

FEDERAL EMERGENCY MANAGEMENT AGENCY

FINDING OF NO SIGNIFICANT IMPACT
Fleshman Creek Flood Mitigation Project
Park County, Montana
April 30, 2010

BACKGROUND

Park County has applied through the State of Montana Disaster and Emergency Services for funding through the Department of Homeland Security, Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation Program. This assistance would be used to reduce flood damages along a 2 mile reach of Fleshman Creek by upgrading existing culverts, performing channel augmentation, and restoring wetlands and habitat along the Creek.

The City of Livingston (Livingston) is located in Park County in southwestern Montana, on the Yellowstone River, approximately 60 miles north of Yellowstone National Park. Fleshman Creek, a tributary of the Yellowstone River, flows through developed areas of Livingston. Its headwaters begin west of Livingston in the Bangtail Mountains and it has a total watershed of approximately 23.6 square miles. Hydrologic studies for Fleshman Creek completed between 1955 and 2005 concluded that it represents a flood risk to residences, businesses, and public properties located along the creek within Livingston. Three major flooding events have been documented on Fleshman Creek that, based on the 2008 Consumer Price Index, had damages ranging from approximately \$500,000 to over \$1 million in 2008 dollars. In addition to posing a flood risk, Fleshman Creek has become a degraded stream within the city limits of Livingston, with poor water and habitat (riparian and aquatic) quality, and steadily increasing annual maintenance costs. During the planning process, Park County was encouraged to take a holistic approach to restoring Fleshman Creek to a more natural and flood resistant state. Based on these suggestions, Park County established the following restoration goals for the creek:

- Mitigate/minimize risk to property and life associated with flood hazards;
- Improve water quality;
- Increase water quantity;
- Restore aquatic and riparian habitat; and
- Enhance the creek as a community resource and public amenity (Park County 2009).

DESCRIPTION

The Proposed Action project area, known as Reach 2, extends approximately from the intersection of East Clark Street and South M Street upstream to the Yellowstone River diversion pipe (outfall). The goal is to mitigate flood hazards by increasing the channel capacity of the creek, while rehabilitating the creek channel and associated riparian zone. In addition to reducing flood risk, there are several benefits associated with the Proposed Action, such as improving water quality, restoring aquatic and riparian habitat, and enhancing the area as a public amenity. The Proposed Action would upgrade culverts at six street/road crossings; install hydrodynamic separators at storm water outfalls to enhance gravity separation of suspended storm water pollutants; enhance, create, or modify wetlands along the creek channel; and increase the sinuosity of the creek. The project would also include channel augmentations, bank stabilization and revegetation, and relocation of utilities. These features are described in more detail below.

New Hydraulic Structures

Undersized culverts would be replaced at six street/road crossings along the creek. In addition, the restoration design plan would involve resetting the culvert elevations to redistribute the channel gradient throughout the project reach. The Proposed Action would employ ConSpan type culverts ranging in size from 12-foot x 6-foot to 20-foot x 5-foot. These structures were selected because they provide an economical solution that would support stream restoration processes along the project reach, including sediment transport, elimination of woody debris jams, and a significant enhancement of the existing flood conveyance capabilities.

Enhancing/Creating/Modifying Wetlands

The Proposed Action calls for the creation and/or modification of three types of wetlands:

- Existing wetland/riparian fringe along the creek and the Sacajawea Lagoon (Lagoon) edge would be modified as part of active channel restoration, and would be revegetated using native herbaceous and woody wetland species.
- A channel-wide treatment wetland would be constructed within the narrow section of the creek upstream of the Lagoon.
- Storm water outfalls to the stream would be modified to include new hydrodynamic separators and treatment wetlands, or bio-swales.

Channel Augmentations

The primary goal throughout the project reach is to increase channel sinuosity and decrease width/depth ratio. In most areas, the existing actively flowing channel would be narrowed and existing channel areas would be reestablished as active floodplain/wetlands/riparian areas. Channel geometry would be designed based on existing physical and infrastructure constraints and desired geomorphic ratios (sinuosity, width/depth ratio, entrenchment). The design would establish riffle/pool spacing, meander wavelength, radius of curvature, and belt width based on these multiple requirements and on existing conditions in each stream segment. The desired morphology is classified as a "Type E" stream based on the Rosgen stream classification system. Type E streams have entrenchment >2.2 , width/depth ratio <12 , sinuosity >1.5 , and slope <2 percent. The restoration design would also involve setting new culvert elevations and redistributing channel gradient or slope throughout the project reach. This would effectively eliminate the excessively flat reaches where sediments accumulate, and would improve both flow and sediment conveyance throughout the entire reach. The total length of the channel is expected to increase by approximately 1,755 feet.

Bank Stabilization

The Proposed Action would incorporate the strategic use of coir (coconut) fabric to allow for creation of steeper bank angles and critical cover features. After channel alterations are complete, the project would also incorporate other bank stabilization/erosion prevention methods, such as Best Management Practices (BMPs), and would revegetate disturbed area with native herbaceous and woody species to reduce sediment loads in the creek.

Utility Relocations

Livingston's water main and Northwestern Energy's overhead electric lines cross Freshman Creek at six locations within the project area. These utilities may be impacted by proposed changes within the project area. Multiple alternatives, including relocation, replacement, and temporary shutoff, were addressed as potential solutions for working alongside stream restoration and structure replacement activities. Unfortunately, the actual depth of buried utilities is not indicated on the Livingston engineering drawings. Utility design would involve locating and determining the depth of each utility. Temporary road closures would occur during replacement of the hydraulic structures and it is assumed that corresponding utility work would coincide with the culvert work. The utility work would also include the installation of stormceptors (hydrodynamic separators designed to enhance gravity separation of storm

water pollutants). The estimated time for each of the utility relocations is estimated to be between a few hours and a few days. Additionally, two existing sewer lines cross under Fleshman Creek at the alley between D and E Streets and at Main Street. During final design, it is likely that the aggraded streambed would need to be lowered to increase flood conveyance without resulting in future erosion and sedimentation. Consequently, the existing gravity sewer lines would likely be exposed in the creek, and therefore need to be lowered or relocated. The installation of a sewer lift station(s) may be necessary. The actual size of the lift station(s), if needed, would be determined during final design, as it depends on a variety of factors, including existing utility depths and overall utility infrastructure of Livingston.

Project Details

Section 1 - Upstream limit of 2003 project area to Geyser Street

No culverts would be installed in this section. The channel would be narrowed and the sinuosity would be increased to a level similar to the 2003/2004 project reach located immediately downstream. The total restored channel length would be approximately 675 feet. Activities in this section would also include: implementation of bank stabilization/revegetation, enhancement/creation of riparian and wetland areas along the creek in places where the channel is narrowed, modification of the storm sewer outfall with a stormceptor at M Street, and creation of a bio-swale treatment wetland. Utilities would be relocated within the road ROW, as needed.

Section 2 - Geyser Street to H Street

In this section, the Proposed Action would involve installing a new 12-foot x 6-foot culvert at Geyser Street and resetting the culvert elevation. The channel would be narrowed throughout the reach and sinuosity would be increased. The channel slope would also be made uniform throughout the reach, but would remain relatively flat, preserving its broad wetland character. The total restored channel length would be approximately 2,050 feet. Bank stabilization and revegetation would be implemented. Converting the active channel area to new riparian/wetlands areas along newly created meanders would increase the area of wetlands. Utilities at Geyser Street would be relocated within the road ROW, as needed.

Section 3 - H Street to F Street

In this section, the Proposed Action would involve installing a new 12-foot x 6-foot culvert at H Street and more sinuous riffle/pool morphology would be created. The total restored channel length would be approximately 920 feet. Converting active channel area to new riparian/wetlands areas along newly created meanders would increase the area of wetlands. Utilities at H Street would be relocated within the road ROW, as needed.

Section 4 - F Street to C Street

In this section, the Proposed Action would involve installing a new 20-foot x 5-foot culvert at E Street and a new 14-foot x 7-foot ConSpan culvert at F Street. Channel alteration/restoration would include redistributing the grade over the reach. Also, the channel would be narrowed, creating a riffle/pool profile and converting some of the existing pond area into an active floodplain. The total restored channel length would be approximately 2,130 feet. Riparian and wetland areas would be enhanced in places where the channel is narrowed. The storm sewer outfall at D Street would be equipped with stormceptors and bioswale treatment wetlands would be created. Utilities at F Street and E Street would be relocated within the road ROW, as needed. A Lift Station may be needed to relocate the existing sewer line at the alley between D Street and E Street, depending on existing utility depths and infrastructure.

Section 5 - C Street to Main Street

In this section, the Proposed Action would involve installing a new 16-foot x 8-foot culvert at C Street. The narrow corridor would be widened to improve flood conveyance capacity and increase channel sinuosity. The total restored channel length would be approximately 860 feet. Riparian and wetland areas would potentially be removed/relocated in the section planned for channel widening. Two storm sewer

outfalls, one at B Street and one downstream of Main Street, would be equipped with stormceptors, and bio-swale treatment wetlands would be created. A lift station may be needed to relocate an existing sewer line at Main Street, depending on existing utility depths and infrastructure. Utilities at C Street would be relocated within the road ROW, as needed.

Section 6 – Main Street to Upstream Area of Lagoon

In this section, a new 12-foot x 6-foot culvert would be installed at Main Street. The storm sewer outfall at 2nd Street would be equipped with a stormceptor and a bio-swale treatment wetland would be created. The Yellowstone Street Stone Arch Bridge would remain unchanged. Underground utilities at Main Street would be relocated within the road ROW, as needed.

Section 7 – Upstream Area of Lagoon to Yellowstone Diversion Inlet

No culverts would be installed in this section; however, a channel-wide wetland would be created within a more efficient channel. Designed treatments would be configured to improve aesthetics, serve as sediment traps/filters to slow sedimentation of the Lagoon, and improve downstream water quality. Sinuosity would also be increased. The altered channel length would be approximately 920 feet. Riparian/wetland areas would be enhanced where the channel would be narrowed. Three storm sewer outfalls (at 7th, 8th, and 9th Streets) would be equipped with stormceptors and bio-swale treatment wetlands would be created. Utilities would be relocated within the road ROW, as needed.

MITIGATION AND STIPULATIONS

The resulting mitigation and stipulations upon which this finding is conditioned are:

1. A floodplain development permit would be required from the Park County Floodplain Administrator. Construction must begin at the downstream end and proceed upstream.
2. ~~The project sponsor would obtain a Section 404 permit from the U.S. Army Corps of Engineers prior to beginning construction. Applications can be obtained at:~~
<https://nwo.usace.army.mil/html/od.rmt/applications.html>
3. Minimize tree removal. Vegetation restoration to include trees, shrubs, and grasses. Impacted wetlands would be mitigations as outlined in the Section 404 permit.
4. The project sponsor would obtain a Section 401 Certification and a 318 Water Quality permit from the Montana Department of Environmental Quality prior to beginning construction. These permitted conditions must be adhered to including the fueling of equipment must be at least 50 feet from the stream.
5. The proposed action would require a SPA 124 permit.
6. Per Montana DEQ, the project sponsor would obtain a General Montana Pollutant Discharge Elimination System permit prior to beginning construction activities. As part of the permitting process, a Notice of Intent Package and a Storm Water Pollution Prevention Plan would also be prepared.
7. Excavation and vegetation removal activities would be completed in accordance with Best Management Practices (BMPs) to reduce impacts to soils and water resources.
8. Excess soil would be disposed of at a local licensed landfill or an established city or county stockpile area.
9. Dust abatement procedures would be implemented if fugitive dust becomes an issue for local

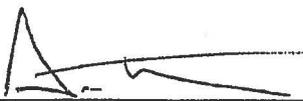
residents.

10. The project sponsor must use care to avoid site 24PA1249, View Vista Village which is eligible for nomination to the National Register of Historic Places during construction or staging equipment.
11. Fill would be obtained from established borrow areas near Livingston, Montana. Any new or undisturbed borrow areas must be approved by FEMA and SHPO.
12. If cultural resources are encountered during project activities, work would be stopped until appropriate coordination has been completed with the Montana State Historic Preservation Office.
13. The project sponsor would need to obtain short-term construction easements along Fleshman Creek.
14. Street/road closures would be phased and access to all properties would be maintained during construction activities. Park County would notify local residents prior to any road closures.
15. The project sponsor would coordinate with the Utilities Underground Location Center regarding the location of utilities within the project area.
16. To assure noise levels remain at acceptable levels, all equipment would be equipped with proper mufflers, construction activities would be limited to daylight hours, and to the extent practicable, construction near the schools would be scheduled to occur during summer vacation.

FINDINGS

Based upon the information contained in the attached Final Environmental Assessment completed in accordance with the National Environmental Policy Act, FEMA's regulations (44 CFR Part 10) for environmental considerations, and Executive Orders (EO) addressing Floodplains (EO 11988), Wetlands (EO 11990), and Environmental Justice (EO 12898), it is found that the Proposed Action with the prescribed mitigation measures and stipulations will have no significant adverse impact on the human environment. As a result of this Finding of No Significant Impact, an Environmental Impact Statement will not be prepared, and the Proposed Action with the associated mitigation measures and stipulations as described in the attached Environmental Assessment may proceed.

APPROVAL



Steven Hardegen
FEMA Region 8
Environmental Officer

04/30/2010

Date