

CHATFIELD STORAGE REALLOCATION PROJECT

TECHNICAL ADVISORY COMMITTEE (TAC) TAC RECOMMENDATION DOCUMENT

**SUBJECT: EFU Credit – On-Site Habitat
Preservation**

No. 002

Date: April 27, 2016

Purpose:

This document serves as the basis of the TAC recommendation on the subject noted above.

Background:

Since completion of the FR/EIS for the Chatfield Storage Reallocation Project (CSRP) there has been significant degradation of habitat along both Plum Creek and the South Platte River that will continue to occur if projects are not undertaken to stabilize both stream channels to preserve existing good quality habitat and stop further degradation that will also have an impact on proposed mitigation. Appendix K – Compensatory Mitigation Plan (CMP) of the FR/EIS did not anticipate the need for preservation of existing habitat.

In the meeting packets originally distributed to TAC members, the Program Management (PgM) Team and the EM1 consultant, ERO Resources (ERO), set forth a proposal to extend the CMP approach for an EFU credit for preservation of off-site habitat to these on-site areas. This approach was discussed with the U.S. Army Corps of Engineers (USACE) at a recent meeting on the Project, and the USACE provided feedback that they did not believe this proposed on-site preservation approach was consistent with the intent of the CMP.

The USACE agreed that it was appropriate and necessary to preserve existing habitat and prevent future degradation of the existing habitat and impacts to proposed downstream mitigation, and that it was also appropriate that an EFU lift be calculated for projects that preserve existing habitat. USACE recommended that the accepted methodology for calculating EFUs be used to predict future habitat degradation based on documented changes that have occurred over the last several years. EFU lift will then be calculated as the difference between the existing habitat and the predicted degraded habitat. Implementation of these habitat preservation projects (i.e., channel stabilization and reconnection of the channel to the floodplain) will preserve existing good quality habitat for PMJM, wetlands, birds and mature cottonwoods.

Refinements to the Design Criteria used in the EFA have been made by ERO as part of their contract with the CRMC issued in February 2016. See Reference Documents, below.

Referenced Documents:

ERO, April 2016. EFU On-Site Preservation Credit

Requested Action:

The TAC is requested to review the revised approach to calculating EFUs for the preservation of existing on-site habitat and recommend that this revised approach be implemented by the CRMC and the PCT.

Request Rationale:

EFUs for stream channel stabilization and other projects to preserve existing habitat and prevent degradation of proposed mitigation is consistent with the intent of the CMP in the FR/EIS that recognized refinements to the feasibility level study would be required for implementation of the Project and changing conditions at Chatfield. In order to justify CRMC investment in stream channel stabilization projects to preserve existing habitat and avoid habitat degradation, a methodology must be adopted to calculate EFUs for these projects. These habitat preservation projects will be designed by the preliminary design consultants utilizing the current design criteria to ensure consistent development of mitigation plans to meet the needs of the Project. Designs for all habitat preservation projects will be reviewed by the TAC and the PCT and evaluated against the requirements.


TAC Recommendation:

The TAC unanimously approved recommendation that the revised approach, that reflects comments from the USACE, for calculating EFUs for on-site habitat preservation be implemented by the CRMC and PCT. In addition, the TAC noted the imminent risk of further habitat degradation, especially along Plum Creek, and urged that the proposed stream stabilization to preserve existing habitat be implemented as soon as practicable.

TAC Rationale:

Based on the background set forth above, the presentation by the EM1 consultant, and discussion at the April 27, 2016, TAC meeting, the TAC agreed that preservation of existing habitat and protection of downstream mitigation was appropriate, and agreed with the USACE revised approach to calculating EFUs based on predicted degradation.

On behalf of the TAC:



Kevin Urie
Chair



Jennifer Anderson
Vice Chair

April 6, 2016

To: Ted Johnson, CDM Smith
From: Ronald Beane, ERO Resources Corporation
Re: Preservation of Ecological Function along Plum Creek at Chatfield State Park

In 2008, ERO Resources Corporation (ERO), in support of the Chatfield Reallocation Feasibility Report/Environmental Impact Statement, began assessing Plum Creek at Chatfield State Park for the ecological functions it provides for Preble's meadow jumping mouse (Preble's), wetlands, and birds. Since then, Plum Creek within Chatfield State Park has experienced severe degradation (Muller Engineering (Muller) 2013). Headcutting on the west channel of Plum Creek has incised the channel more than 8 feet and has advanced more than 3,800 feet. Degradation results in the loss of ecological functions and services by disconnecting a stream from its floodplain. Channel erosion can progress so rapidly that the rate of lowering of the channel invert and associated local water table within the riparian zone it can outpace the ability of riparian root systems to keep up, resulting in die-off of vegetation and desiccation of overbanks. This degrades the riparian habitat and leaves overbanks in a weakened state, less able to handle flood events. In addition, runoff events tend to concentrate in the incised active channel, increasing flow velocities and erosion potential (Muller 2013).

Recent mapping of vegetation communities for the Chatfield Storage Reallocation Project has documented extensive die-off and the rapid conversion of wetland and willow riparian habitats to degraded upland communities dominated by noxious weeds. Headcutting in 2015 advanced more than 625 feet and is expected to continue in the future.

The Comprehensive Mitigation Plan (CMP) for the Chatfield Reallocation Project was developed to mitigate for, and restore, the ecological functions that would be lost due to inundation. For off-site mitigation, the CMP explicitly recognized the value of protecting existing habitat from loss or degradation from land use activities in or near wetland/riparian habitat. The CMP focused on the value of preservation of existing habitat on private lands through purchase of conservation easements and that preservation would generate some amount of baseline mitigation credit. In consultation with the U.S. Fish and Wildlife Service, a value of 15 percent of baseline Ecological Function Units (EFU) was established for preservation. No preservation credit was applied to on-site mitigation activities because the on-site mitigation

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activities occur, for the most part, within the already “preserved” Chatfield State Park. However, this was before the degradation of Plum Creek was discovered and the severity of the problem fully understood. Another form of preservation of existing habitat is protection from impending degradation.

Currently, Muller Engineering is developing mitigation designs to restore and create new wetland and riparian habitat (EFUs) to replace EFUs that will be lost for storage reallocation. Design elements include extensive stream stabilization that would raise degraded channels that will rehydrate the riparian zone and restore/enhance vegetation communities to increase EFUs. These activities would provide an additional benefit of stabilizing the creek channels further upstream and preclude the imminent degradation of existing high quality habitat.

Much of this upstream habitat provides some of the highest quality Preble’s habitat at Chatfield State Park and is being considered as reference areas for mitigation. Although stream stabilization activities would help protect existing Preble’s, wetland, and bird habitat from being degraded and maintain their ecological function, the current calculation of EFU lift does not allow any of this preservation to be included in the on-site mitigation credit. Yet in concept, the ecological benefit of preserving off-site areas from future land use threats through legal protection is the same as protecting on-site areas from future physical degradation through engineering and stream stabilization. An EFU physically protected = an EFU legally protected. Based on this justification, ERO proposes to apply the same 15-percent preservation credit to the prevention of future on-site habitat degradation. The preservation credit would only apply to those areas along Plum Creek that are anticipated to continue to degrade if the proposed Plum Creek channel stabilization improvements were not completed. Applying this preservation credit would capture the far-reaching and long-term ecological benefits of stabilizing the creek.

Reference

Muller Engineering Company (Muller). 2013. Draft Plum creek Stream Stability Assessment: Chatfield State Park. April 2.