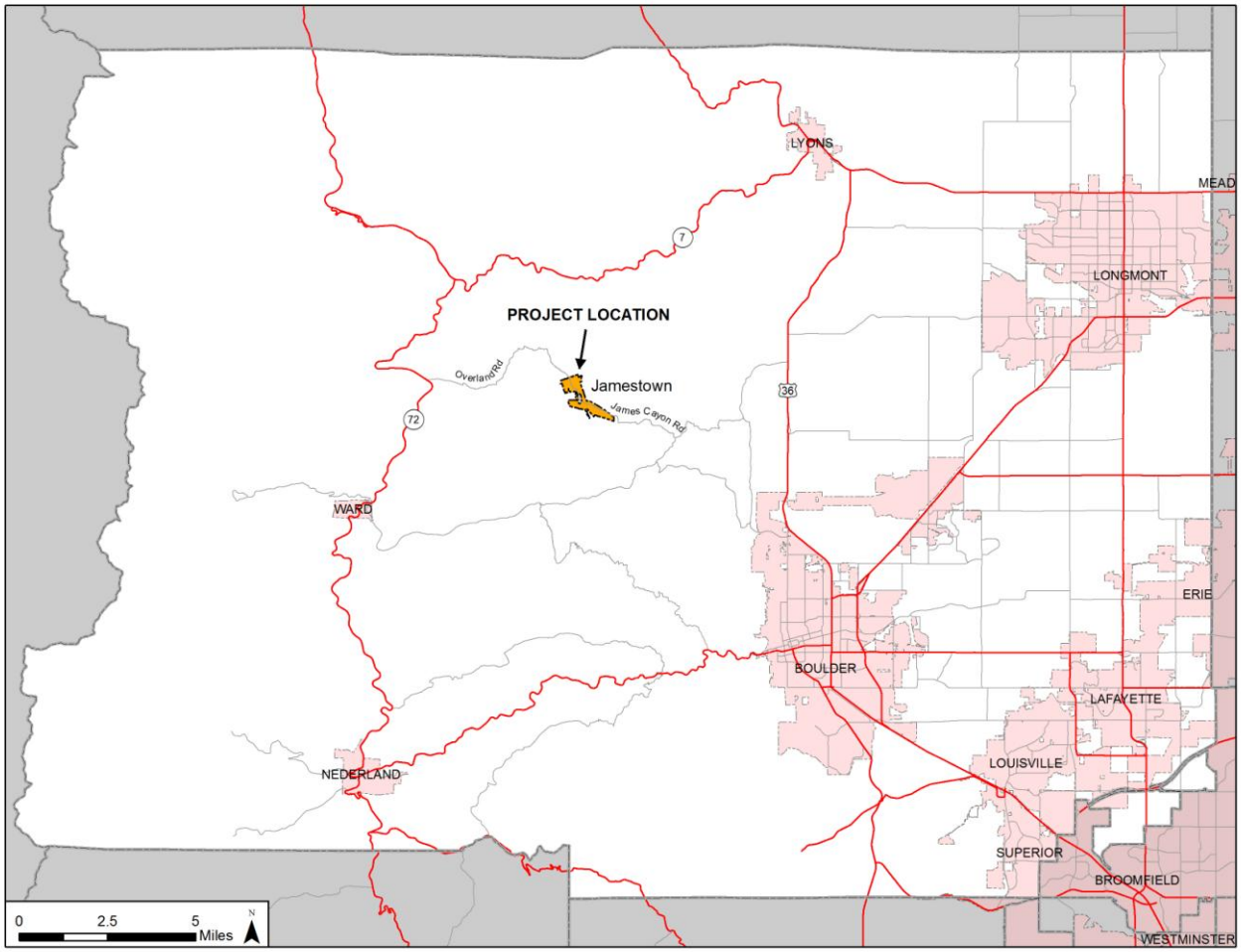


Figure 2: Town of Jamestown Boundaries, Roadways and Land Stewardship

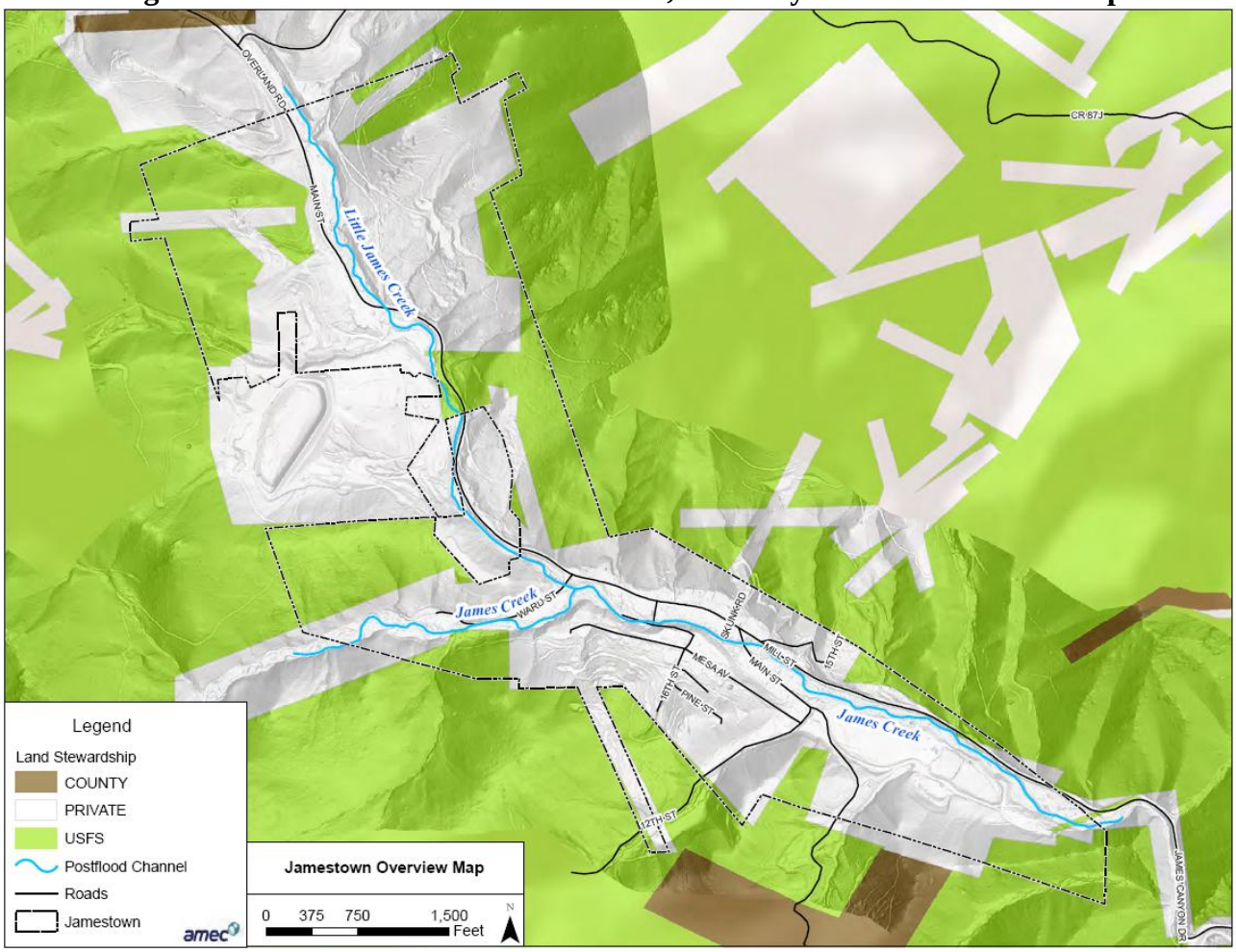
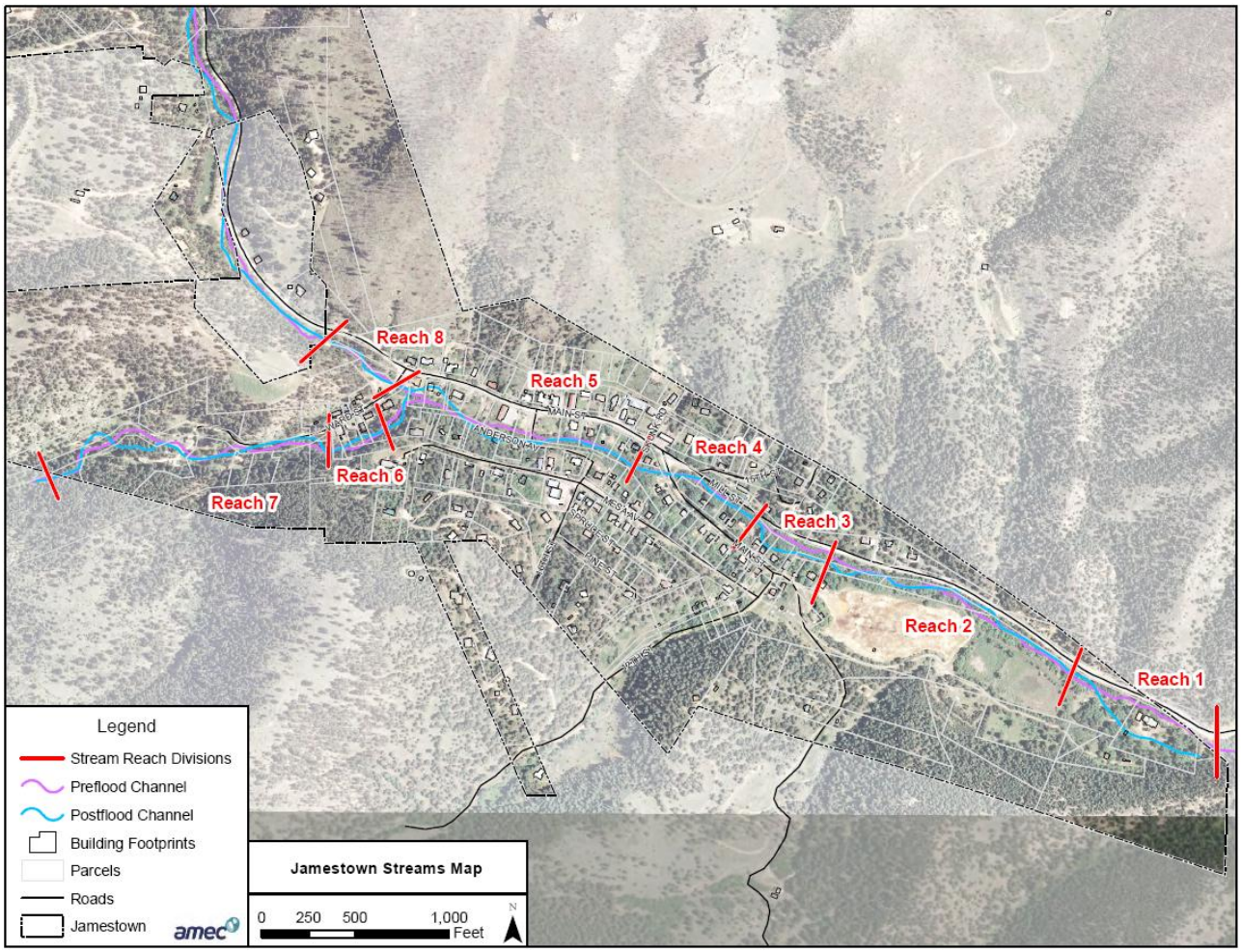


Figure 3: Jamestown Stream Corridor Reaches



SECTION TWO | PURPOSE AND NEED

This PEA evaluates numerous individual sites where the repair, replacement, restoration and/or relocation of buildings, infrastructure, and river channels will be undertaken by Agencies to provide permanent restoration of function. It also addresses mitigation activities that reduce disaster losses and protect life and property to existing infrastructure, buildings and river channels from future disaster damages. These actions are required as a result of historic and anticipated future flooding throughout the State of Colorado and are applicable to all proposed alternatives described in this document. This PEA also provides the public and decision-makers with the information required to understand and evaluate the potential environmental consequences of these actions and to consider these impacts in decision making. The purpose of this action is to help Agencies fulfill and expedite the environmental review process.

Agencies will use this PEA to determine the level of environmental analysis and documentation required under NEPA for permanent infrastructure, and building and stream channel repairs or modifications for any of the proposed alternatives. If the description of the site-specific project work and the levels of analysis are fully and accurately described in this PEA, then Agencies will take no further action other than what is necessary to support and document that conclusion. If a specific project is expected to (1) create impacts not described in the PEA; (2) create impacts greater in magnitude, extent, or duration than those described in the PEA; or (3) require mitigation measures to keep impacts below significant levels that are not described in the PEA; then a Supplemental Environmental Assessment (SEA) would be prepared to address the specific action. The SEA would be tiered from this PEA, in accordance with 40 CFR Part 1508.28. Actions that are determined during the preparation of the SEA to require a more detailed or broader environmental review will be subject to the stand-alone EA process.

The Jamestown stream corridor recovery projects will be funded with a variety of federal sources including NRCS EWP, FEMA PA, HMGP, and CDBG-DR grants. These programs all share a similar goal of helping state, local, or tribal governments recover from disasters and mitigate future losses. The specific purpose statements of each program are provided here:

- **NRCS EWP:** "The program is designed to help people and conserve natural resources by relieving imminent hazards to life and property caused by floods, fires, windstorms, and other natural occurrences. EWP is an emergency recovery program." (http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/)
- **FEMA PA:** "The mission of the Federal Emergency Management Agency's (FEMA) Public Assistance (PA) Grant Program is to provide assistance to State, Tribal and local governments, and certain types of Private Nonprofit organizations so that communities can quickly respond to and recover from major disasters or emergencies declared by the President." (http://www.fema.gov/public-assistance-local-state-tribal-and-non-profit)

- **FEMA HMGP:** "The Hazard Mitigation Grant Program (HMGP) provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster." (http://www.fema.gov/hazard-mitigation-grant-program)
- **CDBG-DR:** "In response to disasters, Congress may appropriate additional funding for the CGBG and HOME programs as Disaster Recovery grants to rebuild the affected areas and provide crucial seed money to start the recovery process." (http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs/drsi)

The purpose of the Jamestown stream corridor recovery projects is to meet these programs' goals. These projects will satisfy the need to:

- Restore infrastructure and properties in the Town to a safe, sustainable, and permanent function and capacity;
- Mitigate the impacts and losses caused by future flood and debris flows events on Jamestown's essential services, infrastructure and property; and
- Protect the health, safety, and welfare of Jamestown's residents from future floods and debris flows.

SECTION THREE | ALTERNATIVES

3.1 INTRODUCTION

The following Alternatives are being considered for further evaluation in this PEA. These alternatives represent classes of actions that may be implemented individually or in combination with one another. Depending upon the response action The Agencies determines is necessary to maintain buildings, infrastructure and stream corridors, and the individual characteristics of the specific site, there may be only one viable option to be implemented. The following list of alternatives may not be available in all reaches or all segments of each reach. Therefore, each reach may have a different preferred alternative. The preferred alternatives for the eight reaches were identified during the SCMP process, taking into consideration community preferences, scientific analysis, and financial constraints. The conceptual designs for the preferred alternatives were presented at several community meetings throughout January and February 2014. Jamestown private property owners were given multiple opportunities to mark-up and comment on the conceptual designs before giving their approval of the final designs.

3.2 ALTERNATIVES CONSIDERED

Alternative 1: No Action

A No Action Alternative is required to be included in the environmental analysis and documentation in accordance with the Council on Environmental Quality regulations implementing NEPA. The No Action Alternative is defined as maintaining the status quo with no Agency involvement for any alternative. The No Action Alternative is used to evaluate the effects of not implementing the building, infrastructure or stream corridor replacement, repair, relocation, or upgrade action on a programmatic level; thus, this alternative provides a benchmark against which other alternatives may be evaluated.

"No action" means the proposed activity would not take place and the building, infrastructure element or stream corridor would remain in its existing condition. Access may remain restricted due to the loss of a bridge or roadway. For the purpose of the environmental analysis, under the No Action Alternative the Town of Jamestown would have to rely on savings, insurance, loans, or other forms of assistance to restore and retain access to buildings, infrastructure and stream corridors.

Alternative 2: Replacement

This alternative applies to replacement of an existing building, infrastructure element or stream corridor with a new iteration in the existing location. In some reaches or locations within reaches, leaving the stream channel, road, and buildings in their post-flood locations may be the safest and/or most cost-effective option that also meets most private property owners' desires.

This alternative differs from No Action in that it includes projects such as streambank stabilization, grade control, etc.; the flood hazard in that segment of the stream corridor is mitigated without relocating the stream channel, infrastructure, or buildings.

Changes to materials and dimensions are included in this alternative. This may include upgrades to meet existing codes and standards as well as upgrades warranted to address conditions that have changed since the original construction. In the case of stream corridors that no longer serve as functional drainageways, bank stabilization and/or grade control may be needed to restore stream corridor function and stability. Figure 4 through Figure 7 show examples of bank stabilization measures and Figure 8 depicts an example of grade control.

Figure 4: Example Concrete and RipRap

Figure 5: RipRap with Natural Stream

Figure 6: Engineered Woody Debris

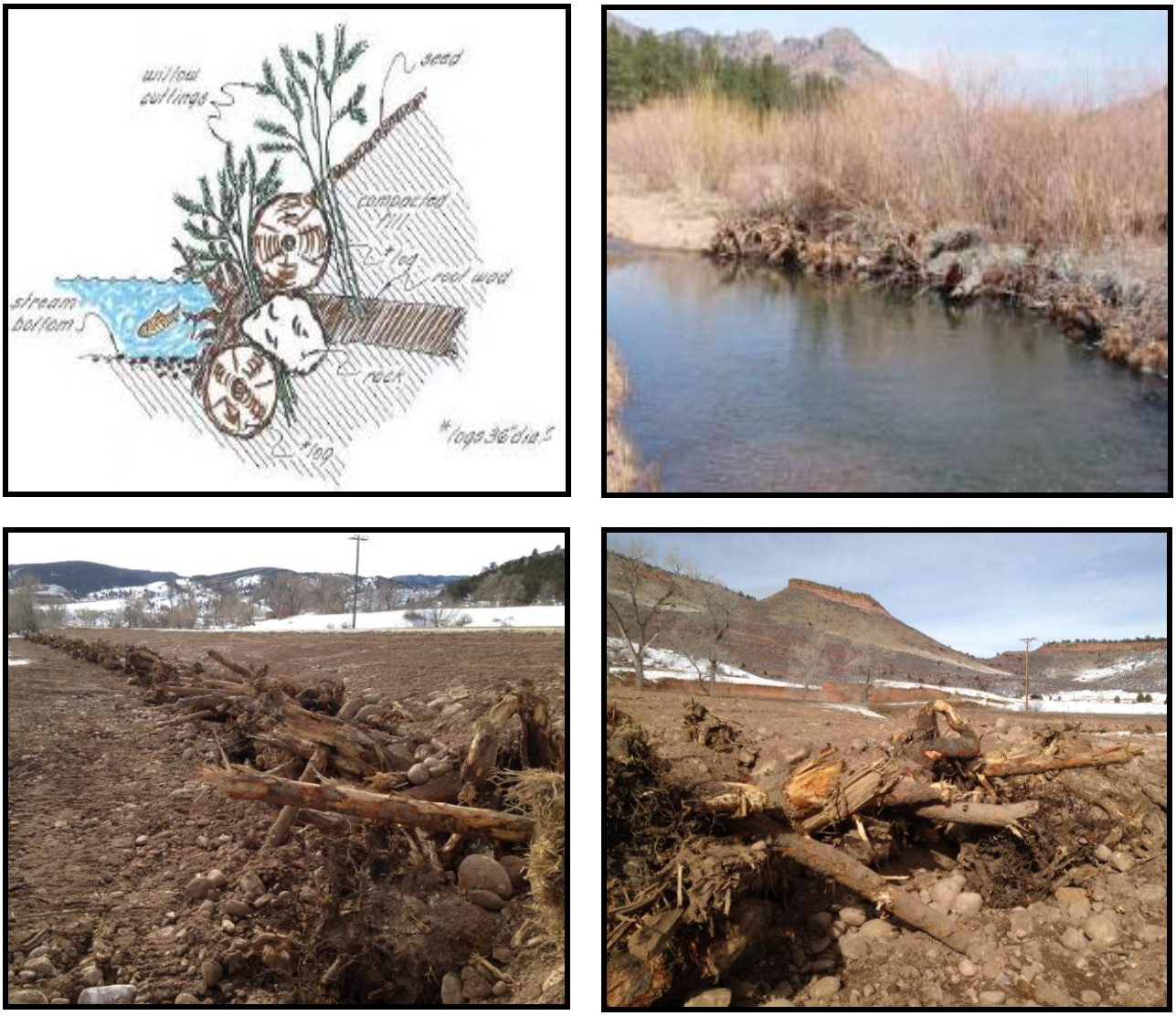
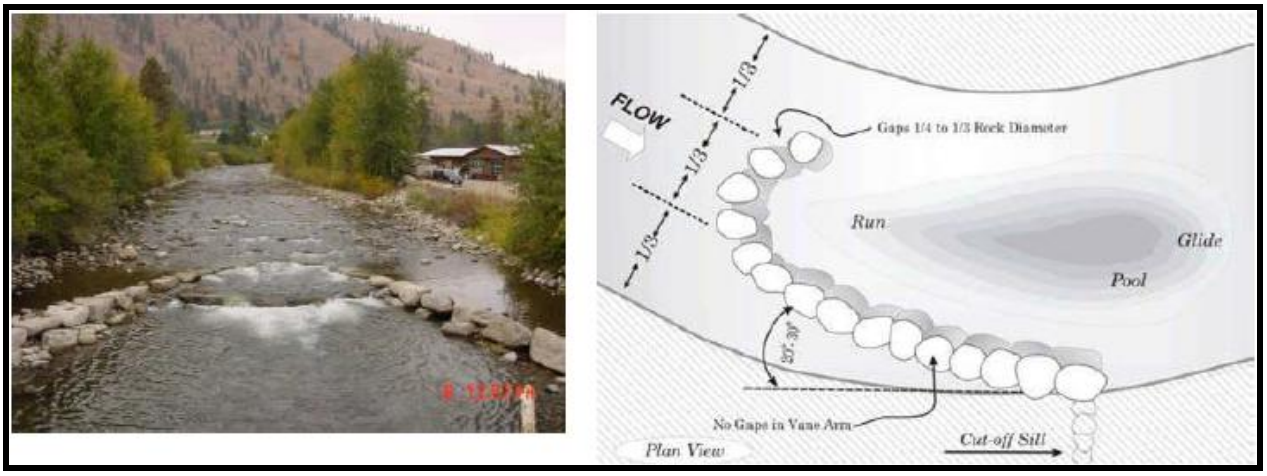


Figure 7: Bank Re-Vegetation

Figure 8: Grade Control



Some bridges in the community are not sufficiently-sized to convey floodwaters and debris. These bridges may need to be replaced by longer or wider structures to restore (or improve upon) the pre-flood level of service and stability. Included in this alternative are upgrades to current codes, standards, and construction of road approaches which are necessary to maintain the roadway system. Figure 9 and Figure 10 have examples of possible bridge changes under this alternative. Applicable design codes will be followed for all construction design.

Figure 9: Bridge Length Adjustment Top View

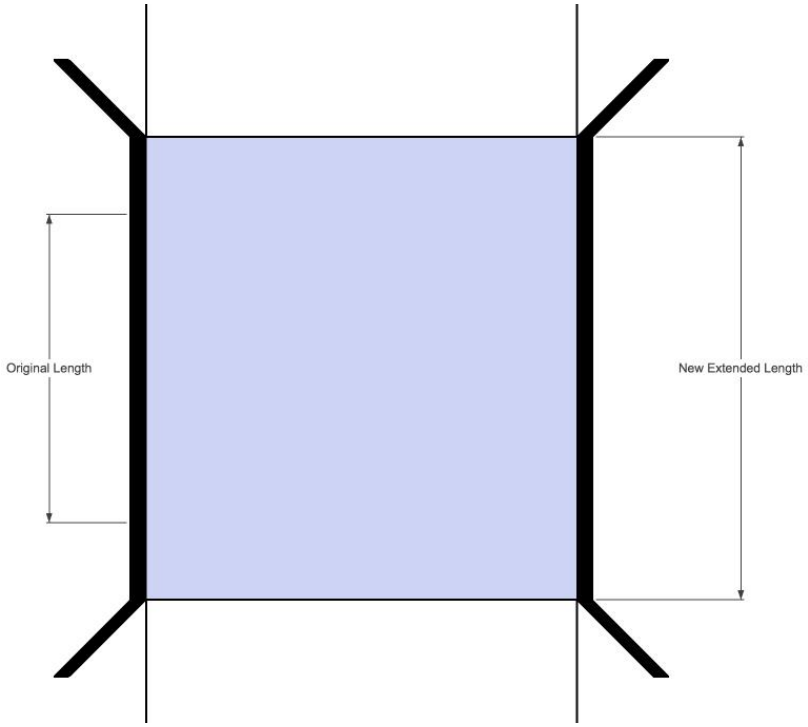
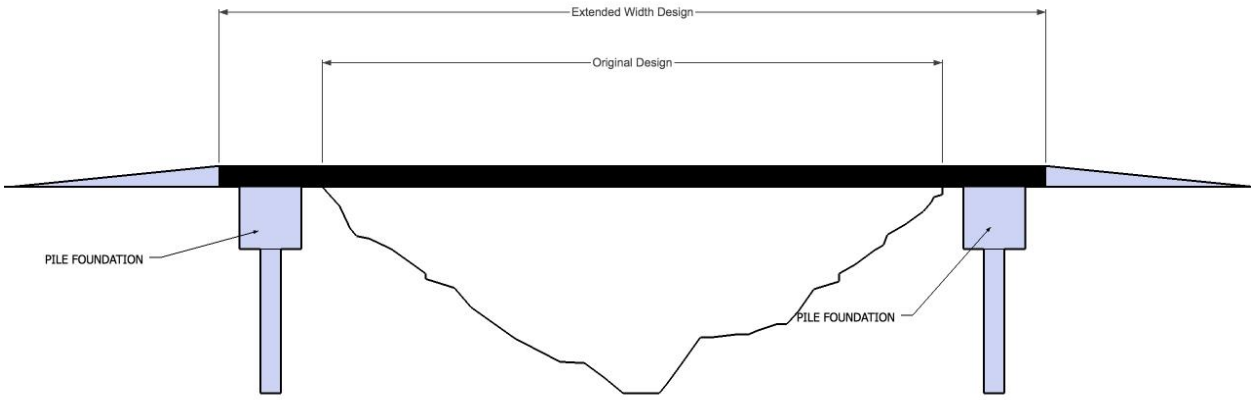
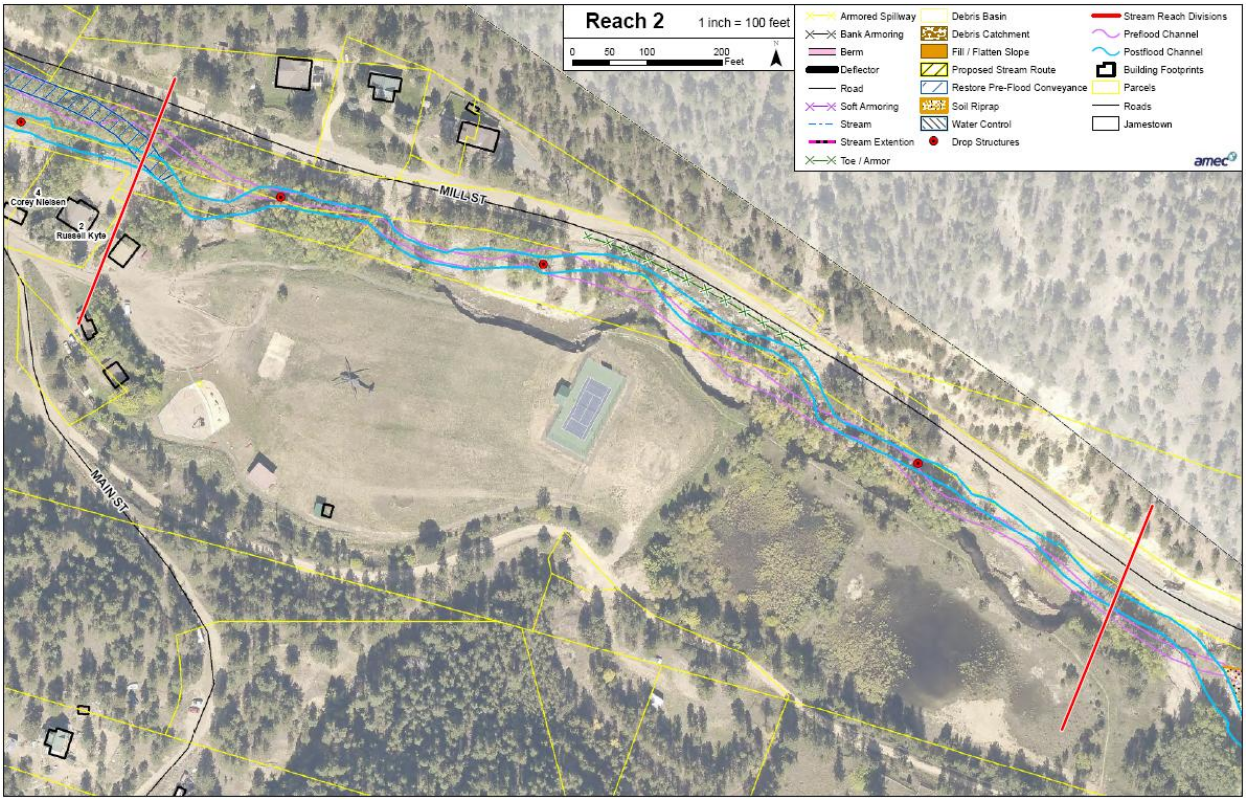


Figure 10: Bridge Length Adjustment Side View



The conceptual design for Reach 2 is shown in Figure 11 as an example of the 'replacement' alternative. The stream channel and road would be kept in their post-flood locations. Drop structures would be installed to help control flood velocities, and the stream bed nearest to the road would be stabilized.

Figure 11: Preliminary Conceptual Design for Reach 2



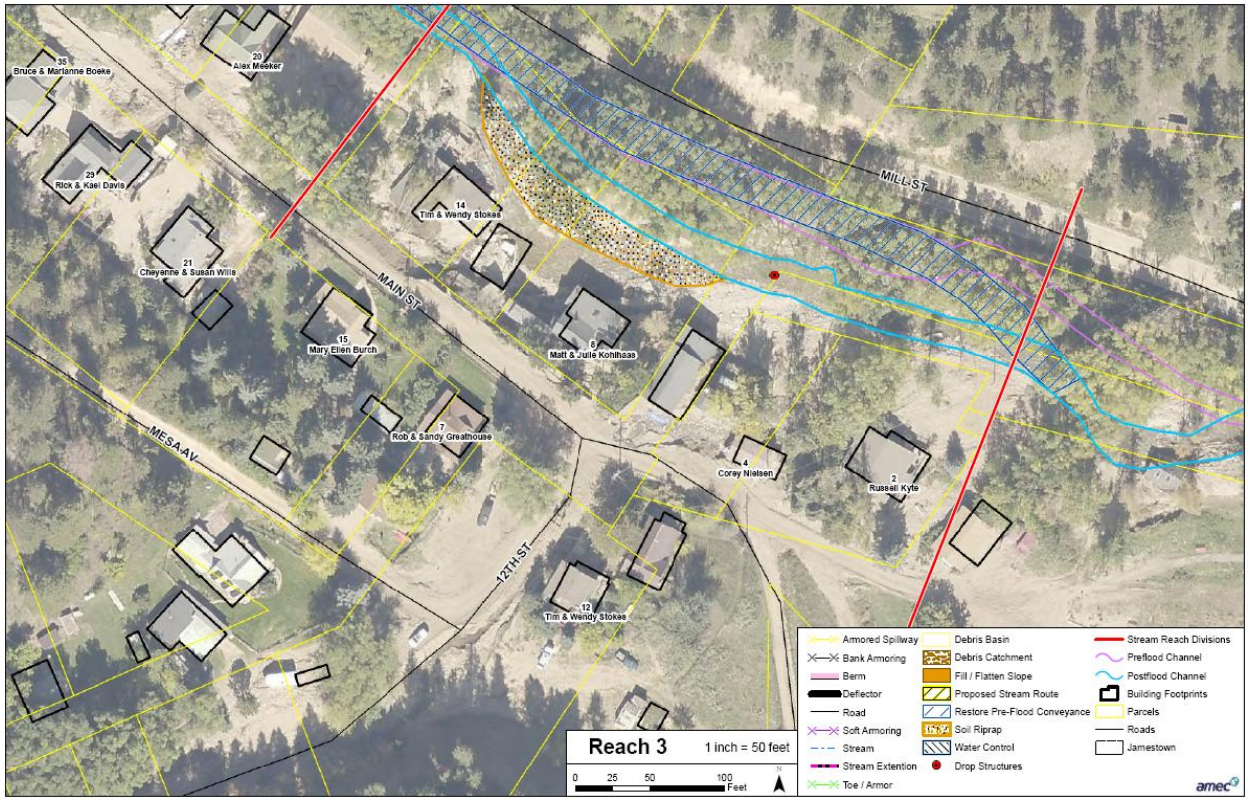
Alternative 3: Relocation

This alternative includes the realignment of the stream channel and/or relocation of buildings or infrastructure to another location generally within the existing stream corridor. In some locations of the project area the post-flood stream alignment poses too great a threat to public safety and infrastructure, and prevents private property owners from returning to Jamestown and rebuilding their homes. The stream channel, infrastructure, or buildings in these locations may need to be relocated to protect life safety and property during future flood and debris flow events.

Included in this alternative is the construction of new or relocated buildings, infrastructure, and stream corridors which are necessary to the Town of Jamestown. Road and infrastructure relocations will contain a beginning and end point that tie to the original segment. These segments may be either longer or shorter than the segments they are replacing. Buildings, infrastructure or stream corridors that are replaced would be abandoned and/or removed. Purchase of land or new easements may be required. Parts of Jamestown are only accessible via one road segment. Due to building constraints such as stream channel alignment and the

mountainous terrain of the Town, an alternate route may not be available. Applicable design codes will be followed for all construction. Figure 12 depicts the conceptual design for Reach 3 as an example of the 'relocation' alternative. Based on this design, the stream channel segment in Reach 3 would be almost entirely relocated to its pre-flood alignment.

Figure 12: Preliminary Conceptual Design for Reach 3

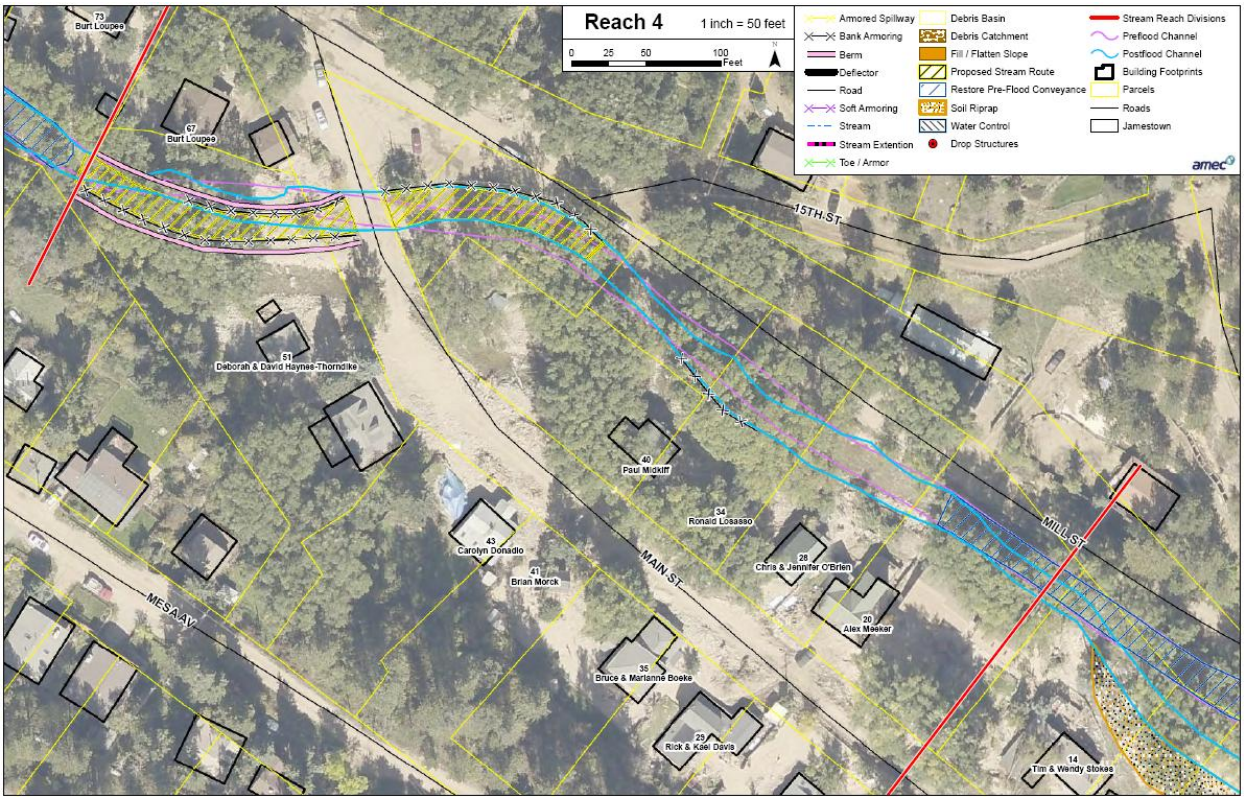


Alternative 4: Combination

Alternative 4 includes some combination of No Action, Replacement, and/or Relocation within a single reach. Individual buildings or segments of the road or stream channel may be left in their post-flood location and condition if it is determined that No Action is the safest, most cost-effective alternative. Adjacent buildings or segments of roads or streams within the same reach may be replaced or relocated to mitigate flood risk, restore Jamestown's infrastructure, and enable as many private property owners to rebuild their homes as possible.

Figure 13 illustrates a preliminary conceptual design recommendation for Reach 4 that includes a combination of Replacement and Relocation. Relocating the downstream segment of James Creek to or near its pre-flood location restores some private property on lower Main St. The immediately adjacent upstream segment would be left in its post-flood location with stream stabilization measures installed in front of 40 Main St. and 34 Main St.

Figure 13: Preliminary Conceptual Design for Reach 4



3.3 ALTERNATIVES CARRIED FORWARD

Alternatives 1, 2, 3, and 4 were carried forward. The preferred alternative for each reach may vary. Refer to Section 6 for a list of the preferred alternative for each reach.

3.4 ALTERNATIVES NOT CONSIDERED

Applicants for federal grant funding may repair buildings, infrastructure and elements of stream corridor embankments and crossings to pre-disaster condition under programs like FEMA's Public Assistance Program or make small mitigation upgrades under Hazard Mitigation Grant Programs. These types of projects may fall into a Statutory Exclusion or a Categorical Exclusion under NEPA and will be evaluated accordingly. No further review of these types of projects will be considered in this PEA.

SECTION FOUR | AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.1 PHYSICAL RESOURCES

4.1.1 Affected Environment

The Town of Jamestown is located in central Boulder County, Colorado. It lies along James Creek within the Front Range of the Colorado Rockies. Jamestown's elevation is 6,920 feet (2,110 m) above sea level. The Town of Jamestown is located in the Southern Rocky Mountain province and consists of mountainous slopes with gravely sandy loam soil compositions. The mean annual precipitation for the Town is from 16 to 25 inches. Temperatures average 45 to 48 degrees Fahrenheit throughout the year. The Town of Jamestown is located in Ponderosa pine-Rocky Mountain juniper vegetation classification.

Geology and Soils

Five different physiographic provinces are found within Colorado: Colorado Plateau, Wyoming Basin, Southern Rocky Mountains, Middle Rocky Mountains, and the Great Plains.

The Town of Jamestown is within the Southern Rocky Mountains physiographic province. The Rocky Mountain province is a complex assortment of igneous, metamorphic, and sedimentary rocks in approximately equal proportions.

The Town of Jamestown consists of mountainous slopes with gravely sandy loam soil compositions. The soil complex known as Cypher-Ratake families complex is found throughout the area and is a poorly drained soil. These soils are not suitable for prime farmland.

Land Cover/Vegetation

In 2000, the Colorado Division of Wildlife (now part of Colorado Parks and Wildlife) and the U.S. Geological Survey produced a report entitled "Colorado Gap Analysis Project: A Geographic Approach to Planning for Biological Diversity." The report showed land cover types across Colorado. According to this report Jamestown lies within the ponderosa pine land cover area. Land use in the Town of Jamestown is mostly residential homes surrounded by an evergreen forest. According to the 2012 American Community Survey, there are 134 total housing units in Jamestown. Other important locations in the community include one cemetery, one elementary school, one church, two Town parks, and one café.

Water Resources

The Town of Jamestown is divided by James Creek (also known as Jim Creek). James Creek is a tributary of the larger Left Hand Creek Watershed, which is part of the St. Vrain Creek basin (HUC 10190005). Left Hand Creek, James Creek, and Little James Creek are the primary streams in the Left Hand Creek watershed. James Creek, the largest tributary to Left Hand Creek, drains an area of approximately 48 km^2. This sub-watershed is covered entirely by alpine and sub-alpine forest. Elevations in the James Creek watershed range from approximately 3,000 meters at the headwaters in the Indian Peaks Wilderness Area to 2,000 meters at the confluence with Left Hand Creek approximately 5 km south of Jamestown. A diversion of the South St. Vrain Creek, which drains glacial-melt lakes near the continental divide, contributes nearly all of the flow of James Creek during certain parts of the year. Snowmelt in the South St. Vrain Creek headwaters feeds high James Creek flows. James Creek and its tributaries drain heavily mined slopes, including areas known as the Jamestown and Golden Age mining districts. Data collected by the University of Colorado in July of 2002 indicated that zinc may at times exceed acute water quality criteria in James Creek upstream of the Town of Jamestown, and both copper and zinc may sometimes exceed acute water quality criteria at the point of confluence with Little James Creek. Data collected by RiverWatch, a volunteer water monitoring organization developed by the Colorado Division of Wildlife, indicate exceedance of acute criteria for copper in Upper James near Chipmunk Gulch and below Overland Mountain .

Floodplains

According to the effective FEMA Flood Insurance Rate Map (FIRM) (December 18, 2012, panel number 08013C0357J), shown in Figure 14, significant portions of the Town of Jamestown were located within Special Flood Hazard Area Zone AE (1% annual chance) and Moderate and Minimal Risk Areas shaded Zone X (0.2% annual chance), Zone X (outside 1% and 0.2% annual chance), and Zone D (non-determined). The majority of the Town is mapped as being in the floodway due to the narrow topography of the stream corridor. Figure 15 depicts the provisional flood hazard delineation (PFHD) developed during the SCMP process. (The PFHD and associated plans and profiles are on file with Jamestown's floodplain administrator and can be accessed on the Town's website: http://jamestownco.org/.) The stream channel avulsions (relocation), scour, and deposition that occurred during the September 2013 flood event substantially altered the 1% annual chance and 0.2% annual chance flood zones. The horizontal boundaries of the 1% annual chance flood zone are, in general, noticeably wider throughout the stream corridor. In fact, the boundaries of the 1% annual chance and 0.2% annual chance flood zones are now nearly coterminous in places along lower Ward St. and upper Main St. This has had significant implications for private property owners who may now be in the 1% annual chance flood zone when they were outside of the Special Flood Hazard Area (SFHA) prior to the flood.

For the sake of comparison, Figure 16 shows the 1883 stream alignment, the effective Digital Flood Insurance Rate Map (DFIRM), and the PFHD. Of particular note is the change in stream alignment at the confluence of Little James and James creeks. Historically the stream channel meandered up to Main St. after converging. James Creek avulsed again during the September 2013 flood event, attempting to follow the historical alignment at the confluence and damaging or destroying several properties in the process. Note that the 1883 stream channel does not extend through the full length of the current Town boundaries; it extends from roughly Reach 3 to Reach 6. The Town boundaries have expanded significantly since 1883, and data on the stream channel alignment outside of the historical boundaries was not available.

Figure 14: Effective DFIRM (December 18, 2012)

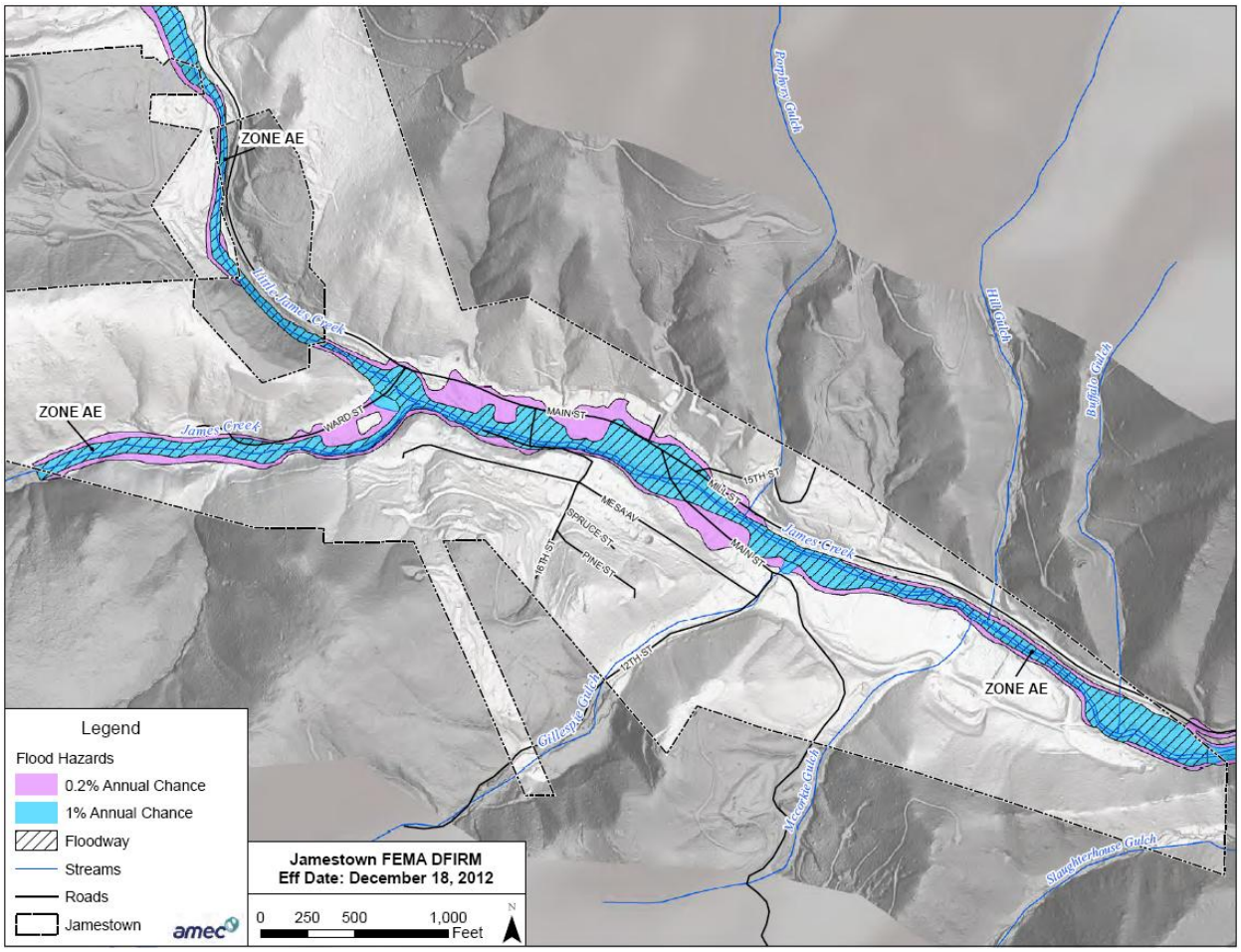


Figure 15: Provisional Flood Hazard Delineation (February 7, 2014)

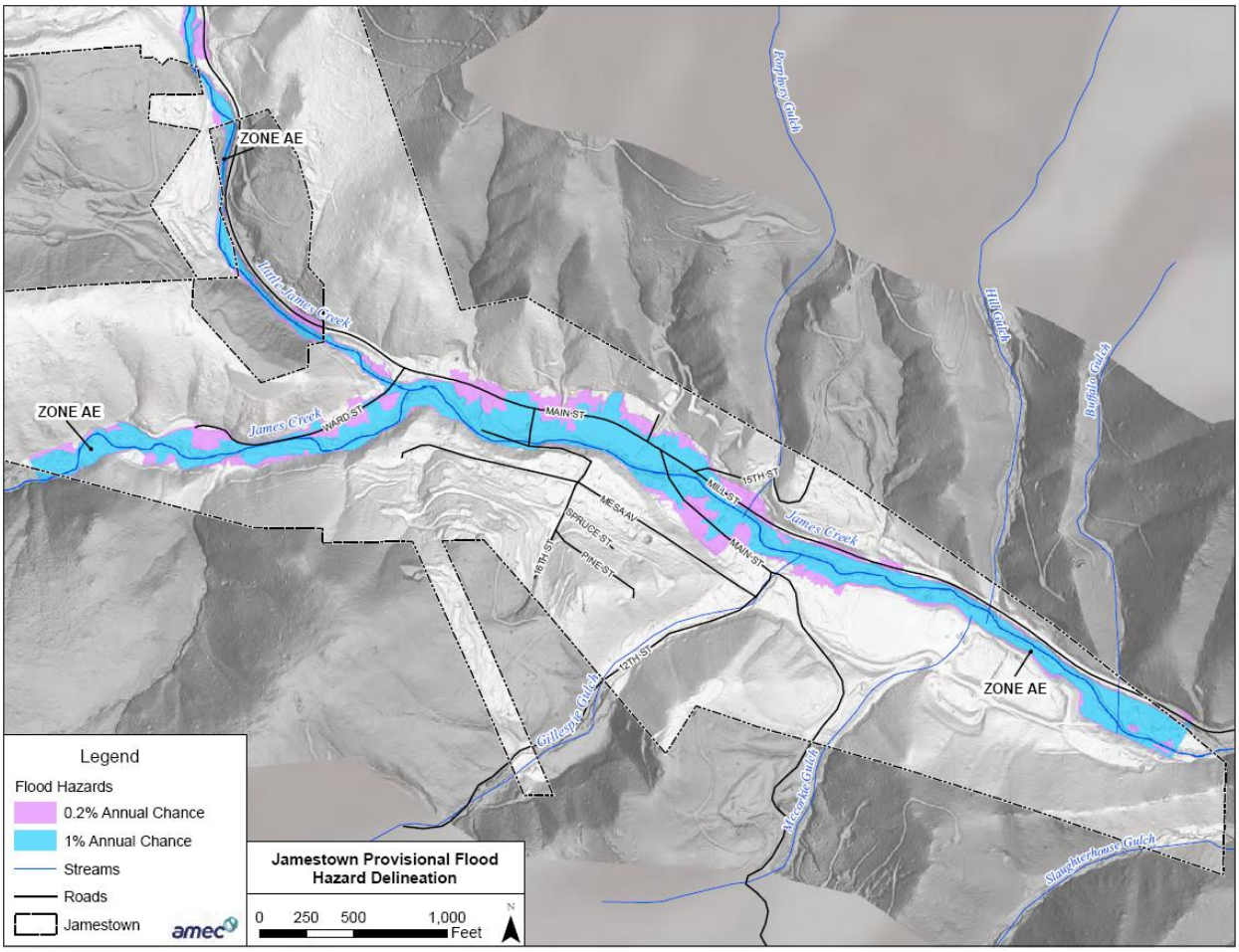
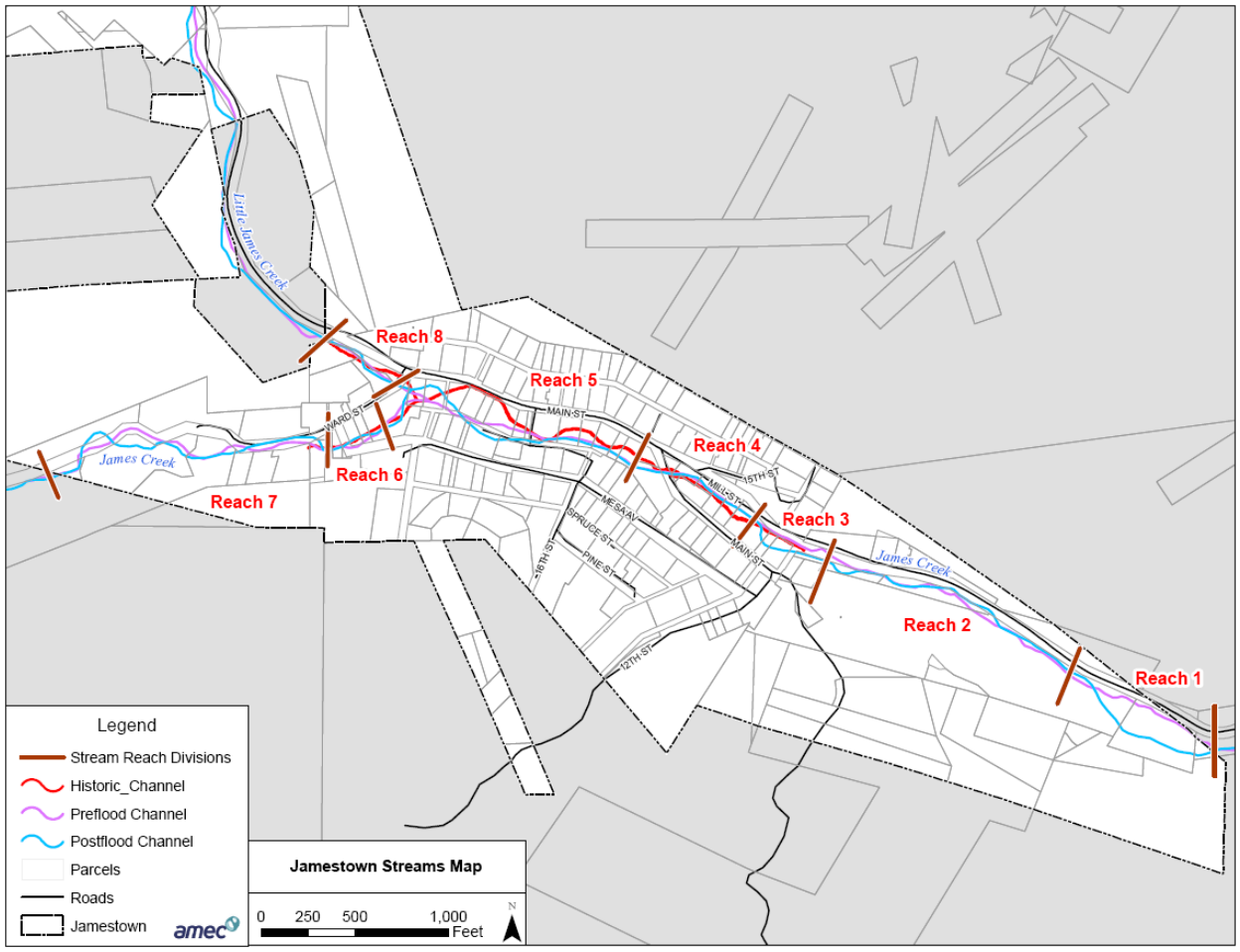


Figure 16: Comparison of 1883 Channel, Pre and Post 2013 Flood Channel



Wetlands

There are no identified wetlands within the project area according USFWS National Wetland Indicator (NWI). If any wetlands are found during subsequent site inspection, construction will be coordinated with USACE.

Wildlife and Game Species

Boulder County is home to a variety of large wildlife and game species such as Mule Deer, Elk, Black Bear, and Mountain Lion. Smaller species include Coyotes, Foxes, Rabbits, Raccoons, Squirrels, and Birds. However, the proposed project will have little to no effect on these wildlife species.

Protected Species

The USFWS recognizes seven species that are endangered, threatened, or candidates for listing under the Endangered Species Act (ESA) that may occur or previously occurred in Boulder County. An additional five species (least tern [interior population], pallid sturgeon, piping

plover, western prairie fringed orchid, and whooping crane) are listed because water depletions in the North Platte, South Platte and Laramie River Basins may affect the species and/or critical habitat associated with the Platte River in Nebraska. These species are presented in Table 1 below.

Table 1: Endangered, Threatened, or Candidate Species Listed for Boulder County

Common Name	Scientific Name	Type	Federal Status**
Mexican Spotted Owl	*Strix occidentalis lucida*	Bird	Threatened
Preble's Meadow Jumping Mouse	*Zapus hudsonius preblei*	Mammal	Threatened
Ute Ladies'-tresses Orchid	*Spiranthes diluvialis*	Plant	Threatened
Colorado Butterfly Plant	*Gaura neomexicana* var. *coloradensis*	Plant	Threatened
Canada Lynx	*Lynx canadensis*	Mammal	Threatened
North American Wolverine	*Gulo gulo luscus*	Mammal	Candidate
Greenback Cutthroat Trout	*Oncorhynchus clarki stomias*	Fish	Threatened
Least Tern (interior population)*	*Sterna antillarum*	Bird	Endangered
Pallid Sturgeon*	*Scaphirhynchus albus*	Fish	Endangered
Piping Plover*	*Charadrius melodus*	Bird	Threatened
Western Prairie Fringed Orchid*	*Platanthera praeclara*	Plant	Threatened
Whooping Crane*	*Grus americana*	Bird	Endangered

*Water depletions in the North Platte, South Platte and Laramie River Basins may affect the species and/or critical habitat associated with the Platte River in Nebraska. Critical Habitat as designated under the ESA is present in this county.

**ENDANGERED - Any species that is in danger of extinction throughout all or a significant portion of its range.
THREATENED - Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
PROPOSED - Any species of that is proposed in the Federal Register to be listed under section 4 of the Act.
CANDIDATE - Those taxa for which the Service has sufficient information on biological status and threats to propose to list them as threatened or endangered. We encourage their consideration in environmental planning and partnerships, however, none of the substantive or procedural provisions of the Act apply to candidate species

The Town of Jamestown Stream Corridor projects are within an urbanized corridor with residential and commercial development that does not provide habitat for the species listed in Table 1. The projects are located within the designated critical habitat range of Preble's meadow jumping mouse (*Zapus hudsonius preblei*), a species listed as Threatened under the ESA that inhabits riparian areas as indicated by GIS data provided by USFWS to the Agencies. Given the heavily developed and previously disturbed nature of the project area, it is unlikely that a large population of Preble's existed in this area prior to the flooding disaster. The flooding in September 2013 scoured the stream banks and removed shrubby riparian vegetation that previously existed there, making the habitat undesirable for Preble's. Therefore, their presence in this area is unlikely. Any Preble's that might have been present in the area and survived the

storm without being washed downstream may be hibernating in more upland areas away from the Jamestown project area. The Colorado butterfly plant (*Gaura neomexicana* spp. *coloradensis*) and the Ute ladies'-tresses orchid (*Spiranthes diluvialis*) are also known to inhabit riparian areas. Like the Preble's, they are unlikely to have existed in the urbanized project area prior to the floods, and flood scouring has subsequently made riparian areas unsuitable for these species.

FEMA requested concurrence from USFWS on a finding of *may affect, but is not likely to adversely affect* for project activities on the Preble's meadow jumping mouse on January 15, 2014. Concurrence on this effect determination was received by FEMA from Susan Linner, Colorado Field Supervisor, of the USFWS on January 21, 2014 (see Appendix A for consultation documentation). Based on prior discussions with USFWS, FEMA made a determination of *no effect* for project activities on the remaining species listed for Boulder County.

Raptors and other bird species may nest in the cliff faces adjacent to the stream corridor or on structures slated for repair or replacement. Conditions will be attached to the grants to avoid or minimize impacts to bird species protected under the Bald and Golden Eagle Protection Act and/or the Migratory Bird Treaty Act.

As specific projects are identified, the impacts will be assessed and addressed as appropriate. The Agencies will consult with USFWS either in the context of an overall pre-negotiated programmatic consultation or on an individual project basis within the Stream Restoration Corridor.

4.1.2 Environmental Consequences

Alternative 1: No Action

Under the No Action alternative, no federal action would be completed. Alternative 1 has potential to permanently displace residents and change land use if access is lost as a result of an abandoned bridge or impassable road. Additionally Alternative 1 has the potential to permanently alter drainage and flow rates downstream. Loss in residential, commercial, agricultural, or recreational land use may occur. This could lead to vegetation reclaiming roadways, and public and private properties in the Town of Jamestown as well as downstream impacts.

Alternative 2: Replacement

Under this alternative, the existing buildings, infrastructure and stream corridor would be maintained. Existing infrastructure would be expanded to accommodate best construction practices as well as the changes in channel width. However, building, infrastructure and stream corridor footprint is expected to remain within the previous right-of-way (ROW) so no changes in land use are anticipated.

In some cases, small portions of new ROW may be required due to the additional width of infrastructural elements or widened stream corridor. There may be changes to land use; however, these impacts are not expected to be significant. If the footprint extends outside of the ROW into US Forest Service (USFS) land, a new or revised easement will be required from the USFS. If the footprint extends outside of the ROW into other state or federal lands, additional coordination and permitting will be required from the owner agency. For all ROW acquisitions, the Agencies will comply fully with federal and state requirements including the Uniform Relocation Assistance and Real Property Acquisition Policies act of 1970, as amended (Uniform Act). The Town of Jamestown contains no prime farmland; see Figure 17 and Table 2.

Figure 17: Town of Jamestown and Surrounding Areas Farmland Classification

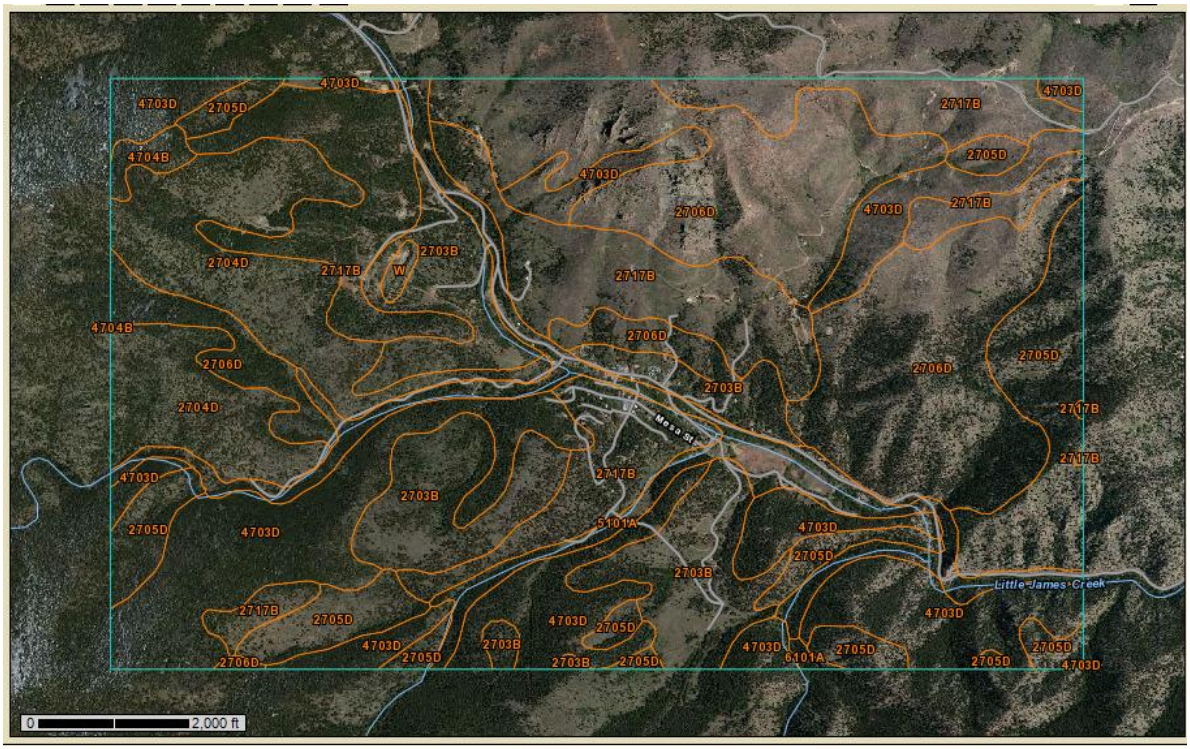


Table 2: Arapaho-Roosevelt National Forest Area, Colorado, Parts of Boulder, Clear Creek, Gilpin, Grand, Park and Larimer Counties

Map Symbol	Map Unit Name	Farmland Classification
2703B	Cypher-Ratake families complex, 5 to 40 percent slopes	Not prime farmland
2704D	Typic Haplustolls-Cathedral family-Rock outcrop complex, 40 to 150 percent slopes	Not prime farmland
2705D	Ratake-Cathedral families-Rock outcrop complex, 40 to 150 percent slopes	Not prime farmland
2706D	Cypher family-Rock outcrop complex, 40 to 150 percent slopes	Not prime farmland
2717B	Cypher-Wetmore-Ratake families complex, 5 to 40 percent slopes	Not prime farmland
4703D	Bullwark-Catamount families-Rock outcrop complex, 40 to 150 percent slopes	Not prime farmland
4704B	Bullwark-Catamount families-Rubble land complex, 10 to 40 percent slopes	Not prime farmland
5101A	Pachic Argiustolls-Aquic Argiudolls complex, 0 to 15 percent slopes	Not prime farmland
6101A	Cryaquolls-Gateview family complex, 0 to 15 percent slopes	Not prime farmland
W	Water	Not prime farmland

Alternative 3: Relocation

Alternative 3 would entail relocation of buildings, segments of infrastructure, and segments of the stream corridor. Small parcels of the Town's ROW may be repurposed into private property, and vice versa, to accommodate relocation of roads, drainages, and the stream channel. Some parcels of private property may be bought out by the Town if it is determined that those parcels are unsafe to rebuild. These bought-out parcels would no longer be used for residential purposes and may instead be turned into public parking, a park, etc. If the footprint extends outside of the ROW into US Forest Service (USFS) land, a new or revised easement will be required from the USFS. If the footprint extends outside of the ROW into other state or federal lands, additional coordination and permitting will be required from the owner agency. For all ROW acquisitions, the Agencies will comply fully with federal and state requirements including the Uniform Relocation Assistance and Real Property Acquisition Policies act of 1970, as amended (Uniform Act). The Town of Jamestown contains no prime farmland; see Figure 17 and Table 2.

Alternative 3 is not expected to impact the endangered, threatened, or candidate species identified in Table 1. However, as specific projects are identified, the impacts will be assessed and addressed as appropriate. The Agencies will consult with USFWS as necessary on individual projects within the Stream Restoration Corridor.

Vegetation along the stream corridor may be lost in the short term. However, streambank stabilization projects will use bioengineered, vegetative stabilization methods wherever possible, increasing the amount of vegetation in the long run.

The floodplain designation of certain parcels may change following relocation of infrastructure, buildings, and the stream corridor.

Alternative 4: Combination

The environmental consequences of Alternative 4 would be similar to the consequences identified in Alternatives 2 and 3.

4.2 TRANSPORTATION FACILITIES

4.2.1 Affected Environment

Most parking access is on private property. Public parking is available in the Town Square near the post office. Traffic volume is relatively low given the Town's small population, much of which includes retirees or seasonal homeowners. The Town is a popular destination for cyclists in the Boulder area, particularly during warmer months and on weekends. Major roadways affected by the flood include James Canyon Dr., Main St., 12th St., Anderson St., Mesa St., and Ward St. Upper Main St. is paved while many of the other roads in Town are compact gravel. The stream crossing at Ward St. and the bridge at lower Main St. were damaged, and the Anderson Hill Bridge was washed away.

4.2.2 Environmental Consequences

Alternative 1: No Action

Under the No Action alternative no federal funding would be provided to repair damaged roads and bridges. Roads would remain in disrepair and bridges would be isolated or abandoned unless actions to maintain or improve the road system would be provided by the State and/or local transportation agencies. This alternative may result in significant adverse impacts due to increased travel times and increasing traffic volumes as travel patterns change.

Alternative 2: Replacement

This alternative would maintain the existing road network and the existing traffic patterns and volumes. Short term impacts would be expected during construction as traffic delays and alternate routes would be required. No significant adverse long term impacts are expected to the transportation volume, capacity, and time of transit. The transportation facilities would be more resilient and less likely to experience substantial damage from future severe weather events.

Alternative 3: Relocation

This alternative would generally maintain the existing road network and maintain existing traffic patterns and volumes. In some cases travel times and distances may increase or decrease slightly. Short term impacts would occur during construction from traffic delays and detours. No significant long term impacts are expected to the transportation volume, capacity, and time of transit. Relocating roads further from waterways would make the transportation facilities be more resilient and much less likely to experience substantial damage from future severe weather events.

Alternative 4: Combination

Generally the impacts to transportation facilities from this alternative would be similar to those described for Alternatives 2 and 3.

4.3 SAFETY AND OCCUPATIONAL HEALTH

4.3.1 Affected Environment

Safety and occupational health issues include exposure to natural hazards; one-time and long-term exposure to asbestos, lead, radiation, chemicals, and other hazardous materials; and injuries or deaths resulting from a one-time accident. Safety and occupational health concerns could impact personnel working on the project and in the surrounding area, as well as travelers using the project sites. Buildings and infrastructure are damaged or isolated creating public safety issues due to flooding. Many structures in the project area were constructed prior to 1978 and have the potential to contain lead-based paint or asbestos.

Lead exposure can result from paint chips or dust, or inhalation of lead vapors from torch-cutting operations. Lead exposure can adversely affect the human nervous system. Due to the size of children, exposure to lead based paint is especially dangerous to small children. Occupational Health and Safety Administration (OSHA) considers all painted surfaces in which lead is detectable to have a potential for occupational health exposure.

Asbestos exposure can result from the inhalation of dust from a plethora construction materials or household products. In 1988 the EPA issued regulations requiring certain companies to report the asbestos used in their products. However, to this day these products can easily be found anywhere in the United States. Asbestos fibers cannot be seen with the naked eye and when inhaled can cause asbestosis that often progresses to disability and death. The Town's Elysian Park, located in Reach 2, was found to have high concentrations of lead and other heavy metals in the soil during the early 2000s. In 2008 Jamestown received a $200,000 Brownfields grant from the EPA to clean up the contaminated soils. The Colorado Department of Public Health and Environment (CDPHE) provided supplemental funding. Risks to human health were eliminated, and Elysian Park is now used as a recreational site by the Jamestown community.

Residents of Jamestown are vulnerable to natural hazards, the most significant of which include flood, debris flows, wildfire; drought, and windstorm. Other hazards that could impact Jamestown include hailstorm, lightning, and severe winter storms. Due to its location in the foothills, Jamestown has had problems with nearby wildfires, floods and debris flows associated with heavy rains on the burned areas. Major historical wildfires in the area include the 1988 Left Hand fire and the 2003 Overland Fire which destroyed several structures in the Town.

4.3.2 Environmental Consequences

Alternative 1: No Action

In the no action alternative buildings, infrastructure and the stream corridor would not be repaired, leaving the Town of Jamestown inaccessible. Damaged facilities are a safety concern as they remain vulnerable to future events. Pieces could be washed downstream impacting other structures. Buildings and infrastructure may be abandoned or closed, but travelers may attempt to cross behind barriers. Infrastructure may be particularly dangerous during winter weather conditions when visibility is more restricted. A No Action Alternative results in restricted access for emergency, police and fire services causing the potential for significant delay. The No Action Alternative provides a significant adverse safety affect to residents of the Town of Jamestown.

Alternative 2: Replacement

Alternative 2 would have no significant impact to public safety or occupational health. Buildings, infrastructure and the stream corridor would be built to current codes and standards with adjustments for the new stream corridor width. Removal or repair of materials with painted surfaces or containing Asbestos may be required and construction workers are required to follow OSHA regulations to provide appropriate Asbestos abatement and avoid release of lead from paint. Construction workers and equipment operators are required to wear appropriate personal protective equipment (PPE) and be properly trained for the work being performed. All solid or hazardous wastes that might be generated by the activities of entities in the Town of Jamestown must be removed and disposed of at a permitted facility or designated collection point (e.g., for solid waste, a utility or construction company's own dumpster). Standard construction traffic control measures will be used to protect workers, residents and the travelling public.

Alternative 3: Relocation

Alternative 3 would have no significant impacts to public safety or occupational health. The new relocated building, infrastructure or stream corridor would be designed to handle the capacity of pre-disaster function. Removal of materials with painted surfaces or containing Asbestos may be required and construction workers are required to follow OSHA regulations to provide appropriate Asbestos abatement and avoid release of lead from paint. Construction workers and equipment operators are required to wear appropriate personal protective equipment (PPE) and be properly trained for the work being performed. All solid or hazardous wastes that might be generated by the activities of entities in the Town of Jamestown must be removed and disposed of at a permitted facility or designated collection point (e.g., for solid waste, a utility or construction company's own dumpster). Standard construction traffic control measures will be used to protect workers, residents and the travelling public.

Alternative 4: Combination

Generally the impacts to public safety or occupational health from this alternative would be similar to those described for Alternatives 2 and 3.

4.4 SOCIOECONOMICS AND ENVIRONMENAL JUSTICE

4.4.1 Affected Environment

According to the U.S. Census, the population of Jamestown in 2000 was 205 and in 2012 was estimated at 281, showing a 37.1% increase. The median resident age was 46.6. In 2011 the estimated median household income was $65,350, down from $67,500 in 2000. In 2011 estimated per capita income was $30,062.

The majority of the Census respondents (97.8%) identified themselves as being of one race. Of those who identified themselves as being of one race, 94.9% identified themselves as being White, 1.8% identified as Asian and 1.1% identified as Hispanic. The remaining 2.2% identified themselves as two or more races.

There are two federally recognized American Indian tribes in Colorado: Southern Ute Indian Tribe of the Southern Ute Reservation and Ute Mountain Tribe of the Ute Mountain Reservation (Colorado, New Mexico and Utah). These tribes are several hundred miles from Jamestown.

The percentage of residents living in poverty in Boulder County was 13.9 % in 2009. The poverty rate was 11.7% for White Non-Hispanic residents and 28.1% for Hispanic or Latino residents. Per a five year estimate 17.6% of individuals in Jamestown are below the poverty level. The official national poverty rate in 2012 was 15% according to U.S. Census estimates.

4.4.2 Environmental Consequences

Alternative 1: No Action

Under the No-Action alternative impacted buildings, infrastructure and stream corridors would not receive federal assistance. There is no requirement for compliance with Executive Orders (EO) 12898 (Environmental Justice) and 13045 (Protection of Children From Environmental Health Risks and Safety Risks) since there are no federal actions. Alternative 1 has potential to result in significant adverse impact to socioeconomics of a community if buildings and critical infrastructural elements such as utilities are not restored. Residents may be isolated from their homes and businesses. Farmers/ranchers may be isolated from their crop/pasture/hay lands. Post-flood stream corridors may reclaim property and compromise infrastructure.

Alternative 2: Replacement

During the construction period this alternative may provide some short term benefits by providing construction jobs and a multiple effect of increased expenditures in the local economy.

There may be major effects to populations during construction periods due to road detours, infrastructure and building construction and stream corridor construction.

Efforts would be made during any construction to minimize short-term disruption to the local transportation system. Low income and minority populations may actually benefit during the construction process through the provision of construction jobs and multiplier effects of expenditures in the local economy. Any adverse impacts to low income or minority populations are expected to be short-term and not significant.

Alternative 3: Relocation

Generally the impacts to socioeconomics and environmental justice from this alternative would be similar to those described for Alternative 2 although there is the potential for original buildings and infrastructure to be abandoned. Construction of new road segments that are longer than the existing roadway could permanently increase travel distances and time. Extended travel distances and time increases fuel consumption due to longer commutes, and additional energy consumption associated with construction activities. However, these impacts are not expected to be significant, as the road relocations are expected to be relatively minor distances from the existing infrastructure.

During the construction period this alternative may provide some short term benefits by providing construction jobs and a multiple effect of increased expenditures in the local economy.

It is important to note the potential socioeconomic impact on the Town from buying out properties that were severely damaged or destroyed during the flood. Nine properties were identified as potential candidates for the HMGP buyout program. If these properties could not be rebuilt, the Town would lose several thousand dollars in property taxes each year. This impact could potentially be mitigated through land swapping; if displaced private property owners were able to rebuild on a different parcel, the Town could buyout the dangerous properties and still retain tax revenue.

Alternative 4: Combination

Generally the impacts to socioeconomics and environmental justice from this alternative would be similar to those described for Alternatives 2 and 3.

4.5 AIR QUALITY

4.5.1 Affected Environment

The Town of Jamestown is currently in attainment or maintenance for air quality as is the majority of Colorado with the exception of the Denver-Boulder-Greeley-Ft. Collins-Loveland area which is listed as being in nonattainment for 8-hour ozone under the National Ambient Air Quality Standards.

4.5.2 Environmental Consequences

Alternative 1: No Action

Under the No Action Alternative, areas near impassible roads may experience a reduction in localized vehicle emissions, while other areas may experience an increase due to re-routed traffic. Overall there may be an increase in vehicle emissions compared to pre-disaster conditions as detour routes are likely to be longer that the routes they replace.

Alternative 2: Replacement

Construction of buildings, infrastructure and stream corridors may include pre-cast concrete and some poured in place concrete. During construction there may be temporary increases in equipment exhaust emissions and fugitive dust. However, the temporary increase in equipment exhaust is expected to be negligible as long as the equipment is well maintained and idling is minimized. Asphalt paving emits volatile organic compounds (precursors to ozone) as it cures, but this is also expected to be negligible. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.

If fugitive dust were to become a problem it can be mitigated by periodic watering of active construction areas, particularly areas close to any nearby sensitive receptors (e.g., hospitals, senior citizen homes, schools). Impacts from fugitive dust are anticipated to be short-term and negligible.

Where removal of buildings, infrastructure, or bank stabilization/construction within the stream corridor is required there would be some short term increase in fugitive dust and vehicular emissions. Mitigation of fugitive dust, if necessary can be accomplished by periodic watering of the demolition site.

A land development permit may be required from Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division. Projects that last less than 6 months and disturb less than 25 acres do not require a permit. Generator engines in place for more than one year would require a permit, though most projects should not require.

After construction there would be no change in air quality as this alternative would not change roadway length, and therefore would not change the amount of vehicle emissions.

Alternative 3: Relocation

Generally the impacts to air quality from this alternative would be similar to those described for Alternative 2. Although roadway location may either increase or decrease slightly, changing the amount of vehicle emissions, this change is expected to be minor.

Alternative 4: Combination

Generally the impacts to air quality from this alternative would be similar to those described for Alternatives 2 and 3 with air quality impacts affecting both the replacement and relocation project sites. Although roadway length may either increase or decrease slightly, changing the amount of vehicle emissions, this change is expected to be minor.

4.6 NOISE

4.6.1 Affected Environment

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 p.m. to 7 a.m.) are generally considered more annoying than those that occur during normal waking hours (7 a.m. to 9 p.m.).

Noise events in the project vicinity are associated with climatic conditions (e.g., wind, thunder), transportation noise (e.g., traffic on roads, airplanes) and "life sounds" (e.g., people talking, children playing).

4.6.2 Environmental Consequences

Alternative 1: No Action

Under this alternative, buildings, infrastructure and stream corridors would continue to be damaged due to flooding. This would result in a natural shift in occupation density and transportation patterns. Transportation noise along other roadway segments within the County may increase under this alternative due to increasing traffic on alternate roadways. Noise in the immediate area would decrease as buildings and transportation corridors are abandoned. The potential exists that overall noise levels in the immediate area may also decrease due to some migration of residents from the region. The noise as existing roads absorbed the increased traffic may increase for persons who live near the alternate routes. However, noise impacts are not expected to be significant.

Alternative 2: Replacement

Building, roadway and stream corridor restoration is anticipated to carry a similar noise level to that which it had at pre-disaster damage levels. Noise from construction activities may have short term adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise impacts on residences can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours. Noise levels of construction equipment (70 to 72 dBa) at the distance in which affected parties would likely be located (>200 feet/60 meters) will not be of a duration to be significant.

Alternative 3: Relocation

No short term noise impacts would occur from construction activities under this alternative at the original location. Noise from construction activities may have short term adverse effects on persons who live near the new construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise impacts on residences can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours. Noise levels of construction equipment (70 to 72 dBa) at the distance in which affected parties would likely be located (>200 feet/60 meters) will not be of a duration to be significant.

Alternative 4: Combination

Generally the noise impacts from this alternative would be similar to those described for Alternatives 2 and 3 with noise impacts affecting both the replacement and relocation project sites.

4.7 PUBLIC SERVICES AND UTILITIES

4.7.1 Affected Environment

Utility lines often cross or run along roads, either overhead or underground. Public services and utilities include:

- Fire protection
- Law Enforcement
- Emergency Medical Services
- Schools
- Water
- Wastewater
- Sanitation
- Solid waste disposal
- Stormwater drainage
- Electric utilities
- Natural gas
- Telephone/Telecommunications

Most residents of Jamestown remain displaced as of February 2014 due to the damage to the Town's water distribution system and water treatment plant. Specific damages included 55 services connections (including 2 Town buildings), fire hydrants, valves, and 5,000 linear feet of pipe of varying diameters. The water distribution mains and connections are located in the Town ROW and are scheduled to be repaired simultaneously with the roads. Construction is scheduled to begin in late February 2014. The Town does not have a wastewater treatment plant; residents use septic systems instead. Many septic systems were damaged or destroyed during the flooding

from scour and stream avulsions. Septic systems and leach fields need to be restored for these private property owners to return home.

The Jamestown Volunteer Fire Department's fire hall was condemned due to flood damage. The Jamestown Volunteer Fire Department is still the primary agency for fire response in Jamestown. The Department has an automatic mutual aid agreement with Lefthand Fire Protection District and American Medical Response.

4.7.2 Environmental Consequences

Alternative 1: No Action

This alternative does not include any Agency action. Alternative 1 does have the potential to affect public services and utilities because flood waters would continue to damage roads and bridges which adversely impact the ability to provide service. Fire, emergency, law enforcement, and school services would be delayed as a result of continued inaccessibility of the route due to closed roads or bridges. Depending on the length of detour required these services could be significantly impacted. In addition, utility repair crews may not be able to reach damaged utility lines, resulting in lengthy service outages.

Alternative 2: Replacement

During construction, delays in fire, emergency, law enforcement and school services would continue, but these would be short term impacts. Once completed, public services would be restored to pre-disaster levels. Utilities that cross or run along roads may be temporarily interrupted, but this would be a short-term impact. No long term impacts would occur under this alternative.

Alternative 3: Relocation

This alternative could impact utilities due to roads and bridges being abandoned. Relocation of utilities may be required to maintain service. Relocations could produce short term disruptions to customers. Fire, emergency, law enforcement, and school services would not be significantly impacted as the route is not anticipated to be significantly longer than the route's pre-disaster function and capacity.

Alternative 4: Combination

Fire, emergency, law enforcement, and school services may be delayed as a result of rerouting traffic onto alternate routes. Depending on the increase in the length of the route, these services could be significantly impacted. Impacts to utilities under this alternative would be similar to those described in Alternative 3.

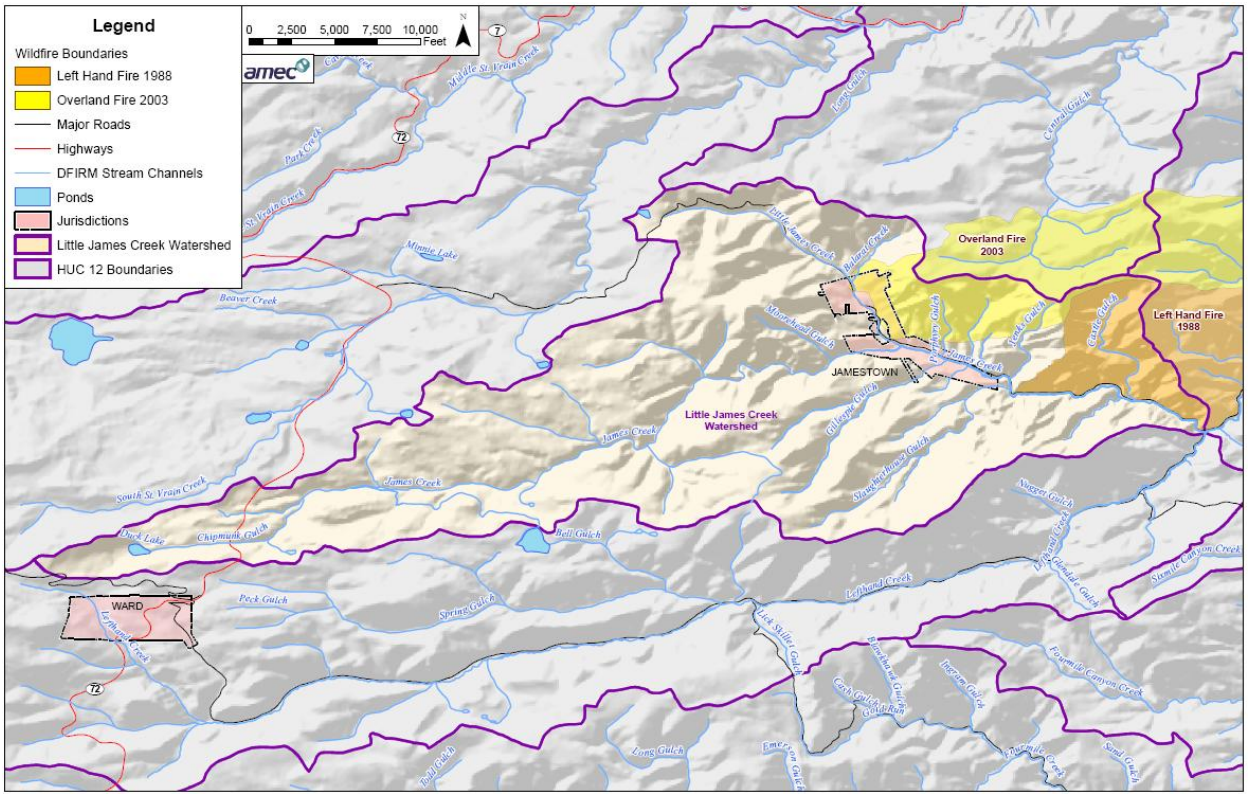
4.8 WATER RESOURCES

4.8.1 Affected Environment

Colorado has more than 105,344 river miles and more than 249,787 lake acres. There are seven major river basins in Colorado: the Arkansas, Rio Grande, San Juan, Colorado, Green, Platte and Republican. Four major river systems – the Platte, Colorado, Arkansas, and Rio Grande – originate within the mountains of Colorado. These systems drain fully one-third of the landmass of the lower 48 states.

The Town of Jamestown is located on the Eastern Slope of Colorado in the South Platte River Basin which drains an 18,924 square mile area. Around 80 percent of the state's population lives on the Eastern Slope of Colorado between Fort Collins and Pueblo, but about 80 percent of Colorado's precipitation falls on the Western Slope. Jamestown lies within the Little James Creek Watershed, shown in Figure 18.

Figure 18: Overview of Little James Creek Watershed



Wild and Scenic Rivers

Colorado has one river classified under the wild and scenic river designation: Cache La Poudre River with 30 miles designated as Wild and 46 miles as Recreational. Cache la Poudre is not within the study area of this document.

Floodplains

Executive Order (EO) 11988 requires federal agencies to consider the effect of their actions on the floodplain, evaluate alternatives to taking action in the floodplain and to provide opportunity for public comment if there is no practicable alternative. Colorado has 245 participating entities, of which the Town of Jamestown is one, and 16 non-participating entities in the National Flood Insurance Program (NFIP). Under requirements established in 44 CFR Section 60.3, participating communities shall require permits for all development, including **temporary** development, in the Special Flood Hazard Areas (SFHA).

Development is defined as "any man-made change to improved and unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials" and includes both permanent and **temporary** actions such as stream crossings and conveyance structures (public and private), sediment removal, channel restoration or relocation, etc. Effective January 14, 2011, the State of Colorado adopted the enhanced Colorado Floodplain Damage Prevention Ordinance, which requires higher standards for floodplain management. These standards are intended to prevent loss of life and property, as well as economic and social hardships that result from flooding. Local governments were required to adopt these higher standards in their own floodplain ordinances by January 14, 2014. Jamestown's floodplain ordinance was revised in 2012 and incorporates the higher standards. The Jamestown floodplain ordinance was further revised after the 2013 disaster and is available at http://jamestownco.org/files/2013/12/2012-Ord-8-FEMA-Flood-1.pdf.

Wetlands

EO 11988 requires federal agencies to consider the effect of their actions on the floodplain, evaluate alternatives to taking action in the floodplain and to provide opportunity for public comment if there is no practicable alternative. Colorado has lost approximately half of its naturally occurring wetlands since settlement. Wetlands provide flood control, recharge groundwater, stabilize stream flows, improve water quality, and provide habitat for wildlife; however, these positive attributes have not always been recognized. Though, the Clean Water Act (CWA) requires mitigation for some wetland filling projects, wetlands continue to be impacted and lost as roads are expanded, land is developed and due to cumulative impacts from numerous activities such as draining, changes in land management and landowner preference for open water ponds. No wetlands have been identified in the Jamestown project area.

4.8.2 Environmental Consequences

Alternative 1: No Action

In the no action alternative, buildings, infrastructure and stream corridors are not repaired, leaving the Town of Jamestown inaccessible and vulnerable to future flood events. No work would occur in water, thus there would be no impact to water due to project work. Erosion and

sedimentation may increase if banks are further damaged from being left unrepaired. Damaged infrastructure may cause a flow impediment, potentially causing significant impacts to stream and floodplain hydraulics and function.

Alternative 2: Replacement

Existing buildings, infrastructure and stream corridors may be expanded within the existing footprint or ROW. Fill material may be needed around buildings, infrastructure or stream corridor banks thus impacting waters of the U.S. Discharge into surface water may provide a temporary alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity.

The design of infrastructural and stream corridor features requires a hydrologic analysis to determine the magnitude and frequency of flows and a hydraulic analysis to locate and size drainage facilities. During construction the Agencies would mitigate impacts by requiring the Town of Jamestown to apply Best Management Practices (BMPs) to reduce sediment and fill material from entering the water. The Town of Jamestown may be required to prepare a storm water pollution prevention plan (SWPPP). The Town of Jamestown may also be required to obtain a Section 404 or other permit from the U. S. Army Corps of Engineers and a Section 401 Water Quality Certification permit from CDPHE Water Quality Control Division or EPA. Discharges of water encountered during excavation or work in wet areas may require a Construction Dewatering Discharge Permit. The Town of Jamestown is responsible for complying with any conditions outlined within these permits.

Because infrastructure and stream corridors are location-dependent and potentially located within a floodplain, the scope of work of this alternative may have some impacts to the floodplains. Construction of the infrastructure and/or stream corridors may result in alteration of the course or magnitude of floodwater. Expanding bridges will take more of the structure out of the floodplain and reduce impediments and upstream flooding. Building, infrastructure repair and changes within floodplains may also have some impact. If changes to buildings, infrastructure or stream corridors are anticipated to impact the floodplain/floodway, Agency projects must adhere to Executive Order 11988: Floodplain Management which 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. A hydrology and hydraulics report may be required to evaluate changes to stream hydraulics in detail and compliance with the Town of Jamestown floodplain ordinance will be required.

While this alternative is not expected to impact wetlands because actions are limited to existing ROWs, certain sites could result in some fill being placed in a wetland. This alternative would have little if any impact on increasing impervious surfaces, reduce groundwater recharge, and adversely affect water quality through the transmission of sediment, debris, oils, and hazardous substances into surface waters. During construction The Agencies would mitigate these impacts

by requiring the applicant to apply BMPs to reduce transport of sediment, debris, oils, concrete waste and hazardous substances into wetlands or waterways.

The results of the analyses and consultation discussed above would be documented in a memorandum to this PEA or in a SEA.

Alternative 3: Relocation

This alternative would generate impacts similar to those described for Alternative 2.

Alternative 4: Combination

This alternative would generate impacts similar to those described for Alternative 2 and 3.

4.9 BIOLOGICAL RESOURCES

Biological resources include native or naturalized plants and animals and the habitats (e.g., wetlands, forests, and grasslands) in which they exist. Protected and sensitive biological resources include federally listed (endangered or threatened), proposed, and candidate species designated by the United States Fish and Wildlife Service (USFWS). Sensitive habitats include those areas designated by the USFWS as critical habitat protected by the Endangered Species Act (ESA) and sensitive ecological areas as designated by state or federal rulings. Sensitive habitats also include wetlands, plant communities that are unusual or of limited distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer and winter habitats).

4.9.1 Affected Environment

Vegetation

Colorado contains parts of six major eco-regions and is divided into approximately 60 ecosystems (Table 3). The most prominent eco-region is the Southern Rockies, which occupies most of the state's central and western portions and the Great Plains-Palouse Dry Steppe in the eastern half of the state. Other eco-regions include the Intermountain Semi-Desert and Desert, the Nevada-Utah Mountains and the Colorado Plateau. Forests are found in all eco-regions of the state, but the Southern Rockies contain the most forested area and the greatest variety of forest types. The Town of Jamestown is located in two major ecosystems: the Rocky Mountain Dry-Mesic and Mesic Montane Mixed Conifer Forest and Woodland, and Rocky Mountain Lower Montane Riparian Woodland and Shrubland. Other ecosystems that could be nearby or have pockets in the vicinity of Jamestown include the Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Aspen Forest and Woodland, and Southern Rocky Mountain Ponderosa Pine Woodland.

Table 3: Colorado Ecosystems

Ecosystem Name	Ecosystem Name
Central Mixedgrass Prairie	Colorado Plateau Blackbrush-Mormon-tea Shrubland
Colorado Plateau Hanging Garden	Colorado Plateau Mixed Bedrock Canyon and Tableland
Colorado Plateau Mixed Low Sagebrush Shrubland	Colorado Plateau Pinyon-Juniper Shrubland
Colorado Plateau Pinyon-Juniper Woodland	Inter-Mountain Basins Active and Stabilized Dunes
Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland	Inter-Mountain Basins Big Sagebrush Shrubland
Inter-Mountain Basins Big Sagebrush Steppe	Inter-Mountain Basins Greasewood Flat
Inter-Mountain Basins Interdunal Swale Wetland	Inter-Mountain Basins Juniper Savanna
Inter-Mountain Basins Mat Saltbush Shrubland	Inter-Mountain Basins Mixed Salt Desert Scrub
Inter-Mountain Basins Montane Sagebrush Steppe	Inter-Mountain Basins Mountain Mahogany Woodland and Shrubland
Inter-Mountain Basins Playa	Inter-Mountain Basins Semi-Desert Grassland
Inter-Mountain Basins Semi-Desert Shrub-Steppe	Inter-Mountain Basins Shale Badland
Inter-Mountain Basins Wash	North American Alpine Ice Field
North American Arid West Emergent Marsh	Northern Rocky Mountain Avalanche Chute Shrubland
Rocky Mountain Alpine Bedrock and Scree	Rocky Mountain Alpine Dwarf-Shrubland
Rocky Mountain Alpine Fell-Field	Rocky Mountain Alpine-Montane Wet Meadow
Rocky Mountain Aspen Forest and Woodland	Rocky Mountain Cliff, Canyon and Massive Bedrock
Rocky Mountain Dry Tundra	Rocky Mountain Dry-Mesic and Mesic Montane Mixed Conifer Forest and Woodland
Rocky Mountain Foothill Limber Pine-Juniper Woodland	Rocky Mountain Gambel Oak-Mixed Montane Shrubland
Rocky Mountain Lodgepole Pine Forest	Rocky Mountain Lower Montane Riparian Woodland and Shrubland
Rocky Mountain Lower Montane-Foothill Shrubland	Rocky Mountain Ponderosa Pine Savanna
Rocky Mountain Subalpine Dry-Mesic and Mesic Spruce-Fir Forest and Woodland	Rocky Mountain Subalpine Mesic Meadow
Rocky Mountain Subalpine-Montane Fen	Rocky Mountain Subalpine-Montane Limber-Bristlecone Pine Woodland
Rocky Mountain Subalpine-Montane Riparian Shrubland	Rocky Mountain Subalpine-Montane Riparian Woodland
Southern Rocky Mountain Juniper Woodland and Savanna	Southern Rocky Mountain Montane-Subalpine Grassland
Southern Rocky Mountain Pinyon-Juniper Woodland	Southern Rocky Mountain Ponderosa Pine Woodland
Southwestern Great Plains Canyon	Western Great Plains Cliff, Outcrop, and Shale Barren
Western Great Plains Closed Depression Wetland	Western Great Plains Big River Floodplain
Western Great Plains Foothill and Piedmont Grassland	Western Great Plains Riparian Woodland, Shrubland and Herbaceous
Western Great Plains Saline Depression	Western Great Plains Sand Prairie
Western Great Plains Sandhill Shrubland	Western Great Plains Shortgrass Prairie
Western Great Plains Tallgrass Prairie	Wyoming Basins Low Sagebrush Shrubland

Wildlife

Colorado hosts about 750 species of fish, mammals, birds, reptiles, and amphibians. Big game hunted in Colorado includes black bear, deer, elk, antelope, moose, bighorn sheep, mountain goat, mountain lion and turkey. Smaller game species hunted include sharp-tailed grouse, prairie

chickens, sage grouse, mountain grouse, partridge, and pheasants. Hunted waterfowl includes ducks, geese, and swans. Bobcat, otter, swift fox, and wolverine are trapped.

Across the state, Colorado Parks and Wildlife (CPW) manages more than 348 State Wildlife Areas, totaling more than 684,252 acres. In addition, CPW leases approximately 550,000 acres of State Trust Lands. CPW also manages fifteen properties that house State Fish Units - hatcheries or fish rearing operations.

Protected Species

There are 50 species listed as Endangered (E), Threatened (T), Candidate (C), or Proposed (P) by the USFWS under ESA that historically occurred, occur or may potentially occur within Colorado. Six of these species, Preble's meadow jumping mouse, Mexican spotted owl, Southwestern willow flycatcher, Colorado pikeminnow, whooping crane, and razorback sucker have designated critical habitat in Colorado. Critical habitat designations have also been included with the proposed New Mexico meadow jumping mouse, Gunnison sage grouse, White River beardtongue, and Graham beardtongue.

Out of nearly 750 fish and wildlife species in Colorado, 74 are listed as species in need of conservation and protected by CPW. None have designated critical habitat in the Town of Jamestown.

4.9.2 Environmental Consequences

Alternative 1: No Action

Under the No Action Alternative, no localized or regional effects to threatened or endangered species are expected. This alternative does not include any Federal action. Therefore, the Agencies would not be required to consult with USFWS to comply with the ESA, Migratory Bird Treaty Act (MBTA), Fish and Wildlife Coordination Act (FWCA), or state laws. A damaged decaying structure left in the stream may cause a flow impediment, potentially causing significant impacts to stream and floodplain hydraulics and function and negative impacts to fish habitat and passage.

Alternative 2: Replacement

The actions under this alternative may have the potential to affect sensitive biological resources, wetlands or natural waterways due to construction activities; a review of available information on the potential for species and critical habitat occurrence in the area will be conducted. This alternative consists of performing work on roads and bridges in existing alignments. If the project includes extension of a bridge, this may remove the structure from the waterway, thus reducing impacts to species. Embankment work and in-water work may occur. This work would require a Senate Bill (SB) 40 permit from CPW for impacts to riparian areas.

The Agencies will review the project and make a determination of affect. If an Agency determines that a project has the potential to affect sensitive biological resources it will initiate the review process under Section 7 of the ESA, MBTA, or FWCA, the results of this consultation with USFWS would be documented in a memorandum to this PEA or in a SEA.

Because migratory birds nest on many substrates (e.g., ground, shrubs, trees, bridges, box culverts), should the proposed work occur during the breeding season (May 1st to August 15th) , the Service recommends: the required cutting of trees or shrubs occur between August 16th and April 30th to remove potential nesting surfaces prior to project commencement; the removal of swallow nests as they are built, but prior to egg laying, from the bridge structures that are to be removed; and/or netting of the affected bridge structures to prevent swallow nesting prior to the breeding season.

If the project sites occur within 0.5 mile of occupied eagle nests, implementation of the National Bald Eagle Management Guidelines would be applied as necessary.

This alternative will not disrupt the life cycle of indigenous fish species by preventing them from swimming upstream.

Alternative 3: Relocation

This alternative is expected to have effects similar to those discussed under Alternative 2 and will be treated the same.

Alternative 4: Combination

This alternative consists of performing work on existing roadways and building new roadways. If improvements are needed on the alternative routes to accommodate increased traffic, this alternative is expected to have effects similar to those discussed under Alternative 2 and will be treated the same. Otherwise, the actions under this alternative are not expected to affect sensitive biological resources.

4.10 CULTURAL RESOURCES

4.10.1 Affected Environment

The National Historic Preservation Act (NHPA) was established in 1966 to preserve historical and archaeological sites in the United States of America. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation Offices.

The National Register of Historic Places is the Nation's official list of cultural resources worthy of preservation and is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant

in American history, architecture, archeology, engineering, and culture. To be eligible for listing, a property must meet one of four eligibility criteria and have sufficient integrity.

Colorado has a rich cultural history. Throughout the state Native Americans have left petroglyphs, abandoned villages, and many other items from their life and travels. Spanish explorers, trappers and hunters, and gold miners made their way through the state and settled in Colorado. Westward expansion brought European settlers to the area for mining, ranching and farming. Jamestown has two listings on the National Register shown below in Figure 19 through Figure 22. Neither of the two structures sustained flood damages and each remained open for business to assist residents with food, shelter and emergency supplies during the recovery effort.

Figure 19: Jamestown Mercantile Bldg.

Figure 20: Mercantile Bldg., Recent

National Register 8/3/1989, 5BL.503: Typical of the vernacular building tradition it represents, this 2½ story, false front, wood frame commercial structure was built sometime after 1896. The unaltered building exemplifies this distinctive western building type. The property is associated with the Metal Mining and Tourist Era Resources of Boulder County.

Figure 21: Jamestown Town Hall

Figure 22: Jamestown Town Hall in 2012

National Register 7/10/2003, 5BL.502: Construction on this simple stone building began in early 1935 with local stonemasons hauling rock out of nearby James Creek. In addition to housing the Town Board, the building plays host to musicians, school plays, dances, and many other community functions. It is the focal point for community life in this small mountain town. The property is associated with the Metal Mining and Tourist Era Resources of Boulder County Multiple Property Submission.

On Saturday, January 11th, 2014, FEMA conducted a windshield survey of 51 buildings along the stream corridors in the Town of Jamestown that were affected by flooding and mudslides and that may be further affected during the flood recovery process. This inventory was conducted in order to identify structures potentially eligible for the National Register of Historic Places (NRHP) and is part of a larger *Determination of Eligibility* (DOE) made by FEMA. FEMA is currently awaiting concurrence from the Colorado State Historic Preservation Office (SHPO) with this determination. In the meantime projects will be addressed on a case by case basis for compliance with section 106 of NHPA.

4.10.2 Environmental Consequences

Alternative 1: No Action

The No Action Alternative does not include construction, and thus no new impacts to historic resources would occur.

Alternative 2: Replacement

This alternative has the potential to affect historic or cultural resources. Destruction or alteration of any site, structure or object of prehistoric or paleontological importance may occur during construction. Physical change could affect unique cultural values. There could be effects on existing religious or sacred uses of a site or area. Bridges may be of cultural significance or archeological resources may be present. For non-tribal lands The Agencies will determine if a project meets any outlined programmatic allowances from Programmatic Agreements with the

Colorado State Historic Preservation Office (SHPO). If so, The Agencies would consider the project to be in compliance with Section 106 of NHPA and no further review would occur. If a project does not fall within an allowance, The Agencies will make a determination of affect and consult with the SHPO. Additional archaeological surveys of ground disturbing activities may be required depending on consultation with Tribal Historic Preservation Office (THPO) and SHPO.

Alternative 3: Relocation

Impacts are similar to those listed under Alternative 2.

Alternative 4: Combination

Impacts are similar to those listed under Alternative 2.

4.11 CUMULATIVE IMPACTS

The CEQ regulations (40 CFR 1500-1508) implementing the procedural provisions of NEPA of 1969, as amended (42 USC 4321) defines cumulative effects as:

"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or local) or person undertakes such other action (40 CFR 1508.7)". Based on these regulations, if the alternative does not have direct or indirect effects there can be no cumulative effects resulting from the project because there would be no impacts added to past, present, or reasonably foreseeable actions.

CEQ regulations also describe cumulative impacts as impacts that "can result from individually minor but collectively significant actions taking place over a period of time." On a programmatic level and combined with other actions affecting the roads and resource areas within Colorado, including closed Federal-Aid roads, alternatives could lead to cumulative impacts depending on the scale (number of projects) or geography (localized area) in which the actions are performed.

4.11.1 Summary of Cumulative Impacts

Individual projects proposed under this Programmatic Environmental Assessment are not anticipated to cause significant impacts, even when combined with other actions. Other than the "No Action Alternative", project impacts that are implemented at an individual or cumulative scale, such as to produce significant impacts generally can be reduced below the level of significance by mitigating for individual impacts using the mitigation measures as addressed in Section 5. A Supplemental Project Specific Environmental Assessment will be completed, for any projects that are anticipated to occur at a scale or localized area such that impacts cannot be addressed under Mitigation Measures listed in Section 5.

SECTION FIVE | MITIGATION MEASURES

Project impacts that are implemented at an individual or cumulative scale such as to produce significant impacts can generally be reduced below the level of significance through avoidance, minimization, or by mitigating for individual impacts using mitigation measures as described below. If impact avoidance cannot be achieved, specific mitigation measures including agency consultation will be undertaken by The Agencies to reduce any potentially significant impacts to less than significant levels. Table 4 lists the specific mitigation measures The Agencies will use if necessary.

Table 4: Mitigation Measures by Resource Area

Resource Area	Mitigation Measure
Physical Resources, Water Resources	If projects extend outside of the previously disturbed road footprint and wetland areas will be impacted, The Agencies will evaluate individual and cumulative impacts and implement avoidance, minimization and/or mitigation measures as necessary to reduce impacts below level of significance.
Physical Resources, Water Resources	For projects in which soil erosion potential is determined to be significant, a project erosion control plan to minimize soil loss, including the use of Best Management Practices, to isolate the construction site and minimize adverse effects of soil loss and sedimentation on soil and water resources will be implemented.
Physical Resources, Water Resources	To mitigate for impacts to floodplain, a hydrology and hydraulics study will be completed to ensure the flow of flood waters. The project must not serve as a dam or otherwise impede water movement thus aggravating flooding upstream of the roadway.
Physical Resources, Water Resources	The Agencies will consult with US Fish and Wildlife Service and/or Natural Resources Conservation Service for any project which extends outside of the road right of way and has the potential to affect land use, including Fish and Wildlife Service easements, prime farmland, or farmland of state/local significance.
Safety and Occupational Health	To minimize any potential to occupation health and safety, construction workers and equipment operators are required to wear appropriate PPE and to be properly trained for the work being performed, including removal and disposal of asbestos and lead-based paint for demolition projects.
Safety and Occupational Health	All waste material associated with the project must be disposed of properly and not placed in identified floodway or wetland areas or in habitat for threatened or endangered species. All hazardous material resulting from demolition activities, including asbestos and lead paint will be disposed of in hazardous waste landfill.
Air Quality	To mitigate for fugitive dust during construction periodic watering of active construction areas, particularly in areas close to sensitive receptors (e.g. hospitals, senior citizen homes, and schools) will be implemented.
Noise	Construction noise levels will be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Impact to noise levels will be minimized by limiting construction activities that occur during early morning or late evening hours.
Biological Resources	The Agencies will grant conditions for Species Protection (Preble's Mouse Specific, See Appendix A) per consultation with the US Fish and Wildlife Service for any projects that have the potential to affect biological resources, including Threatened and Endangered Species.

Resource Area	Mitigation Measure
Cultural Resources	The absence of cultural properties in the area does not mean they do not exist, but rather may reflect the absence of any previous cultural resource inventory in the area. If during the course of any ground disturbance related to this project, cultural materials are inadvertently discovered, the project would be immediately stopped and the SHPO/THPO and Agency notified.
Cultural Resources	To avoid impacts to cultural resources from material borrow source, borrow material source will be reviewed and approved by SHPO or THPO prior to use.
Cultural Resources	The Agencies will consult with the State/Tribal Historic Preservation Office on project specific activities for any project that has the potential to affect previously undisturbed areas or historic properties.

SECTION SIX | SUMMARY OF IMPACTS

The following table summarizes the potential impacts of each alternative on the resource areas discussed in Section 4. The table is organized by the eight reaches identified during the SCMP process. Best construction practices are listed, and the preliminary assessment of historical properties and potential buyout candidates are summarized.

Table 5: Summary of Impacts

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
1	Physical Resources	Alternative 1 would not result in any construction in the floodplain, but the existing channel may not be sufficiently able to convey floodwaters.	The proposed bank stabilization measures are not expected to result in any encroachment to the floodplain. Stabilizing the banks should minimize the impact of flooding throughout the reach up to a 25-year event. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Realigning the channel may have temporary impacts on the floodplain. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. May include temporary vegetation loss. Floodplain designation of parcels may change.	Similar to alternative 2 and 3.	May need easements or permits from owner agency if new parcel boundaries/footprints extend into state or federal lands.	Historic properties and buyout candidates have been evaluated. None identified.	• Use vegetative stabilization measures/bioengineered alternatives to rip rap/armoring • Assess impacts to endangered species, historic buildings or cultural resources as specific projects are identified • Consult with individual agencies including USFWS, USACE, EPA, etc. as needed on individual projects
	Transportation Facilities	No adverse impacts are expected. The creek moved away from the road after the flood, decreasing the potential for the creek to damage and erode the road.	Increased traffic from construction equipment and vehicles along James Canyon. Potentially limited parking space for construction vehicles. No adverse long-term impacts.	Generally similar to alternative 2. Relocating roads away from the stream channel could improve resiliency to flooding.	Similar to alternative 2 and 3.			
	Safety and Occupational Health	Damaged infrastructure and buildings that are left in place pose a threat to public safety. Delayed emergency response times for first responders.	No adverse impacts to public health or safety. Stabilizing the stream bend along the roadway would help protect public safety.	No adverse impacts to public health or safety. Building a new road to code/higher standards would help protect public safety.	Similar to alternative 2 and 3.			
	Socioeconomic and Environmental Justice	Potential for negative socioeconomic impacts. Loss of infrastructure, utilities, land, etc. adversely impacts people and businesses.	Potential short-term benefits through job creation in construction and increased expenditures in local economy. Small negative impacts from travel delays due to construction.	Similar to alternative 2.	Similar to alternative 2 and 3.			

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
	Air Quality	Possible increase in vehicle emissions if detour routes are longer than the routes they replaced.	Temporary increase in vehicle emissions, dust from construction, etc. during construction. No change in air quality after construction is complete.	Similar to alternative 2, with potential for minor increase in vehicle emissions if relocated road segments are longer than the segments they replaced.	Similar to alternative 2 and 3.			
	Noise	No impacts expected.	Short-term increase in noise levels from construction during daytime hours.	Short-term increase in noise levels from construction during daytime hours.	Similar to alternative 2 and 3.			
	Public Services and Utilities	Future floodwaters could damage roads and utility lines, disrupting service. Could impact response capabilities of first responders (e.g., lack of water for fire protection if water utilities are not restored).	Short-term impacts during construction. Afterwards services and utilities would return to pre-flood levels.	Potential to slightly alter emergency response times if road segments are relocated.	Similar to alternative 2 and 3.			
	Water Resources	Deposition from the floods was substantial in this reach. Sedimentation could occur downstream. Erosion of the stream banks could occur, increasing the amount of sediment in the water.	In the short-term, construction to stabilize the stream bed and install wood log revetments may disturb sediment and cause deposition downstream. Installing stream stabilization measures will have some impact to water resources. There may be some initial clearing of vegetation to install stream stabilization measures, though the intent is to replace this with wood log revetments which will help restore and anchor vegetation. No long-term impact is expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Discharge into surface water may provide a temporary alteration of surface water quality.	Relocating the stream channel to its pre-flood location (which is the only other option for placement) could potentially expose the stream to runoff from the road. Sedimentation and deposition downstream could be expected. Loss of vegetation could impact water quality since vegetation helps filter sediments and pollutants. No long-term impact is expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Similar to alternative 2 and 3.	Alternatives 2-4 may require Army Corp of Engineers permit (emergency or 404 permit)		

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
	Biological Resources	No impacts to threatened or endangered species expected. Damaged structures left in the stream corridor could impede streamflow and impact fish habitat and passage.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Similar to alternative 2 and 3.			
	Cultural Resources	No impacts expected.	Potential to impact cultural resources. Archaeological survey may be required depending on consultation with Tribal Historic Preservation Office (THPO) and State Historic Preservation Office (SHPO). No historic buildings identified in this reach.	Similar to alternative 2.	Similar to alternative 2 and 3.			
2	Physical Resources	Alternative 1 would not result in any construction in the floodplain, but the existing channel may not be sufficiently able to convey floodwaters.	The proposed bank stabilization measures are not expected to result in any encroachment to the floodplain. Stabilizing the banks should minimize the impact of flooding throughout the reach up to a 25-year event. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Realigning the channel may have temporary impacts on the floodplain. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Minor changes to land use may occur if Town right-of-ways are exchanged for private property to accommodate relocation of infrastructure, buildings, or stream channel. May include temporary vegetation loss. Floodplain designation of parcels may change.	Similar to alternative 2 and 3.	May need easements or permits from owner agency if new parcel boundaries/footprints extend into state or federal lands.	Historic properties and buyout candidates have been evaluated. None identified.	• Use vegetative stabilization measures/bioengineered alternatives to rip rap/armoring • Assess impacts to endangered species, historic buildings or cultural resources as specific projects are identified • Consult with individual agencies including USFWS, USACE, EPA, etc. as needed on individual projects
	Transportation Facilities	Future floods could erode the road, cutting off access to Jamestown from the east.	Increased traffic from construction equipment and vehicles along James Canyon. Potentially limited parking space for construction vehicles.	Similar to alternative 2	Similar to alternative 2 and 3.			
	Safety and Occupational Health	Damaged infrastructure and buildings that are left in place pose a threat to public safety. Delayed emergency response	No adverse impacts to public health or safety. Stabilizing the stream bend along the roadway would	No adverse impacts to public health or safety. Building a new road to code/higher standards	Similar to alternative 2 and 3.			

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
		times for first responders.	help protect public safety.	would help protect public safety.				
	Socioeconomics and Environmental Justice	Potential for negative socioeconomic impacts. Loss of infrastructure, utilities, land, etc. adversely impacts people and businesses.	Potential short-term benefits through job creation in construction and increased expenditures in local economy. Small negative impacts from travel delays due to construction.	Similar to alternative 2.	Similar to alternative 2 and 3.			
	Air Quality	Possible increase in vehicle emissions if detour routes are longer than the routes they replaced.	Temporary increase in vehicle emissions, dust from construction, etc. during construction. No change in air quality after construction is complete.	Similar to alternative 2, with potential for minor increase in vehicle emissions if relocated road segments are longer than the segments they replaced.	Similar to alternative 2 and 3.			
	Noise	No impacts expected.	Short-term increase in noise levels from construction during daytime hours.	Short-term increase in noise levels from construction during daytime hours.	Similar to alternative 2 and 3.			
	Public Services and Utilities	Future floodwaters could damage roads and utility lines, disrupting service. Could impact response capabilities of first responders (e.g., lack of water for fire protection if water utilities are not restored).	Short-term impacts during construction. Afterwards services and utilities would return to pre-flood levels.	Potential to slightly alter emergency response times if road segments are relocated.	Similar to alternative 2 and 3.			
	Water Resources	Sedimentation could occur downstream. Erosion of the stream banks and road could occur, increasing the amount of sediment in the water.	In the short-term, construction to stabilize the stream bed may disturb sediment and cause deposition downstream. There may be some initial clearing of vegetation to install stream stabilization measures. No long-term impact is expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Discharge into surface water may provide a temporary alteration of surface water	Sedimentation and deposition downstream could be expected from relocating the stream. Loss of vegetation could impact water quality since vegetation helps filter sediments and pollutants. No long-term impact is expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Similar to alternative 2 and 3.	Alternatives 2-4 may require Army Corp of Engineers permit (emergency or 404 permit)		

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
			quality.					
	Biological Resources	No impacts to threatened or endangered species expected. Damaged structures left in the stream corridor could impede streamflow and impact fish habitat and passage.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Similar to alternative 2 and 3.			
	Cultural Resources	No impacts expected.	Potential to impact cultural resources. Archaeological survey may be required depending on consultation with Tribal Historic Preservation Office (THPO) and State Historic Preservation Office (SHPO). No historic buildings identified in this reach.	Similar to alternative 2.	Similar to alternative 2 and 3.			
3	Physical Resources	Alternative 1 would not result in any construction in the floodplain, but the existing channel may not be sufficiently able to convey floodwaters. Gillespie Gulch could continue to erode the drainageway and cut into the property at 12 12th St.	The proposed bank stabilization measures are not expected to result in any encroachment to the floodplain. Stabilizing the banks should minimize the impact of flooding throughout the reach up to a 2-year event. The area is expected to remain active during the adjustment period so the channel will be stabilized to a 2-year event during construction. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Realigning the channel may have temporary impacts on the floodplain. The area is expected to remain active during the adjustment period so the channel will be stabilized to a 2-year event. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Floodplain designation of parcels may change.	Similar to alternative 2 and 3.	May need easements or permits from owner agency if new parcel boundaries/footprints extend into state or federal lands.	Historic properties and buyout candidates have been evaluated. No historic properties identified. One buyout candidate identified.	• Use vegetative stabilization measures/bioengineered alternatives to rip rap/armoring • Assess impacts to endangered species, historic buildings or cultural resources as specific projects are identified • Consult with individual agencies including USFWS, USACE, EPA, etc. as needed on individual projects
	Transportation Facilities	If mitigation measures are not put in place, continued erosion of the drainageway could decrease the width and stability of 12th St. and lower Main St.	Increased traffic from construction equipment and vehicles along 12 St. and lower Main St. Potentially limited parking space for construction vehicles.	Similar to alternative 2	Similar to alternative 2 and 3.			
	Safety and Occupational Health	Damaged infrastructure and buildings that are left in place pose a threat to public safety. Delayed emergency response times for first responders.	No adverse impacts to public health or safety. Stabilizing the stream bend along the roadway would help protect public safety.	No adverse impacts to public health or safety. Building a new road to code/higher standards would help protect public	Similar to alternative 2 and 3.			

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
				safety.				
	Socioeconomics and Environmental Justice	Potential for negative socioeconomic impacts. Loss of infrastructure, utilities, land, etc. adversely impacts people and businesses.	Potential short-term benefits through job creation in construction and increased expenditures in local economy. Small negative impacts from travel delays due to construction.	Similar to alternative 2.	Similar to alternative 2 and 3.			
	Air Quality	Possible increase in vehicle emissions if detour routes are longer than the routes they replaced.	Temporary increase in vehicle emissions, dust from construction, etc. during construction. No change in air quality after construction is complete.	Similar to alternative 2, with potential for minor increase in vehicle emissions if relocated road segments are longer than the segments they replaced.	Similar to alternative 2 and 3.			
	Noise	No impacts expected.	Short-term increase in noise levels from construction during daytime hours.	Short-term increase in noise levels from construction during daytime hours.	Similar to alternative 2 and 3.			
	Public Services and Utilities	Future floodwaters could damage roads and utility lines, disrupting service. Could impact response capabilities of first responders (e.g., lack of water for fire protection if water utilities are not restored).	Short-term impacts during construction. Afterwards services and utilities would return to pre-flood levels.	Potential to slightly alter emergency response times if road segments are relocated.	Similar to alternative 2 and 3.			
	Water Resources	Sedimentation could occur downstream. Erosion of the stream banks could occur, increasing the amount of sediment in the water.	In the short-term, construction to stabilize the stream bed and Gillespie Gulch may disturb sediment and cause deposition downstream. There may be some initial clearing of vegetation to install stream stabilization measures, though the intent is to replace this with wood log revetments and rip rap which could help restore and anchor vegetation. No long-term impact is expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain	Relocating the stream channel to its pre-flood location could potentially expose the stream to runoff from the road. Sedimentation and deposition downstream could be expected. Loss of vegetation could impact water quality since vegetation helps filter sediments and pollutants. No long-term impact is expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will	Similar to alternative 2 and 3.	Alternatives 2-4 may require Army Corp of Engineers permit (emergency or 404 permit)		

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
			impacts will be mitigated. Discharge into surface water may provide a temporary alteration of surface water quality.	be mitigated.				
	Biological Resources	No impacts to threatened or endangered species expected. Damaged structures left in the stream corridor could impede streamflow and impact fish habitat and passage.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Similar to alternative 2 and 3.			
	Cultural Resources	No impacts expected.	Potential to impact cultural resources. Archaeological survey may be required depending on consultation with Tribal Historic Preservation Office (THPO) and State Historic Preservation Office (SHPO). No historic buildings identified in this reach.	Similar to alternative 2.	Similar to alternative 2 and 3.			
4	Physical Resources	Alternative 1 would not result in any construction in the floodplain, but the existing channel may not be sufficiently able to convey floodwaters.	The proposed bank stabilization measures are not expected to result in any encroachment to the floodplain. Stabilizing the banks should minimize the impact of flooding throughout the reach up to a 10-year event. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Realigning the channel may have temporary impacts on the floodplain. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Floodplain designation of parcels may change.	Similar to alternative 2 and 3.	May need easements or permits from owner agency if new parcel boundaries/footprints extend into state or federal lands.	Historic properties and buyout candidates have been evaluated. Historic property at 28 Main St. One buyout candidate identified.	• Use vegetative stabilization measures/bioengineered alternatives to rip rap/armoring • Assess impacts to endangered species, historic buildings or cultural resources as specific projects are identified • Consult with individual agencies including USFWS, USACE, EPA, etc. as needed on individual projects
	Transportation Facilities	Future floods would be likely to severely erode lower Main St. and access for private property owners.	Increased traffic from construction equipment and vehicles along lower Main St. Potentially limited parking space for construction vehicles.	Similar to alternative 2	Similar to alternative 2 and 3.			
	Safety and Occupational Health	Damaged infrastructure and buildings that are left in place pose a threat to public safety. Delayed emergency response times for first responders.	No adverse impacts to public health or safety. Stabilizing the stream bend along the roadway would help protect public safety.	No adverse impacts to public health or safety. Building a new road to code/higher standards would help protect public safety.	Similar to alternative 2 and 3.			

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
	Socioeconomics and Environmental Justice	Potential for negative socioeconomic impacts. Loss of infrastructure, utilities, land, etc. adversely impacts people and businesses.	Potential short-term benefits through job creation in construction and increased expenditures in local economy. Small negative impacts from travel delays due to construction.	Similar to alternative 2.	Similar to alternative 2 and 3.			
	Air Quality	Possible increase in vehicle emissions if detour routes are longer than the routes they replaced.	Temporary increase in vehicle emissions, dust from construction, etc. during construction. No change in air quality after construction is complete.	Similar to alternative 2, with potential for minor increase in vehicle emissions if relocated road segments are longer than the segments they replaced.	Similar to alternative 2 and 3.			
	Noise	No impacts expected.	Short-term increase in noise levels from construction during daytime hours.	Short-term increase in noise levels from construction during daytime hours.	Similar to alternative 2 and 3.			
	Public Services and Utilities	Future floodwaters could damage roads and utility lines, disrupting service. Could impact response capabilities of first responders (e.g., lack of water for fire protection if water utilities are not restored).	Short-term impacts during construction. Afterwards services and utilities would return to pre-flood levels.	Potential to slightly alter emergency response times if road segments are relocated.	Similar to alternative 2 and 3.			
	Water Resources	Sedimentation could occur downstream. Erosion of the stream banks could occur, increasing the amount of sediment in the water.	In the short-term, construction to stabilize the stream bed and create an overflow channel down lower Main St. may disturb sediment and cause deposition downstream. There may be some initial clearing of vegetation to install stream stabilization measures, though the intent is to replace this with wood log revetments and rip rap which could help restore and anchor vegetation. Some vegetation may not be able to be restored if hard armoring is required (e.g. near 20 Main St. and 34 Main St.). No long-term	For the most part the pre-flood and post-flood stream alignment is very similar in Reach 4. Relocating the stream to its exact pre-flood alignment would not require substantial construction, though some sedimentation and deposition could still be expected. Loss of vegetation could impact water quality since vegetation helps filter sediments and pollutants. No long-term impact is expected to wetlands or floodplains. Review of site specific impacts will	Similar to alternative 2 and 3.	Alternatives 2-4 may require Army Corp of Engineers permit (emergency or 404 permit)		

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
			impact is expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Discharge into surface water may provide a temporary alteration of surface water quality.	be completed. Any wetland or floodplain impacts will be mitigated.				
	Biological Resources	No impacts to threatened or endangered species expected. Damaged structures left in the stream corridor could impede streamflow and impact fish habitat and passage.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Similar to alternative 2 and 3.			
	Cultural Resources	No impacts expected.	Potential to impact cultural resources. Archaeological survey may be required depending on consultation with Tribal Historic Preservation Office (THPO) and State Historic Preservation Office (SHPO). No historic buildings identified in this reach.	Similar to alternative 2.	Similar to alternative 2 and 3.			
5	Physical Resources	Alternative 1 would not result in any construction in the floodplain, but the existing channel may not be sufficiently able to convey floodwaters. Not replacing Anderson Hill Bridge would impact access for private property owners and emergency response vehicles.	The proposed bank stabilization measures are not expected to result in any encroachment to the floodplain. Stabilizing the banks to the 10-year or 2-year event should minimize the impact of flooding throughout the reach. Catchment basins near the confluence for debris and floodwaters should reduce the severity of future flood events. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Realigning the channel may have temporary impacts on the floodplain. Relocating the channel to its exact original location at the confluence would be particularly dangerous and unlikely to reduce the severity of future floods. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Floodplain designation of parcels may change.	Similar to alternative 2 and 3.	May need easements or permits from owner agency if new parcel boundaries/footprints extend into state or federal lands.	Historic properties and buyout candidates have been evaluated. Historic properties at 108 and 118 Main St. Six buyout candidates identified.	• Use vegetative stabilization measures/bioengineered alternatives to rip rap/armoring • Assess impacts to endangered species, historic buildings or cultural resources as specific projects are identified • Consult with individual agencies including USFWS, USACE, EPA, etc. as needed on individual projects
	Transportation Facilities	Parking access for private property owners at the	Increased traffic from construction equipment and	Similar to alternative 2	Similar to alternative 2 and 3.			

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
		confluence would be insufficient.	vehicles along Main St. Potentially limited parking space for construction vehicles.					
	Safety and Occupational Health	Damaged infrastructure and buildings that are left in place pose a threat to public safety. Delayed emergency response times for first responders.	No adverse impacts to public health or safety. Stabilizing the stream bend along the roadway would help protect public safety.	No adverse impacts to public health or safety. Building a new road to code/higher standards would help protect public safety.	Similar to alternative 2 and 3.			
	Socioeconomics and Environmental Justice	Potential for negative socioeconomic impacts. Loss of infrastructure, utilities, land, etc. adversely impacts people and businesses.	Potential short-term benefits through job creation in construction and increased expenditures in local economy. Small negative impacts from travel delays due to construction.	Similar to alternative 2.	Similar to alternative 2 and 3.			
	Air Quality	Possible increase in vehicle emissions if detour routes are longer than the routes they replaced.	Temporary increase in vehicle emissions, dust from construction, etc. during construction. No change in air quality after construction is complete.	Similar to alternative 2, with potential for minor increase in vehicle emissions if relocated road segments are longer than the segments they replaced.	Similar to alternative 2 and 3.			
	Noise	No impacts expected.	Short-term increase in noise levels from construction during daytime hours.	Short-term increase in noise levels from construction during daytime hours.	Similar to alternative 2 and 3.			
	Public Services and Utilities	Future floodwaters could damage roads and utility lines, disrupting service. Could impact response capabilities of first responders (e.g., lack of water for fire protection if water utilities are not restored).	Short-term impacts during construction. Afterwards services and utilities would return to pre-flood levels.	Potential to slightly alter emergency response times if road segments are relocated.	Similar to alternative 2 and 3.			
	Water Resources	Sedimentation could occur downstream. Erosion of the stream banks and debris flows could occur, increasing the amount of sediment in the water.	Minor realignment at the confluence would cause some sedimentation. Construction of a new bridge for Anderson Hill could cause sedimentation and remove vegetation. No long-term impact is expected to wetlands or floodplains. Review of site	Sedimentation and deposition downstream could be expected. Loss of vegetation could impact water quality since vegetation helps filter sediments and pollutants. No long-term impact is expected to wetlands or floodplains.	Similar to alternative 2 and 3.	Alternatives 2-4 may require Army Corp of Engineers permit (emergency or 404 permit)		

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
			specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Discharge into surface water may provide a temporary alteration of surface water quality.	Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.				
	Biological Resources	No impacts to threatened or endangered species expected. Damaged structures left in the stream corridor could impede streamflow and impact fish habitat and passage.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Similar to alternative 2 and 3.			
	Cultural Resources	No impacts expected.	Potential to impact cultural resources. Archaeological survey may be required depending on consultation with Tribal Historic Preservation Office (THPO) and State Historic Preservation Office (SHPO). No historic buildings identified in this reach.	Similar to alternative 2.	Similar to alternative 2 and 3.			
6	Physical Resources	Alternative 1 would not result in any construction in the floodplain, but the existing channel may not be sufficiently able to convey floodwaters.	Maintaining and stabilizing the current stream alignment would not be expected to result in any encroachment to the floodplain. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Realigning the channel to its pre-flood location may have temporary impacts on the floodplain. Stabilizing the stream to the 10-year flood level and deepening the channel as proposed would help mitigate flood impacts in Reach 6 and downstream. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Floodplain designation of parcels may change.	Similar to alternative 2 and 3.	May need easements or permits from owner agency if new parcel boundaries/footprints extend into state or federal lands.	Historic properties and buyout candidates have been evaluated. Historic property at 18 Ward St. No buyout candidates identified.	• Use vegetative stabilization measures/bioengineered alternatives to rip rap/armoring • Assess impacts to endangered species, historic buildings or cultural resources as specific projects are identified • Consult with individual agencies including USFWS, USACE, EPA, etc. as needed on individual projects
	Transportation Facilities	Ward St. could be washed out again during a flood, isolating Ward St. from emergency responders.	Increased traffic from construction equipment and vehicles along Ward St. Potentially limited parking space for construction vehicles.	Similar to alternative 2	Similar to alternative 2 and 3.			

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
	Safety and Occupational Health	Damaged infrastructure and buildings that are left in place pose a threat to public safety. Delayed emergency response times for first responders.	No adverse impacts to public health or safety. Stabilizing the stream bend along the roadway would help protect public safety.	No adverse impacts to public health or safety. Building a new road to code/higher standards would help protect public safety.	Similar to alternative 2 and 3.			
	Socioeconomics and Environmental Justice	Potential for negative socioeconomic impacts. Loss of infrastructure, utilities, land, etc. adversely impacts people and businesses.	Potential short-term benefits through job creation in construction and increased expenditures in local economy. Small negative impacts from travel delays due to construction.	Similar to alternative 2.	Similar to alternative 2 and 3.			
	Air Quality	Possible increase in vehicle emissions if detour routes are longer than the routes they replaced.	Temporary increase in vehicle emissions, dust from construction, etc. during construction. No change in air quality after construction is complete.	Similar to alternative 2, with potential for minor increase in vehicle emissions if relocated road segments are longer than the segments they replaced.	Similar to alternative 2 and 3.			
	Noise	No impacts expected.	Short-term increase in noise levels from construction during daytime hours.	Short-term increase in noise levels from construction during daytime hours.	Similar to alternative 2 and 3.			
	Public Services and Utilities	Future floodwaters could damage roads and utility lines, disrupting service. Could impact response capabilities of first responders (e.g., lack of water for fire protection if water utilities are not restored).	Short-term impacts during construction. Afterwards services and utilities would return to pre-flood levels.	Potential to slightly alter emergency response times if road segments are relocated.	Similar to alternative 2 and 3.			
	Water Resources	Sedimentation could occur downstream. Erosion of the stream banks and private property could occur, increasing the amount of sediment in the water.	In the short-term, construction to stabilize the stream bed may disturb sediment and cause deposition downstream. There may be some initial clearing of vegetation to install stream stabilization measures, though the intent is to replace this with wood log revetments or rip rap which could help restore and anchor vegetation. No long-term impact is expected to	Relocating the stream channel to its pre-flood location could cause sedimentation and deposition in the short-term. Loss of vegetation could impact water quality since vegetation helps filter sediments and pollutants, which may also impact the efficiency and operating costs of the water treatment plant. No long-term impact is	Similar to alternative 2 and 3.	Alternatives 2-4 may require Army Corp of Engineers permit (emergency or 404 permit)		

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
			wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Discharge into surface water may provide a temporary alteration of surface water quality.	expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.				
	Biological Resources	No impacts to threatened or endangered species expected. Damaged structures left in the stream corridor could impede streamflow and impact fish habitat and passage.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Similar to alternative 2 and 3.			
	Cultural Resources	No impacts expected.	Potential to impact cultural resources. Archaeological survey may be required depending on consultation with Tribal Historic Preservation Office (THPO) and State Historic Preservation Office (SHPO). No historic buildings identified in this reach.	Similar to alternative 2.	Similar to alternative 2 and 3.			
7	Physical Resources	Alternative 1 would not result in any construction in the floodplain, but the existing channel may not be sufficiently able to convey floodwaters. The culverts would get clogged with debris and exacerbate flood severity.	The proposed bank stabilization measures are not expected to result in any encroachment to the floodplain. Stabilizing the banks, raising Ward St., and installing catchment basins near 67 Ward St. for debris and floodwaters should reduce the severity of future flood events. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Relocating the stream channel and road to their original locations may have temporary impacts on the floodplain. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Floodplain designation of parcels may change.	Similar to alternative 2 and 3.	May need easements or permits from owner agency if new parcel boundaries/footprints extend into state or federal lands.	Historic properties and buyout candidates have been evaluated. Historic property at old miner's cabin near 65 and 67 Ward St. One buyout candidate identified.	• Use vegetative stabilization measures/bioengineered alternatives to rip rap/armoring • Assess impacts to endangered species, historic buildings or cultural resources as specific projects are identified • Consult with individual agencies including USFWS, USACE, EPA, etc. as needed on individual projects
	Transportation Facilities	Ward St. could be washed out again during a flood, isolating Ward St. from emergency responders.	Increased traffic from construction equipment and vehicles along Ward St. Potentially limited parking space for construction vehicles.	Similar to alternative 2	Similar to alternative 2 and 3.			

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
	Safety and Occupational Health	Damaged infrastructure and buildings that are left in place pose a threat to public safety. Delayed emergency response times for first responders.	No adverse impacts to public health or safety. Stabilizing the stream bend along the roadway would help protect public safety.	No adverse impacts to public health or safety. Building a new road to code/higher standards would help protect public safety.	Similar to alternative 2 and 3.			
	Socioeconomics and Environmental Justice	Potential for negative socioeconomic impacts. Loss of infrastructure, utilities, land, etc. adversely impacts people and businesses.	Potential short-term benefits through job creation in construction and increased expenditures in local economy. Small negative impacts from travel delays due to construction.	Similar to alternative 2.	Similar to alternative 2 and 3.			
	Air Quality	Possible increase in vehicle emissions if detour routes are longer than the routes they replaced.	Temporary increase in vehicle emissions, dust from construction, etc. during construction. No change in air quality after construction is complete.	Similar to alternative 2, with potential for minor increase in vehicle emissions if relocated road segments are longer than the segments they replaced.	Similar to alternative 2 and 3.			
	Noise	No impacts expected.	Short-term increase in noise levels from construction during daytime hours.	Short-term increase in noise levels from construction during daytime hours.	Similar to alternative 2 and 3.			
	Public Services and Utilities	Future floodwaters could damage roads and utility lines, disrupting service. Could impact response capabilities of first responders (e.g., lack of water for fire protection if water utilities are not restored).	Short-term impacts during construction. Afterwards services and utilities would return to pre-flood levels.	Potential to slightly alter emergency response times if road segments are relocated.	Similar to alternative 2 and 3.			
	Water Resources	Sedimentation could occur downstream. Erosion of the stream banks and private property could occur, increasing the amount of sediment in the water.	In the short-term, construction to stabilize the stream bed may disturb sediment and cause deposition downstream. There may be some initial clearing of vegetation to install stream stabilization measures. No long-term impact is expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain	Relocating the stream channel to its pre-flood location could potentially expose the stream to runoff from the road. Sedimentation and deposition downstream could be expected. Loss of vegetation could impact water quality since vegetation helps filter sediments and pollutants. No long-term impact is expected to	Similar to alternative 2 and 3.	Alternatives 2-4 may require Army Corp of Engineers permit (emergency or 404 permit)		

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
			impacts will be mitigated. Discharge into surface water may provide a temporary alteration of surface water quality.	wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.				
	Biological Resources	No impacts to threatened or endangered species expected. Damaged structures left in the stream corridor could impede streamflow and impact fish habitat and passage.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Potential to impact biological resources. The Agencies will review projects and make determinations of affect.	Similar to alternative 2 and 3.			
	Cultural Resources	No impacts expected.	Potential to impact cultural resources. Archaeological survey may be required depending on consultation with Tribal Historic Preservation Office (THPO) and State Historic Preservation Office (SHPO). No historic buildings identified in this reach.	Similar to alternative 2.	Similar to alternative 2 and 3.			
8	Physical Resources	Alternative 1 would not result in any construction in the floodplain, but the existing channel may not be sufficiently able to convey floodwaters.	The proposed bank stabilization measures are not expected to result in any encroachment to the floodplain. Stabilizing the banks should minimize the impact of flooding throughout the reach up to a 10-year event. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Realigning the channel may have temporary impacts on the floodplain. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Floodplain designation of parcels may change.	Similar to alternative 2 and 3.	May need easements or permits from owner agency if new parcel boundaries/footprints extend into state or federal lands.	Historic properties and buyout candidates have been evaluated. None identified.	• Use vegetative stabilization measures/bioengineered alternatives to rip rap/armoring • Assess impacts to endangered species, historic buildings or cultural resources as specific projects are identified • Consult with individual agencies including USFWS, USACE, EPA, etc. as needed on individual projects
	Transportation Facilities	Future floods could erode Ward St.	Increased traffic from construction equipment and vehicles along Ward St.	Similar to alternative 2	Similar to alternative 2 and 3.			
	Safety and Occupational Health	Damaged infrastructure and buildings that are left in place pose a threat to public safety. Delayed emergency response times for first responders.	No adverse impacts to public health or safety. Stabilizing the stream bend along the roadway would help protect public safety.	No adverse impacts to public health or safety. Building a new road to code/higher standards would help protect public safety.	Similar to alternative 2 and 3.			
	Socioeconomics and	Potential for negative socioeconomic impacts. Loss	Potential short-term benefits through job creation in	Similar to alternative 2.	Similar to alternative 2 and 3.			

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
	Environmental Justice	of infrastructure, utilities, land, etc. adversely impacts people and businesses.	construction and increased expenditures in local economy. Small negative impacts from travel delays due to construction.					
	Air Quality	Possible increase in vehicle emissions if detour routes are longer than the routes they replaced.	Temporary increase in vehicle emissions, dust from construction, etc. during construction. No change in air quality after construction is complete.	Similar to alternative 2, with potential for minor increase in vehicle emissions if relocated road segments are longer than the segments they replaced.	Similar to alternative 2 and 3.			
	Noise	No impacts expected.	Short-term increase in noise levels from construction during daytime hours.	Short-term increase in noise levels from construction during daytime hours.	Similar to alternative 2 and 3.			
	Public Services and Utilities	Future floodwaters could damage roads and utility lines, disrupting service. Could impact response capabilities of first responders (e.g., lack of water for fire protection if water utilities are not restored).	Short-term impacts during construction. Afterwards services and utilities would return to pre-flood levels.	Potential to slightly alter emergency response times if road segments are relocated.	Similar to alternative 2 and 3.			
	Water Resources	Sedimentation could occur downstream. Erosion of the stream banks and road could occur, increasing the amount of sediment in the water.	In the short-term, construction to stabilize the stream bed may disturb sediment and cause deposition downstream. There may be some initial clearing of vegetation to install stream stabilization measures. No long-term impact is expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated. Discharge into surface water may provide a temporary alteration of surface water quality.	Sedimentation and deposition downstream could be expected from relocating the stream. Loss of vegetation could impact water quality since vegetation helps filter sediments and pollutants. No long-term impact is expected to wetlands or floodplains. Review of site specific impacts will be completed. Any wetland or floodplain impacts will be mitigated.	Similar to alternative 2 and 3.	Alternatives 2-4 may require Army Corp of Engineers permit (emergency or 404 permit)		
	Biological Resources	No impacts to threatened or endangered species expected. Damaged structures left in the	Potential to impact biological resources. The Agencies will review	Potential to impact biological resources. The Agencies will review	Similar to alternative 2 and 3.			

REACH	Resource Area	Alternative 1: No Action	Alternative 2: Replacement	Alternative 3: Relocation/Realignment	Alternative 4: Combination	Permits and Conditions Required	Historic Properties and Buyout Candidates	Best Construction Practices
		stream corridor could impede streamflow and impact fish habitat and passage.	projects and make determinations of affect.	projects and make determinations of affect.				
	Cultural Resources	No impacts expected.	Potential to impact cultural resources. Archaeological survey may be required depending on consultation with Tribal Historic Preservation Office (THPO) and State Historic Preservation Office (SHPO). No historic buildings identified in this reach.	Similar to alternative 2.	Similar to alternative 2 and 3.			

SECTION SEVEN | PUBLIC INVOLVEMENT

7.1 INITIAL PUBLIC NOTICE

The following Initial Public Notice was published in the *Denver Post* on January 12, 2014.

DRAFT 01/12/2014

PUBLIC NOTICE OF INTENT TO PREPARE A PROGRAMMATIC ENVIRONMENTAL ASSESSMENT (PEA)

In the spirit of Unified Federal Review (UFR) as outlined in the congressionally mandated Sandy Recovery Improvement Act (SRIA) the Federal Emergency Management Agency (FEMA), announces their intent to prepare a Programmatic Environmental Assessment (PEA) for proposed projects to repair, relocate and replace infrastructure, acquire and demolish properties and restore, relocate or otherwise engineer river channels in the Town of Jamestown and surrounding Boulder County in the state of Colorado. This analysis would be programmatic in nature and not address site-specific impacts, which would be evaluated prior to project approval. FEMA is seeking input from the public and interested federal, tribal, state and local agencies on proposed actions and potential impacts to existing resources.

The PEA is intended to address numerous individual sites where the repair, replacement, restoration and/or relocation of buildings, infrastructure, and river channels will be required. In an effort to restore or mitigate infrastructure FEMA and other federal, state and local agencies may provide funds for expansion, enlargement and other upgrades along with replacement, relocation or changes in materials. Sites are located both within and outside of the Town of Jamestown's jurisdictional limits and on federal lands managed by other federal agencies (OFA). Work will be accomplished within the existing right of way to the extent practicable, however as many of the rivers and streams have disrupted original footprints, there will be locations where upgrades to meet existing codes and standards, and/or to address conditions that have changed since the original construction, will be warranted.

Some specific items of work may include, but will not be limited to:

- Operating equipment within the waterway as needed for retrieval of flood debris, roadway material and to allow repair, replacement and relocation of damaged facilities
- Placement of temporary buildings, bridges, crossings, utilities, staging areas, access and safety features
- Repair, replacement and relocation of damaged buildings, bridges, roadways, utilities and ancillary facilities (such as paths, trails, and bike lanes)
- Channel modifications necessary to reestablish embankments and accommodate repair, replacement and relocation of facilities

- Repair, replacement and relocation of culverts, pipes and other drainage structures and crossings
- Repair, replacement and relocation of signals, signs, pavement marking, and safety features such as guardrail, etc.

Projects considered under this PEA will involve actions that may be completed and/or funded by multiple federal, tribal, state and local sources. All federally-funded projects will be completed in compliance with applicable federal, tribal, state and local laws, regulations, Executive Orders, etc.

This notice of intent to prepare a PEA for these actions is pursuant to the National Environmental Policy Act (PL 91-190) and associated environmental statutes, as implemented in FEMA's regulations 44 CFR Part 10. This PEA will address the purpose and need of the proposed projects, project alternatives considered, affected environment, environmental consequences, and impact mitigation measures. Once completed, the draft PEA will be available for public review and comment. Notice is also published in accordance with the National Historic Preservation Act, as implemented in 36 CFR Part 800; and Executive Order 11988, Floodplain Management and Executive Order 11990, Wetlands Protection, as implemented in 44 CFR Part 9; since these actions may have the potential to affect historic, cultural and archaeological resources, floodplains and wetlands.

As a portion Jamestown's citizenry remains displaced an abbreviated public comment period related to the proposed actions described above will remain open for 5 days following publication of this notice. In addition to this initial comment period, a final comment period will be opened for notice of availability of the draft PEA.

Interested persons may obtain more detailed information about the proposed PEA from Steven Hardegen, FEMA Region VIII, Regional Environmental Officer, Denver, CO steven.hardegen@fema.dhs.gov.

Comments will be accepted by the affected public; local, state, and federal agencies; and other interested parties in order to consider and evaluate environmental impacts of the proposed projects. Comments should be made in writing to the FEMA point of contact listed above and post-marked within 5 days of publication of this notice.

7.2 PUBLIC NOTICE OF AVAILABILITY FOR DRAFT COMMENTARY

The following Public Notice of Availability was published in the *Denver Post* on February 18, 2014

February 18th, 2014

PUBLIC NOTICE OF AVAILABILITY OF THE DRAFT PROGRAMMATIC ENVIRONMENTAL ASSESSMENT (PEA) FOR THE TOWN OF JAMESTOWN, BOULDER COUNTY, COLORADO

In the spirit of Unified Federal Review (UFR) as outlined in the congressionally mandated Sandy Recovery Improvement Act (SRIA) the Federal Emergency Management Agency (FEMA), announces the availability of a draft Programmatic Environmental Assessment (PEA) for proposed projects to repair, relocate and replace infrastructure, acquire and demolish properties and restore, relocate or otherwise engineer river channels in the Town of Jamestown and surrounding Boulder County in the state of Colorado. This analysis would be programmatic in nature and not address site-specific impacts, which would be evaluated prior to project approval. FEMA is inviting comment from the public and interested federal, tribal, state and local agencies on proposed actions and potential impacts to existing resources.

The PEA is intended to address numerous individual sites where the repair, replacement, restoration and/or relocation of buildings, infrastructure, and river channels will be required. In an effort to restore or mitigate infrastructure FEMA and other federal, state and local agencies may provide funds for expansion, enlargement and other upgrades along with replacement, relocation or changes in materials. Sites are located both within and outside of the Town of Jamestown's jurisdictional limits and on federal lands managed by other federal agencies (OFA). Work will be accomplished within the existing right of way to the extent practicable, however as many of the rivers and streams have disrupted original footprints, there will be locations where upgrades to meet existing codes and standards, and/or to address conditions that have changed since the original construction, will be warranted.

Some specific items of work may include, but will not be limited to:

- Operating equipment within the waterway as needed for retrieval of flood debris, roadway material and to allow repair, replacement and relocation of damaged facilities
- Placement of temporary buildings, bridges, crossings, utilities, staging areas, access and safety features
- Repair, replacement and relocation of damaged buildings, bridges, roadways, utilities and ancillary facilities (such as paths, trails, and bike lanes)
- Channel modifications necessary to reestablish embankments and accommodate repair, replacement and relocation of facilities
- Repair, replacement and relocation of culverts, pipes and other drainage structures and crossings

- Repair, replacement and relocation of signals, signs, pavement marking, and safety features such as guardrail, etc.

Projects considered under this PEA will involve actions that may be completed and/or funded by multiple federal, tribal, state and local sources. All federally-funded projects will be completed in compliance with applicable federal, tribal, state and local laws, regulations, Executive Orders, etc.

This notice of availability for comment is pursuant to the National Environmental Policy Act (PL 91-190) and associated environmental statutes, as implemented in FEMA's regulations 44 CFR Part 10. This draft PEA addresses the purpose and need of the proposed projects, project alternatives considered, affected environment, environmental consequences, and impact mitigation measures. Notice is also published in accordance with the National Historic Preservation Act, as implemented in 36 CFR Part 800; and Executive Order 11988, Floodplain Management and Executive Order 11990, Wetlands Protection, as implemented in 44 CFR Part 9; since these actions may have the potential to affect historic, cultural and archaeological resources, floodplains and wetlands.

As a portion Jamestown's citizenry remains displaced an abbreviated public comment period related to the proposed actions described above will remain open for 5 days following publication of this notice. The draft EA will be available for public review on the Town of Jamestown website at http://jamestownco.org.

Interested persons may obtain more detailed information about the proposed PEA from Steven Hardegen, FEMA Region VIII, Regional Environmental Officer, Denver, CO steven.hardegen@fema.gov.

Comments will be accepted by the affected public; local, state, and federal agencies; and other interested parties in order to consider and evaluate environmental impacts of the proposed projects. Comments should be made in writing to the FEMA point of contact listed above and post-marked within 5 days of publication of this notice.

7.3 PUBLIC COMMENTS

No comments were received on the draft PEA during the public review period.

SECTION EIGHT | REFERENCES

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SECTION NINE | LIST OF PREPARERS

This PEA was prepared by:

AMEC Environment and Infrastructure, Boulder, CO

- Jeff Brislawn – AMEC Hazard Mitigation Lead/Associate
- Hillary King – AMEC Junior Hazard Mitigation Planner

FEMA Region VIII, Denver, CO

- Jeffrey Fullmer – FEMA Environmental Protection Specialist
- Steven Hardegen – FEMA Regional Environmental Officer

APPENDIX A | AGENCY CORRESPONDENCE

2014-0238 EA: C. Cunningham R Mgb

U.S. FISH AND WILDLIFE SERVICE

☐ NO CONCERNS
☒ CONCUR NOT LIKELY TO ADVERSELY AFFECT
☐ NO COMMENT

Susan C Linner 1/21/14

SUSAN C. LINNER DATE
COLORADO FIELD SUPERVISOR

RECEIVED
JAN 15 2014

U.S. Department of Homeland Security
FEMA DR-4145-CO
9200 E. Mineral Ave
Centennial, CO 80112

January 15, 2014

MEMORANDUM TO: United States Fish and Wildlife Service

FROM: Federal Emergency Management Agency, Region VIII

SUBJECT: Concurrence on Not Likely to Adversely Affect Determination for Various Projects in Jamestown, Boulder County, CO

Beginning on September 11, 2013, Colorado experienced a series of wide-spread rainstorms that resulted in damage to dozens of roads, bridges, and other structures. The President signed the Disaster Declaration for FEMA-4145-DR-CO on September 14, 2013. The Federal Emergency Management Agency (FEMA) requests concurrence from the U.S. Fish and Wildlife Service (USFWS) on the finding of "may effect, but not likely to adversely affect" for proposed projects to repair, relocate and replace infrastructure, acquire and demolish properties and restore, relocate or otherwise engineer rivers in the Town of Jamestown and surrounding Boulder County in the state of Colorado that were damaged as a result of the heavy rainfall and flooding caused by the storms.

Some specific items of work may include, but will not be limited to:

- Operating equipment within the waterway as needed for retrieval of flood debris, roadway material and to allow repair, replacement and relocation of damaged facilities
- Placement of buildings, bridges, crossings, utilities, staging areas, access and safety features, as needed during construction
- Repair, replacement and relocation of damaged buildings, bridges, roadways, utilities and ancillary facilities (such as paths, trails, and bike lanes)
- Channel modifications necessary to reestablish embankments and accommodate repair, replacement and relocation of facilities
- Repair, replacement and relocation of culverts, pipes and other drainage structures
- Repair, replacement and relocation of signals, signs, pavement marking, and safety features such as guardrail, etc.

The summary Town of Jamestown Stream Corridor Master Plan (Master Plan) is attached as Appendix A. Grant conditions are attached as Appendix B. Information on specific work locations is provided in the table below.

Grant Conditions for Species Protection

Preble's Meadow Jumping Mouse (Zapus Hudsonius Preblei)

General Conservation Measures for All FEMA Grant Funded Projects:

1. Obtain and comply with all applicable federal, tribal, state and local permits, including those required by the Clean Water Act Section 401 and Section 404 and floodplain development ordinance.
2. Minimize the amount of concrete, riprap, and other "hard," impermeable engineering features within the stream channel and riparian habitats. Use bioengineering techniques to stabilize stream banks when feasible.
3. Locate access routes, staging areas, and work areas within previously disturbed or modified areas when feasible.
4. Install limits of work fencing (e.g., orange barrier netting or silt fencing), signage, or other visible markers to delineate access routes and the project area from sensitive protected areas such as streams and wetlands. Use this fencing to enforce no-entry zones.
5. Hold a preconstruction briefing for onsite personnel to explain the limits of work and other conservation measures.
6. Follow regional stormwater guidelines and design best management practices (BMPs) to control contamination, erosion, and sedimentation during and after construction.
7. Locate utilities along existing road corridors, and if possible, within the roadway or road shoulder. Bury overhead utilities whenever possible. Directionally bore utilities and pipes underneath wetlands and streams.
8. To the maximum extent practicable, limit disturbing (e.g., crushing, trampling) or removing (e.g., cutting, clearing) all vegetation within riparian and adjacent upland habitats. Minimize the use of heavy machinery and use smaller equipment when possible.
9. During the Preble's active season (May 1 through November 1), work only during daylight hours to avoid disrupting Preble's nocturnal activities
10. Use native, weed-free seeds, plants, and mulch to re-vegetate all areas of disturbance.
11. For movement of construction vehicles over wetlands - Utilize cut/cover approach during active season, but post-weaning period. This approach entails the cutting of sandbar willows (*Salix interior*) to a height of 6-inches and placement of geotextile fabric over the trimmed willows and placement of 12-inches of loose straw, followed by 2-feet of clean fill material. Once construction activities have been completed in that area, the soil and straw lifts and geotextile membrane are removed with a toothless bucket of a front end loader.
12. Temporary lighting will be used with directional shielding to focus the lighting onto the driving surface or project construction area. All permanent lighting must be dark-sky compliant. Lighting will be limited to the extent necessary to meet safety requirements.

Conditions Specific to FEMA Grant Funded Projects in Boulder County

1. During the Preble's active season (May 1 through November 1), work only during daylight hours to avoid disrupting Preble's nocturnal activities.
2. Limit construction activities to outside of the breeding season of Mexican Spotted Owl (mid-February through the end of September).

3. Limit construction activities to outside of the rearing season for Canada Lynx (May through July).
4. Limit construction activities to outside of the rearing season for North American Wolverine (January through April).
5. Box culverts must meet culvert size requirements according to FHWA guidelines, in order to not impede movement for the Canada Lynx or North American Wolverine. Box culverts must be equal to or greater than the existing culvert size. (For culvert size requirements, please refer to: http://www.cflhd.gov/programs/techDevelopment/wildlife/documents/02_Title_Forward_TOC.pdf)
6. Conduct activities outside of spawning season for Greenback Cutthroat Trout (late May - mid July).
7. Bridge deck debris must be captured and/or contained to prevent material from entering the channel.
8. Install protective netting over water intake devices to prevent fish from being harmed.

U.S. Department of Homeland Security
FEMA State Joint Field Office
FEMA 3365-EM-CO/4145-DR-CO
9200 East Mineral Ave
Centennial, CO 80112

FEMA

February 25, 2014

Mr. Dan Corson
Intergovernmental Services Director
Office of Archaeology and Historic Preservation
History Colorado
1200 Broadway
Denver, Colorado 80203

Re: Jamestown Determination of Eligibility (DOE) Report
National Register of Historic Places (NRHP) District Potential

Dear Mr. Corson:

This letter is in response to comments previously received from your office with regard to the DOE document prepared by the Federal Emergency Management Agency (FEMA) for the Town of Jamestown. Findings included in the DOE document, which was submitted on February 3, 2014, demonstrate that while individual buildings within the town may be eligible for the NRHP, there is no unified, identifiable group of resources that convey a visual sense of the overall historic environment. Therefore, FEMA has determined that no NRHP eligible district exists within the Town of Jamestown. FEMA requests formal concurrence with this evaluation.

Additionally, while each individual structure within the town is briefly documented in the DOE report and accompanying reconnaissance-level forms, these evaluations are to serve as a point of reference and evaluation for potential projects only. FEMA will evaluate sites and buildings on an individual basis as projects that will potentially impact these resources and that are to be conducted or funded by FEMA occur.

Sincerely,

Douglas C. McVarish
Historic Preservation Lead

Xc: Kristin Gensmer, Steve Hardegen, Jeffrey Fullmer, Portia Ross

HISTORY Colorado

February 14, 2014

Douglas McVarish
Federal Emergency Management Agency
FEMA/State Joint Federal Office
9200 East Mineral Ave
Centennial, CO 80112

Re: Jamestown DOE Report (CHS #65392)

Thank you for your correspondence dated and received February 3, 2014 that included the project cover letter and survey report and correspondence received on February 6, 2014 that included the site forms regarding the review of the above-mentioned project under Section 106 of the National Historic Preservation Act (Section 106). We request that you forward to our office any comments you received from Tribes or other consulting parties in regards to the review of these surveyed properties.

After review of the provided survey information, we concur that the resources listed below are eligible for the National Register of Historic Place.

- 5BL.382
- 5BL.473
- 5BL.503
- 5BL.502

We believe the surveyed properties below have the potential to be eligible for the National Register of Historic Places, and request that OAHP Form 1403 be completed in order to fully evaluate the eligibility of the property.

- 27 Mesa/5BL.12760
- 30 Mill Street/5BL.12761
- 46 Mesa/5BL.12765
- 68 Mesa/5BL.12769
- 120 Main Street/5BL.12775
- 4 and 8 Main Drive/5BL.12785
- 15 Main Street/5BL.12788
- 29 Main Street/5BL.12792
- 18 Ward Street/5BL.12802
- 55 Ward Street/5BL.12807
- 65 Ward Street/5BL.12808

We do not concur with the recommended findings for the properties listed below.

- 73 Spruce Street/5BL.12771. We recommend this property as not eligible for the National Register of Historic Places.
- We are not able to fully evaluate the Jamestown Irrigation Ditch as currently recorded on the Historic and Architectural Reconnaissance OAHP form #1417. We recommend recording the ditch using the Management Data Form OAHP form #1400 with the associated Linear Component Form OAHP form #1418.

We concur with the remaining surveyed properties recommend as not eligible for the National Register of Historic Places.

If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CFR 60.4, in consultation with this office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings. If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Manager, at (303) 866-4678.

Sincerely,

Edward C. Nichols
State Historic Preservation Officer

U.S. Department of Homeland Security
Federal Emergency Management Agency
DR-4145-CO
FEMA/State Joint Field Office
9200 East Mineral Ave
Centennial, Colorado 80112

February 3, 2014

Mr. Edward C. Nichols
State Historic Preservation Officer
History Colorado
1200 Broadway
Denver, Colorado 80203

Re: Jamestown DOE Report
Reconnaissance Inventory
Historical and Architectural Reconnaissance Forms
Boulder County

Dear Mr. Nichols:

The Federal Emergency Management Agency (FEMA) conducted a reconnaissance level inventory designed to identify buildings and potential archaeological resources situated within the limits of the Town of Jamestown. The town was impacted by the flooding and mudslides in September 2013 that resulted in Presidentially Declared Disaster DR-CO-4145. Due to the magnitude of the destruction caused by the flood, FEMA will be conducting or funding extensive recovery work in the Jamestown area. In order to streamline the recovery process, FEMA conducted a reconnaissance inventory of all accessible buildings within the town area, evaluated each structure for eligibility with regard to the National Register of Historic Places (NRHP), and compiled a Determination of Eligibility (DOE) report document of these buildings. Additionally, FEMA evaluated the project area for potential archaeological resources. Although areas of both high and low archaeological potential were identified, it is important to note that the DOE pertains only to above-ground buildings and that archaeological resources will be evaluated as projects are developed.

Sincerely,

Douglas C. McVarish
Historic Preservation Specialist

Enc: DOE Report Document, Historical and Architectural Reconnaissance Forms
Xc: Steve Hardegan, Jeffrey Fullmer, Portia Ross

HISTORY Colorado

February 26, 2014

Douglas McVarish
Historic Preservation Lead
FEMA State Joint Field Office
US Department of Homeland Security
9200 East Mineral Avenue
Centennial, Colorado 80112

RE: Jamestown survey
HC #65392

Dear Mr. McVarish:

Thank you for your letter dated and received in our office on February 25, 2014 regarding the captioned matter with the request to concur that there is no National Register-eligible historic district in Jamestown. We do so concur.

We look forward as always to working with you regarding any projects dealing with specific properties.

If you have questions please contact Dan Corson, our Intergovernmental Services Director, at (303) 866-2673.

Sincerely,

Edward C. Nichols
State Historic Preservation Officer

From: Mark Williams [mailto:mark.williams@jamestownco.org]
Sent: Wednesday, February 19, 2014 2:35 PM
To: King, Hillary
Subject: Re: FW: Jamestown visit (UNCLASSIFIED)

Hillary -
Elysian Park has a wetland of sorts at the east end, which had cattails at one point, and held water during the September rain event, but rarely holds water anymore (hadn't for the last 10 years). The EPA's work included drainage of that area so that it wouldn't over-top the berming that they created.

The remediated park itself to the west has some problems with stormwater drainage, so that now water is collecting in the parking area, but neither it nor the remediated portion of the park ever held water or contained facultative or obligate wetland species.

I wouldn't say that any area of Elysian Park has "flooded", but rather will retain stormwater on occasion. I hope that helps, and thanks for the leads on study materials.

If you get a chance, could you steer me in the direction of a definitive process for applying locally for a CLOMR? I've seen the definitions and general scenarios, but if you have experience in actually going through the letter writing process, that would be helpful too. Otherwise, I have a meeting with Jaime Prochno and Michael Gease later in the month, and can pin them down on it.

Best Regards,

Mark Williams
Flood Plain Administrator
Town of Jamestown
town hall:303.449.1806
cell:720.938.0425

On Wed, Feb 19, 2014 at 11:04 AM, King, Hillary <hillary.king@amec.com> wrote:

Hi Mark, hope this email finds you well. We are using the National Wetlands Inventory (NWI) to try to determine if there are any remaining wetlands around Jamestown. FEMA's research found NWI markings on Elysian Park. Do you know if that area floods intermittently?

Thanks,

Hillary

From: Fullmer, Jeffrey [mailto:Jeffrey.Fullmer@fema.dhs.gov]
Sent: Wednesday, February 19, 2014 9:58 AM
To: Brislawn, Jeff P; Hardegen, Steven
Cc: King, Hillary; Jackson jr, Jesse
Subject: RE: Jamestown visit (UNCLASSIFIED)

The markings from NWI indicate POWKF.

- P-Palustrine
- 0-(zero, not O) – Fresh Water
- W- Intermittently Flooded/Temporary
- K-Artificially Flooded
- F-Semi-permanently Flooded

The markings are located on top of Elysian Park. Is the rehabilitated open space intermittently flooded? Do you know?

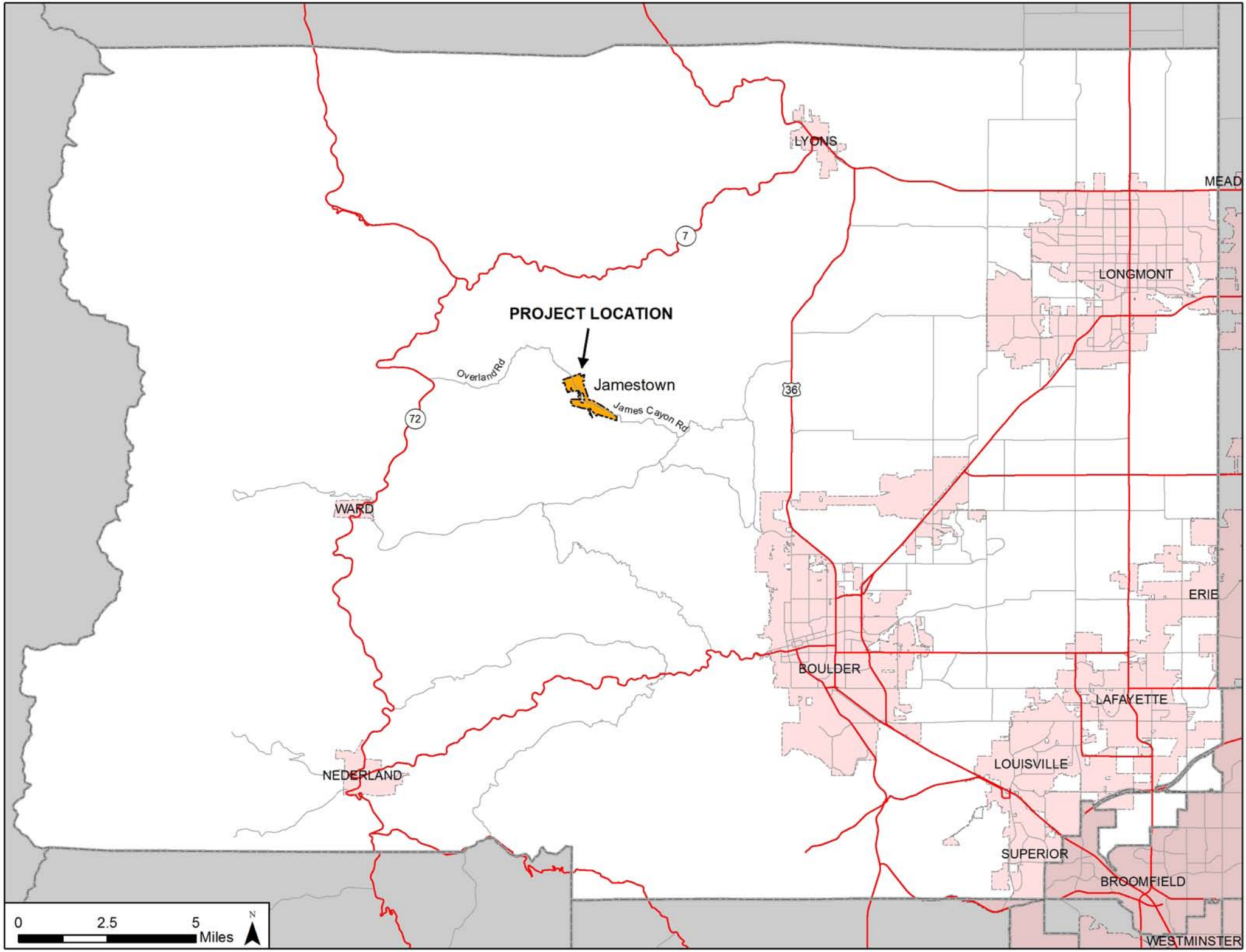
Jeff

Environmental Protection Specialist

DHS | FEMA RVIII | Mitigation | E/HP

M: 929.232.0122 | D: 303.235.4317

APPENDIX B | MAPS AND FIGURES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MEAD
LONGMONT
ERIE
BOULDER
LAFAYETTE
LOUISVILLE
SUPERIOR
BROOMFIELD
WESTMINSTER
WARD
NEDERLAND
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36
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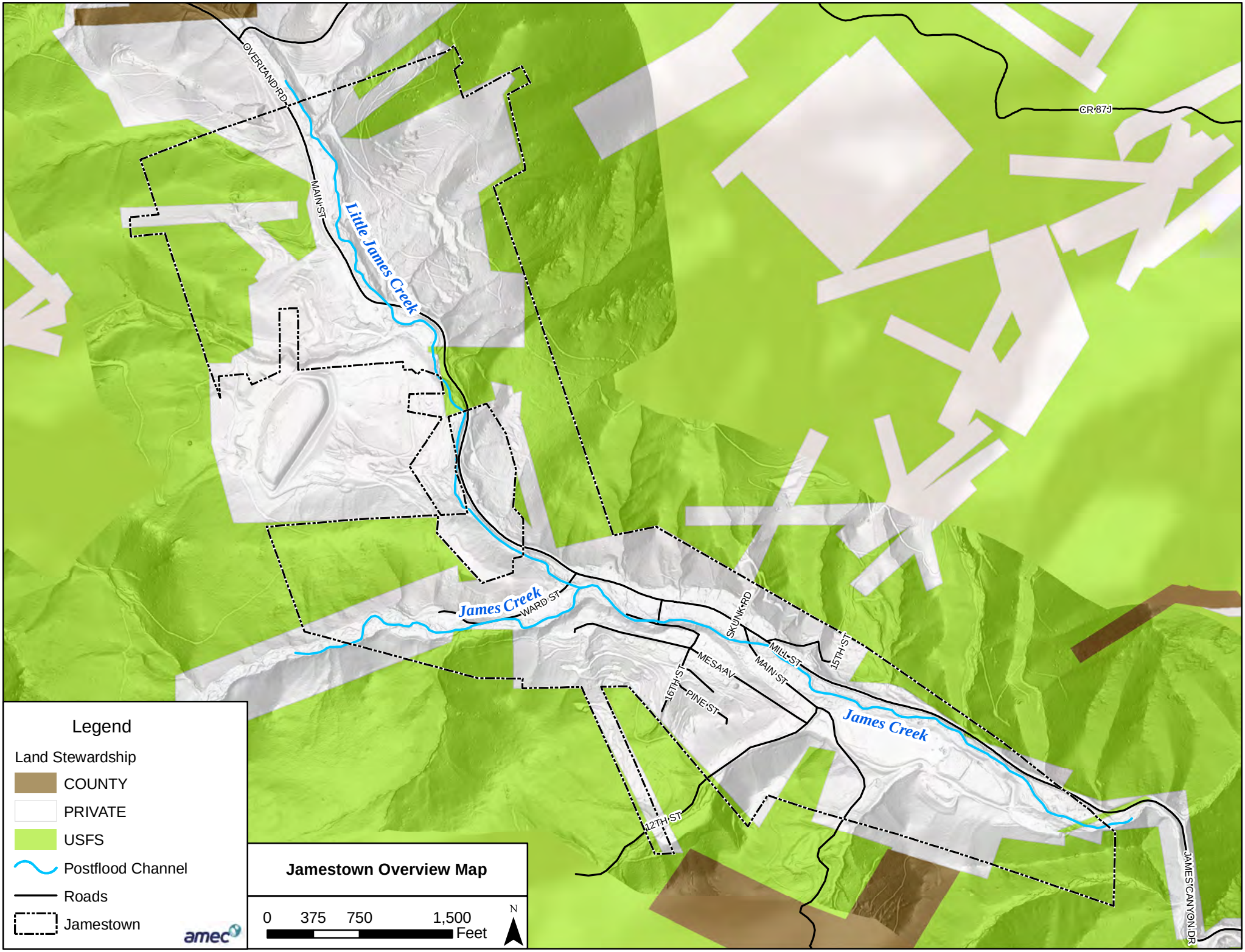
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CR 87J
James Creek
WARD ST
SKUNK RD
MILL ST
15TH ST
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James Creek
12TH ST
JAMES CANYON DR
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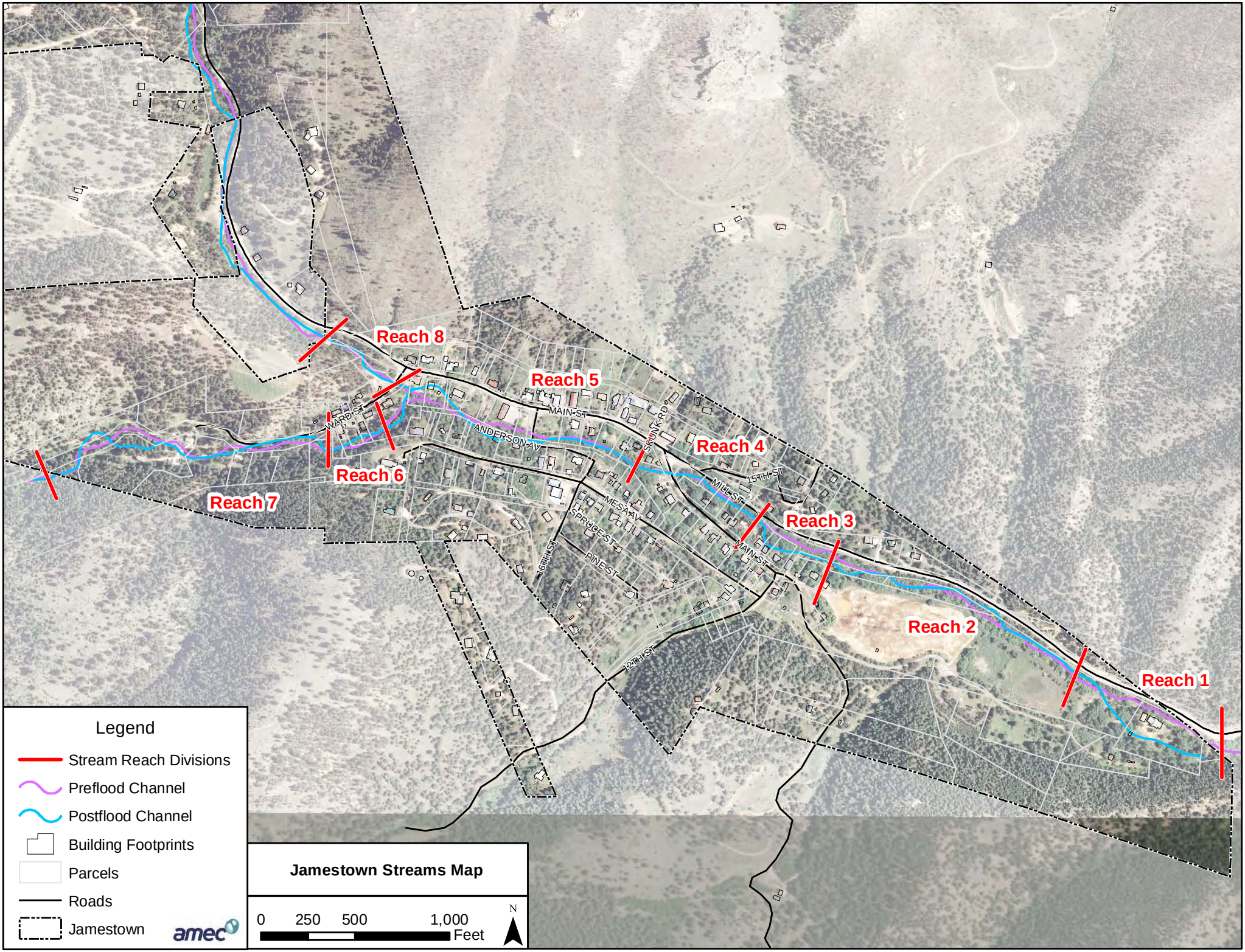
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MILL ST
MESA AV
SPRUCE ST
16TH ST
PINE ST
MAIN ST
12TH ST
Legend
Stream Reach Divisions
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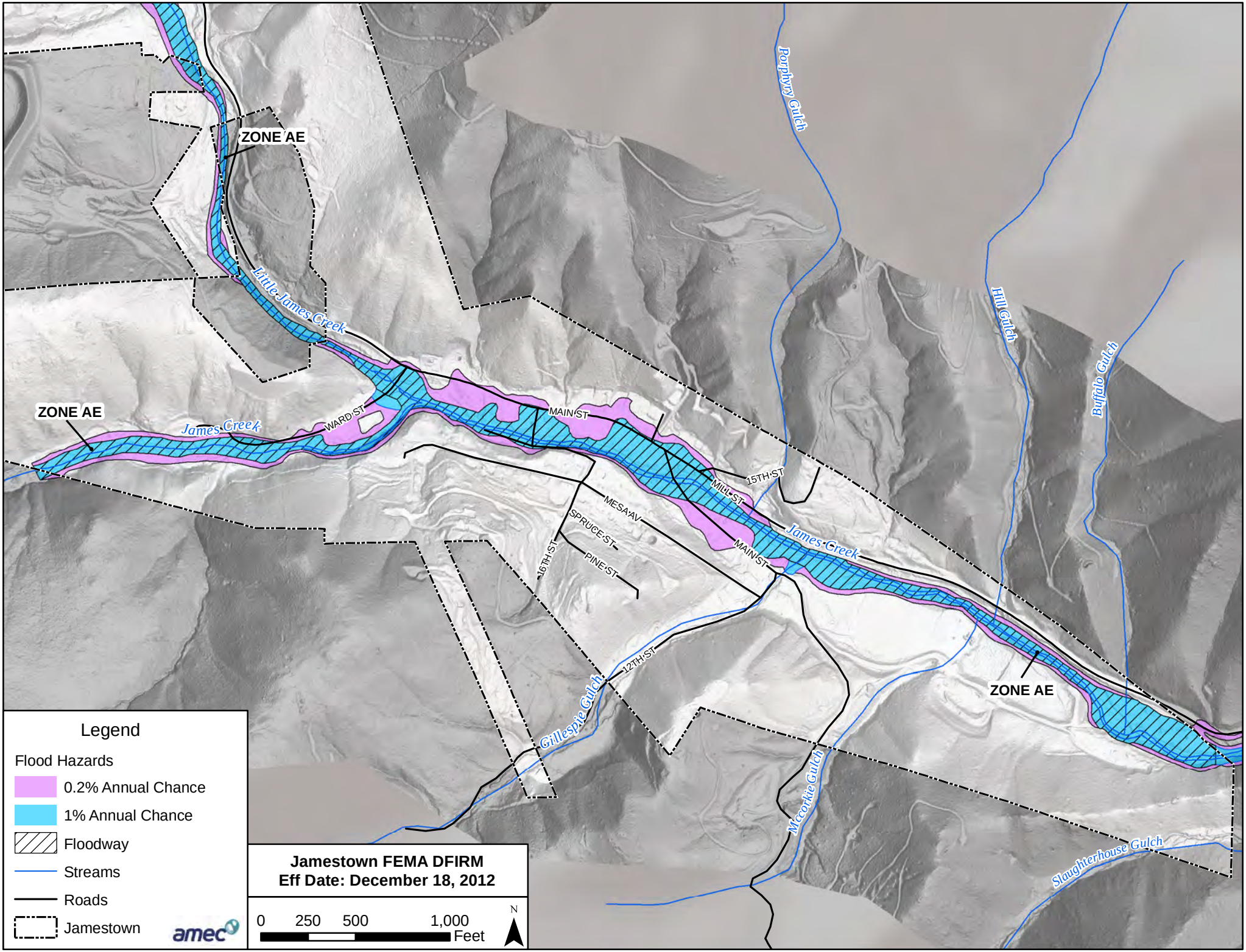
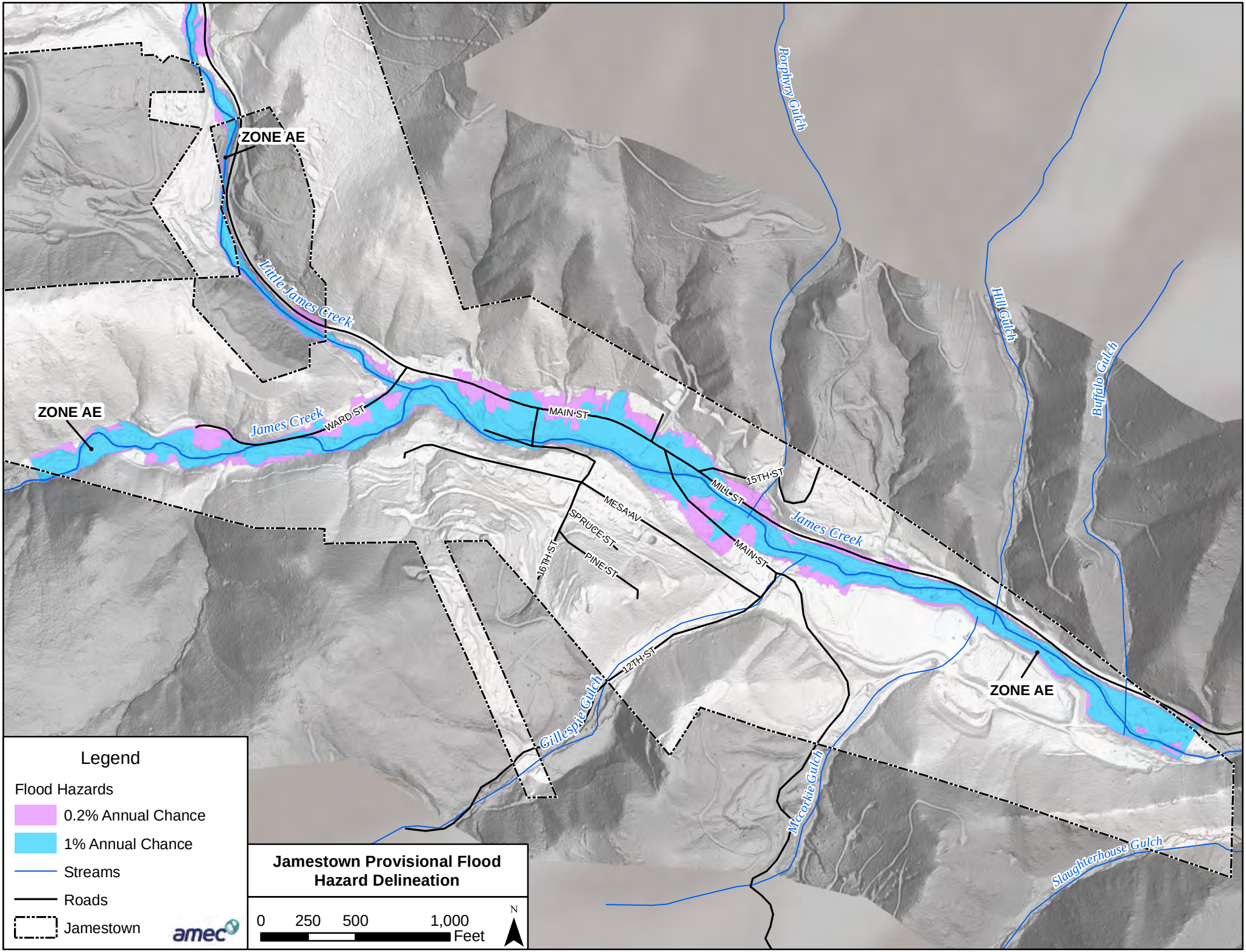

ZONE AE
ZONE AE
ZONE AE
Little James Creek
James Creek
James Creek
Porphyry Gulch
Hill Gulch
Buffalo Gulch
WARD ST
MAIN ST
MILL ST
15TH ST
MESA AV
SPRUCE ST
PINE ST
16TH ST
12TH ST
MAIN ST
Gillespie Gulch
McCorkle Gulch
Slaughterhouse Gulch
Legend
Flood Hazards
0.2% Annual Chance
1% Annual Chance
Floodway
Streams
Roads
Jamestown
amec
Jamestown FEMA DFIRM
Eff Date: December 18, 2012
0 250 500 1,000
Feet
N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ZONE AE
ZONE AE
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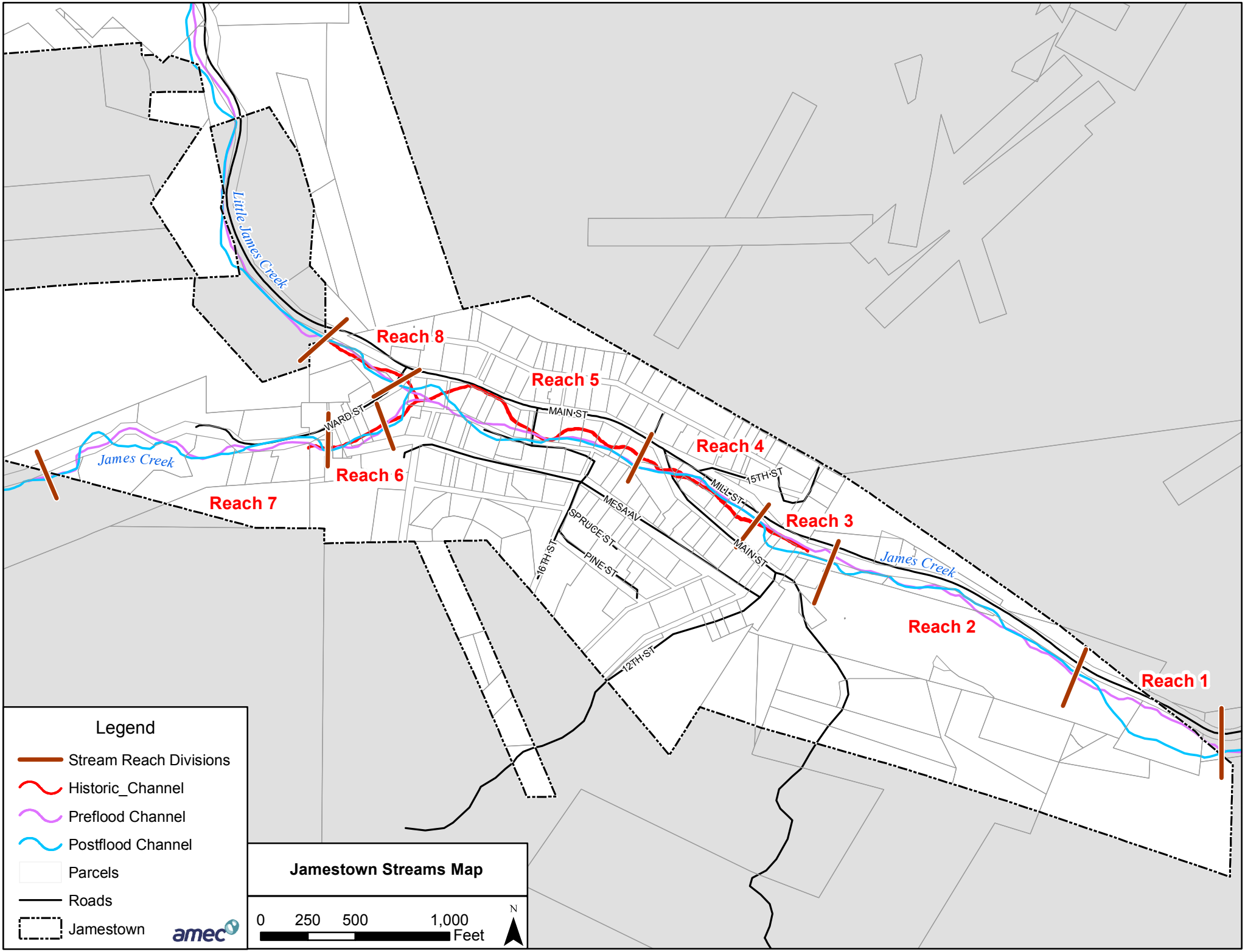
James Creek
James Creek
Porphyry Gulch
Hill Gulch
Buffalo Gulch
WARD ST
MAIN ST
MILL ST
15TH ST
MESA AV
SPRUCE ST
16TH ST
PINE ST
MAIN ST
12TH ST
Gillespie Gulch
McCorkie Gulch
Slaughterhouse Gulch
Legend
Flood Hazards
0.2% Annual Chance
1% Annual Chance
Streams
Roads
Jamestown
amec
Jamestown Provisional Flood Hazard Delineation
0 250 500 1,000 Feet
N


Little James Creek
James Creek
James Creek
Reach 8
Reach 5
Reach 4
Reach 6
Reach 7
Reach 3
Reach 2
Reach 1
WARD ST
MAIN ST
MILL ST
15TH ST
MESA AV
SPRUCE ST
PINE ST
16TH ST
12TH ST
MAIN ST
Legend
Stream Reach Divisions
Historic_Channel
Preflood Channel
Postflood Channel
Parcels
Roads
Jamestown
amec
Jamestown Streams Map
0 250 500 1,000
Feet
N

Legend

Wildfire Boundaries
- Left Hand Fire 1988
- Overland Fire 2003
- Major Roads
- Highways
- DFIRM Stream Channels
- Ponds
- Jurisdictions
- Little James Creek Watershed
- HUC 12 Boundaries

0 2,500 5,000 7,500 10,000 Feet

N

amec

7

72

Middle St. Vrain Creek

Long Gulch

Central Gulch

Park Creek

St. Vrain Creek

Minnie Lake

Beaver Creek

Little James Creek

Balarat Creek

Overland Fire 2003

Moorehead Gulch

Porphyry Gulch

Jenks Gulch

Castle Gulch

Left Hand Fire 1988

James Creek

JAMESTOWN

Little James Creek Watershed

Gillespie Gulch

Slaughterhouse Gulch

Nugget Gulch

Lefthand Creek

Glendale Gulch

Sixmile Canyon Creek

South St. Vrain Creek

James Creek

Duck Lake

Chipmunk Gulch

Bell Gulch

Peck Gulch

Spring Gulch

WARD

Lefthand Creek

Lefthand Creek

Lick Skillet Gulch

Blawkhawk Gulch

Cash Gulch

Gold Run

Ingram Gulch

Fourmile Canyon Creek

72

Todd Gulch

Long Gulch

Emerson Gulch

Fourmile Creek

Sand Gulch

Reach 1

1 inch = 50 feet

0 25 50 100 Feet

N

- Armored Spillway
- Bank Armoring
- Berm
- Deflector
- Road
- Soft Armoring
- Stream
- Stream Extention
- Toe / Armor
- Debris Basin
- Debris Catchment
- Fill / Flatten Slope
- Proposed Stream Route
- Restore Pre-Flood Conveyance
- Soil Riprap
- Water Control
- Drop Structures
- Stream Reach Divisions
- Preflood Channel
- Postflood Channel
- Building Footprints
- Parcels
- Roads
- Jamestown

amec

MILL ST

JAMES CANYON DR

2199
Roger & Nancy Loving

Reach 2

1 inch = 100 feet

0 50 100 200 Feet

N

- Armored Spillway
- Bank Armoring
- Berm
- Deflector
- Road
- Soft Armoring
- Stream
- Stream Extention
- Toe / Armor
- Debris Basin
- Debris Catchment
- Fill / Flatten Slope
- Proposed Stream Route
- Restore Pre-Flood Conveyance
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- Drop Structures
- Stream Reach Divisions
- Preflood Channel
- Postflood Channel
- Building Footprints
- Parcels
- Roads
- Jamestown

amec

MILL ST

MAIN ST

4 Corey Nielsen

2 Russell Kyte

35
Bruce & Marianne Boeke

20
Alex Meeker

29
Rick & Kael Davis

14
Tim & Wendy Stokes

21
Cheyenne & Susan Wills

15
Mary Ellen Burch

8
Matt & Julie Kohlhaas

MILL ST

MAIN ST

MESA AV

7
Rob & Sandy Greathouse

4
Corey Nielsen

2
Russell Kyte

12TH ST

12
Tim & Wendy Stokes

Reach 3

1 inch = 50 feet

0 25 50 100 Feet

N

- Armored Spillway
- Bank Armoring
- Berm
- Deflector
- Road
- Soft Armoring
- Stream
- Stream Extention
- Toe / Armor
- Debris Basin
- Debris Catchment
- Fill / Flatten Slope
- Proposed Stream Route
- Restore Pre-Flood Conveyance
- Soil Riprap
- Water Control
- Drop Structures
- Stream Reach Divisions
- Preflood Channel
- Postflood Channel
- Building Footprints
- Parcels
- Roads
- Jamestown

amec

Reach 4

1 inch = 50 feet

0 25 50 100 Feet

N

- Armored Spillway
- Bank Armoring
- Berm
- Deflector
- Road
- Soft Armoring
- Stream
- Stream Extention
- Toe / Armor
- Debris Basin
- Debris Catchment
- Fill / Flatten Slope
- Proposed Stream Route
- Restore Pre-Flood Conveyance
- Soil Riprap
- Water Control
- Drop Structures
- Stream Reach Divisions
- Preflood Channel
- Postflood Channel
- Building Footprints
- Parcels
- Roads
- Jamestown

amec

73 Burt Loupee

67 Burt Loupee

51 Deborah & David Haynes-Thorndike

43 Carolyn Donadio

41 Brian Morck

40 Paul Midkiff

34 Ronald Losasso

35 Bruce & Marianne Boeke

29 Rick & Kael Davis

28 Chris & Jennifer O'Brien

20 Alex Meeker

14 Tim & Wendy Stokes

15TH ST

MAIN ST

MESA AV

MILL ST

Reach 5

1 inch = 100 feet

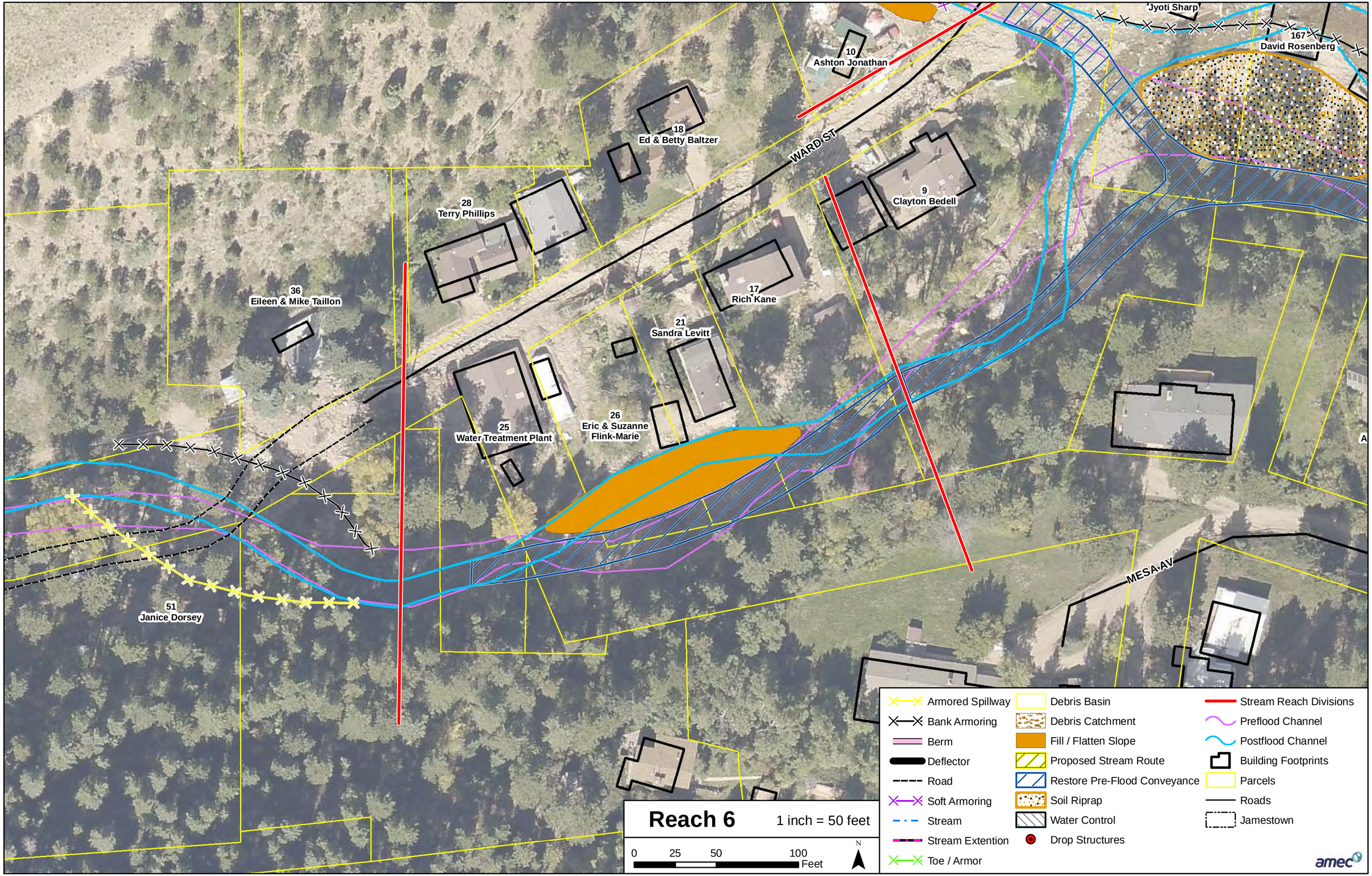
0 50 100 200 Feet

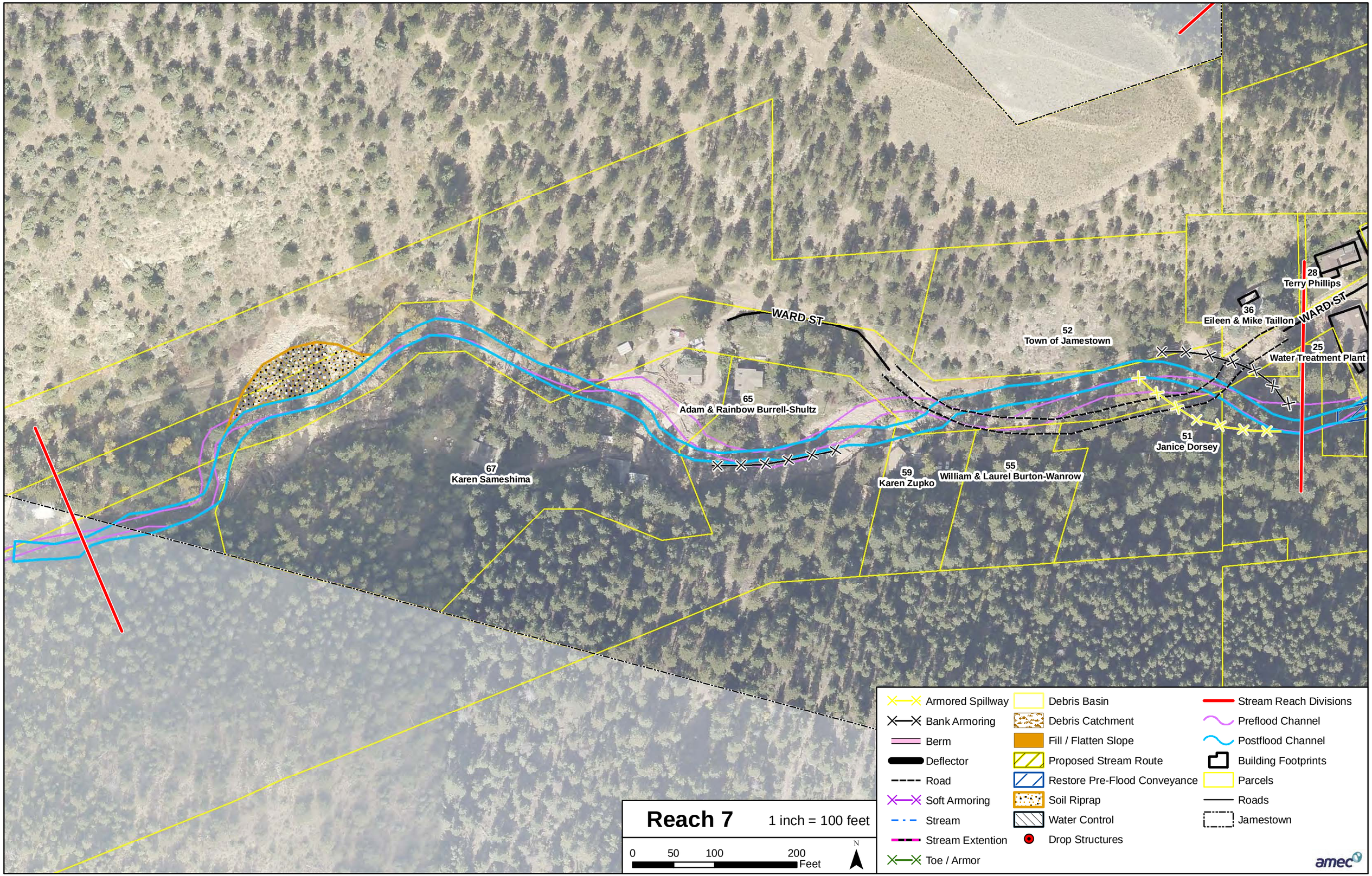
N

- Armored Spillway
- Bank Armoring
- Berm
- Deflector
- Road
- Soft Armoring
- Stream
- Stream Extention
- Toe / Armor
- Debris Basin
- Debris Catchment
- Fill / Flatten Slope
- Proposed Stream Route
- Restore Pre-Flood Conveyance
- Soil Riprap
- Water Control
- Drop Structures
- Stream Reach Divisions
- Postflood Channel
- Building Footprints
- Parcels
- Roads
- Jamestown

amec

2 Town of Jamestown
10 Ashton Jonathan
18 Ed & Betty Baltzer
175 Jyoti Sharp
167 David Rosenberg
153 Nancy Farmer
145 Nancy Farmer
150 Zachary Howlett
142 Jonathan & Juliette Bartsch
141 Jonathan & Juliette Bartsch
133 Post Office
9 Clayton Bedell
17 Rich Kane
21 Sandra Levitt
154 Allan Mueller
146 David & Emma Mans-Hardy
134 Dan & Kelly Kennelly
122 Rudiger & Kate Schmidt
105 Leesa Bolden
99 David & Emma Mans-Hardy
91 Burt & Anna Payne
85 Burt & Anna Payne
66 Fire Hall
73 Burt Loupee
67 Burt Loupee
51 Deborah & David Haynes-Thorndike


Jyoti Sharp
167
David Rosenberg
10
Ashton Jonathan
18
Ed & Betty Baltzer
WARD ST
9
Clayton Bedell
28
Terry Phillips
36
Eileen & Mike Taillon
17
Rich Kane
21
Sandra Levitt
25
Water Treatment Plant
26
Eric & Suzanne
Flink-Marie
51
Janice Dorsey
MESA AV
Reach 6
1 inch = 50 feet
0
25
50
100
Feet
N
Armored Spillway
Bank Armoring
Berm
Deflector
Road
Soft Armoring
Stream
Stream Extention
Toe / Armor
Debris Basin
Debris Catchment
Fill / Flatten Slope
Proposed Stream Route
Restore Pre-Flood Conveyance
Soil Riprap
Water Control
Drop Structures
Stream Reach Divisions
Preflood Channel
Postflood Channel
Building Footprints
Parcels
Roads
Jamestown
amec


WARD ST
WARD ST
28
Terry Phillips
36
Eileen & Mike Taillon
52
Town of Jamestown
25
Water Treatment Plant
65
Adam & Rainbow Burrell-Shultz
51
Janice Dorsey
67
Karen Sameshima
59
Karen Zupko
55
William & Laurel Burton-Wanrow
Reach 7
1 inch = 100 feet
0
50
100
200
Feet
N
Armored Spillway
Bank Armoring
Berm
Deflector
Road
Soft Armoring
Stream
Stream Extention
Toe / Armor
Debris Basin
Debris Catchment
Fill / Flatten Slope
Proposed Stream Route
Restore Pre-Flood Conveyance
Soil Riprap
Water Control
Drop Structures
Stream Reach Divisions
Preflood Channel
Postflood Channel
Building Footprints
Parcels
Roads
Jamestown
amec

Reach 8

1 inch = 50 feet

0 25 50 100 Feet

N

- Armored Spillway
- Bank Armoring
- Berm
- Deflector
- Road
- Soft Armoring
- Stream
- Stream Extention
- Toe / Armor
- Debris Basin
- Debris Catchment
- Fill / Flatten Slope
- Proposed Stream Route
- Restore Pre-Flood Conveyance
- Soil Riprap
- Water Control
- Drop Structures
- Stream Reach Divisions
- Preflood Channel
- Postflood Channel
- Building Footprints
- Parcels
- Roads
- Jamestown

amec

MAIN ST

WARD ST

2
Town of Jamestown

175
Jyoti Sharp

167
David Rosenberg

10
Ashton Jonathan

18
Ed & Betty Baltzer

9
Clayton Bedell

28
Terry Phillips

Prime and other Important Farmlands

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Report—Prime and other Important Farmlands

Prime and other Important Farmlands–Arapaho-Roosevelt National Forest Area, Colorado, Parts of Boulder, Clear Creek, Gilpin, Grand, Park and Larimer Counties		
Map Symbol	**Map Unit Name**	**Farmland Classification**
2703B	Cypher-Ratake families complex, 5 to 40 percent slopes	Not prime farmland
2704D	Typic Haplustolls-Cathedral family-Rock outcrop complex, 40 to 150 percent slopes	Not prime farmland
2705D	Ratake-Cathedral families-Rock outcrop complex, 40 to 150 percent slopes	Not prime farmland
2706D	Cypher family-Rock outcrop complex, 40 to 150 percent slopes	Not prime farmland
2717B	Cypher-Wetmore-Ratake families complex, 5 to 40 percent slopes	Not prime farmland
4703D	Bullwark-Catamount families-Rock outcrop complex, 40 to 150 percent slopes	Not prime farmland
4704B	Bullwark-Catamount families-Rubble land complex, 10 to 40 percent slopes	Not prime farmland
5101A	Pachic Argiustolls-Aquic Argiudolls complex, 0 to 15 percent slopes	Not prime farmland
6101A	Cryaquolls-Gateview family complex, 0 to 15 percent slopes	Not prime farmland
W	Water	Not prime farmland

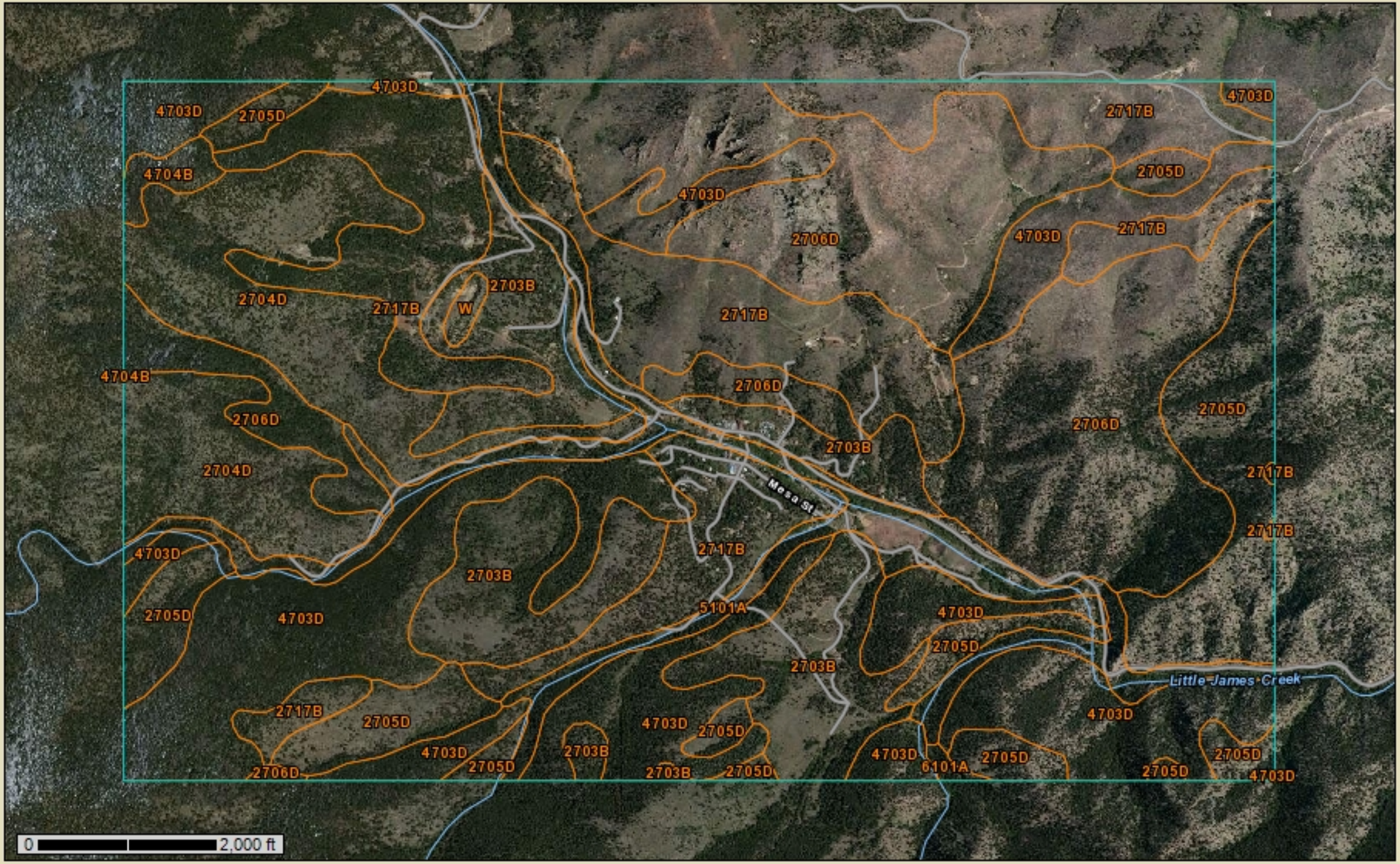
Data Source Information

Soil Survey Area: Arapaho-Roosevelt National Forest Area, Colorado, Parts of Boulder, Clear Creek, Gilpin, Grand, Park and Larimer Counties
Survey Area Data: Version 3, Dec 23, 2013

Soil Map

Legend

Scale (not to scale)



APPENDIX C | FINDING OF NO SIGNIFICANT IMPACT (FONSI)

U.S. Department of Homeland Security
FEMA Region VIII
Denver Federal Center
Building 710, Box 25267
Denver, CO 80225-0267

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

FINAL PROGRAMMATIC ENVIRONMENTAL ASSESSMENT FOR THE TOWN OF JAMESTOWN STREAM CORRIDOR RECOVERY DESIGN

BACKGROUND

One of the most costly and widespread floods in Colorado history devastated the Town of Jamestown, Boulder County, in September 2013. Sustained heavy rains (14 inches in 48 hours) and post-wildfire conditions led to massive flooding and debris flows. The worst flooding occurred from September 11-13, 2013. James Creek and Little James Creek both left their banks and formed new channels, undercutting houses and roads. Several homes, bridges, culverts, and roads were washed away, isolating residents and forcing nearly every resident to be evacuated by military helicopters. The Town's water treatment plant and water distribution system were also severely damaged, leaving the Town without water for several months. By the end of the disaster, the Town had lost 20% of the homes, 50% of the roads, multiple bridges, the water treatment plant, and the Jamestown Volunteer Fire Department's fire hall. The floodwaters and debris flows deposited thousands of cubic yards of sediment and debris along the Town's main corridor, on private property, and inside homes and garages. A Presidential disaster declaration (FEMA-4145-DR-CO) was declared on September 14, 2013.

Because of the severe flooding and debris flows that occurred in Jamestown during Presidential disaster declaration FEMA-4145-DR-CO, stream corridor recovery projects are needed to:

- Restore infrastructure and properties in the Town to a safe, sustainable, and permanent function and capacity;
- Mitigate the impacts and losses caused by future flood and debris flows events on Jamestown's essential services, infrastructure and property; and
- Protect the health, safety, and welfare of Jamestown's residents from future floods and debris flows.

As a result of the damages that occurred in Colorado during the September 2013 floods and debris flows, FEMA was authorized under Presidential disaster declaration FEMA-4145-DR-CO to provide Federal assistance to designated disaster areas in Colorado, including Jamestown. Jamestown's stream corridor recovery projects are being funded by the Emergency Watershed Protection (EWP) program, administered by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS); FEMA's Public Assistance (PA) program; FEMA's

Hazard Mitigation Grant Program (HMGP); and the U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant – Disaster Recovery (CDBG-DR) program.

In accordance with the National Environmental Policy Act (NEPA) of 1969, FEMA's regulations for implementing NEPA at 44 Code of Federal Regulations (CFR) Part 10, the President's Council on Environmental Quality (CEQ) NEPA implementing regulations at 40 CFR Parts 1500-1508, and in the spirit of Unified Review as outlined in Section 6 of the Sandy Recovery Improvement Act (SRIA) of 2013 FEMA prepared a draft Programmatic Environmental Assessment (PEA) to evaluate the potential impacts to the human environment resulting from the Jamestown stream corridor recovery projects. The PEA is incorporated by reference into this FONSI.

The PEA evaluated four alternatives: (1) No Action; (2) Replacement of Existing Buildings, Infrastructure, or Stream Corridor; (3) Relocation of Existing Buildings, Infrastructure, or Stream Corridor and/or Construction of New Buildings, Infrastructure, or Stream Corridor; and (4) Combination of Alternatives 2 and 3. The stream corridor was divided into eight reaches during the preliminary alternative design process to effectively analyze the post-flood hydrologic and hydraulic conditions. A given alternative may not be available in all eight reaches or all segments of each reach. Therefore, each reach may have a different preferred alternative.

Notice of the availability of the draft PEA was published on the Town of Jamestown's website (jamestownco.org) and the *Denver Post* on February 18, 2014, for a 5-day public comment period. No comments on the draft PEA were received during the 5-day public comment period.

CONDITIONS

Actions under this PEA and FONSI must meet the following conditions. Failure to comply with these conditions would make the FONSI determination inapplicable for the project and could jeopardize the receipt of FEMA funding.

1. In accordance with applicable local, state, and federal regulations, the applicant would be responsible for acquiring any necessary permits prior to commencing construction at the proposed project site.
2. The applicant will follow best management practices and requirements under applicable stormwater pollution requirements for the placement of fill and construction activities.
3. Contractor and/or Subcontractors will properly handle, package, transport, and dispose of hazardous materials and/or waste in accordance with all local, state, and federal regulations, laws, and ordinances. If hazardous substances are released to the project area during construction, these federal, state, and local requirements must be followed in response and cleanup.
4. If during the course of work, unmarked graves, burials, human remains, or archaeological artifacts (prehistoric or historic) are discovered, the applicant shall stop work in the vicinity of the discovery, secure the site, and take all reasonable measures to avoid or minimize harm to the finds. All archaeological findings will be secured and access to the

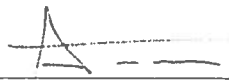
sensitive area restricted. The applicant shall inform their Public Assistance (PA) contacts at FEMA, who will in turn contact FEMA Historic Preservation (HP) staff. The applicant will not proceed with work until FEMA HP completes consultation with the State Historic Preservation Office (SHPO) to ensure that the project is in compliance with the National Historic Preservation Act.

5. The applicant will follow applicable mitigation measures as identified in Section 5 of the PEA to the maximum extent possible.
6. The applicant must meet any project-specific conditions developed and agreed upon between FEMA and with environmental planning or historic preservation resource or regulatory agencies during consultation or coordination.
7. Construction traffic should be closely monitored and controlled as appropriate. All construction activities would be conducted in a safe manner in accordance with OSHA requirements. To alert motorists and pedestrians of project activities, appropriate signage and barriers would be on site prior to and during construction activities. During construction activities, the construction site(s) would be fenced off to discourage trespassers.
8. The applicant will submit any changes to the scope of work that was originally submitted as part of the application for FEMA's determination of whether the PEA is still valid or whether any supplementation or re-evaluation is needed.

FINDINGS

Based upon the information contained in the Final PEA, the potential impacts resulting from the four project types analyzed in the PEA, and in accordance with FEMA's regulations at 44 CFR Part 10 and Executive Orders 11988 (Floodplain Management), 11990 (Protection of Wetlands), and 12898 (Environmental Justice), FEMA finds that the implementation of the proposed action will not have significant impacts to the quality of the human environment. Therefore, an Environmental Impact Statement (EIS) will not be prepared. This FONSI is based upon proposed actions fitting one of the four project types (alternatives) described in the Final PEA and meeting all conditions prescribed for that particular project type.

APPROVAL



03/04/2014

Steven E. Hardegen — Date
Regional Environmental Officer, FEMA Region VIII
FEMA-4145-DR-CO