



**US Army Corps
of Engineers**
Omaha District

PUBLIC NOTICE

Application No: NWO-2021-01393-DEN
Project: Happy Canyon Creek Stream Improvements
at Ridgeway Project
Applicant: Mile High Flood District
Waterway: Happy Canyon Creek
Issue Date: September 30, 2021
Expiration Date: October 30, 2021

REPLY TO:

U.S. Army Corps of Engineers
Denver Regulatory Office
9307 South Wadsworth Blvd
Littleton, CO 80128-6901
ellison.a.koonce@usace.army.mil

30 DAY NOTICE

PUBLIC NOTICE FOR SECTION 404 PERMIT APPLICATION SUBMITTED TO U.S. ARMY CORPS OF ENGINEERS

The District Engineer, U.S. Army Engineer District, Omaha, Nebraska is evaluating a Department of the Army permit application from **Mile High Flood District, c/o ERO Resources Corporation, Attn: 1842 Clarkson Street, Denver, CO 80218**. Permits are issued under Section 404 of the Clean Water Act (Section 404) which regulates the placement of dredged or fill material in the nation's waters.

Summary

The proposed project will consist of installation of riffle and sculpted concrete drop structures, bank stabilization treatments, peak shaving ponds, and road/pedestrian trail crossings.

Location

The project area includes Happy Canyon Creek and its adjacent wetlands, located at approximately 39.50645°N, -104.873707°W, in Section 27, Township 6 South, Range 67 West, of the 6th Principal Meridian, in Douglas County, Colorado.

Description of work

Based on the hydrology and hydraulic analysis completed by Merrick & Company, three types of structures are proposed along the channel to provide grade control, raise the channel invert, and improve the bed form diversity of the creek. The three types of control structures are: Sculpted Concrete Drop Structures, Control Riffles, and Intermediate Riffles.

Sculpted Concrete Drop Structures

Sculpted concrete drop structures are proposed where increases in the low-flow invert are proposed based on the existing overbank elevations and to quickly raise the grade. The typical height of the drop ranges from 2 to 3 feet. Four sculpted concrete drop structures are proposed in the project area, with three of the structures proposed in Phase 1 and one drop proposed in Phase 2. The concrete drop structures would consist of 12- to 18-inch grouted core rock, with a 12-inch-thick concrete placed above the grouted core rock. A 30-inch-thick Type L void-permeated riprap layer would be placed at the bottom of the concrete drop structure as a stilling basin, with 20-inch-thick Type VL buried soil riprap placed on the sides of the structure. The structures would be approximately 15 to 26 feet long and 35 to 40 feet wide.

Control Riffles

Control riffles are proposed where smaller drop heights (maximum of 1 foot) were needed to maintain a design slope of 0.75 percent. This type of grade-control structure also can form multiple low-flow paths and stabilize horizontally in addition to vertically. Approximately 16 control riffles are proposed throughout the project area and in all phases of the project. The control riffles would consist of 18-inch-thick Type VL void-permeated riprap. The control riffles would include an 18-inch-wide concrete cutoff wall to provide additional protection against excessive downcutting. The control riffles would be 29 to 58 feet long and approximately 20 to 60 feet wide.

Intermediate Riffles

Intermediate riffles were roughly spaced at 250 feet between the grade-control structures (drop structures and control riffles) to provide additional protection and impede degradation between the grade-control structures. Eighteen intermediate riffles are proposed throughout the project area and in all phases of the project. The intermediate riffles would consist of 18-inch-thick Type VL void-permeated riprap. The intermediate riffles would be approximately 26 feet long and approximately 12 to 15 feet wide.

Bank Stabilization

The project area contains several areas where the channel banks are severely incised and are steep or vertical. With potential additional undercutting, these banks are unstable and pose a safety hazard. Most of the bank stabilization would consist of laying the vertical banks back at a 3:1 to 4:1 (horizontal to vertical ratio) slope. Buried riprap is proposed in specific locations where outside bends or higher shear stresses are located and would consist of 20-inch-thick Type VL buried soil riprap or 26-inch-thick Type L buried soil riprap. Where site constraints do not allow slope grading, walls are proposed to accommodate the grading needs. Walls are proposed specifically in two locations in Phase 1 where there are existing steep vertical banks that are actively eroding and site constraints (existing utilities, proposed road location, and project boundaries) limit the space available. At the location closest to RidgeGate Parkway, either a concrete retaining wall or a mechanically stabilized earth block wall is being considered for the

wall adjacent to future Peoria Street. At the location at the upstream end of Phase 1, either a soil nail wall or trencher wall is being considered. Structural design for these walls will occur during final design and more detail will be provided to the Corps once design has been completed. In addition, 32-inch-thick buried Type M soil riprap is proposed in a few locations in the project area where high shear stresses were identified and to prevent erosion in these areas.

Peak Shaving Ponds

Two peak shaving ponds, Pond 1 and Pond 5, are proposed in the project area. Pond 5 is downstream of RidgeGate Parkway as part of the regional trail crossing and would be constructed in Phase 1. Pond 1 is in the middle section of the project area as part of the High Note Avenue road crossing and would be constructed as part of Phases 2 and 3. As discussed above, one of the project goals is to reduce the 100-year peak flows to below the historic condition at Lincoln Avenue. These peak shaving ponds, in conjunction with others proposed on Happy Canyon Creek and Badger Gulch, would reduce the peak flows at Lincoln Avenue to the MDP (Muller 2014) target for the three-hour storm duration in order to protect existing life and property. Both ponds would still contain an active low-flow channel, with a wide floodplain bench and graded bank slopes. The High Note Avenue channel crossing and culverts at the regional trail crossing would serve as the pond outlet structures. As stated above, these ponds would only be activated during large peak flood events (greater than 10-year) and would not hold water for more than 72 hours.

High Note Avenue Road Crossing

High Note Avenue is proposed to cross Happy Canyon Creek to connect proposed development on either side of the creek. The road crossing location was determined based on several factors. The road is proposed to tie into an existing road intersection along South Havana Street at the RTD park and ride. The road needs to tie into this location to provide the most efficient transportation corridor and not increase intersections along Havana Street. Other constraints for crossing Happy Canyon Creek include the Schweiger Ranch property, which is just southwest of the proposed road crossing. The road crossing cannot be located further south as this ranch is a historic site and, therefore, the crossing must avoid impacts on that property. Finally, the crossing location was also sited based on providing efficient emergency response times for first responders to access the development in the future. Based on these requirements and constraints, the proposed road crossing location was chosen. In order to construct the embankment for the road crossing, stream realignment is necessary. The existing stream alignment has an oxbow curve in this area that would be difficult to stabilize and cross over efficiently with the proposed road alignment. In total, the road crossing would require the realignment of approximately 554 linear feet of stream channel. The peak shaving pond (Pond 1) that is necessary in this portion of the creek has been located at the road crossing location to provide dual services, with the road providing the necessary embankment for the pond. The roadway channel crossing would consist of a bridge with abutments and wingwalls. Stilling basins are proposed downstream of the High Note Avenue channel crossing to dissipate energy. The stilling basins would consist of 24-inch-thick Type M void-permeated riprap with 18-inch-thick concrete cutoff walls and sculpted concrete between the basins. Type L void-permeated riprap 18 to 27 inches thick would be placed upstream and downstream of the channel crossing for erosion prevention. The channel crossing would also include a bench underneath the bridge adjacent to the channel to accommodate the regional trail proposed to extend along Happy Canyon Creek.

Pedestrian Crossings

MHFD and the City are proposing to construct a portion of Happy Canyon Creek Regional Trail in the project area. A trail crossing is proposed at the downstream end of the project area as part of the overall regional trail . The trail crossing would also be the Pond 5 embankment and will include three precast reinforced concrete box culverts, 14 feet wide and 6 to 7 feet tall, with concrete headwalls and wingwalls to route the channel low flows (up to the 25-year flows) below the trail. An 18-inch-thick layer of Type L void-permeated riprap would be placed upstream and downstream of the crossing to prevent future erosion. A second trail crossing is also proposed immediately upstream of RidgeGate Parkway. The trail crossing would consist of a prefabricated steel pedestrian bridge with a 12-foot-wide clear trail that will span the floodplain. Riprap would be placed along the abutments of the trail crossing to prevent future erosion.

Other Project Elements

Other project-related activities, including erosion- and sediment-control measures (e.g., check dam), diverting water around work sites, staging areas, and construction access, would occur in the project area and result in temporary impacts of riparian and upland areas.

Purpose

For purposes of definition under Section 404, the project proponent identifies the basic project purpose to be channel stabilization, while the overall project purpose to be re-establishing the floodplain connectivity of Happy Canyon Creek.

Impacts and Mitigation

The project would result in a loss of 554 linear feet of stream while permanent impacts will occur along approximately 10,984 linear feet (1.709 acres) of Happy Canyon Creek and 0.927 acre of abutting wetland. Compensatory mitigation for permanent impacts are proposed as permittee-responsible at a 1:1 ratio for 0.93 acre of wetland impacts, while the Colorado Stream Quantification Tool will be utilized to demonstrate functional lift within this reach of Happy Canyon Creek to account for the proposed 554 linear foot of permanent stream loss.

The Colorado Department of Public Health and Environment, WQCD-GWPS-B2, 4300 Cherry Creek Drive South, Denver, Colorado 80222-1530, will review the proposed project for state certification in accordance with the provisions of Section 401 of the Clean Water Act. The certification, if issued, will express the State's opinion that the operations undertaken by the applicant will not result in a violation of applicable water quality standards. For further information, please contact the Colorado Water Quality Control Division, (303) 692-3500.

In compliance with the Endangered Species Act, a preliminary determination has been made that the described work will not adversely affect species designated as threatened or endangered or adversely affect critical habitat. In order to complete our evaluation of this activity, comments are solicited from the U.S. Fish and Wildlife Service and other interested agencies and individuals.

The Corps of Engineers, Omaha District will comply with the National Historic Preservation Act of 1966, and amendments and the procedures set forth in 33 CFR 325, Appendix C. We will evaluate input by the State Historic Preservation Office, Tribes, and the

public in response to this public notice, and we may conduct or require a survey of the permit area to check for unknown historic or prehistoric properties, if warranted.

The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against the reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among these are conservation, economics, aesthetics, wetlands, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people. In addition, the evaluation of the impact of the work on the public interest will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act (40 C.F.R. Part 230).

The Corps of Engineers is soliciting written comments from the public; Federal, state and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comments, both favorable and unfavorable, will be accepted, made a part of the record and will receive full consideration in subsequent actions on this application. Any agency or individual having an objection to the work should identify it as an objection with clear and specific reasons. All replies to the public notice should be sent to the **U. S. Army Corps of Engineers, Denver Regulatory Office, 9307 South Wadsworth Blvd, Littleton, Colorado 80128-6901**. For additional information please contact **Ellison Koonce at (303) 979-4120 or by email at ellison.a.koonce@usace.army.mil or visit the Denver Regulatory Office web site at:**

<http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Colorado/PublicNotices.aspx>

The District Engineer will consider requests for holding a public hearing, for the purpose of gathering additional information. Before the expiration date of this notice, anyone may request, in writing, that a public hearing be held. Requests for a public hearing should state specifically the reasons for holding a public hearing, and what additional information would be obtained. Should the District Engineer decide that additional information is required and a public hearing should be held, interested parties will be notified of the date, time and location.

Comments received after the close of business on the expiration date of this public notice will not be considered.