

**Preble's Meadow Jumping Mouse Biological Assessment For
Cherryvale Road Improvements, Boulder County, Colorado.**

Submitted to:

Boulder County Transportation Department
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I. INTRODUCTION

The Boulder County Transportation Department is planning a series of improvements to a section of Cherryvale Road in Boulder County. These improvements will include widening of the entire stretch of road for new bicycle lanes, replacement of two ditch culverts that pass under the road, and placement of a new traffic light at the intersection of Baseline and Cherryvale Roads.

Some of these proposed actions will affect habitat of the Preble's meadow jumping mouse (*Zapus hudsonius preblei*). This small mammal was listed as threatened by the U.S. Fish and Wildlife Service (USFWS) on May 12, 1998 (Federal Register 63 FR 26517). The use of the term mouse or jumping mouse in this document refers to the Preble's meadow jumping mouse.

This document will summarize potential project impacts to the mouse and its habitat, pertinent biological information from the project area, how project impacts will be avoided and minimized, and conservation measures that will be taken to offset impacts.

In addition to potential impacts to Preble's habitat, wetlands adjacent to the road will be affected. Total wetland loss will be approximately 0.09 acres, of which 0.04 acres is isolated wetland area. The U.S. Army Corps of Engineers has reviewed the project, and has authorized this work under Nationwide Permit No. 3 (File 2001 80218, U.S. Army Corps of Engineers, 2001). The Corps has indicated that a Section 7 consultation between the Corps and USFWS under the Endangered Species Act (ESA) will be needed if the mouse is located in the project area. Boulder County Transportation has agreed with the U.S. Army Corps to submit a biological assessment for this project under Section 7 of the ESA.

The project area also has potential habitat for the Ute ladies' tresses orchid, a federally threatened plant species (Federal Register FR 57:2048). The project area was surveyed in July and August 2000 and the orchid was not found along the road or in adjacent wetlands or ditches (Boulder County, 2000).

II. PROJECT DESCRIPTION

Project Need

The project has become necessary to improve safety for motorists and bicyclists traveling along Cherryvale Road. The road has no shoulders, experiences relatively high traffic volumes, and has been the site of a fatal accident within the last five years. The project primarily involves widening Cherryvale Road to add five-foot wide bicycle lanes, and overlaying the road with new pavement. Prior to paving, five drainage culverts beneath the road will be replaced, several of those within jurisdictional wetlands; three culverts also have associated mouse habitat. Since the road will be widened to accommodate new shoulders, these three culverts will be extended beyond their current length. In addition

to pavement overlay and culvert replacement, adjustments will be made to the radius of several curves and guardrails to improve safety.

Project Area

The proposed road improvement project on Cherryvale Road in Boulder County is located within Section 13, T1S, R70W. Boundaries of the project are: 300 feet north of Baseline Road to the intersection with South Boulder Road for a total length of 5,350' (see project map). Horizontal limits on the project generally extend no more than 15' beyond the existing edge of pavement to allow for 5' shoulders and extensions of some culverts beneath the roadway.

A full set of design drawings of the project have been attached (Figures 2-4), along with a USGS map containing the project limits (Figure 1).

Work within six specific zones will likely impact mouse habitat. Please see Figures 2-4 for locations of individual impact areas.

Work Zone 1

Located on the southeast quadrant of Baseline and Cherryvale Roads. The re-aligned lane with a new five foot shoulder will affect a long narrow patch of sandbar willow (*Salix exigua*) for approximately 214 feet in length and 15 feet in width (Appendix 1, photo 1). The total temporary and permanent habitat impact would be about 4,950 square feet, 1,650 square feet of which would be temporary impact and would be re-vegetated by sprigging with willow cuttings.

Work Zone 2

Located on the southeast quadrant of Baseline and Cherryvale Roads opposite Work Zone 1. Again, a re-aligned lane with a new five foot shoulder will affect a small patch of sandbar willow (*Salix exigua*). The total temporary and permanent habitat impact would be about 225 square feet, 75 square feet of which would be temporary impact and would be re-vegetated. (Appendix 1, photo 2)

Work Zone 3

East Boulder Ditch flows under Cherryvale Road, and the old culvert will be replaced with a new, longer culvert (from 81 to 96 feet). The culvert would be replaced from the existing roadway, eliminating the need for construction equipment in the ditch. Small habitat areas will be affected on both sides of the ditch (Appendix 1, photos 3 and 4). The total temporary and permanent habitat impact would be about 2,300 square feet, 600 of which would be temporary impact and would be re-vegetated.

Work Zone 4

Enterprise Ditch flows under the road and the old culvert will be replaced with a new, longer culvert (from 68 to 86 feet). A re-aligned lane with a new five-foot wide shoulder will affect a small area around the culvert as well (Appendix 1, photos 5 and 6). The culvert would be replaced from the existing roadway as in Work Zone 2. The total temporary and permanent habitat impact would be about 500 square feet, 250 square feet of which would be temporary impact and would be re-vegetated.

Work Zone 5

An area just south of the Enterprise Ditch crossing near the north end of Baseline Reservoir, west side of Cherryvale Road. The ditch parallels the road here and a steep bank drops off from the road to the Enterprise ditch (Appendix 1, photo 7). Due to the narrowness of the available land between the ditch and reservoir the guardrail is located directly along the steep slope. In order to widen the road and replace the necessary guardrail, the top edge of the ditch must be moved several feet to the west; this would place the toe of the new 3:1 slope within the existing ditch. Therefore, instead of piping 190 feet of the Enterprise Ditch and covering the pipe with fill, the ditch will be re-aligned to the west and the old ditch filled and re-vegetated as a habitat enhancement.

The total temporary and permanent habitat impact would be about 5,400 square feet, 3,700 square feet of which will be temporary impact and will be re-vegetated. About 2,850 square feet in this work zone will serve as habitat enhancement.

Work Zone 6

An area just north of South Boulder Road where a culvert will be replaced on the McGinn Ditch. The culvert will be replaced with the same length pipe. Therefore, all 200 square feet of impact will be temporary and re-vegetated (Appendix 1, photo 8).

All work zone activities, habitat conditions, and impact areas are summarized in Table 1.

Summary of Project Impacts

After reviewing biological data from Boulder County and the City of Boulder, Boulder County staff and ecologist Mark Bakeman made several field visits to determine locations where construction may affect Preble's meadow jumping mouse habitat. Impact area was calculated by delineating an area 15 feet beyond the new edge of pavement and 10 feet beyond the end of replaced culverts, and overlaying these areas on mouse habitat.

Six specific sites were identified accounting for approximately 13,575 square feet (0.31 acres) of possible impact. Of that area, approximately 5,625 square feet would be considered temporary impacts and would be re-vegetated, 7,950 would be considered

permanent impacts. In addition, approximately 2,850 square feet would be reclaimed along the original alignment of the Enterprise Ditch for a habitat enhancement credit.

Areas of Non-Habitat

All maintained areas within the Cherryvale Road right-of-way were not considered mouse habitat and were not included in impact areas. The vast majority of this area was mowed road shoulders and toe slopes, which extended to 10 feet from the edge of pavement in most locations (Appendix 1, photo 9). There were a few non-vegetated turn-outs that were also not considered habitat.

III. PROJECT SCHEDULE

Work on the project is scheduled to begin in mid-October 2001 and should last no more than 40 days. Cherryvale will be closed to traffic from Baseline Road to S. Boulder Road in an effort to limit the total construction time necessary for the project. Closing the road will also allow construction crews to replace the culverts while staying on the road surface, as opposed to taking equipment into the ditches.

Table 1. Cherryvale Road Project Actions, Impact Areas, and Habitat Conditions, Boulder County, CO.

Work Zone	Proposed Action	Temporary Impact (ft ²)	Permanent Impact (ft ²)	Habitat Affected
1	Road widening	1650	3300	Roadside stand of sandbar willow
2	Road widening	75	150	Roadside stand of sandbar willow
3	Culvert replacement, East Boulder Ditch	600	1700	West side of ditch 50% Russian olive (<i>Elaeagnus angustifolia</i>), 50% graminoid/herbaceous. East side has 2 large cottonwood trees (<i>Populus deltoides</i>), 1 smaller Russian olive, and graminoid understory
4	Culvert replacement, Enterprise Ditch	250	250	West side has 90% chokecherry (<i>Prunus virginiana</i>) and 10% graminoid. East side has cattail (<i>Typha latifolia</i>) in ditch bottom, smooth brome (<i>Bromus inermis</i>) on edges
5	Widening and new toe slope; realign Enterprise Ditch, bury/revegetate old ditch segment	3700	1700	Smooth brome
6	Culvert replacement, McGinn Ditch	200		West side has 50% willow, 50% graminoid; east side has 50% tree/shrub and 50% graminoid
Total		6,475	7,100	

Grand Total **13,575 ft²**
0.31 acre

IV. PROJECT BIOLOGICAL INFORMATION

Typical habitat for the Preble's meadow jumping mouse in Colorado consists of a matrix of riparian vegetation with associated upland grasslands (Armstrong et al, 1997 and Shenk and Sivert, 1998). The riparian vegetation component has variable composition, but shrub patches with scattered tree overstory is common. Riparian woody vegetation usually has a heavy understory of graminoids or herbs, and woody or leaf litter is often abundant. The common vegetation theme in riparian areas is heavy cover with minimal open areas. Preble's habitat within a drainage may not be continuously occupied, with occupied riparian patches with thick cover interspersed with more open patches. However, mice may still use these open patches for dispersal routes between the occupied patches.

Upland habitat types include a variety of mid to tall grass types that often have upland shrub patches. Alfalfa fields are also used in some situations. These grasslands are usually at higher elevations than the immediate flood plain, and would not be flooded during regular flood events, unlike much of the lower elevation riparian habitat.

It is known that riparian habitat functions as the primary mouse nesting areas, but feeding, mating, hibernation, and dispersal are known or strongly suspected in these areas as well. Upland habitat serves as the primary hibernation sites, often in association with upland shrubs. Mice are known to feed in upland areas during evening hours, and social gatherings with unknown implications have also been observed here.

Preble's mice have been found on a variety of stream types, but most populations are found on first or second order streams. Streams may be braided or meandering, with permanent or intermittent flow. They often have shallow banks (height < 1 meter), with a lateral saturated zone that can support riparian vegetation to a width that is usually at least 3 meters.

Jumping mouse habitat within the project area differs from the average habitat conditions found in most of the Colorado range of the animal. South Boulder Creek has a wide floodplain in this area, and is bisected by several ditches. This matrix of wet meadows and ditches probably provides the broadest habitat area for the mouse in Colorado.

Preble's jumping mice on South Boulder Creek have been studied extensively on City of Boulder Open Space property. This study area extends from Baseline Road (northern end) to an area 1.3 miles south of South Boulder Road (Figure 2). In addition to early presence/absence surveys (Armstrong et. al., 1997), a three-year project to evaluate the impact of trails on small mammals was conducted between 1997-1999 (Meaney et. al., 2001). Preble's meadow jumping mouse linear densities were also estimated for this area as part of the trail impact study. Meaney et. al. (2000) conducted additional Preble's monitoring in 2000, and the linear density values reported here include data from 1997-2000.

Linear densities from several sites were estimated for sample areas along South Boulder Creek and several ditches (Table 2). South Boulder Creek linear densities ranged from 0.0 to 142.3 mice km^{-1} , with a four year mean value of 37.0 mice km^{-1} .

Four ditches were sampled; two north of South Boulder Road, and two to the south. No jumping mice were captured on Marshallville or Shearer Ditches in 2000, south of South Boulder Road. The Enterprise and East Boulder Ditches to the north have high densities of jumping mice, ranging from 55.3 to 116.0 mice km^{-1} , with a mean of 60.7 mice km^{-1} .

Some of the sites that were sampled in Meaney's work were 0.2 miles west of Cherryvale Road. Preble's mice have been known to travel distances > 1 mile, so many of the sites where Preble's were captured are within the known dispersal distance to the Cherryvale project area. The wide floodplain between South Boulder Creek and Cherryvale Road within the limits of the project area also has suitable Preble's habitat.

Because of the close proximity of Meaney's work to the project area, we have not trapped the area to confirm the presence of the mouse. Rather, we have assumed that the wet meadow/upland grassland complex west of Cherryvale Road is jumping mouse habitat. It is also probable that jumping mice can travel from South Boulder Creek to Cherryvale Road via both general habitat connections (wet meadow and upland grassland habitat) and the East Boulder and Enterprise Ditches. Jumping mice can access habitat east of Cherryvale Road by moving through ditch culverts under Cherryvale Road. Jumping mice have been documented moving through road culverts that were smaller in diameter and longer than the project culverts (Ensign 1999).

Habitat conditions were also explored to the extent possible east of Cherryvale Road. There is shrub habitat on East Boulder Ditch east of Cherryvale Road for approximately 0.1 mile before the ditch flows north into a residential area. Habitat on this ditch effectively ends north of Baseline Road.

Habitat on Enterprise Ditch east of Cherryvale Road consists of a narrow band of tree/shrub patches on the ditch edge, surrounded by an upland grassland/disturbed matrix. This area is privately owned and could not be accessed. There could be up to 0.6 miles of habitat along the ditch between Cherryvale and Baseline Roads. As with South Boulder Ditch, Enterprise Ditch has no Preble's habitat north of Baseline Road.

It appears that Preble's habitat east of Cherryvale Road is limited and of poor-moderate quality.

Table 2. Linear Densities (mice km⁻¹ ± standard error) of Preble's Meadow Jumping Mice Along South Boulder Creek, East Boulder Ditch (EBD), and Enterprise Ditch (ED), 1997-2000.

Site	July 1997	August 1997	June 1998	August 1998	June 1999	August 1999	June 2000	Mean
South Boulder Creek Sites (SBC)								
1N			108.8±5.9	0.0	27.2±1.5	13.6±0.7	26.2±0.9	35.2±19.1
1T			0.0	0.0	13.6±0.7	13.6±0.7		6.8±3.9
2N		142.3±7.6	54.4±2.9	13.6±0.7	54.4±2.9	27.2±1.5		48.6±20.7
2T		67.3±3.6	81.6±4.4	54.4±2.9	27.2±1.5	13.6±0.7		40.7±13.1
3N			13.6±0.7	0.0	81.6±4.4	0.0		23.8±19.5
3T	0.0	28.8±1.5	40.8±2.2	0.0	81.6±4.4	95.2±5.2	75.4±2.8	46.0±16.4
4N			40.8±2.2	0.0	27.2±1.5	13.6±0.7		20.4±8.8
4T			13.6±0.7	13.6±0.7	40.8±2.2	54.4±2.9		30.6±10.2
5N			54.4±2.9	54.4±2.9	27.2±1.5	13.6±0.7		37.4±10.2
5T			13.6±0.7	0.0	0.0	0.0		3.4±3.4
6N			54.4±2.9	108.8±5.9	40.8±2.2	27.2±1.5	51.5±2.1	56.5±13.9
6T			97.5±5.3	97.5±5.3	27.2±1.5	0.0	8.7±0.3	46.2±24.9
Ditches								
EBD	74.3±4.1	65.6±3.1	48.1±2.3	33.9±1.6	44.6±2.2	48.1±2.3	55.3±2.6	52.9±5.1
ED							116.0±5.1	116.0±0.0
Mean (SBC)								
Mean (SBC)	0.0	79.5±33.3	47.8±10.1	28.5±11.6	37.4±7.1	22.7±7.9	40.5±0.0	37.0±4.7
Mean (Ditches)								
Mean (Ditches)	74.3±0.0	65.6±0.0	48.1±0.0	33.9±0.0	44.6±0.0	48.1±0.0	85.6±30.3	60.7±9.1
Mean (All)								
Mean (All)	18.1±18.6	76.0±23.8	47.8±9.3	28.9±10.7	38.0±6.6	24.6±7.5	55.5±15.4	40.0±4.4

N = nontrail side of creek, T= trail side of creek. EBD = East Boulder Ditch ED=Enterprise Ditch. Shearer and Marshallville Ditches were sampled in 2000 with 0 *Zapus* captures. Data from Meaney et.al., 2000

V. PROJECT BIOLOGICAL EFFECTS

The Cherryvale project will affect Preble's habitat, and may also affect Preble's populations.

The pavement area of Cherryvale Road will be widened an average of 10 feet. This widening will occur within a maintained right-of-way, and we do not believe this area is used by the mouse. A small amount of habitat area (0.15 acres) will be temporarily disturbed during project construction. Vegetation will be disturbed during construction and then restored at project completion. Revegetation efforts should provide cover for the mouse during the active season following construction. Habitat disturbance has been limited to the effective edge of habitat for the South Boulder Creek Preble's population.

There are two culverts that extend under Cherryvale Road that will be extended, and another culvert will be replaced. Habitat at culvert ends will be disturbed during construction. We do not anticipate that either replacing and lengthening the culverts will have significant biological impacts on mouse populations. These actions will occur during the hibernation period and the additional culvert length is less than the known maximum length of culverts used by Preble's mice. We believe that mouse dispersal under the road is not important to this population (because of the marginal habitat on the east side of Cherryvale Road), but mice will still be able to travel through the culverts after the project is completed.

It is possible that extending the culverts during the hibernation period will affect hibernating mice. This possibility will be minimized by clearing woody vegetation from the culvert disturbance areas in late summer to discourage mice from selecting these areas for hibernacula.

Noise and vibration from the construction activities will also be confined to the hibernation period and should not cause additional stress to mice in this area.

VI. MOUSE PROTECTION ACTIVITIES

Efforts were made to avoid and minimize project impacts. There were small areas where impacts could not be avoided, and we propose conservation measures to off-set those impacts.

Avoidance of Impact

- Avoid removal of large cottonwood trees along roadway and ditches.
- Design road to avoid wetland and habitat areas wherever possible. Expansions of both road width and culvert length kept to an absolute minimum while maintaining safety design features.
- Wherever physically possible, road improvements will be skewed away from habitat areas, primarily to the eastern side of Cherryvale Road where habitat is limited compared to the west side of Cherryvale Road.

- Follow DOW approved “Best Management Practices” adopted by CDOT for road construction in sensitive areas.
- Have all work zones clearly delineated with orange fencing to avoid impact outside of approved zones.
- Supervisor on-site who will ensure construction activities do not affect areas outside of approved zones.

Minimizing Impact

- Relocate the Enterprise Ditch instead of piping the ditch, thus allowing for enhancement of habitat areas along original ditch alignment.
- Impacts in and around habitat areas will take place after October 15th when mice will be hibernating.
- Replacement of culverts or road widening will be kept to a minimum, not expanding the road and bike lanes beyond what is absolutely necessary to create a safe corridor based on AASHTO Standards.
- Ditch areas that may provide habitat for hibernacula will be cleared of woody vegetation during the latter part of the active season to discourage mice from hibernating in these areas.
- Replace culverts from the existing road rather than bringing equipment into the ditches. Only foot traffic in ditch.

Conservation Measures

Conservation measures will take place both on and off-site Cherryvale Road project to off-set the 13,575 square feet (.31 acres) of permanent and temporary habitat impacts.

On-site conservation measures will include revegetating 5,475 square feet of temporarily disturbed vegetation with like vegetation. In addition, approximately 2,850 square feet along the original alignment of the Enterprise Ditch will be filled after the new ditch alignment is constructed. The new alignment would be vegetated with sandbar willow (*Salix exigua*) and various native grass species appropriate for mouse habitat. This should serve as either habitat creation or habitat enhancement.

The off-site conservation measure includes eliminating cattle grazing from a portion of Coal Creek just west of the Town of Superior. This area is the Boulder County *Mayhoffer/Singletree* open space property, and is near other jumping mouse capture sites on Coal Creek. Boulder County Parks and Open Space Department staff would fence approximately 3,000 linear feet along both sides of Coal Creek, thus protecting and regulating grazing on approximately 20 acres of known mouse habitat. An alternative water source for cattle would be provided outside the creek area in the irrigated meadows above Coal Creek. Those irrigated meadows, currently grazed periodically throughout the year, would also be regulated so grazing only occurs when Preble’s meadow jumping mice are in hibernation (October 15-April 15).

Conservation Area Credit

The impact area for this project is 0.31 acre (13,504 ft²). On-site revegetation will restore a total of 6,475 ft² of disturbed area, by revegetating with shrubs or herbaceous vegetation as appropriate (Table 3). Restoration credit values were determined using the higher riparian shrub ratio. In addition, 2,850 ft² of habitat will be enhanced by filling in a portion of the Enterprise Ditch, for a credit of 950 ft² for concurrent herbaceous restoration (at 3:1 ratio).

On-site conservation measures will account for 4,187 ft² of impact, or 31% of the total (4,187/13,504). The remainder of the impact area (9,317 ft²) will be accounted for on the Mayhoffer property on Coal Creek (Figure 5).

The Mayhoffer property was recently acquired by Boulder County and the City of Boulder. The entire property is currently grazed by cattle. Cottonwood trees (*Populus deltoides*) dominate the narrow riparian zone, with a scattered understory of shrubs, especially on the north side of Coal Creek (Appendix 1, photos 10 and 11). Hawthorne (*Crataegus erythropoda*) is the most common shrub, followed by dogwood (*Cornus sp.*), with few willow. Upland areas were dominated by smooth brome (*Bromus inermis*) and a variety of weed species. The W.G. Hake Ditch parallels the creek (Appendix 1, photo 12), about 150 feet to the north, and a Preble's mouse was captured there in 1999 (personal communication, Ron Bean). The uplands north of the ditch are much dryer than the area between the ditch and the creek, and there is considerable weed cover here. Cattle have access to the creek and there are a few, eroded crossing paths.

In the spring of 2000, Boulder County received funding from the Colorado Department of Natural Resources (DNR) through a *Preble's Meadow Jumping Mouse Habitat Protection, Restoration, and Enhancement Grant*. The approved enhancement action was to fence the riparian zone along Coal Creek in the summer of 2001 to regulate cattle access into the mouse habitat areas. Funding for the project from DNR was contingent on not using the grant monies toward required mitigation activities. After speaking with Gary Skiba with the Division of Wildlife, County staff was informed that fencing off habitat area in addition to the 20 acres committed to for the Restoration Grant, would still meet the spirit of the grant and would not be considered use of grant monies toward required mitigation activities.

Therefore, the property was visited by Scott Robson (Boulder County Transportation) and Mark Bakeman (Ensign Technical Services) on May 8, 2001 and the fencing plan amended with Boulder County Parks and Open Space staff. Fence locations will be adjusted from the original plan in the grant to fence-off portions of the Hake Ditch where Preble's Mice have been trapped. This, along with other expansions of the fencing within the mouse habitat area will expand the total area fenced are from 20 acres to 25+ acres. This will exceed the quality and quantity of the habitat enhancement commitment in the original DNR proposal. Using a 3:1 ratio for advance riparian shrub enhancement, at least 5 acres of additional fencing within mouse habitat area along Coal Creek and Hake Ditch will satisfy at least 1.67 acres of disturbance (Table 3).

The Cherryvale project will have 0.31 acres of disturbance and conservation measures both on and off-site will account for 1.76 acres of disturbance, exceeding the required amount by 1.45 acres.

Table 3. Conservation Measures for the Cherryvale Widening Project

Conservation Measure	Location	Conservation Area (ft ²)	Ratio	Area Credited (ft ²)
Restore disturbed areas with shrubs	Throughout project area	1,725	2:1 concurrent restoration woody	862
Restore disturbed areas with herbaceous vegetation	Throughout project area	4,750	2:1 concurrent restoration herbaceous	2,375
Enhance former ditch alignment	Enterprise Ditch	2,850	3:1 concurrent enhancement herbaceous	950
Enhance through fencing formerly grazed Preble's habitat	Mayhoffer Property Coal Creek	217,800 (5 acres)	3:1 advance enhancement shrub	72,600
Total				76,787 (1.76 acre)

VII. SUMMARY OF EFFECTS

Boulder County Transportation is proposing to widen a 1 mile section of Cherryvale Road. The road is adjacent to Preble's meadow jumping mouse habitat, and project actions will affect roadside habitat and habitat near three ditches where culverts under the road will be replaced.

Impacts to mouse populations will be avoided and minimized to the extent possible by conducting most of the construction activities from the existing road, and by scheduling work during the mouse hibernation season. Despite these efforts, 0.31 acres of habitat will be affected. Boulder County Transportation proposes to off-set this impact by a series of conservation measures. On-site measures include revegetating temporarily disturbed areas, and refilling and vegetating a section of a ditch that will be realigned. The County also proposes to enhance mouse habitat on Coal Creek by excluding cattle grazing from 25 acres of riparian habitat.

Although there will be adverse effects to the mouse on a small area of habitat during the hibernation season, 37% of this area will be promptly revegetated. All of these impacts are distant from the primary mouse habitat on South Boulder Creek, and project actions will not cause increased habitat fragmentation. Conservation measures are proposed for both on and off-site areas. ~~Although mouse habitat in the project area will be reduced by 0.16 acre, we contend that the remainder of the affected area will still remain fully functional for the mouse, and there will be no long-term adverse effects.~~

Good!!

VIII. REFERENCES

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Figure 1. Cherryvale Road Improvement Project Area, Boulder County, CO

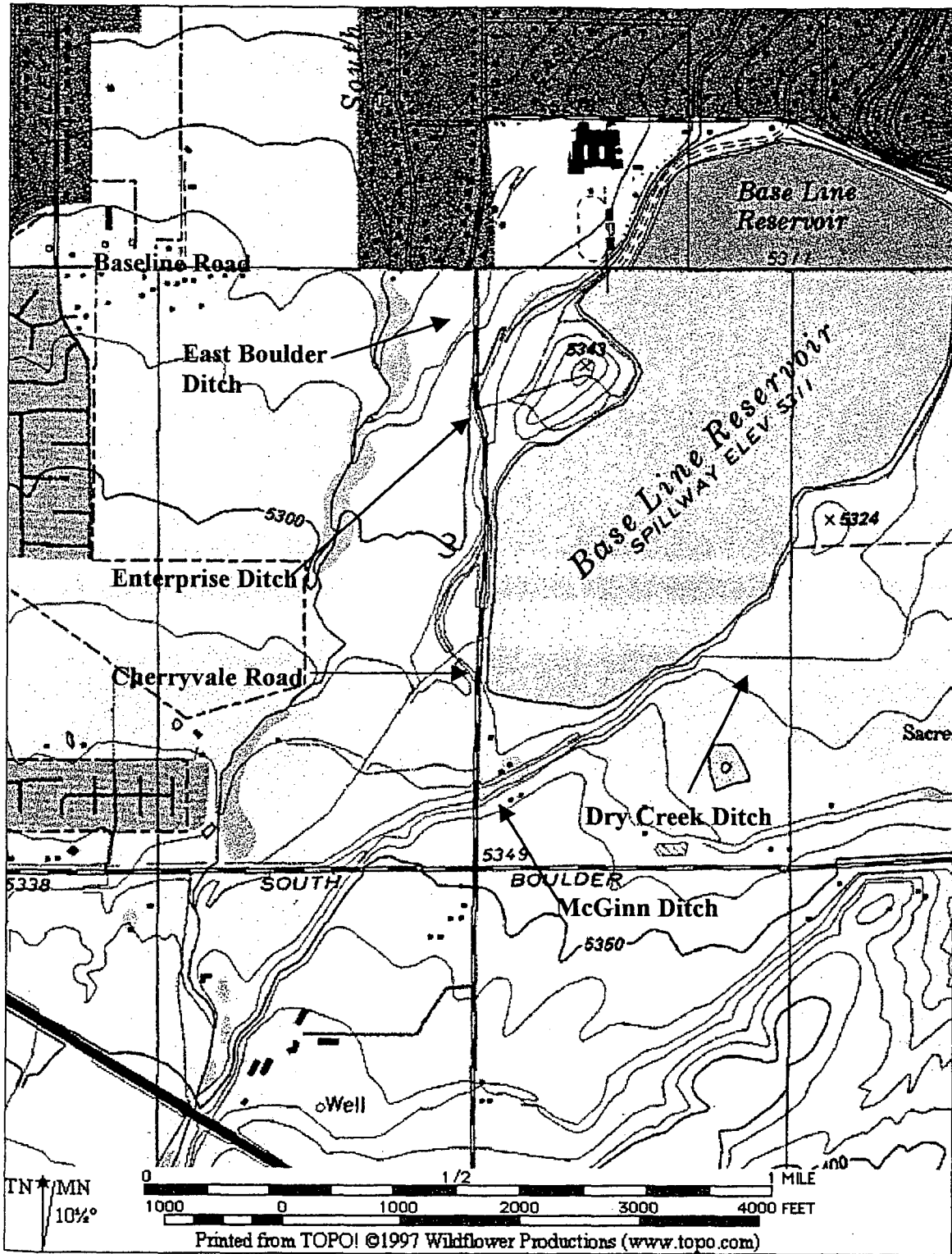


Figure 5. Conservation Area on Mayhoffer Property, Boulder County CO.



Appendix 1. Photographs of the Cherryvale Road Improvement Project, Boulder County, CO.



Photo 1. Work Zone 1 at the SE quadrant of Baseline and Cherryvale Roads. There is a thick stand of sandbar willow on the west side of the road. 4/18/01



Photo 2. Work Zone 2 at the SW quadrant of Baseline and Cherryvale Roads. The edge of this sandbar willow stand will be affected by road widening. 4/18/01

Appendix 1. Photographs of the Cherryvale Road Improvement Project, Boulder County, CO.



Photo 3. This is the east side of East Boulder Ditch (Work Zone 3); the culvert will be extended but with work conducted from the road. 4/18/01

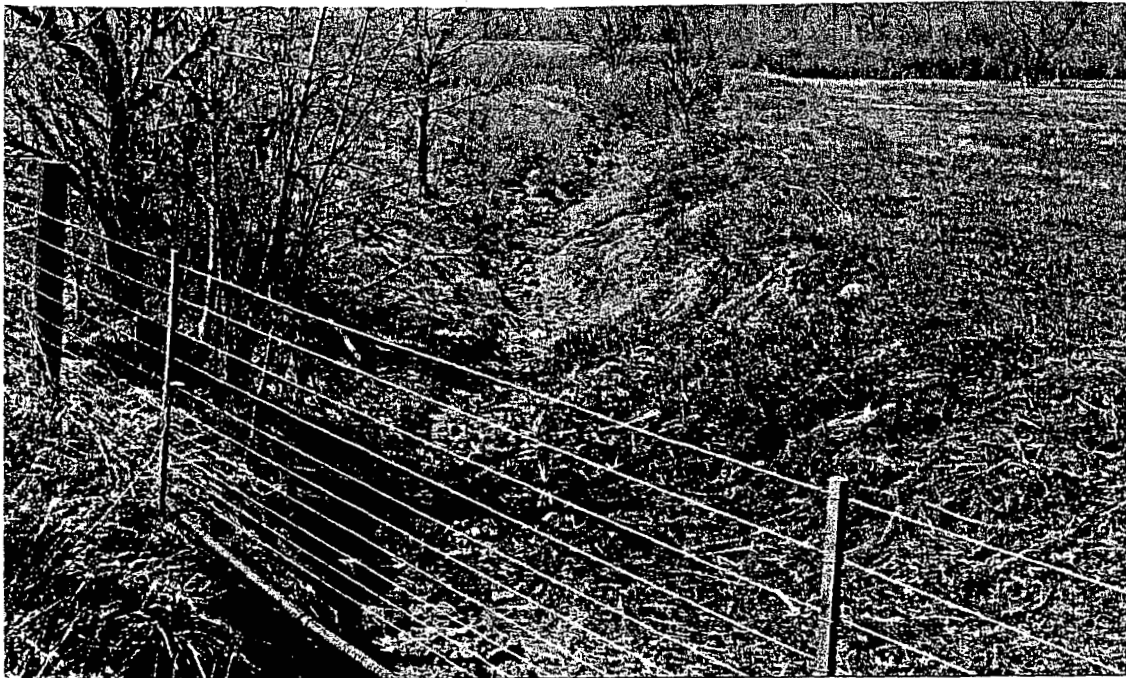


Photo 4. This is the west side of East Boulder Ditch (Work Zone 3); small patches of shrubs and a Russian olive tree will be disturbed. 4/18/01

Appendix 1. Photographs of the Cherryvale Road Improvement Project, Boulder County, CO.

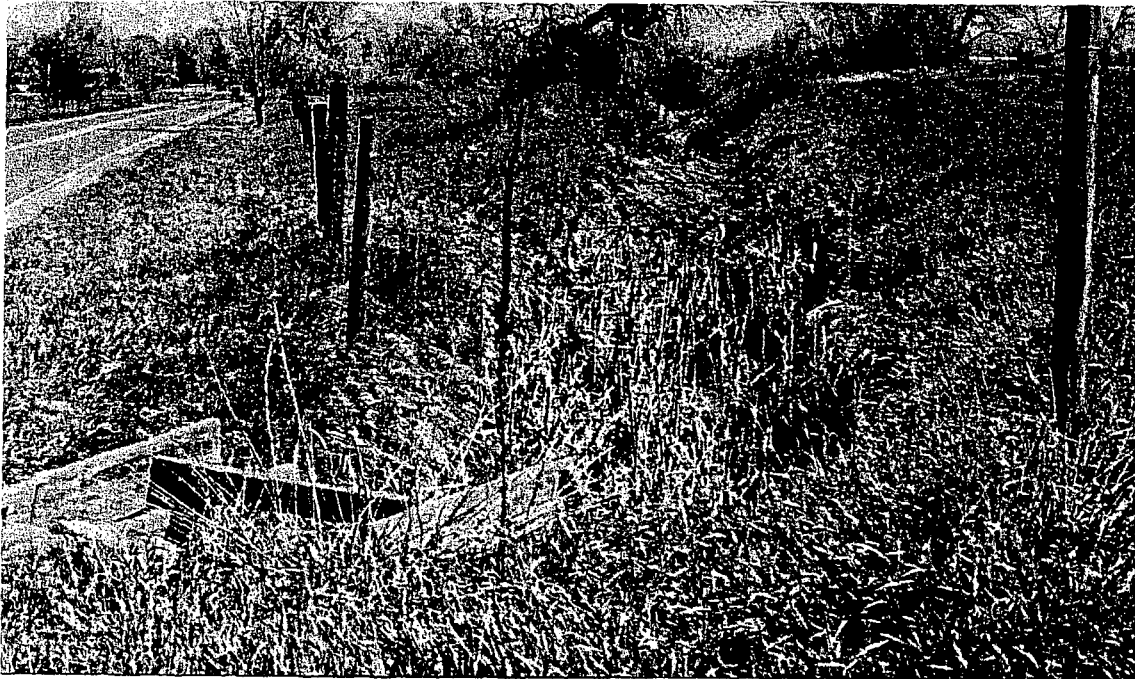


Photo 5. This is the east side of Enterprise Ditch (Work Zone 4); the culvert will be extended from the road and upland grasses and cattails will be disturbed. 4/18/01

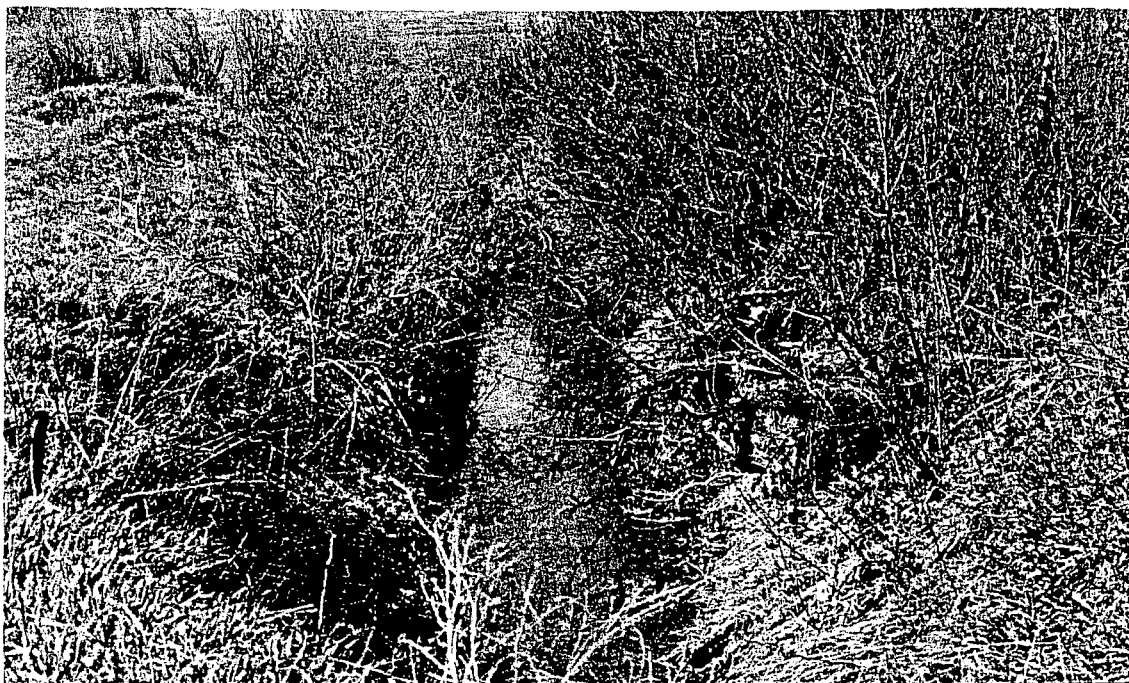


Photo 6. This is the west side of Enterprise Ditch (Work Zone 4); small patches of shrubs will be disturbed. 4/18/01

Appendix 1. Photographs of the Cherryvale Road Improvement Project, Boulder County, CO.



Photo 7. This is the section of Enterprise Ditch (Work Zone 5) that will be realigned; the old ditch section will be filled and revegetated. 4/18/01

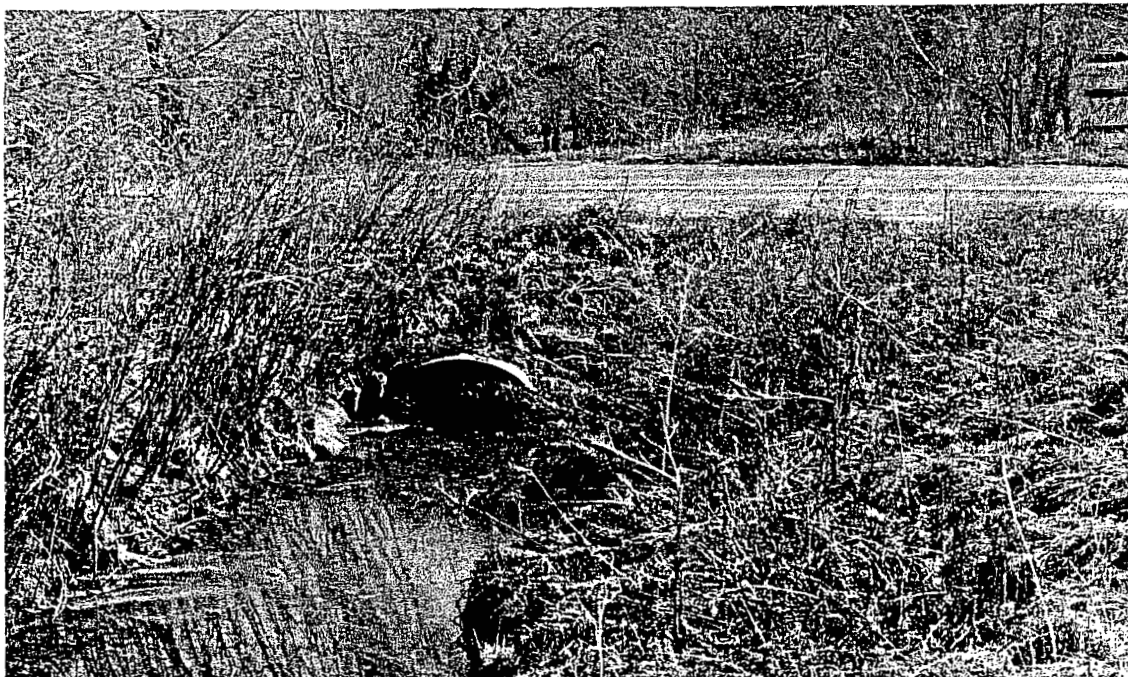


Photo 8. East side of McGinn Ditch; disturbance will be confined to grassy area between road and end of existing culvert. 4/18/01

Appendix 1. Photographs of the Cherryvale Road Improvement Project, Boulder County, CO.

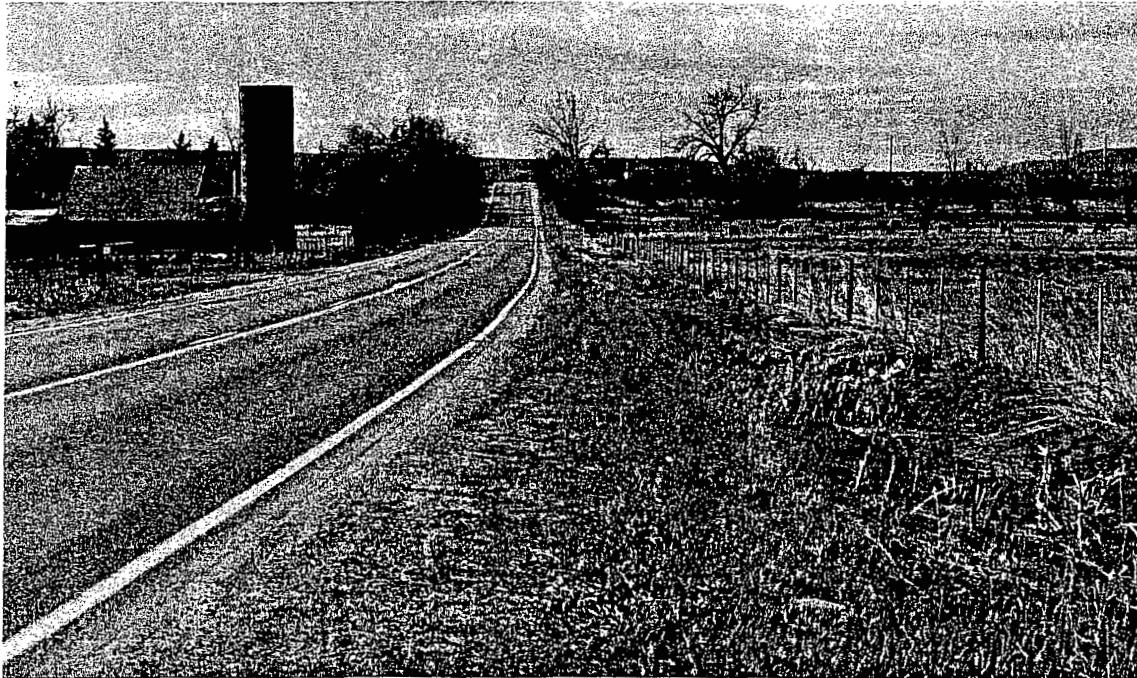


Photo 9. View of Cherryvale Road looking south. Much of the right-of-way area was mowed or used as turn-outs, and these areas were not considered habitat. 4/18/01



Photo 10. Coal Creek on Mayhoffer property showing cattle use of creek and narrow riparian zone. 5/8/01

Appendix 1. Photographs of the Cherryvale Road Improvement Project, Boulder County, CO.



Photo 11. Coal Creek looking south. Note open bank on south side of stream with little woody vegetation. 5/8/01



Photo 12. Old fence line on Mayhoffer property in disrepair. Trees and shrubs to left of fence are on Hake Ditch and will be protected by new fencing. 5/8/01.



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
DENVER REGULATORY OFFICE, 9307 S. PLATTE CANYON ROAD
LITTLETON, COLORADO 80128-6901

RECEIVED

JUN - 7 2001

Boulder County
Transportation

June 5, 2001

Ms. Kathleen Linder
U.S. Fish and Wildlife Service
Colorado Field Office
755 Parfet Street, Suite 361
Lakewood, Colorado 80215

RE: Request for Formal Section 7 Consultation, Cherryvale Road Improvements,
Corps File No. 200180218

Dear Kathleen:

On April 1, 2001, the Corps of Engineers (Corps) sent the Boulder County Transportation Department verification that the above referenced project was authorized by Nationwide Permit No. 3, *Maintenance*. However, the verification included a condition that work could not begin on the project until it was determined whether or not the project area was habitat for the Preble's meadow jumping mouse (*Zapus hudsonius preblei*). If the area was determined to be habitat for Preble's, work could not begin until completion of consultation under Section 7(a) of the Endangered Species Act (ESA). On June 4, 2001, the Corps received a letter from Boulder County that the project area is bordered by known habitat for Preble's. Therefore, the Corps has determined that the proposed project may adversely affect Preble's. The Corps had also determined that the project would have no affect on any other proposed or listed species under the ESA.

With this letter I am requesting the initiation of Formal Consultation under Section 7(a) of the Endangered Species Act. Boulder County informed me that they have already provided you with a copy of the Biological Assessment (BA), which should be considered the Corps' BA. If you have any questions concerning this information, please give me a call at 979-4120.

Sincerely,

Timothy T. Carey
Chief, Denver Regulatory Office

CF:

Mr. Scott Robson
Boulder County Transportation Department
2045 13th Street
Boulder, CO 80302