

**Exhibit F**  
**East Plum Creek Bank Management Plan**

September 9, 2004

## **I. Introduction**

### **Purpose Of This Management Plan**

The East Plum Creek Bank (Bank) was established to permanently protect habitat and populations of the Preble's meadow jumping mouse (*Zapus hudsonius preblei*). In return for habitat restoration and protection, the Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA) will earn conservation credits to offset permanent and temporary impacts to Preble's populations and habitat that result from future highway projects. The 25.3-acre bank was formally established on April 18, 2003, after a Conservation Bank Agreement was signed by representatives from CDOT, FHWA, and the U.S. Fish and Wildlife Service (FWS). The land has been owned by CDOT for several decades, and was used as general right-of-way prior to Bank establishment (see CDOT 2003).

The Conservation Bank Agreement specifies the legal description and title report for the bank area, credit allocation and success criteria for restoration actions, the service area, and baseline ecological information. This background information can be found within the Bank Agreement document. The Bank Agreement also calls for a management plan to be prepared for the Bank area. This management plan will fulfill that condition.

The general purposes of this management plan are to:

- State management actions that are planned to meet the obligations of the bank agreement;
- List operations and maintenance practices that are or may be necessary for management of the Bank area and nearby highway and related facilities;
- Describe any actual or potential impacts to Preble's and its habitat as a result of management actions, and steps that are needed to avoid, minimize, and mitigate such actions, including the use of best management practices.

Specific goals of this management plan are to:

- Meet the commitments of the bank agreement; and
- Identify and implement actions that will protect the habitat of the Preble's within the bank area in a manner that meets the long-term needs of the species.

## **II. Property Description**

The boundaries and legal title work for the Bank are found in the Bank Agreement (CDOT 2003). It should be noted that although the Bank was established with 25.3 acres, CDOT owns additional adjacent land that was not committed to the Bank area in 2003. These lands include areas that will be disturbed by reconstruction activities on Interstate 25 (I-25), isolated pieces, and parcels that were committed for mitigation on past highway projects.

The Bank is surrounded by other private and public property landholders.

CDOT owns and manages several pieces of highway infrastructure within or adjacent to the Bank. They include:

- I-25 southbound lanes are adjacent to much of the eastern boundary of the Bank;
- The Wolfensberger Bridge;
- The Fifth Street Bridge;
- The I-25 Bridge over East Plum Creek;
- Numerous groundwater monitoring wells;
- A gabion wall within East Plum Creek consisting of wire-encased rip-rap on the northern end of the bank;
- Several culverts of varying size that extend under I-25 and empty into East Plum Creek; and
- Nine grade-control structures (check dams) in East Plum Creek that were installed as part of the proposed Preble's habitat restoration.

The Bank boundaries are currently not fenced, and fencing is not anticipated.

There is also a bicycle path that is oriented north-south through approximately three quarters of the Bank area. The bicycle path is owned and maintained by the Town of Castle Rock on land leased from CDOT.

There are no known cultural, historical or archeological resources within the Bank area.

### **III. Description of Future and Completed Restoration and Construction Projects**

The East Plum Creek Bank is centered on East Plum Creek. The Creek supports a riparian plains community with a narrow floodplain surrounded by urban influences. CDOT wetland surveys in the late 1990s found that groundwater levels were falling in the riparian zone because of extensive stream downcutting, presumably from increased streamflow associated with the large increase in impervious surface in the watershed. There was concern that the extensive willow (*Salix sp.*) shrub stands that are used by the Preble's meadow jumping mouse were declining and that the known Preble's populations here were in peril.

CDOT proposed a phased riparian restoration project to the FWS in 2000. Initial plans called for the installation of three grade control structures (check dams). If successful, sediment would accumulate behind the dams, bringing the creek banks back to pre-erosion grade, and restore groundwater levels. Three dams were installed in late-winter and early spring 2001. The areas behind the dams immediately silted in following a spring storm, and groundwater levels rose to within the root zone of tree and shrub stands (see Baseline Report of Bank Agreement for details, CDOT 2003). Based on this initial success, six more check dams were installed, with construction finishing in April 2002.

Check dam construction was the primary restoration tool used for this Bank. No additional projects on this scale are anticipated.

In addition to installation of the check dams for stream restoration, CDOT and FHWA have had or will have three transportation projects that have or will affect Preble's habitat in areas immediately adjacent and contiguous with the Bank (and also owned by CDOT). Restoration actions for these projects will fulfill specific project commitments and are not part of the Conservation Bank Agreement, although bank credits may be used if needed.

The first recent project was the installation of the new Fifth Street Bridge in early 2001 over East Plum Creek. Approximately one acre of habitat area was disturbed during that project, and areas with disturbed vegetation were replanted or reseeded. Areas are being monitored for revegetation success and results are found in Ensign 2004.

A second project occurred in fall 2001 through spring 2002; the replacement of the Wolfensberger Bridge over East Plum Creek. Habitat disturbances here were similar to the Fifth Street project, amounting to 0.6 acres. Site revegetation and success monitoring were also similar.

A third project is planned within the next decade; the reconstruction of Interstate 25 (I-25) in Castle Rock. This project will affect approximately 6 acres of Preble's habitat, but the affected areas were excluded from the 25.3 acres of the bank (but are generally adjacent to bank boundaries). This project includes the relocation of an existing railroad line that crosses I-25 just north of the Bank. Conservation measures called for in the biological assessment/biological opinion for that project include weed control in some areas of the bank. General areas that require weed control are described in this plan, and more specific information will be provided in subsequent Riparian Research reports and management plan reports. There is also a one-acre upland grassland adjacent to the west boundary of the bank that is being restored as part of that project.

All past and future projects near or adjacent to the bank are reviewed in the 2004 Castle Rock monitoring report (Ensign 2004 in progress), including all references to the pertinent biological opinions and biological assessments.

#### **IV. Habitat and Species Description**

Vegetation community descriptions, soil types, and detailed information on plant and animal species can be found in the Baseline Report section of the Bank Agreement (CDOT 2003). The majority of vegetation in the Bank area has been mapped, with 16 known community types.

Most of the Bank is within the East Plum Creek floodplain, which is nearly level with gravelly sandy soils with low water-holding capacity. Sideslopes are moderate to steep with upland vegetation communities.

The only federally protected species that is known from the bank area is the Preble's meadow jumping mouse.

## **V. Management Goals and Environmental Impacts**

### **Elements, Goals, and Tasks**

Several elements are defined and discussed in this section. An “element,” for the purposes of this management plan, can be any biological, public use, or facility maintenance feature or program as defined herein, for which goals and objectives have been prepared. Each element also has one or more associated “tasks” that are needed to accomplish the associated goal(s).

Many of the goals associated with the various elements involve a series of tasks. Most of the tasks have monitoring and reporting components. The general status of the Bank area will be documented in an annual report. A summary of the reporting requirements is presented in Appendix 1.

### **Potential Environmental Impacts from Biological, Public Use, and Facility Maintenance Elements.**

CDOT’s active management within the Bank area is intended to have positive biological consequences, primarily through the protection of this riparian ecosystem following the stream restoration project.

However, there are future projects adjacent to the Bank that will have adverse biological effects (and have been permitted through the Section 7 process), as well as maintenance or emergency actions that would also have adverse effects. The future widening of I-25 and associated bridgework have been permitted with appropriate conservation measures.

Negative environmental impacts associated with public use and maintenance features are not anticipated. However, there may be unintended and negative impacts associated with CDOT actions, such as the use of temporary ponds behind the dams by bullfrogs, or habitat disturbance from emergency bridge repair.

Management actions will be reviewed to determine if biological elements will be affected. All efforts will be made to avoid and minimize potential impacts. If environmental impacts result from normal maintenance or emergency actions, habitat restoration will commence as soon as possible. No permanent impacts to habitat are anticipated.

Projects that result in disturbances to Preble’s habitat that are less than or equal to 400 square ft (ft<sup>2</sup>) will not require any additional permitting. Projects that exceed this area will require a Section 7 consultation.

All projects within the Bank must use Best Management Practices (BMPs) to the extent possible (see Appendix 2). BMPs are used to avoid or minimize impacts from projects in Bank habitat. All project proponents must communicate with the CDOT Region 1 Environmental Manager or their designee before project commencement.

## **Timeframe for Management Actions and Reporting Requirements**

Management actions within the Bank fall within two broad timeframes: 1) those that are needed within approximately the next five years or so (2003-2008) to support data collection needed for final credit determination. Most of this data collection would fall under groundwater, vegetation, and Preble's population sampling and is generally more intensive than actions reviewed on an annual basis. Regular maintenance, and emergency repair work on infrastructure may also be needed, and 2) Actions over the longer term (5 years +) including: data collection to assess the general health of the Bank area, normal maintenance actions, and emergency repair work on infrastructure.

Most of the short-term management actions related to crediting have specific reporting requirements that are called "credit reports." Credit reports will be discontinued after the various credit goals are fulfilled. The remainder of the management actions can be summarized in an annual report to FWS. Appendix 1 reviews projected schedules and reporting for each management action (annual or credit report).

**A. Biological Elements: Consists of species, habitats, or communities, or related factors, for which specific goals and objectives have been developed within this plan.**

**Beaver.** A large rodent (*Castor canadensis*) that builds dams and lodges within Preble's habitat. There has been regular periodic beaver activity within the Bank area during the past decade.

**Objective:** Monitor beaver activity to determine potential conflicts with Preble's or infrastructure.

**Task:** Monitor the Bank area on an annual basis and report beaver activity (lodges or dams) within the Bank area. In the event that there are beaver conflicts, any control measures will be determined by staff from CDOT, FWS, and Colorado Division of Wildlife. CDOT is currently working on a beaver best management practice that can be adopted for use within the Bank area.

**Task:** Report monitoring results in annual report.

**Groundwater Level.** The height of groundwater in the alluvial aquifer measured in a groundwater monitoring well.

**Objective:** Maintain groundwater levels at a sufficient height to support riparian vegetation on East Plum Creek.

**Specific objectives for check dams 1-9.** Sample groundwater wells to earn groundwater credits for Bank.

**Task:** Measure groundwater levels within the Bank area during the growing season. Additional monitoring may occur after success criteria have been achieved with the concurrence of CDOT, FHWA, and FWS.

**Task:** Report the above findings to FWS in a credit report.

**Invasive Species.** These are both non-native plant and animal species that may spread within the Bank or adjacent properties and threaten native species. Known species include the house mouse, bullfrog, and several noxious weeds (see Weed element).

**Objective:** Monitor and control if necessary invasive species that may threaten habitat or populations of Preble's in the Bank area.

**Objective:** Ensure compliance with state of Colorado weed control laws.

**Task:** Periodically monitor Bank conditions and assess the status of threatening invasive species.

**Task:** Periodically map invasive weeds within the Bank area. Mapping was conducted and completed in 2003. Control measures are discussed under "weed infestation area."

**Preble's meadow jumping mouse.** A small mammal that is federally designated as "threatened" and is protected by the Endangered Species Act.

**General Objective:** The primary objective of the East Plum Creek Bank is to provide for conditions that will protect populations and habitat of the mouse in perpetuity, or until such time that these protections are no longer needed.

**Task:** Improve habitat conditions by restoring groundwater levels so that the riparian vegetation community can be maintained. See Groundwater Level above.

**Task:** Monitor Preble's populations and distribution within the Bank by live-trapping and capture/recapture methods, and subsequent population modeling of these data. Monitoring will occur until success criteria identified above are achieved. Additional monitoring may occur after success has been reached with the concurrence of CDOT, FHWA, and FWS. It is anticipated that sampling will be conducted for less than 15 days per year.

**Task:** Report the above findings to FWS in a credit report.

**Riparian habitat.** Vegetation that depends on surface or alluvial groundwater. This vegetation is generally within 100 feet of the edge of East Plum Creek and consists of a mixture of herbaceous and woody plant species. Preble's may breed, feed, nest, disperse and hibernate within this zone.

**Objective:** Maintain and restore (if needed) areas of riparian vegetation within the Bank.

**Task:** Monitor riparian vegetation foliar cover as per conditions of vegetation success criteria. Data collection may include measurements of cover, species composition, biomass or density.

**Task:** Report the above findings FWS in a credit report.

**Small mammal community.** The species of small mammals that are found within the Bank area. Known species are: meadow vole (*Microtus pennsylvanicus*), deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), Preble's meadow jumping mouse (*Zapus hudsonius preblei*), western harvest mouse (*Reithrodontomys megalotis*), and house mouse (*Mus musculus*). The house mouse is the only non-native species.

**Objective:** To maintain the diversity of native species within the Bank area, and to detect changes in the community structure that may have negative consequences for Preble's. Increased numbers of the house mouse or introduction of the Norway rat may be concerns.

**Task:** Monitor small mammal populations in the Bank area by live-trapping(see Task under Preble's meadow jumping mouse above). Small mammal populations may be

monitored until 2006. Additional monitoring may occur after that time with concurrence of CDOT, FHWA, and FWS.

**Upland habitat.** The vegetation communities that extend outward from the edge of the riparian habitat zone for a maximum distance of 300 feet. In most Bank locations the upland habitat zone is much narrower because of adjacent roads and residential/commercial buildings. Preble's may feed, nest, disperse and hibernate within this zone. The majority of hibernation sites are thought to be in this zone.

**General Objective:** Maintain and restore (if needed) areas of upland vegetation within the Bank. No impacts are planned at this time, but could result from maintenance or emergency repair work.

**Task:** Periodically visually monitor upland areas to ensure that such areas can be maintained and function as Preble's habitat.

**Task:** Report findings in an annual report to FWS.

**Weed Infestation Area.** An area that is 100 square feet (ft<sup>2</sup>) or greater and is occupied by one or more state-listed noxious weeds.

**Objective:** Detect and control weed infestations in the bank.

**Task:** Control weed infestations using state-accepted control methods. Weed control will be performed by licensed operators, either CDOT staff or their contractors. All weed control measures in Preble's habitat will conform to current FWS guidelines (e.g., broadcast spraying of herbicides is usually discouraged). Approved biological controls may be used.

**Task:** Periodically map weed infestation areas and provide maps to control operators.

**Task:** Report findings in an annual report to FWS.

**B. Public Use Elements. Any recreational, scientific, or other use programs appropriate to and compatible with the purpose for which the property was acquired.**

**Community Use Events.** These are special events within the Bank boundaries that should be reviewed to determine if there might be conflicts with biological or infrastructure objectives of the Bank.

**Objective:** Track and schedule community events located within the Bank area. Determine if there may be conflicting uses from such events. CDOT Region 1 Environmental Manager or their designee will evaluate such events based on potential impacts.

**Task:** Contact Castle Rock Chamber of Commerce for use of Bank for Duck Race. Determine potential impacts to Preble's habitat from event. Give the Chamber of Commerce a letter (see Appendix 3) and a copy of the BMPs (Appendix 2) that include measures to avoid and minimize impacts from this activity.

**Task:** Conduct educational tours of the Bank area. Tour groups can generally be restricted to bicycle path or other existing access points to minimize impacts to Preble's habitat.

**Monitoring wells.** Groundwater monitoring wells are located primarily within the riparian zone in most areas of the Bank. They are identified by 3 inch diameter poly-vinyl (PVC) tubes that extend 6-9 inches above the ground surface.

**Objective:** Monitoring wells are used to determine success of the check dams and document groundwater levels in Preble's habitat areas.

**Task:** Determine groundwater depth from wells, primarily in growing season. Water samples may also be drawn from wells to determine various measures of water quality.

**Task:** Remove and back-fill wells that are no longer needed.

**Passive trails.** There are several non-maintained dirt trails within the Bank that are used by local citizens.

**Objective:** Monitor trail use on an annual basis to determine if trails are expanding within Bank area or affect Preble's habitat.

**Task:** Monitor the Bank area on an annual basis and report incompatible uses and suggested management actions in an annual report.

**Recreational Use of Bank:** The Bank area is used by local citizens for a variety of non-developed recreational uses including dog-walking, walking, bicycling, picnicking, water-play, and bird watching.

**Objective:** Monitor recreational use to ensure that such uses are compatible with protection and maintenance of Preble's habitat.

**Task:** Monitor the Bank area on an annual basis and report incompatible uses and suggested management in annual report.

**C. Facility Maintenance Elements. General purpose features and programs that are needed to maintain orderly and beneficial management of the area.**

**Bicycle Path and Bridge over East Plum Creek.** This is a 12-foot-wide cement path with mowed shoulders that extends from the Sellers Gulch area of the Bank north to the north side of the Wolfensberger Bridge. The path has Preble's habitat areas on both sides for much of its length. The path is owned by the Town of Castle Rock on CDOT property through a use permit. CDOT maintenance mows and maintains the path. Any impacts to habitat should be avoided and minimized.

**General objective:** Maintain path so that pedestrian and bicycle rider use and safety are protected.

**Specific objective:** Use bicycle path for vehicle access to Bank area, either for maintenance or emergency-related activities.

**Task:** Mow vegetation adjacent to path up to a maximum width of 15 feet. All mowing will be conducted by CDOT staff and in conformance with the memorandum of understanding (MOU) between CDOT and the Colorado Division of Wildlife.

**Task:** Access bicycle path with approved vehicles for infra-structure maintenance or emergency-related activities.

**Task:** Replace the bicycle path bridge at some time in the future. This bridge culvert has nearly filled in from new sediment deposits, and a new span may be needed. If a replacement is necessary, CDOT/FHWA will consult with the Service if the impact exceeds 400 ft<sup>2</sup>.

**Bridges at 5<sup>th</sup> Street, I-25, and Wolfensberger Road.** These bridges all cross East Plum Creek within the Bank area and are necessary for normal traffic flow within the Town of Castle Rock and on the interstate.

**Objective:** Maintain bridges in safe working condition.

**Task:** Inspect and repair bridges as necessary. The 5<sup>th</sup> Street and Wolfensberger bridges were recently built or added to, with impacts to Preble's habitat. Permits were obtained from FWS for both projects. The Plum Creek Parkway bridge will be rebuilt as part of the future I-25 project, and that work has also been permitted. Additional work beyond that identified in those permits may require additional discussion or permitting with FWS.

**Check dams.** Nine check dams have been installed on East Plum Creek from 2001-02 to help restore groundwater levels for riparian vegetation. There has been occasional recreational use of the stream areas up and downstream of some dams. All of the dams are within Preble's habitat areas.

**Objective:** Maintain dams in working condition so that riparian habitat is protected and groundwater levels are maintained.

**Task:** No general maintenance activities are foreseen at this time. Dams will be inspected annually for end-running, channeling, and damage to sheet pile. In the event of dam failure during a flood, emergency actions may be needed in a timely manner to protect habitat and infra-structure. CDOT will immediately apprise FWS of any emergency actions and conform with best management practices (BMPs) to avoid and minimize impacts to Preble's habitat. Additional check dams may be installed in the future; if construction impacts exceeds 400 ft<sup>2</sup>, a Section 7 consultation will be initiated.

**Decision-making Authority.** The point of contact to review proposed Bank actions.

**Objective:** To ensure proper review of all Bank uses, including community events, maintenance actions, biological research activities, and emergency actions.

**Task:** The point-of-contact will be the Colorado Department of Transportation Region 1 Environmental Manager.

**Culverts.** These are culverts of varying size that convey water from roadways on both the east and west sides of the Bank.

**Objective:** Maintain culverts in working condition so that riparian habitat is protected and erosion from run-off is avoided or minimized.

**Task:** No general maintenance activities are foreseen at this time, but culverts are periodically inspected. In the event of culvert failure during a flood, emergency actions may be needed in a timely manner to protect habitat and infra-structure. CDOT will

immediately apprise FWS of any emergency actions and conform with best management practices (BMPs) to avoid and minimize impacts to Preble's habitat.

**Gabion Wall.** This is a bank-stabilizing wall consisting of wire-bound rip-rap approximately 400 feet north of the Wolfensberger Bridge between I-25 and East Plum Creek within the Bank area.

**Objective:** Maintain wall in working condition so that I-25 slope is stable and East Plum Creek is protected from erosion.

**Task:** Erosion was detected at the base of the wall in 2004 and CDOT may have to take corrective stabilizing measures. If corrective measures include impacts to Preble's habitat that exceed 400 ft<sup>2</sup>, the FWS will be consulted.

**Trash pick-up within the Bank**

**Objective:** Help maintain the natural condition of the Bank by removing trash periodically.

**Task:** Organize and implement trash pick-up within the Bank area during the Preble's hibernation season. This may be organized under the Adopt-a-Highway program or other similar programs with local civic participation.

**Overhead and Underground Utility Lines.** Various electrical, sewer, or cable lines that cross the Bank area.

**Objective:** Maintain lines in working condition.

**Task:** No general maintenance activities are foreseen at this time but utility lines may be periodically inspected. In the event of line failure or breakage during a storm, emergency actions may be needed in a timely manner to continue service. CDOT will immediately apprise FWS of any emergency actions and conform with best management practices (BMPs) to avoid and minimize impacts to Preble's habitat.

**Sewage Lines.** Pipes that carry raw sewage over or under East Plum Creek. There are two pipes; one runs under the Wolfensberger Bridge, and one under the Creek about 300 feet north of the bicycle path bridge.

**Objective:** Maintain lines in working condition.

**Task:** No general maintenance activities are foreseen at this time. In the event of pipe failure or breakage during a storm, emergency actions may be needed in a timely manner to continue service. CDOT will immediately apprise FWS of any emergency actions and conform with best management practices (BMPs) to avoid and minimize impacts to Preble's habitat.

**Potentially Contaminated Groundwater Area.** An area on the northeast side of the Wolfensberger Bridge within the Bank that is downgradient from a nearby site that was known

to have contaminated groundwater from a former CDOT facility maintenance site. The site is about 200 meters east of East Plum Creek on the east side of I-25 and groundwater is currently being remediated. Recent sampling has indicated that concentrations of organic contaminants are decreasing (Arcadis 2004).

**Objective:** Determine if groundwater in this area was contaminated with organic gasoline by-products or organic cleaning solvents.

**Task:** CDOT will sample groundwater at the maintenance facility site and two off-site wells in the I-25 median four times during 2004. The CDOT groundwater contaminant consultant will then make a recommendation on potential site closure in early 2005 after data sampling and analysis. If the consultant recommends site closure, no further sampling will occur. If additional sampling is warranted, CDOT will consider installing new groundwater wells in the northern section of the Bank, and will consult with FWS on the number and placement of wells, and the contaminants for analysis.

**Upland Bench Conservation Site.** This is a 1-acre parcel adjacent to the west side of the Bank. It was purchased to partially fulfill conservation requirements as part of the 5<sup>th</sup> Street Bridge project.

**Objective:** Restore this upland site to a grassland that will function as Preble's habitat.

**Task:** Monitor the site until FWS restoration standards have been met. Continue restoration efforts if success standards are not met.

**Task:** Monitor this site annually after success criteria have been reached to ensure that there are no incompatible uses (e.g., dumping).

## **VI. References**

Arcadis G&M Inc. 2004. Modified Corrective Action Plan for the CDOT Castle Rock Maintenance Facility Site, 1000 N. Wilcox St. Castle Rock CO (Event ID 4036).

Colorado Department of Transportation. 2003. East Plum Creek Bank Agreement. Signed by CDOT, Federal Highway Administration, and U.S. Fish and Wildlife Service on April 17, 2003.

Enight Technical Services Inc. 2004. Biological monitoring report for Region 1 Colorado Department of Transportation projects in Castle Rock, Douglas County, CO.

**Appendix 1. Summary of Elements and Tasks for East Plum Creek Conservation Bank**

<b>Biological Elements</b>				
	<b>Data Collection</b>	<b>Duration</b>	<b>Data Collection Linked to Bank Credits</b>	<b>Reporting</b>
Beaver	Field notes, photographs, document locations	Annually	No	Annual report
Invasive Species	Field notes, photographs, document locations. Periodic special surveys after discussion with FWS	Annually	Yes, for State listed weed species	Annual report
Preble's meadow jumping mouse	Live-trapping population surveys in Bank area and nearby reference site	Annual for three years. Potential special surveys after discussion with FWS	Yes, for population numbers and distribution	Credit report
Groundwater elevations	Groundwater levels at multiple monitoring wells	Two years (2004-05), or until success is demonstrated	Yes, groundwater levels are part of success criteria	Credit report
Groundwater chemicals of concern analysis	Groundwater samples from NE side of Wolfensberger Bridge, analyze for chemicals of concern to be determined	One sampling period, then discuss results	No	Credit report
Riparian habitat vegetation	Foliar cover measurements at all check dam sites and two reference sites. Mapping completed.	Two years (2003-04).	Yes	Credit report

<b>Biological Elements</b>	<b>Data Collection</b>	<b>Duration</b>	<b>Data Collection Linked to Bank Credits</b>	<b>Reporting</b>
Small Mammal Community	Initially small mammals will be sampled using live-trapping methods at the same time as Preble's surveys (above). CDOT and FWS will determine if additional sampling is warranted.	Two years (2003-04), with potential for additional sampling.	No	For 2003-04 in credit Preble's credit report.
Upland Vegetation Habitat	This will overlap with riparian vegetation sampling, but is also intended as a general annual check on current conditions.	Two years (2003-04) of formal sampling at check dam and reference areas; general assessment thereafter.	No	For 2003-04 in credit report; thereafter in annual report.
Weed Infestation Area	Document locations and recommend control measures	Annually	Yes	Annual report.
<b>Public Use Elements</b>	<b>Data Collection</b>	<b>Duration</b>	<b>Data Collection Linked to Bank Credits</b>	<b>Reporting</b>
Community Use Events	Review any requests for community events	On-going	No	List in annual report
Homeless Person Bank Use	Observe potential use during walk-through or other surveys of the Bank area.	Annually	No	List in annual report
Monitoring wells	See groundwater elevations			
Passive trails	Observe any conflicting uses within Bank area	Annually	No	List in annual report

<b>Public Use Elements</b>	<b>Data Collection</b>	<b>Duration</b>	<b>Data Collection Linked to Bank Credits</b>	<b>Reporting</b>
Recreational Use of Bank	Observe any conflicting uses within Bank area	Annually	No	List in annual report
<b>Facility Maintenance Elements</b>	<b>Data Collection</b>	<b>Duration</b>	<b>Data Collection Linked to Bank Credits</b>	<b>Reporting</b>
Bicycle Path and Bridge over East Plum Creek	Monitor to ensure that mowing conforms to MOU and indicate any needed maintenance.	Annually	No	List in annual report
Bridges at 5 <sup>th</sup> Street, I-25, and Wolfensberger Road	Inspect for needed maintenance.	Periodically	No	List in annual report
Check dams	Inspect for needed maintenance. Check for stream end-running and indicate if erosion-control measures needed.	Annually	No	List in annual report
Culverts	Monitor for needed maintenance.	Periodically	No	List in annual report
Gabion Wall	Monitor for needed maintenance.	Periodically	No	List in annual report
Trash Pick-up	Determine areas that need collection	Annual	No	List in annual report
Overhead Utility Lines	Monitor for needed maintenance.	Periodically	No	List in annual report
Potentially Contaminated Groundwater Area	To be determined	To be determined	No	To be determined
Upland Bench Conservation Site	Monitor vegetation restoration until successful	Monitor until success criterium reached	No	Monitoring report

## **Appendix 2. Best Management Practices for the East Plum Creek Bank**

Best management practices (BMPs) are a series of operational procedures that will guide certain management activities in the Bank area. Adherence to BMPs will result in the avoidance of potential impacts, or minimize potential disturbances to Preble's meadow jumping mouse habitat and populations on East Plum Creek.

Many management activities have certain common elements, such as access issues, possible excavation, or disturbance to vegetation. The general BMPs presented here address most of the issues that a manager must consider before completing an action in the bank. Some BMPs relate to special activities, such as control of beaver dams in unwanted areas.

All BMPs have common objectives, including.

- Evaluating the proposed action and determining if there might be an effect on the target species, the Preble's meadow jumping mouse.
- Determine if potential impacts can be avoided by modifying a technique, altering the timing of the action, or moving the impact to a non-habitat area.
- If the impact cannot be avoided, minimize the habitat area, duration, or activity level associated with the impact.

The manager should consider all of these objectives during the planning stage of the activity.

The following are a series of practices that will be followed for all projects within the Bank area.

- 1) Determine if any part of the project is within Preble's habitat or within or adjacent to a permitted project area. There are permitted disturbance areas adjacent to the Bank that have scheduling and disturbance area restrictions. Please contact CDOT Region 1 Environmental if there are any questions about the status of an area.
- 2) If the project will be within Preble's habitat, all efforts should be made to avoid any impacts. The preferable way to avoid impacts is to move the project to a non-habitat area.
- 3) In most cases, projects should be scheduled during the Preble's hibernation season, from November 1 to April 30. Areas that may harbor hibernation chambers (hibernacula) may be an exception to this general rule. Please refer to CDOT Region 1 Environmental staff for clarification.
- 4) If work must be conducted in a suspected hibernation area, shrubs should be cleared from the area by mid-August to discourage animals from hibernating in that location.
- 5) Projects that result in temporary area disturbances of 400 ft<sup>2</sup> or less will not require additional permitting. Projects that exceed this threshold will require consultation with the U.S. Fish and Wildlife Service.
- 6) Motorized access for equipment should only be used if necessary. If the project requires the use of hand tools or other small devices, access on foot is encouraged. If motorized equipment access is needed, the first travel path that should be considered is the existing

bicycle path. Vehicles should be parked off the path but within the 15-foot wide mowed shoulder. Equipment staging and parking areas within habitat are discouraged and may be tallied as impact areas. In some cases travel within the creek channel during winter months may be possible and desirable. All travel paths should be presented and discussed with CDOT Region 1 Environmental before project commencement.

- 7) Preble's may be negatively affected by loud noise levels. Use the quietist equipment practicable.
- 8) Nighttime work will generally not be allowed in Preble's habitat during the active season (May 1-October 30).
- 9) Disturbance to vegetation should be minimized to the greatest extent possible. This can often be accomplished by a variety of working techniques. Shrub patches that will be disturbed can be cut, buried with a blanket of soil and geotextile cloth until project completion. Shrubs will resprout after the soil has been removed. Tree limbs can be pruned rather than removing entire tree boles. In some cases vehicle pads can protect vegetation and reduce the effects of soil compaction.
- 10) If a project requires soil excavation, topsoil will be identified and salvaged by stockpiling topsoil separately from sub-soil horizons. Soil stockpiles will be placed in non-habitat areas to the extent possible and protected from flooding and erosion.
- 11) Project areas will be fenced prior to project commencement to ensure that proposed disturbance areas are not exceeded and that adjacent habitat areas are not affected.
- 12) Project areas will be returned to pre-disturbance grades to the extent possible.
- 13) All reasonable measures should be taken to avoid excess application of chemicals into the aquatic ecosystem. Use of soil stabilizers, dust palliatives, sterilants, growth inhibitors, fertilizers, deicing salts, etc. should be limited to application rates recommended by the manufacturer.
- 14) Revegetation of disturbed sites should take place as quickly as possible after project completion. Every effort should be made to catalog before-disturbance vegetation and to replace vegetation in-kind. Non-native plants should not be used in seed mixes.
- 15) Revegetated areas should be monitored and controlled for weeds as needed.
- 16) In some cases an emergency may require immediate action before a proposed project can be reviewed. The emergency manager should contact the CDOT Region 1 Environmental Manager at their earliest possible convenience. The Environmental Manager will contact the FWS representative to discuss the action and implement any BMPs that may be applicable.
- 17) Community use events may be scheduled within the Bank after consultation with CDOT Environmental. Event coordinators should be informed about the sensitive nature of the Bank area and should discuss their activities with CDOT staff so that avoidance and minimization of impacts to habitat areas are realized. Event coordinators will be responsible for picking up all trash that may be associated with that event.

### **Appendix 3. Letter for Event Organizers within The East Plum Creek Bank**

The East Plum Creek Conservation Bank was established in 2003 as a reserve for the Preble's meadow jumping mouse. This rare mouse is threatened and both the habitat and the populations of the mouse are protected by the federal Endangered Species Act.

CDOT is charged with protecting this special area and asks for your cooperation in planning and completing your event. CDOT requests that you summarize your event in a letter to the CDOT Environmental Manager for Region 1. The letter should include:

- A brief description of the event;
- The date(s) and time(s) of the event;
- The event coordinator (name, address, telephone number);
- The number of people that are expected to attend; and
- The location of the event.

CDOT has a few general guidelines for events within the Bank area that are intended to protect Preble's habitat areas. Some of these protection measures include:

- Pedestrian traffic is encouraged to remain on the bicycle path and not in areas along the stream;
- Vehicle traffic (if necessary) should be limited to the bicycle path;
- Review the list of Best Management Practices (enclosed);
- Event organizers are responsible for picking up any trash associated with the event; and
- Event organizers are responsible for informing all participants about the sensitive nature of the Bank area.

Please contact the CDOT Region 1 Environmental representative, (insert name and contact information here) for further information.