Raptor Nest Field Survey Technical Memorandum for the North Meadows Extension to US 85 and Interstate 25

December 2007

Prepared for:

Town of Castle Rock
Douglas County
Colorado Department of Transportation
Federal Highway Administration

Prepared by:

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Douglas County Project CI 05-024
FHU Project No. 07-113
# TABLE OF CONTENTS

**LIST OF ACRONYMS**

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ii</td>
</tr>
</tbody>
</table>

1.0 **Introduction**

| 1.1 Right-of-Way Access Limitations | 4 |
| 1.2 Methodology | 4 |
| 1.3 Post-Processing Data | 4 |
| 1.4 Follow-up Survey | 4 |
| 1.5 Migratory Bird Treaty Act | 5 |

**LIST OF FIGURES**

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**APPENDIX**

- **APPENDIX A** Migratory Bird Species
- **APPENDIX B** Photo Log
- **APPENDIX C** Colorado Field Ornithologist Bird Checklist
- **APPENDIX D** Town of Castle Rock Bird Checklist
# LIST OF ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>CDOT</td>
<td>Colorado Department of Transportation</td>
</tr>
<tr>
<td>COHA</td>
<td>Cooper's Hawk</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>GPS</td>
<td>Global Positioning System</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>FHU</td>
<td>Felsburg Holt &amp; Ullevig</td>
</tr>
<tr>
<td>IREA</td>
<td>Intermountain Rural Electric Association</td>
</tr>
<tr>
<td>I-25</td>
<td>Interstate 25</td>
</tr>
<tr>
<td>MBTA</td>
<td>Migratory Bird Treaty Act</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Policy Act</td>
</tr>
<tr>
<td>RTHA</td>
<td>Red-tailed Hawk</td>
</tr>
<tr>
<td>ROW</td>
<td>Right-of Way</td>
</tr>
<tr>
<td>US 85</td>
<td>US Highway 85</td>
</tr>
<tr>
<td>USFWS</td>
<td>US Department of Interior Fish and Wildlife Service</td>
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</table>
1.0 INTRODUCTION

The National Environmental Policy Act (NEPA) of 1969 established a mandate for federal agencies to consider the potential environmental consequences of their proposed actions, to document the analysis, and to make the information available to the public for comment prior to implementation. In accordance with NEPA and related regulations, the Federal Highway Administration (FHWA), as the Lead Agency, in cooperation with the Colorado Department of Transportation (CDOT) as a Joint Lead Agency, has prepared this Environmental Assessment (EA) for a proposed extension of North Meadows Drive from The Meadows area to US Highway 85 (US 85) and to Interstate 25 (I-25) in Douglas County, Colorado. The proposed North Meadows Extension would cross the Burlington Northern Santa Fe (BNSF) Railway, East Plum Creek, and the Union Pacific Railroad (UPRR) (Figure 1 Study Area). The project is sponsored by the Town of Castle Rock and Douglas County. The US Department of the Interior Fish and Wildlife Service (USFWS) is a Cooperating Agency.

This memorandum is a summary of field survey activities performed by Keith Hidalgo and Sally Nowak, of Felsburg Holt & Ullevig (FHU), on August 13 and 14, 2007, for the North Meadows Extension to US Highway 85 (US 85) and Interstate 25 (I-25) Environmental Assessment (EA). The purpose of this field survey was to provide an reconnaissance overview of migratory birds in the area of the alternatives being considered as part of the EA. (see Figure 2 Migratory Bird Nest Survey).
Figure 1  Study Area
Figure 2  Migratory Bird Nest Survey
1.1 Right-of-Way Access Limitations

The areas surveyed for migratory bird nesting were viewed primarily from an area along the East Plum Creek Trail open to the public, and public street and highway rights-of-way (ROW) within and adjacent to the study area. Access to privately owned parcels was generally not available at the time of the survey; however, most areas could be viewed from the trail and ROW. Figure 2 indicates one area along East Plum Creek for which field observation as limited at the time of the survey, due to these access limitations.

1.2 Methodology

Staff used ArcPad 7.0 software loaded on Trimble’s GeoXM Global Positioning System (GPS) units (accuracy of 3 to 5 feet) including aerial imagery, parcel data from June 2007 and later updated to parcel data from September 2007, and the most recent alternative design. Other tools staff used included binoculars and bird identification books. Nest surveying was done by visual observation of the surrounding vegetation and the observance of migratory birds in the area. It is possible that not all nests were identified based on density of vegetation in the project area and due to limited access to private property. Due to how late in the season the survey was done (August 13 and 14) the only migratory birds seen were perched and solitary, no migratory birds were feeding young or sitting on nests. However, staff were able to identify 15 nests that were possible migratory bird nests in the previous season or older. Nests were identified using binoculars, visual observation, and reference books (Baicich and Harrison, 1997). When a nest was found, its location was marked using a Trimble unit, a picture was taken of the nest, and if possible, the bird species was identified. All nests found were observed to be of older nesting material and staff believed these nests to be inactive. A total of 15 nest points were collected on the GPS unit. Appendix A identifies species that were possibly still active within the project area.

1.3 Post-Processing Data

Nest data was downloaded from the GPS unit and quality checked for any errors and additional information was added into the database where possible. Data was also aligned and edited using 2006 one foot pixel resolution aerial imagery as a guide. This imagery data was provided by the Town of Castle Rock. Appendix B contains additional photos and information taken during the field survey.

1.4 Follow-up Survey

Ms. Barbara Spagnuolo, a Town of Castle Rock Natural Resource Specialist, conducts a migratory bird inventory along the East Plum Creek Trail on a weekly to bi-weekly basis. Ms. Spagnuolo confirmed the location of a red-tailed hawk (RTHA) nest and a Cooper’s hawk (COHA) nest along the East Plum Creek Trail that was identified by FHU staff as potential raptor nests. Appendix C is the field checklist that Ms. Spagnuolo uses to record the species she observes. Appendix D is the Town of Castle Rock’s checklist of birds that are seen on the East Plum Creek Trail.
1.5 Migratory Bird Treaty Act

Some potential conflicts with the Migratory Bird Treaty Act (MBTA, 16 USC 128) requirements were identified during site visits conducted by FHU during August of 2007. Large trees within the riparian zone paralleling East Plum Creek which may be designated for removal during project construction could, potentially, be utilized as suitable nesting sites for migratory bird species such as hawks, owls, and various songbirds (see Figure 1). In addition, a number of nests observed by both FHU staff and the Town of Castle Rock staff were observed to have previous nesting raptors. One is a Red-tailed Hawk (RTHA) nest, and the other is a Cooper’s Hawk (COHA) nest. Both are located within the riparian zone of East Plum Creek, adjacent to the East Plum Creek Trail.

To avoid violating MBTA “take” requirements, i.e. damage, destruction, or causing the abandonment of an active nest, construction should be completed outside the active nesting period of migratory bird species which are likely found in the project area, if possible. If construction must be completed within the active nesting period between April 1 and August 31, thorough periodic surveys will need to be completed within two weeks prior to the initiation of construction activities and during the construction period to determine whether any active nests are present. If active nests are found, options may include: 1) the removal of nests prior to the initiation of egg laying, and/or 2) the cessation of construction until all nestlings are fledged.
APPENDIX A  MIGRATORY BIRD SPECIES
## Table A-1 Migratory Bird Species

<table>
<thead>
<tr>
<th>Species</th>
<th>Type</th>
<th>Number Seen</th>
<th>Sex</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Robin</td>
<td>Bird</td>
<td>4</td>
<td>Unknown</td>
<td>Flight</td>
</tr>
<tr>
<td>American Crow</td>
<td>Bird</td>
<td>1</td>
<td>Unknown</td>
<td>Flight</td>
</tr>
<tr>
<td>Broad-tailed Hummingbird</td>
<td>Bird</td>
<td>&gt;4</td>
<td>Females</td>
<td>Flight</td>
</tr>
<tr>
<td>Golden Eagle</td>
<td>Bird</td>
<td>1</td>
<td>Unknown</td>
<td>Perched</td>
</tr>
<tr>
<td>House Finch</td>
<td>Bird</td>
<td>&gt;4</td>
<td>Males/Females</td>
<td>Calling/Feeding/Flight</td>
</tr>
<tr>
<td>House Sparrow</td>
<td>Bird</td>
<td>&gt;6</td>
<td>Males/Females</td>
<td>Calling</td>
</tr>
<tr>
<td>Mountain Bluebird</td>
<td>Bird</td>
<td>&gt;4</td>
<td>Males/Females</td>
<td>Calling/Feeding/Flight</td>
</tr>
<tr>
<td>Mourning Dove</td>
<td>Bird</td>
<td>&gt;5</td>
<td>Unknown</td>
<td>Calling/Feeding/Flight</td>
</tr>
<tr>
<td>Northern Flicker</td>
<td>Bird</td>
<td>2 or 3</td>
<td>Unknown</td>
<td>Calling/Feeding/Flight</td>
</tr>
<tr>
<td>Red-tailed Hawk</td>
<td>Bird</td>
<td>1</td>
<td>Female</td>
<td>Calling/Feeding/Flight</td>
</tr>
<tr>
<td>Song Sparrow</td>
<td>Bird</td>
<td>2 or 3</td>
<td>Males</td>
<td>Calling</td>
</tr>
<tr>
<td>Spotted Towhee</td>
<td>Bird</td>
<td>2 or 3</td>
<td>Males</td>
<td>Calling</td>
</tr>
<tr>
<td>White-breasted nuthatch</td>
<td>Bird</td>
<td>&gt;4</td>
<td>Males/Females</td>
<td>Calling/Feeding/Flight</td>
</tr>
<tr>
<td>Yellow Warbler</td>
<td>Bird</td>
<td>1</td>
<td>Male</td>
<td>Calling/Feeding/Flight</td>
</tr>
<tr>
<td>Cottonwood</td>
<td>Tree</td>
<td>Many</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willow Tree</td>
<td>Tree</td>
<td>Many</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chokecherry Shrub</td>
<td>Shrub</td>
<td>Many</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gamble Oak</td>
<td>Shrub</td>
<td>Many</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mountain Mahogany</td>
<td>Shrub</td>
<td>Many</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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APPENDIX B  PHOTO LOG
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<table>
<thead>
<tr>
<th>Picture of a possible raptor nest within the CAG properties, south of I-25.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spotted towhee actively feeding fledgling in a patch of Gamble oak.</td>
</tr>
<tr>
<td>Magpie nest within a pine tree on the CAG properties south of I-25.</td>
</tr>
</tbody>
</table>
Very old raptor nest in a stand of old Gamble oak south of I-25 on the CAG properties.

Another very old raptor nest on the CAG properties south of I-25.

Potential nest from earlier in the year. Raptor or magpie.
Possible raptor nest or magpie nest.

Large raptor near East Plum Creek trail. Most likely a small male Golden Eagle.

Raptor nest in willow tree along the East Plum Creek bike trail.
Confirmed active Cooper’s Hawk (*Accipiter cooperii*) nest near bike trail.

Magpie nest near bike trail.

Raptor nest in pine tree off of bike path, from this season, most likely a great-horned owl nest.
Another old raptor nest off of the bike trail west of East Plum Creek.

Very large nest tree near the bike trail/creek, a very large red-tailed hawk was calling from this tree and flew from it when we were in the area.

Confirmed active Red-tailed Hawk (*Buteo jamaicensis*) nest.
APPENDIX C  COLORADO FIELD ORNITHOLOGIST BIRD CHECKLIST
COLORADO FIELD ORNITHOLOGISTS
Checklist of the Birds of Colorado
Douglas County - 355 Species

Date__________________ Time__________________
Locality__________________
Skycloud cover________Wind_________Temp_______________
Observers________________________
Total Species_________ Total Individuals________

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**GEESE**
- Greater White-fronted Goose
- Snow Goose
- Ross’s Goose
- Canada Goose
- Cackling Goose

**SWANS**
- Tundra Swan

**DUCKS**
- Wood Duck
- Gadwall
- American Wigeon
- Mallard
- Blue-winged Teal
- Cinnamon Teal
- Northern Shoveler
- Northern Pintail
- Green-winged Teal
- Canvasback
- Redhead
- Ring-necked Duck
- Greater Scaup
- Lesser Scaup
- Surf Scoter
- White-winged Scoter
- Black Scoter
- Long-tailed Duck
- Bufflehead
- Common Goldeneye
- Barrow’s Goldeneye
- Hooded Merganser
- Common Merganser
- Red-breasted Merganser
- Ruddy Duck

**QUAIL**
- Northern Bobwhite

**LOONS**
- Red-throated Loon
- Arctic Loon
- Pacific Loon
- Common Loon
- Yellow-billed Loon

**GREBES**
- Pied-billed Grebe
- Horned Grebe
- Red-necked Grebe
- Eared Grebe
- Western Grebe
- Clark’s Grebe

**PELICANS**
- American White Pelican
- Brown Pelican

**CORMORANTS**
- Double-crested Cormorant

**HERONS**
- American Bittern
- Great Blue Heron
- Great Egret
- Snowy Egret
- Little Blue Heron
- Cattle Egret
- Green Heron
- Black-crowned Night-Heron

**IBISES**
- White-faced Ibis

**VULTURES**
- Turkey Vulture

**HAWKS, KITES, EAGLES**
- Osprey
- Mississippi Kite
- Bald Eagle
- Northern Harrier

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Colorado Field Ornithologists (CFO) is a non-profit statewide organization devoted to the study conservation, and enjoyment of Colorado’s birds. CFO’s activities include reviewing sightings of rare birds through the Colorado Bird Records Committee, publishing Colorado Birds: The Colorado Field Ornithologists’ Quarterly, conducting field trips and workshops, and holding annual conventions. CFO also owns and manages COBirds, the Colorado birding community’s online mailing list. To join COBirds or CFO, or for more information, visit us online at http://www.cfo-link.org.

The Colorado Bird Records Committee (CBRC) is a standing committee of the Colorado Field Ornithologists. The CBRC maintains records documenting bird distribution and occurrence in Colorado, and archives these records at the Denver Museum of Nature and Science. Through these efforts, the CBRC maintains the authoritative bird lists for the state of Colorado and for each of its counties.

Last Updated March 14, 2006

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APPENDIX D  TOWN OF CASTLE ROCK BIRD CHECKLIST
CHECKLIST OF BIRDS ON THE EAST PLUM CREEK TRAIL

Date ___________________________________________ Time __________________________
Weather ____________________________ Temp __________________________
Total Species ____________________________
Observers ____________________________________________

GROSBEAKS, BUNTINGS
- Rose-breasted Grosbeak …………………… MR
- Black-headed Grosbeak …………………… MR
- Blue Grosbeak …………………… SC
- Lazuli Bunting …………………… SC
- Indigo Bunting …………………… SU
- Dickcissel …………………… SU

BLACKBIRDS, GROSBEAKS
- Red-winged Blackbird …………………… SR
- Red-headed Blackbird …………………… SC
- Western Meadowlark …………………… YC
- Brewer’s Blackbird …………………… YC
- Common Grackle …………………… SC
- Great-tailed Grackle …………………… SU
- Brewer’s Mockingbird …………………… SC
- Orchard Oriole …………………… SR
- Bullock’s Oriole …………………… SU
- Baltimore Oriole …………………… SC

FINCHES
- House Finch …………………… YC
- Common Redpoll …………………… YU
- Pine Siskin …………………… YU
- American Goldfinch …………………… YU
- Lesser Goldfinch …………………… SC

INTRODUCED IN USA
- House Sparrow …………………… YU
- European Starling …………………… YC

This checklist is consistent with the American Ornithologists’ Union Checklist of North American Birds, 1998, updated 2003.

If you would like additional information on the East Plum Creek Trail and other Castle Rock trails, or if you identify birds not listed, please contact the Town of Castle Rock Parks & Recreation Department at (303) 814-7444.

LEGEND
W = Winter  S = Spring/Summer  Y = Year-round  M = Migrant
C = Commonly Occurs regularly in moderate numbers  U = Uncommonly Occurs regularly but in small numbers  R = Rare: Occurs infrequently