WILDLIFE SURVEY AND HABITAT EVALUATION FOR THE TOWN OF SUPERIOR, COLORADO

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1.0 INTRODUCTION

1.1 BACKGROUND AND STUDY PURPOSE

In 2001, the Town of Superior (hereafter referred to as the Town and refers to both the Town of Superior government and the geographic extent of the Town of Superior) completed its Comprehensive Plan for the community. This plan addresses the remaining areas of the town to be developed. Public meetings were held and numerous citizens expressed interest in protecting and continuing the presence of wildlife in Superior throughout the development process.

Additionally, the Town Board of Trustees appointed interested citizens as members of the Open Space Advisory Committee (OSAC). OSAC members provide recommendations to the Board for areas that should be set aside within a planned development for open space. As part of the Town's OSAC charter (2003a), wildlife habitat, hunting and feedings areas, migration corridors, and other criteria are to be considered when evaluating land for open space areas.

In February 2003, the Town contracted with Smith Environmental, Inc. (SEI) to perform a wildlife assessment of 18 privately owned properties (hereinafter referred to as the study area) and develop geographic information systems (GIS) mapping of wildlife data. The Town identified the properties to be studied. The goal of the project is to describe wildlife habitats, corridors, enhancement opportunities and human interaction with wildlife on each of these properties to provide a basis for: 1) making property acquisition recommendations, 2) evaluating development proposals, and 3) assisting in the development of an Open Space Management Plan.

1.2 LOCATION OF STUDY AREA

The Town is located between U.S. Highway (U.S.) 36 to the north and Colorado State Highway (SH) 128 to the south, approximately five miles southeast of the City of Boulder (see Figure 1.2-1). McCaslin Boulevard is the major north-south roadway through the Town and the study area. Most of the Town is located in southeastern Boulder County, with a small portion of land in northern Jefferson County. Downtown Denver is approximately 20 miles to the southeast. The properties are largely undeveloped and several are currently proposed for development (see Figure 1.2-2).

1.3 ENVIRONMENTAL SETTING

The study area is generally characterized by gentle to moderately rolling topography, rising from east to west. Topographic lows occur along Coal Creek and Rock Creek, the two principal drainages through the Town. These creeks drain to the northeast into Boulder Creek, a tributary of the South Platte River. Historically, native mixed-grass and tall-grass prairie dominated in the upland areas and trees, shrubs and grasses dominated in the riparian areas of the Town. Dominant wildlife species likely included typical Central Plains keystone species including: black-tailed prairie dogs (*Cynomys ludovicianus*), black-footed ferret,

Fig 1.2-1

Fig 1.2-2

(*Mustela nigripes*), bison (*Bison bison*), pronghorn (*Antilocapra americana*), western rattlesnake (*Crotalus viridus*), and numerous songbird and raptor species. The introduction of large-scale human disturbances including settlement, coal-mining and conversion of prairie to agricultural use permanently changed the physical and biological features of the landscape.

The Town and surrounding vicinity contain a variety of wildlife because of its location between the foothills and the plains. The study area likely receives infrequent visits from species inhabiting plains, foothill, montane, and aquatic/riparian habitats. The Town is the edge of geographical range for numerous species. The abundance of wildlife species varies widely within and across habitats can not be obtained without detailed population studies.

The Colorado Natural Heritage Program (CNHP) identifies the Town vicinity, and more specifically, the Louisville quadrangle, as an ecologically important area. They identify four Potential Conservation Areas (PCA's) within the Louisville quadrangle (see Figure 1.3-1). These PCA's are remnants of historical (pre-disturbance) native plant and animal communities and host several biologically rare and imperiled species. Several of these species are listed and protected as Threatened under the Endangered Species Act, including the bald eagle (*Haliaeetus leucocephalus*), Ute ladies'-tresses orchid (*Spiranthes diluvialis*) and the Preble's meadow jumping mouse (*Zapus hudsonius preblei*).

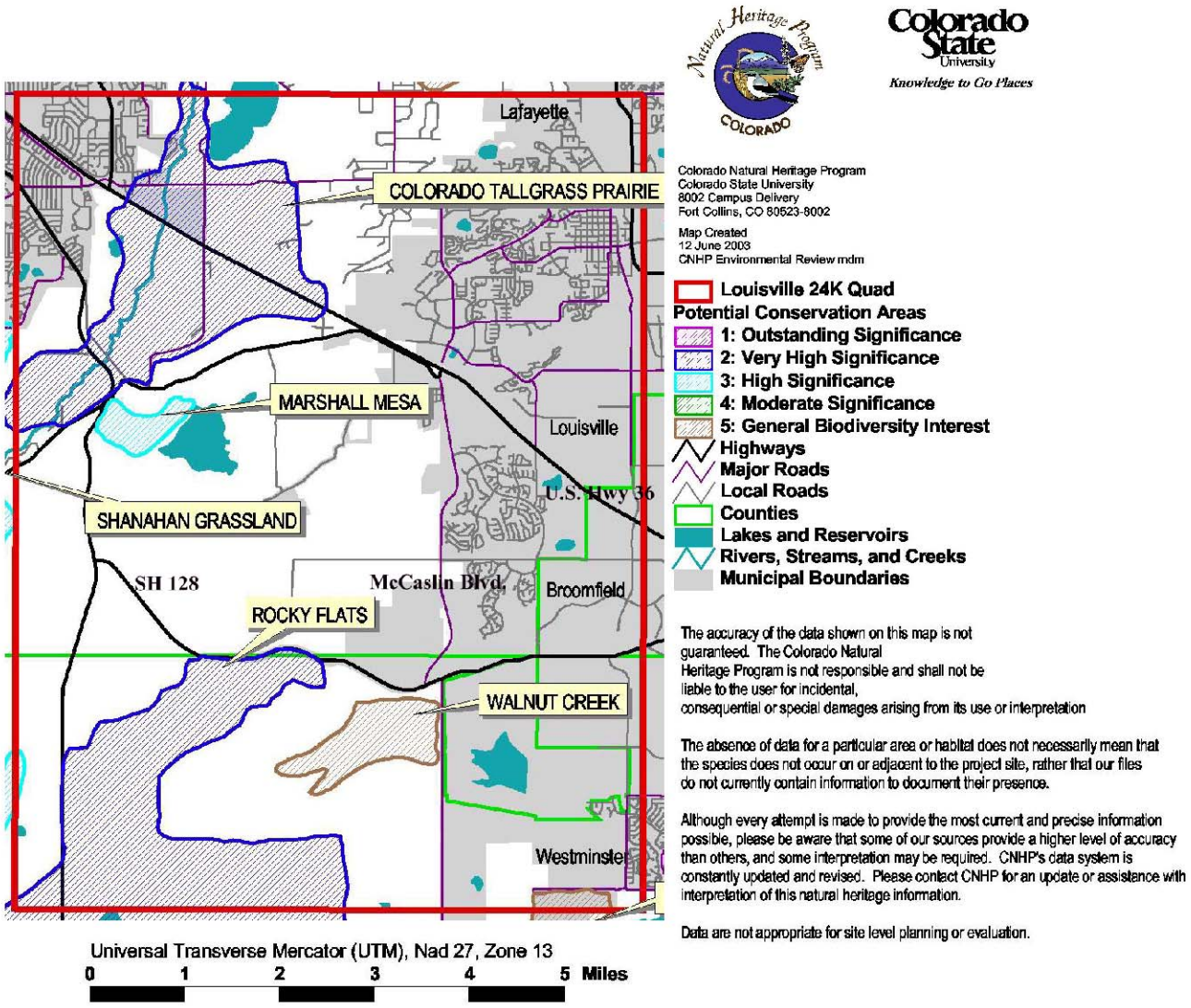
1.4 WILDLIFE ABUNDANCE TERMINOLOGY

Population estimates in this report are given in terms of relative abundance, not absolute numerical value. These relative terms are as follows: casual/accidental, very rare, rare, uncommon, sparsely common, fairly common, common and abundant. Birds are the only wildlife group for which the abundance term has a numerical value (Andrews and Righter 1992). The abundance term and associated numerical value are as follows:

- Abundant: >100/day in appropriate season and habitat
- Common: 25 – 100/day
- Fairly Common: 10 – 25/day
- Uncommon: 1 – 10/day
- Rare: 1 – 5/day
- Very Rare: 10 – 40 (for the state as a whole, or within certain areas or seasons)
- Causal: 4 – 9 records
- Accidental: 1 – 3 records

Abundance categories indicate the average number of birds that would be seen by an observer over many trips in several years in the appropriate season, area and habitat. They do not indicate the number of birds that can be seen by a specialist studying or searching for a particular species. Relative abundance for amphibians, reptiles and mammals are expressed in these aforementioned relative terms and represents the professional judgment of the author making the estimate. To generate numerical population estimates for the study area would be an improper use of the very limited data. More technical studies (small mammal trapping transects, pitfall traps, etc.) are needed to accurately develop this information.

Figure 1.3-1. CNHP (2003) Potential Conservation Areas in the Louisville Quadrangle



Source: CNHP (2003)

2.0 METHODOLOGY

2.1 LITERATURE REVIEW

Prior to the commencement of field evaluations, an initial field reconnaissance and literature review was conducted to determine types of habitats present on each property. Literature reviewed included the Colorado Division of Wildlife's Natural Diversity Information Source database (2003), Hammerson (1999) data of amphibians and reptiles, Menough (2003) data of birds, Andrews and Righter (1992), Kaempfer (1998), Kingery (1998), and Fitzgerald et al. (1994) data of mammals. The ecological types observed during the field reconnaissance are listed on Table 2.1-1. Aerial photographs were obtained of each property at a scale ranging from 1:2,500 to 1:14,750, scales suitable for aerial photo interpretation and identification of on-ground features and ecological types.

2.2 FIELD WORK

Aerial photographic features were inspected and checked in the field by an experienced field biologist. Features missed by photo-interpretation were drawn on the aerial photos. After the aerial photo feature verification was completed, the boundaries for each property and each significant habitat type present were recorded using a Trimble global positioning system (GPS) on properties for which landowner access was granted. Walking or driving the boundary with an all-terrain vehicle recorded x-y coordinate points along the boundary.

While using the GPS, the biologist also recorded and qualitatively ranked 13 pertinent habitat attributes including features present, wildlife species seen, and human disturbance elements present on a standard Habitat Quality Rating Form (HQRF) data sheet (see Figure 2.2-1). An HQRF was completed for each major habitat type present on each property.

Habitat quality data were recorded on the HQRF, not the number of species or individual animals seen. It was collected for birds (primarily songbirds and passerines), raptors (eagle, hawk, falcon, owl and vulture species), waterbirds (waterfowl, wading birds and shore birds), mammals, reptiles (snakes, lizards and turtles) and amphibians (salamanders, frogs and toads), and other wildlife (including fish and any wildlife of interest not covered by the previous categories). **Nearby Habitats** were also recorded and rated.

Pristine Quality was rated based on a subjective evaluation of how current ecological conditions resemble those assumed to be present about 150 years ago, before non-indigenous settlers arrived in Colorado. **Livestock Disturbance** was recorded and rated based on the current evidence of livestock grazing on each property (i.e., the presence of livestock, coral facilities, stock tanks, and, in certain cases, the presence or distribution of weedy plant species. **Human Disturbance and Proximity** was recorded and measured as a function of both on-site usage and disturbance resulting from adjacent land uses. **Enhancement Possibilities** were recorded and rated based on aspects of each property that could be improved for the general benefit of wildlife (i.e., the removal of weedy plants, livestock

Table 2.1-1 ECOLOGICAL TYPE AND CONDITION CLASSIFICATIONS

Habitat Type	Symbol
WETLAND	
Cattail Marsh	CM
Bulrush Marsh	BM
Sedge/Rush (meadow or shoreline)	SR
Willow Shrub	WS
AQUATIC	
Open Water	OW
Stream	ST
Ephemeral Drainage	ED
Modified Drainage	MD
GRASSLAND	
Mixed Grass Prairie (0 - 33% cover)	MG (0 – 33%)
Mixed Grass Prairie (34 - 66% cover)	MG (34 - 66%)
Mixed Grass Prairie (67 – 100% cover)	MG (67 - 100%)
Weedy/Disturbed (0 - 33% cover)	WD (0 – 33%)
Weedy/Disturbed (34 - 66% cover)	WD (34 - 66%)
Weedy/Disturbed (67 – 100% cover)	WD (67 - 100%)
Wet Meadow	WM
SHRUBLAND	
Riparian Shrubland	RS
FOREST	
Riparian Forest	RF
Cottonwood Grove	CG
Urban Forest	UF
Scattered Deciduous Trees	SD
AGRICULTURAL	
Pasture	PA
Irrigation Ditch	ID
MISCELLANEOUS TYPES	
Building	BD
Roads/Recreational Trail	RD/RT
Disturbed	Dist

Figure 2.2-1. Habitat Quality Rating Form (HQRF)

Site Name: _____ Investigator: _____ Date: _____

Site Description (Ownership/Location): _____

_____

Habitat Condition/Types: _____

_____

Property Size_____ (acres)

HABITAT RATINGS:

Very Low		Low		Moderate		High		Very High	
1	2	3	4	5	6	7	8	9	10

Overall Habitat Rating: ____

Birds: ____;

_____

_____

Raptors: ____;

_____

_____

Waterbirds: ____;

_____

_____

Mammals: ____;

_____

_____

Reptiles and Amphibians: ____;

_____

_____

Other Wildlife: ____;

_____

_____

Nearby Habitats: ____;

_____

_____

Pristine Quality: ____;

_____

_____

Livestock Disturbance: ____;

_____

_____

Human Disturbance and Proximity: ____;

_____

_____

Enhancement Possibilities: ____;

_____

_____

Visual Quality: ____;

_____

_____

Special Features: ____;

_____

_____

Wildlife/Human Conflict (Y/N): ___ Literature (Y/N): ___

Wildlife Corridor (Y/N): ___ Any critical INFO needed (Y/N):___

MEMO FILE COMMENTS (use reverse side if necessary).

grazing reduction, human debris removal, planting of various vegetation types, etc.). **Visual Quality** was rated based on a subjective "general citizen" analysis of each property's physical and biological appeal to potential recreational users of the property as a designated open space area. **Special Features** were recorded and rated as a function of unique biological features present on each property (streams, ponds, wetlands, etc.). **Wildlife/Human Conflict** was recorded as the potential for negative interactions between wildlife and human uses (animal-car collisions, urban pest species, etc.). Each property's status as a **Wildlife Corridor** was also recorded.

These ratings were based on the professional judgment of SEI's wildlife biologists, not on quantitative wildlife data (e.g., wildlife population density, productivity, carrying capacity, etc.). Quantitative data were neither available nor collected for this study. Between the initial reconnaissance and the data collection periods, all properties were visited at least three times by the biologist. The limited number of visits are not sufficient to witness all wildlife species that may use each property, record all human disturbance elements, or observe all types of wildlife-human conflict. All surveys were conducted during daylight hours, which serve as a bias against recording the presence of nocturnal and crepuscular (active at dawn and dusk) species.

2.3 DATA ANALYSES

After field data collection completed, HQRF data were entered into a spreadsheet. All of the ranked variables were added together to obtain a numerical total. All rankings had equal weighting except for **Human Disturbance and Proximity**, **Enhancement Possibilities**, **Wildlife/Human Conflict** and **Wildlife Corridor**. These four latter values were determined to have greater importance relative to open space designation and preservation. **Human Disturbance and Proximity** was generally viewed as a negative attribute for open space and was multiplied by a factor of three to obtain a more substantial difference (weighting) between individual properties.

The **Enhancement Possibilities** category was also viewed as a negative attribute in terms of existing habitat quality and amount of cost and effort required for improving the property. A higher recorded value for this category meant that the property was of lower biological quality, resulting in a generally higher potential for enhancement. Values in this category were adjusted from a field–collected value to an inverted rating (10 = 1, 9 = 2, . . . 1 = 10) before entering on the spreadsheet. Therefore, a property with lower field-collected value was generally viewed as better (having better enhancement possibilities).

Two variables, **Wildlife/Human Conflict** and **Wildlife Corridor**, were assigned yes/no values in the field. Numerical values were subsequently assigned to the categories as well. Values for the **Wildlife/Human Conflict** category were assigned as follows:

- 1 for properties with no or minimal potential for conflict (positive)
- 0 for properties that will likely experience wildlife conflicts (negative)

This category was weighted only slightly as most properties had some level of human-wildlife conflict and the full extent of these conflicts were unknown based on the limited number of site visits.

The final weighted habitat attribute, the presence of a **Wildlife Corridor**, was viewed as important factor. Properties with a wildlife corridor present were assigned a "yes" value of 1, while properties lacking a corridor were assigned a "no" value of 0. To reflect the weighted significance of this attribute, properties with a wildlife corridor value of 1 were multiplied by a factor of 3. Only terrestrial corridors (Coal Creek and Rock Creek) that facilitate species movement within the Town, were considered based on their benefit to multiple wildlife groups.

After all values were assigned and entered into the spreadsheet, the final values for all fifteen attributes were added together and averaged. This average was obtained for each property and entered into a spreadsheet as the Overall Habitat Quality Ranking (OHQR) (see Section 3.2). The OHQR value for each property was then ranked against the OHQR values for all other properties. This comparative ranking serves as the basis for the recommendations for open space preservation and property acquisition discussed later in this report.

2.4 GEOGRAPHIC INFORMATION SYSTEMS MAPPING PROCESS

Habitat attribute polygons were downloaded from the GPS unit onto a computer and differentially corrected. After differential correction, the polygons were imported into the ArcView geographic information system (GIS) computer-mapping program. The polygons were then overlaid onto an aerial photograph of the Town (MapMart 2003) for which the location of geographical features are verified through the collection of GPS data. All collected and acquired data were projected in North American Datum 1983. The color aerial photograph was captured in 1999 at a one-meter square pixel resolution. The photograph was taken prior to the construction of several major development features (Flatirons Crossing Mall and several residential subdivisions).

Minimal manual editing of polygons was necessary to correct floating or non-continuous lines that may have occurred during GPS data collection. Polygon acreages were calculated and compared to the property acreages provided by the Town. If discrepancies existed, properties were re-evaluated to assure that the correct boundaries were illustrated on the final maps. ArcView coverages for roads, streams were obtained from the Colorado Department of Transportation (CDOT) (2003) and floodplains were obtained from Boulder County (2003) and the Town (2003) were overlaid onto the polygons and aerial photograph. Tabular data associated with polygons were created and edited so that all polygons and their associated features were labeled correctly. Additional coverages were drawn in ArcView to illustrate various ecological conditions/types, species and wildlife group habitats and corridors, and wildlife protection and enhancement areas.

Three sets of maps were created for each property. These include maps to illustrate the various ecological conditions and types (habitats) present on each property, species and group-specific habitat, and Wildlife Protection and Enhancement Areas. ArcView GIS coverages have been submitted to the Town to provide additional information not evident on the paper maps caused by the difficulty in observing multiple or overlapping information layers.

An available ArcView coverage for the 100 year floodplain for Coal Creek and Rock Creek, have also been included on the Wildlife Protection and Enhancement maps at the Town's request to illustrate where development may not be feasible for portions of properties.

3.0 RESULTS AND DISCUSSION

A list of wildlife species (amphibians, reptiles, birds and mammals) known or potentially occurring in the Town and its vicinity, their relative abundance and any state or federal listing has been included in Appendix A.

A discussion of the ecological types, wildlife habitat, and wildlife species resources, and protection and enhancement strategies for each property are presented Section 3.1. The wildlife protection and enhancement strategies presented are designed to increase the number of wildlife species and individual animals present on each property. Discussion of available resources and protection and enhancement opportunities provides a basis for giving ratings for, and comparisons of each property and recommendations for property acquisition. This discussion is presented in Section 3.2. Section 3.3 provides recommendations for best management strategies for development once properties, or portions thereof, have been acquired by the Town.

3.1 PROPERTY - SPECIFIC EVALUATIONS

Sections 3.1.1 – 3.1.17 and Appendix B detail ecological and wildlife features present for each property. The properties are discussed in alphabetical order, beginning after the 76th Street Property. As the Level 3 property was assessed later, in December 2003, it has been included as Appendix B. Maps illustrating wildlife habitat types, species presence/usage areas, and wildlife protection and enhancement areas are presented in each subsection

3.1.1 76th Street Property (Wiehe, Sawyer, Martinez, Huntsman and Turnbull Parcels)

Five parcels that comprise the overall property, and total approximately 30 acres. For the purposes of evaluation, all five parcels have been grouped together. This property is located at the southwest corner of the intersection of 76th Street and Marshall Road, in the northwestern portion of the Town. This property is generally covered by grassy/weedy fields interspersed with private residences, debris piles (the southern half Martinez and Turnbull parcels), and a pond with accompanying wetlands (on the Weihe parcel). There is a horse pasture on the Martinez parcel. The remnants of an old railroad grade are still present adjacent to the western edge of the overall property.

There are several land uses adjacent to this property. Boulder County Open Space owns the land to the west of this property and allows limited cattle grazing on their land. The land immediately to the north of this property is owned by a private individual (as a private residence) and CDOT, which operates an equipment storage and maintenance facility. U.S. 36 and Marshall Road are within 100 yards of the northern boundary of the property. The land on the east side of 76th Street has been developed for a commercial shopping complex. The Sagamore residential subdivision is adjacent to the property along the southern boundary.

The ecological types present on the 76th Street Property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-1.

Habitat Type	**Acreage (approx.)**	**% of property covered (approx.)**
Weedy/Disturbed (33 – 66% Cover)	14.63	43.5
Mixed Grass Prairie (33 – 66% Cover)	14.47	43.0
Urban Forested	2.39	7.1
Building	0.95	2.8
Sedge/Rush	0.72	2.1
Open Water	0.38	1.1
Cattail Marsh	0.06	<1
Willow Shrub	0.04	<1

Wildlife species visually evident or heard on the property during field surveys include: American Robin, Barn Swallow, Common Grackle, European Starling, House Finch, House Sparrow, Mallard, Red-tailed Hawk, Red-winged Blackbird, Rock Dove, Western Meadowlark, painted turtle, an unidentified snake skin shed and unidentified fish species. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-2.

Wildlife enhancement and protection strategies are presented in Table 3.1-1. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-3.

3.1-1 76th Street Property Ecological Type and Condition Map

3.1-2 76th Street Property Habitat Type and Corridor Map

Table 3.1-1 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE 76TH STREET PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement***
Amphibian and Waterbird Protection Area	*Fish Enhancement Area – pond and adjacent wetland areas on Weihe parcel – Low to Moderate $$*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
	Remove debris from pond on Weihe parcel – Low to Moderate $$	*Remove existing trash/debris piles on Martinez and Turnbull parcels – Moderate – High $$*
	Reduce slope of walls around pond on Weihe parcel to improve wildlife access and usage, create open mudflats; promote increased usage by amphibians, waterbirds – High $$	*Connect all parcels of the property via removing fences if all parcels are acquired– Low to Moderate $$*
	Remove railroad grade west of pond on Weihe parcel, connect to wetlands on W. side of berm, allow for more natural topographic-related drainage into pond – High $$	*Remove all buildings if all parcels acquired – Very High $$*
	Excavate small pond downslope (east) of existing pond to catch water overflow runoff, would supplement/improve existing wetlands – High $$	*Build a recreational trail on top of the old railroad grade (conflicts with railroad grade removal strategy)- High $$*
	Install bat boxes and bird nest boxes on fences and near wetland areas to promote species usage and diversity, added benefit of local mosquito control – Low $$	*If feasible, connect properties to existing Boulder County Open Space property to the west (potential conflicts with livestock grazing and others) - Low $$*
	Plant cottonwood trees to benefit aesthetics, raptors, birds, and mammals) - Moderate $$	Remove or restrict livestock grazing to minimize conflict with recreational users – Low $$
	Plant upland shrubs for reptile, bird and small mammal habitat - Low $$	

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-3 76th Street Property Wildlife Protection and Enhancement Map

3.1.2 Arsenault Property

This property is located at the southern terminus of 2nd Avenue and encompasses approximately 14 acres, just south of Old Town Superior. Boulder County Parks and Open Space subleases this property and allows cattle grazing as part of a scientific study. Farmer's Reservoir Irrigation Company (FRICO) Community Ditch (a concrete-lined irrigation canal) meanders along the south boundary of the property. Prairie dog activity is prominent on the northern half of the property.

There are several land uses adjacent to this property. Rogers Farm borders the property to the north and east. An office building borders the property to the southeast. Private land borders the property to the south and west.

The ecological types present on the Arsenault property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-4.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Mixed Grass Prairie (0 – 33% Cover)	9.83	69.3
Mixed Grass Prairie (33 – 66% Cover)	4.16	29.3
Scattered Deciduous	0.20	1.4

Wildlife species visually evident or heard on the property during field surveys include: American Kestrel, Black-billed Magpie, European Starling, House Sparrow, Western Meadowlark, black-tailed prairie dog and desert cottontail rabbit. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-5.

Wildlife enhancement and protection strategies are presented in Table 3.1-2. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-6.

3.1-4 Arsenault and Rogers Farm Properties Ecological Type and Condition Map

3.1-5 Arsenault and Rogers Farm Properties Habitat Type and Corridor Map

Table 3.1-2 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE ARSENAULT PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Raptor Protection Areas – mature trees and prairie dog colonies	*Install raptor perches and prairie dog predator cover on or around property to limit prairie dog movement and regulate populations by promoting predator success - Low to Moderate $$*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
	Divert water from irrigation canal down through property to create wetland habitat, diversify species and habitats present (costly acquisition of water rights and excavation costs) - High to Very High $$	Build a recreational trail on upslope portion of property (not immediately adjacent to irrigation canal) to utilize viewshed and increase recreational opportunities (potential conflict with Raptor Protection Areas) - High $$
	Plant upland shrubs for reptile, bird and small mammal habitat - Low $$	Remove livestock or restrict grazing allowed on property - Low $$

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-6 Arsenault and Rogers Farm Properties Wildlife Protection and Enhancement Map

3.1.3 Aweida Property

This property is immediately south of the Biella-Menkick property, along the east side of McCaslin Boulevard and encompasses approximately 17 acres, in the north-central portion of the Town. The majority of the Aweida property is currently disturbed by construction. The southernmost parcel, comprising approximately 5 acres will remain undeveloped as open space. The remaining 12 acres are being developed as an office park. Incorporated into the construction design for the office park is a requirement to save a maximum number of pre-existing trees, including raptor perching trees (Town of Superior 2003c). Several trees have been removed during the initial construction process.

There are several land uses adjacent to this property. The property is bordered by the Biella-Menkick property to the north (see description) and the Spicer-Carlson property (see description) on the east and south sides. A residential neighborhood is adjacent to the south side of the property.

The ecological types present on the Aweida property and their percentage of property coverage are listed following table and shown in Figure 3.1-7.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Disturbed	10.84	63.5
Weedy/Disturbed (0 – 33% Cover)	3.68	21.6
Mixed Grass Prairie (33-66% Cover)	2.05	12.0
Scattered Deciduous	0.46	2.7
Cattail Marsh	0.03	<1

Wildlife species visually evident or heard on the property during field surveys include: Barn Swallow, Black-billed Magpie, Common Grackle, European Starling, Killdeer, Mourning Dove black-tailed prairie dog, and raccoon. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-8.

Wildlife enhancement and protection strategies are presented in Table 3.1-3. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-9.

3.1-7 Aweida Property Ecological Type and Condition Map

3.1-8 Aweida Property Habitat Type and Corridor Map

Table 3.1-3 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE AWEIDA PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Raptor Protection Areas – mature trees and prairie dog areas	Retain as many trees in construction disturbance areas for raptor perches as possible (especially dead "snags") - Low $$	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
	Replace trees lost to construction activities at a minimum 1:1 ratio - Low to Moderate $$	Limit construction impacts as much as possible in disturbed north parcel - Low $$
	Install bat boxes and bird nest boxes near drainage and wetland areas across middle of property to promote species usage and diversity, added benefit of local mosquito control - Low $$	Retain southern half of parcel as open space - Low $$
		Connect to Biella-Menkick and Spicer-Carlson properties via fence removal - Low $$

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-9 Aweida Property Wildlife Protection and Enhancement Map

3.1.4 Biella-Menkick Property

This property begins at the southeast corner of the intersection of Superior Way and McCaslin Boulevard and encompasses approximately 82 acres, in the northern portion of the Town. Coal Creek runs through the north side of the property. This property is generally vacant, except for the land south of the recreational trail, which is currently used for cattle grazing. Several irrigation ditches traverse the property. The Town maintains a recreational trail and an ice arena on the north side of the property. Prairie dog activity is prominent on this site.

There are several land uses adjacent to this property. This property is bordered to the north by U.S. Highway 36 and to the west by McCaslin Boulevard. A commercial center is adjacent to the north boundary of the property. The Superior Cemetery is adjacent to a portion of the east side of the property. The Spicer-Carlson properties border the property on the east and south sides. The Aweida property also borders the property at its southwest corner.

The ecological types present on the Biella-Menkick property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-10.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Weedy/Disturbed (0 – 33% Cover)	76.0	92.8
Riparian Forested	4.3	5.2
Building	0.81	<1
Sedge/Rush	0.53	<1
Scattered Deciduous	0.21	<1

Wildlife species visually evident or heard on the property during field surveys include: Black-billed Magpie, Common Grackle, European Starling, Killdeer, Mourning Dove, black-tailed prairie dog and desert cottontail rabbit. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-11.

Wildlife enhancement and protection strategies are presented in Table 3.1-4. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-12.

3.1-10 Biella-Menkick Property Ecological Type and Condition Map

3.1-11 Biella-Menkick Property Habitat Type and Corridor Map

Table 3.1-4 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE BIELLA-MENKICK PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Raptor Protection Area - riparian forested and prairie dog areas	*Fish Enhancement Area – Coal Creek*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
Potential PMJM/ULTO Protection Area - stream with 50-m buffer on both sides	Install logs to slow water flow in creek and create fish and amphibian habitat - Moderate to High $$	Remove or restrict livestock grazing to minimize conflict with recreational users – Low $$
Songbird/Passerine Protection Area - riparian area	*Install raptor perches and prairie dog predator cover on and around edge of property to limit prairie dog movement and regulate populations by promoting predator success - Low to Moderate $$*	*Connect to Spicer-Carlson and Aweida properties via fence removal - Low $$*
Amphibian and Waterbird Protection Area	*Plant cottonwood trees to benefit aesthetics, raptors, birds, small mammals, and black-tailed prairie dog control) - Moderate $$*	
Floodplain present on property	*Plant upland shrubs for reptile, bird and small mammal habitat - Low $$*	
	Excavate pond wetlands in upland sedge/rush wetland areas along S. boundary to diversify habitat, promote usage by amphibians, reptiles and birds - High to Very High $$	
	Install bat boxes and bird nest boxes on fences and near Coal Creek to promote species usage and diversity, added benefit of local mosquito control – Low $$	

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-12 Biella-Menkick Property Wildlife Protection and Enhancement Map

3.1.5 Bolejack Property

This property is located approximately 0.5 miles north of SH 128 on the west side of McCaslin Boulevard and encompasses approximately 25.5 acres in the southwestern portion of the Town. Primary uses on this property include private residential, horse pasture and an industrial equipment repair business (situated in two yellow garage-type buildings at the north end of the property).

There are several adjacent land uses to this property. McCaslin Boulevard borders the property along the entire east side of the property. Boulder County Open Space owns the land along the south half of the western border. This land is a similar mixed grass prairie and supports limited cattle grazing. The Verhey property (see description) borders the property along the north half of the western boundary of the property.

The ecological types present on the Bolejack property and their percentage of property coverage are listed following table and shown in Figure 3.1-13.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Mixed Grass Prairie (0 – 33% Cover)	19.67	77.0
Disturbed	1.85	7.2
Mixed Grass Prairie (33 – 66% Cover)	1.66	6.5
Weedy/Disturbed (33 – 66% Cover)	1.15	4.5
Building	0.60	2.3
Open Water	0.30	1.2
Cattail Marsh	0.17	<1
Cottonwood Grove	0.09	<1
Scattered Deciduous	0.04	<1

Wildlife species visually evident or heard on the property during field surveys include: American Goldfinch, House Finch, Mourning Dove, Red-winged Blackbird, Western Kingbird, Vesper Sparrow and desert cottontail rabbit. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-14.

Wildlife enhancement and protection strategies are presented in Table 3.1-5. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-15.

3.1-13 Bolejack Property Ecological Type and Condition Map

3.1-14 Bolejack Property Habitat Type and Corridor Map

Table 3.1-5 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE BOLEJACK PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Amphibian and Waterbird Protection Area	*Plant upland shrubs for reptile, bird and small mammal habitat - Low $$*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
Raptor/Songbird Protection Area - drainage bottom cottonwood grove	*Install bat boxes and bird nest boxes on fences and near wetland areas to promote species usage and diversity, added benefit of local mosquito control – Low $$*	Remove or restrict livestock grazing - Low $$
	Plant cottonwood trees to maturity near wetland areas (provides benefits for aesthetics, raptors, birds, and small mammals) - Moderate $$	If feasible, connect properties to existing Boulder County Open Space property to the west (potential conflicts with livestock grazing and others?) - Low $$

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-15 Bolejack Property Wildlife Protection and Enhancement Map

3.1.6 Horizon Property

This property begins at the northwest corner of the intersection of West Flatiron Circle and Coalton Road and encompasses approximately 14.75 acres in the eastern portion of the Town. This site is a weedy vacant lot with a dirt access road, bordered on the north by the Coalton Recreational Trail. The pond on the east side of the property receives minimal fishing use.

There are several land uses adjacent to this property. The Coalton Recreational Trail borders the property along its northern boundary. The Horizons at Rock Creek subdivision and Autrey Reservoir occur immediately north of the trail. West Faltiron Circle borders the property on the east. Flatiron Crossing Mall occurs to the east of West Flatiron Circle. Coalton Drive borders the property to the south and receives moderate traffic volume. Restaurants, other commercial businesses and a vacant field occur to the south of Coalton Drive. Tyler Drive borders the property on the west. The Horizons at Rock Creek subdivision occurs west of Tyler Drive.

The ecological types present on the Horizon property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-16.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Weedy/Disturbed (33 – 66% Cover)	13.89	94.1
Open Water	0.68	4.6
Bulrush Marsh	0.18	1.2
Sedge/Rush	0.01	<1

Wildlife species visually evident or heard on the property during field surveys include: Common Grackle, European Starling, Mallard, Red-winged Blackbird, Rock Dove, black-tailed prairie dog, desert cottontail rabbit, and carp. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-17.

Wildlife enhancement and protection strategies are presented in Table 3.1-6. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-18.

3.1-16 Horizon Property Ecological Type and Condition Map

3.1-17 Horizon Property Habitat Type and Corridor Map

Table 3.1-6 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE HORIZON PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Amphibian, and Waterbird Protection Area - pond on E. side of property	*Plant cottonwood trees to maturity near pond and Coalton Recreational Trail (provides benefits for aesthetics, raptors, birds, small mammals, and black-tailed prairie dog control) - Moderate $$*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species, highest priority for this property – Low to Moderate $$
	Plant upland shrubs for reptile, bird and small mammal habitat - Low $$	*Construction of Americans with Disabilities Act - compliant fishing ramp/pavilion on E. side of pond on east side of pond with access to sidewalk - High to Very High $$*
	Install bat boxes and bird nest boxes on fences and near pond and Coalton Recreational Trail to promote species usage and diversity, added benefit of local mosquito control – Low $$	

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-18 Horizon Property Wildlife Protection and Enhancement Map

3.1.7 Lastoka Property

This property is located at the southwest corner of the intersection of Coalton Rd. and McCaslin Boulevard and encompasses approximately 30 acres in southwestern Superior. This property receives very little human use and retains natural mixed-grass prairie characteristics. Rock Creek runs through the property.

There are several land uses adjacent to this property. The Coalton Recreational Trail borders the property along the northern boundary. A mixed-grass prairie dog colony occurs north of the trail. McCaslin Boulevard borders the property along its eastern boundary. The Verhey property borders the property along its southern border. The land along the western boundary of the property is owned by Boulder County Parks and Open Space and limited cattle grazing occurs on this property.

The ecological types present on the Lastoka property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-19.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Mixed Grass Prairie (33 – 66% Cover)	28.62	95.5
Riparian Forested	0.61	2.0
Riparian Shrubland	0.47	1.6
Scattered Deciduous	0.26	<1

Wildlife species visually evident or heard on the property during field surveys include: American Goldfinch, Bank Swallow, Bullock's Oriole, Eastern Kingbird, Great-horned Owl, Mallard, and Red-tailed Hawk. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-20.

Wildlife enhancement and protection strategies are presented in Table 3.1-7. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-21.

3.1-19 Lastoka Property Ecological Type and Condition Map

3.1-20 Lastoka Property Habitat Type and Corridor Map

Table 3.1-7 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE LASTOKA PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Raptor Protection Area - riparian forested area	*Fish Enhancement Area – Rock Creek*	"Spot" removal of exotic weeds, re-seed weedy and disturbed areas with native plant species - Low to Moderate $$
Amphibian and Waterbird Protection Area	Install logs to slow water flow in creek and create fish and amphibian habitat - Moderate to High $$	*If feasible/possible, connect properties to existing Boulder County Open Space property to the west via fence removal (potential conflicts with livestock grazing and others?) - Low $$*
Potential PMJM/ULTO Protection Area - stream with 50-m buffer on both sides	Plant more Palustrine Emergent vegetation (cattails, sedges and rushes) and riparian shrubs to benefit amphibians, reptiles, small mammals, waterbirds, fish enhancement) - Low $$	
Songbird/Passerine Protection Area - riparian shrub and cottonwood areas	*Install bat boxes and bird nest boxes on fences and near Rock Creek to promote species usage and diversity, added benefit of local mosquito control - Low $$*	
Mammal Corridor Protection Area	*Plant upland shrubs to provide habitat for birds, small mammals - Low $$*	
Floodplain present on property		

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-21 Lastoka Property Wildlife Protection and Enhancement Map

3.1.8 Madson Property

This property is located just west of 405 South 3rd Avenue and encompasses approximately 1.5 acres in Old Town Superior. While this site is currently vacant, a past history of horse boarding and intense grazing have resulted in the proliferation of weedy plant species on this property. Aging wooden fence posts, an old car and deteriorating farm machinery also litter the property. Coal Creek flows past the northwest corner of the property.

There are several land uses adjacent to this property. The property is bordered by South 3rd Avenue and private residences to the east. A horse pasture associated with a private residence borders the north end of the property. The northeast corner of the property is adjacent to the southeast corner of the Ochsner property. Additional private land borders the west and south sides of the property.

The ecological types present on the Madson property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-22.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Weedy/Disturbed (33 – 66% Cover)	1.11	77.1
Riparian Forested	0.18	12.5
Scattered Deciduous	0.13	9.0
Building	0.02	1.4

Wildlife species visually evident or heard on the property during field surveys include: Barn Swallow and House Sparrow. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-23.

Wildlife enhancement and protection strategies are presented in Table 3.1-8. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-24.

3.1-22 Madson, Ochsner and Steward Properties Ecological Type and Condition Map

3.1-23 Madson, Ochsner and Steward Properties Habitat Type and Corridor Map

Table 3.1-8 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE MADSON PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Amphibian – Waterbird Protection Area	*Fish Enhancement Area – Coal Creek*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species, highest priority for this property – Low to Moderate $$
Songbird/Passerine Protection Areas - tree areas	Install logs to slow water flow in creek and create fish and amphibian habitat - Moderate to High $$	Remove old unused automobile, farm equipment and most of the old fence posts from the property - Moderate to High $$
Mammal Corridor Protection Area	Plant more Palustrine Emergent vegetation (cattails, sedges and rushes) and riparian shrubs to benefit amphibians, reptiles, small mammals, waterbirds, fish enhancement) - Low $$	
Potential PMJM/ULTO Protection Area - stream with 50-m buffer on both sides		
Floodplain present on property		

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-24 Madson, Ochsner and Steward Properties Wildlife Protection and Enhancement Map

3.1.9 Ochsner Property

This property is southeast of the intersection of 76th Street and Coal Creek Drive and encompasses approximately 37 acres, the north - west portion of the Town. Two irrigation ditches cross the property. Cattle graze the southeast corner of the property held under a conservation easement that is owned by the City and County of Boulder. This property has historically experienced intensive cattle grazing, but has recovered dramatically in recent years due to the removal of cattle and irrigation, especially in the southern half of the property. Coal Creek flows along the eastern edge of the property. Prairie dog activity is prominent on the north side of the property.

There are several land uses adjacent to this property. An automobile junkyard, a self-storage facility and the Steward property all border the property along the western side of the property. Coal Creek Drive forms the northern boundary of the property. A residential trailer court, Bruno's Pizza and private residences are adjacent to the eastern boundary of the property. The Madson property borders the property at the southeast corner, adjacent to the conservation easement. Boulder County Parks and Open Space owns the land south of the property and is currently constructing a recreational trail on the property.

The ecological types present on the Ochsner property and their percentage of property coverage are listed on the following table and are shown in Figure 3.1-22.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Weedy/Disturbed (0 – 33% Cover)	16.08	43.7
Mixed Grass Prairie (66 – 100% Cover)	6.44	17.5
Wet Meadow	4.83	13.1
Mixed Grass Prairie (33 – 66% Cover)	4.57	12.4
Cottonwood Grove/ Scattered Deciduous	1.82	4.9
Riparian Forested	1.80	4.9
Sedge/Rush	0.83	2.2
Cattail Marsh	0.34	<1
Building	0.06	<1

Wildlife species visually evident or heard on the property during field surveys include: Bald Eagle, Barn Swallow, Blue Jay, European Starling, House Finch, Mourning Dove, Red-tailed Hawk (possibly breeding on site), Red-winged Blackbird, Rock Dove, Western Meadowlark, black-tailed prairie dog, desert cottontail rabbit and red fox. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-23.

Wildlife enhancement and protection strategies are presented in Table 3.1-9. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-24.

Table 3.1-9 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE OCHSNER PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Raptor Protection Area - prairie dog colony and all tree areas	*Fish Enhancement Area – along Coal Creek*	Exotic/noxious weed removal (especially chicory), re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
Amphibian – Waterbird Protection Area – Coal Creek	Install logs to slow water flow in creek and create fish and amphibian habitat - Moderate to High $$	Acquire water rights associated with irrigation ditches on property - High $$
Songbird – Passerine Protection Area - Coal Creek and tree/shrub areas	Plant more Palustrine Emergent vegetation (cattails, sedges and rushes) and riparian shrubs to benefit amphibians, reptiles, small mammals, waterbirds, fish enhancement) - Low $$	*Remove S. boundary fence and connect to Boulder County Open Space property to the south (possible conflicts with cattle grazing practices on open space property and others). Remove NW boundary fence to connect to Steward property - Low $$*
Mammal Corridor Protection Area - along creek, east boundary	*Convert irrigation ditches to open pond wetlands with overflow channels (benefits for reptiles, amphibians, various bird and mammal species) - Moderate to High $$*	Recommend no large-scale building/ development in southern and eastern portions of property to preserve unique biological integrity
Potential PMJM/ULTO Protection Area - stream with 50-m buffer on both sides	*Install bat boxes and bird nest boxes on fences and near wetland areas to promote species usage and diversity, added benefit of local mosquito control - Low $$*	Build a "low-impact" recreational trail (e.g., elevated trail) to connect to recreation trail being built across Boulder County Parks and Open Space property to south (may conflict with various protection areas) – High $$
Floodplain present on property	*Excavate pond wetland in wet meadow area at S. end of property (benefits for amphibians, reptiles, various bird and mammal species) - High $$*	
	Install raptor perches and prairie dog predator cover on and around prairie dog towns to limit prairie dog movement and regulate populations by promoting predator success - Low - Moderate $$	

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1.10 Richmond Property

This property begins at the northeast corner of the intersection of Coalton Drive and McCaslin Boulevard and encompasses approximately 15 acres, in the south-central portion of the Town. This property is a weedy vacant lot, receiving intermittent human use.

There are several land uses adjacent to this property. The property is bordered on the west and south by McCaslin Boulevard and Coalton Drive, respectively. A mixed-grass prairie dog colony occurs west of McCaslin Boulevard. The north side of the property is bordered by a residential neighborhood. The east side of the property is bordered by the Coalton Recreational Trail and Rock Creek.

The ecological types present on the Richmond property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-25.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Weedy/Disturbed (0 – 33% Cover)	7.77	52.1
Mixed Grass Prairie (0 – 33% Cover)	7.13	47.8
Cattail Marsh - Sedge/Rush	0.01	<1

Wildlife species visually evident or heard on the property during field surveys include: American Kestrel, Great-horned Owl, Killdeer, Mourning Dove, Western Kingbird, Western Meadowlark and desert cottontail rabbit. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-26.

Wildlife enhancement and protection strategies are presented in Table 3.1-10. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-27.

3.1-25 Richmond Property Ecological Type and Condition Map

3.1-26 Richmond Property Habitat Type and Corridor Map

Table 3.1-10 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE RICHMOND PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
None	*Plant willow shrubs in existing wetland in NW corner of property and upland shrubs elsewhere to improve bird and small mammal habitat - Low $$*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species, highest priority for this property – Low to Moderate $$
	Plant cottonwood trees to maturity (benefits for aesthetics, raptors, birds, small mammals, and black-tailed prairie dog control) - Moderate $$	
	Install bird boxes on fences adjacent to property (with landowner approval) to promote species usage and diversity - Low $$	
	Install bat boxes on poles along Coalton Recreational Trail adjacent to Rock Creek to promote species usage and local mosquito control - Low $$	
	Plant upland shrubs to provide habitat for reptiles, birds and small mammals - Low $$	

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-27 Richmond Property Wildlife Protection and Enhancement Map

3.1.11 Ridge II Property

This property is located just north of Rock View Drive in the Ridge II subdivision, on the west side of McCaslin Boulevard. The property encompasses approximately 6.0 acres, in the west-central portion of the Town. This property is a largely weedy, vacant lot with a gated dirt access road, and receives minimal human use.

There are several land uses adjacent to this property. The east side of the property is bordered by McCaslin Boulevard. The north and west sides of the property are bordered by the Town of Superior Water Treatment Plant. The south side of the property is bordered by the Ridge residential subdivision.

The ecological types present on the Ridge II property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-28.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Weedy/Disturbed (33 – 66% Cover)	3.93	62.9
Mixed Grass Prairie (33 – 66% Cover)	2.29	36.6
Cattail Marsh	0.04	<1

Wildlife species visually evident or heard on the property during field surveys include: Killdeer, Red-winged Blackbird, Rock Dove, Vesper Sparrow and desert cottontail rabbit. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-29.

Wildlife enhancement and protection strategies are presented in Table 3.1-11. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-30.

3.1-28 Ridge II Property Ecological Type and Condition Map

3.1-29 Ridge II Property Habitat Type and Corridor Map

Table 3.1-11 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE RIDGE II PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
None	*Plant upland shrubs to provide habitat for reptiles, birds and small mammals - Low $$*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species, highest priority for this property – Low to Moderate $$
	Install bat boxes and bird nest boxes on along western and northern boundary fences to promote species usage and diversity, added benefit of local mosquito control - Low $$	

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-30 Ridge II Property Wildlife Protection and Enhancement Map

3.1.12 Rogers Farm Property

This property is bordered by McCaslin Boulevard (to the east) and 2nd Avenue (to the west), in Old Town Superior. It encompasses approximately 24 acres. Coal Creek runs flows through the property on the north side of the property. Uses for this property are private residential, intensive livestock grazing pasture, commercial (real estate office), and idle pasture.

There are several land uses adjacent to this property. Residential neighborhoods border the north and west sides of the property. The Arsenault property borders southern and western edges of the property. The Aweida and Biella-Menkick properties occur east of McCaslin Boulevard.

The ecological types present on the Rogers Farm property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-4.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Pasture	12.46	52.6
Mixed Grass Prairie (33 – 66% Cover)	6.21	26.2
Weedy/Disturbed (33 – 66% Cover)	2.99	12.6
Cottonwood Grove/ Scattered Deciduous	0.93	3.9
Scattered Deciduous	0.62	2.6
Urban Forested	0.23	1.0
Building	0.20	<1
Sedge Rush	0.03	<1
Cattail Marsh	0.02	<1

Wildlife species visually evident or heard on the property during field surveys include: Black-billed Magpie, Common Grackle, European Starling, Rock Dove, Western Kingbird, Western Meadowlark and black-tailed prairie dog. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-5.

Wildlife enhancement and protection strategies are presented in Table 3.1-12. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-6.

Table 3.1-12 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE ROGERS FARM PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Amphibian and Waterbird Protection Area – Coal Creek	*Fish Enhancement Area - Coal Creek*	Remove livestock grazing from property for several years to allow upland and riparian vegetation to recover, highest priority for this property - Low $$
Songbird Protection Corridor – Coal Creek	Install logs to slow water flow in creek and create fish and amphibian habitat - Moderate to High $$	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
Mammal Corridor Protection Area – Coal Creek	Plant more Palustrine Emergent vegetation (sedges and rushes) and riparian shrubs to benefit amphibians, reptiles, small mammals, waterbirds, fish enhancement) - Low $$	*Rip soil to depths of 12" to reduce impacts from soil compaction to allow for plant rooting and water absorption - Moderate - High $$*
Floodplain present on property	*Plant cottonwood trees to benefit aesthetics, raptors, birds, small mammals, and black-tailed prairie dog control - Moderate $$*	*Fence removal - Moderate $$*
		Remove buildings - Very High $$
		Remove trash from creek channel - Low $$

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1.13 Spicer-Carlson Property

These properties are located immediately east of the Biella-Menkick and Aweida properties and are bordered on the north by U.S. 36. For the purposes of evaluation, both properties have been grouped together. They encompass approximately 77 acres in the northern portion of the Town. Aside from periodic cattle grazing and irrigation ditches, these properties currently receive little use. Prairie dog activity is prominent on this site.

There are several land uses adjacent to these properties. The Biella-Menkick property borders a portion of the northern boundary. U.S. 36 also borders the property along its northern boundary. The Aweida property (see previous description) borders the property along its western side. A residential neighborhood and the Weinstein property are adjacent to the property's southern boundary.

The ecological types present on the Spicer-Carlson property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-31.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Weedy/Disturbed (0 – 33% Cover)	70.63	91.7
Open Water	2.75	3.6
Mixed Grass Prairie (0 – 33% Cover)	1.23	1.6
Weedy/Disturbed (33 – 66% Cover)	1.08	1.4
Scattered Deciduous	0.51	<1
Sedge/Rush	0.49	<1
Cottonwood Grove	0.21	<1
Cattail Marsh	0.10	<1

Wildlife species visually evident or heard on the property during field surveys include: American Goldfinch, American Robin, Bald Eagle, Barn Swallow, Belted Kingfisher, Black-capped Chickadee, Great Blue Heron, Killdeer, Northern Flicker, Red-tailed Hawk, Red-winged Blackbird, an unidentified waterfowl species, black-tailed prairie dog, desert cottontail rabbit, painted turtle, plains garter snake, largemouth bass and bluegill. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-32.

Wildlife enhancement and protection strategies are presented in Table 3.1-13. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-33.

3.1-31 Spicer-Carlson Property Ecological Type and Condition Map

3.1-32 Spicer-Carlson Property Habitat Type and Corridor Map

Table 3.1-13 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE SPICER-CARLSON PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Raptor Protection Areas - tree areas and prairie dog colonies	*Fish Enhancement Areas – 2 ponds*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
Amphibian and Waterbird Protection Areas – 2 ponds	*Excavate pond bottoms to increase depth and add fish habitat structure; once improvements are made, add fish to easternmost pond – High to Very High $$*	Remove or restrict cattle grazing to minimize conflict with recreational users – Low $$
	Install raptor perches and prairie dog predator cover on and around edge of property to limit prairie dog movement and regulate populations by promoting predator success - Low to Moderate $$	*Connect to Biella - Menkick and Aweida properties via fence removal - Low $$*
	Install bat boxes and bird nest boxes near wetland areas to promote species usage and diversity, added benefit of local mosquito control - Low $$	
	Plant cottonwood trees near ponds, along drainages and irrigation ditches to provide benefit aesthetics, raptors, birds, small mammals, and black-tailed prairie dog control - Moderate $$	
	Plant upland shrubs to provide habitat for reptiles, birds, and small mammals - Low - Moderate $$	
	Potential sedge/rush area pond excavation - High to Very High $$	

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-33 Spicer-Carlson Property Wildlife Protection and Enhancement Map

3.1.14 Steward Property

This property is southwest of the intersection of 76th Street and Coal Creek Drive (7574 Coal Creek Drive) and encompasses approximately two acres in the northwestern portion of the Town. The only current use on the property is a private residence and associated urban landscaping.

There are several land uses adjacent to this property. A self-storage facility borders the property to the south. Coal Creek Drive borders the property to the north and west. The Sagamore residential subdivison is across Coal Creek Drive along the northwest side of the property. The Ochsner property borders the property on the east side.

The ecological types present on the Steward property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-22.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Weedy/Disturbed (0 – 33% Cover)	1.45	70.0
Urban Forested	0.57	27.6
Building	0.05	2.4

Wildlife species visually evident or heard on the property during field surveys include: American Robin, Black-billed Magpie, European Starling, House Finch, House Sparrow, black-tailed prairie dog, and desert cottontail rabbit. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-23.

Wildlife enhancement and protection strategies are presented in Table 3.1-14. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-24.

Table 3.1-14 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE STEWARD PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
None	*Remove existing urban landscaping - Low - Moderate $$*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
	Plant cottonwood trees to benefit aesthetics, raptors, birds, small mammals, and black-tailed prairie dog control) - Moderate $$	*Connect to neighboring Ochsner property by removing E. boundary fence - Low $$*
	Plant upland shrubs to provide habitat for reptiles, birds and small mammals - Low $$	*Turn existing residence into a public nature/visitor center - Moderate - High $$*

*= Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1.15 Verhey Property

This property is located approximately 0.75 mile north of SH 128, on the west side of McCaslin Boulevard. It encompasses approximately 155 acres, in the southwestern portion of the Town. The property is covered by a mixed-grass prairie and is used as horse pasture.

There are several adjacent land uses to this property. Boulder County Open Space owns the land to the south and west of this property and allows limited cattle grazing on their land. The land immediately along the northwest border of this property is owned by Boulder County Parks and Open Space. The land along the northeast boundary of this property is privately owned (the Lastoka property). McCaslin Boulevard borders the northern half of the eastern side of the property. The Bolejack property (see description) borders the southern half of the east side of the property.

The ecological types present on the Verhey property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-34.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Mixed Grass Prairie (0 – 33% Cover)	140.17	90.5
Mixed Grass Prairie (33 – 66% Cover)	12.04	7.8
Pasture	1.25	<1
Open Water	1.0	<1
Building	0.33	<1
Cattail Marsh	0.06	<1

Wildlife species visually evident or heard on the property during field surveys include: American Kestrel, American Robin, Barn Swallow, Black-billed Magpie, Cinnamon Teal, Great Blue Heron, House Sparrow, Killdeer, Mallard, Red-winged Blackbird, Common Grackle, Red-tailed Hawk, Mallard, Rock Dove, House Finch, Song Sparrow, Western Kingbird, Western Meadowlark, coyote, black-tailed jackrabbit, desert cottontail rabbit, raccoon, bullsnake, racer and the tadpoles of an unidentified frog/toad species. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-35.

Wildlife enhancement and protection strategies are presented in Table 3.1-15. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-36.

3.1-34 Verhey Property Ecological Type and Condition Map

3.1-35 Verhey Property Habitat Type and Corridor Map

Table 3.1-15 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE VERHEY PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Amphibian and Waterbird Protection Area – ponds and corridors between	*Plant upland shrubs to provide habitat for reptiles, birds and small mammals - Low $$*	"Spot" removal of exotic weeds, re-seed weedy and disturbed areas with native plant species - Low to Moderate $$
	Plant cottonwood trees near ponds to provide benefit aesthetics, raptors, birds, and mammals - Moderate $$	Build a recreational trail on upslope portion of property to increase utilize viewshed and increase recreational opportunities - High $$
	Install bat boxes and bird nest boxes near ponds to promote species usage and diversity, added benefit of local mosquito control - Low $$	Remove or restrict horse grazing to minimize conflict with recreational users - Low $$
		If feasible, connect properties to existing Boulder County Open Space property to the west via fence removal (creates potential conflicts with livestock grazing and others) - Low $$

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-36 Verhey Property Wildlife Protection and Enhancement Map

3.1.16 Weinstein Property

This property begins at the southwest corner of the South 88th Street overpass of U.S. 36 and extends west to the boundary with the Spicer-Carlson property. It encompasses approximately 16 acres, in the northeast portion of the Town. This property is a weedy, vacant lot with little human use. Prairie dog activity is prominent on this site.

There are several land uses adjacent to this property. The Spicer-Carlson property borders this property at the northwest corner. U.S. Highway 36 also borders the northern side of the property. South 88th Street borders the east side of the property. A wildlife area (cattail marsh) and recreation trail (both owned by the Town) border the property on the south side. A residential neighborhood borders the property on the west side.

The ecological types present on the Weinstein property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-37.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Weedy/Disturbed (0 – 33% Cover)	16.12	99.4
Scattered Deciduous	0.04	<1
Disturbed	0.06	<1

Wildlife species visually evident or heard on the property during field surveys include: Common Grackle, European Starling, Turkey Vulture and black-tailed prairie dog. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-38.

Wildlife enhancement and protection strategies are presented in Table 3.1-16. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-39.

3.1-37 Weinstein Property Ecological Type and Condition Map

3.1-38 Weinstein Property Habitat Type and Corridor Map

Table 3.1-16 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE WEINSTEIN PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Raptor Protection Area - single mature tree and prairie dog colony	*Plant cottonwood trees to benefit aesthetics, raptors, birds, small mammals, and black-tailed prairie dog control - Moderate $$*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
	Plant upland shrubs to provide habitat for reptiles, birds and small mammals - Low $$	
	Install raptor perches and prairie dog predator cover on and around edge of property to limit prairie dog movement and regulate populations by promoting predator success - Low to Moderate $$	

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-39 Weinstein Property Wildlife Protection and Enhancement Map

3.1.17 Zaharias Property

This property begins at the southeast corner of the South 88th Street overpass of U.S. 36 and is east of the Weinstein property. It encompasses approximately 28 acres, in the northeast portion of the Town. This property is a weedy vacant lot receiving little human use. A large drainage, dominated by a cattail wetland crosses the northern portion of the property. Prairie dog activity is prominent on the upland portion of this site.

There are several land uses adjacent to this property. U.S. 36 forms the northern border of the property. South 88th Street forms the western border of the property. The Weinstein property occurs west of South 88th Street. Boulder County Open Space owns the land and the Hodgson-Harris Reservoir at and adjacent to the eastern border of the property. There is a residential subdivision adjacent to the southern boundary of the property.

The ecological types present on the Zaharias property and their percentage of property coverage are listed on the following table and shown in Figure 3.1-40.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Weedy/Disturbed (0 – 33% Cover)	26.21	94.2
Cattail Marsh	1.54	5.5
Weedy/Disturbed (33 – 66% Cover)	0.04	<1
Willow Shrub/ Cottonwood Grove	0.02	<1
Cottonwood Grove	0.01	<1

Wildlife species visually evident or heard on the property during field surveys include: Barn Swallow, Killdeer, Red-winged Blackbird, Rock Dove, and black-tailed prairie dog. Additional species not seen also use this property. General wildlife habitat associations are shown in Figure 3.1-41.

Wildlife enhancement and protection strategies are presented in Table 3.1-17. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure 3.1-42.

3.1-40 Zaharias Property Ecological Type and Condition Map

3.1-41 Zaharias Property Habitat Type and Corridor Map

Table 3.1-17 WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE ZAHARIAS PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Raptor Protection Area - prairie dog colony	*Plant cottonwood trees to provide benefit aesthetics, raptors, birds, small mammals and black-tailed prairie dog control - Moderate $$*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
Amphibian and Waterbird Protection Area - cattail marsh/willow/cottonwood area near N. boundary	*Plant upland shrubs to provide habitat for reptiles, birds and small mammals – Low $$*	*If feasible, connect to Boulder County Open Space/ Harris-Hodgson Reservoir property to the east via fence removal - Low $$*
	Plant more willow shrubs along edges of cattail marsh to benefit amphibian, bird and small mammal species - Low to Moderate $$	
	Install raptor perches and prairie dog predator cover on and around edge of property to limit prairie dog movement and regulate populations by promoting predator success - Low to Moderate $$	
	Install bat boxes and bird nest boxes near cattail marsh area and northern boundary fence to promote species usage and diversity, added benefit of local mosquito control - Low $$	

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

3.1-42 Zaharias Property Wildlife Protection and Enhancement Map

3.2 COMPARATIVE RANKINGS AND PROPERTY ACQUISITION RECOMMENDATIONS

Overall Habitat Quality Rating (OHQR) values for each property were calculated and are shown in Figure 3.2-1. OHQR values for each property were compared against each other to determine the priority for each property for open space acquisition by the Town.

OVERALL WILDLIFE HABITAT RATINGS:

Very Low		Low		Moderate		High		Very High	
1	2	3	4	5	6	7	8	9	10

Properties with a wildlife habitat rating of 7 or higher should be considered first for acquisition and conservation as open space. The Lastoka property (7.4) is the only property to meet this criterion. The Lastoka property has a large property size, a perennial water resource and vital wildlife corridor (Rock Creek), receives low human use, retains natural mixed-grass prairie habitat characteristics and hosts several other biologically significant ecological types.

Properties with a value of 5 - 6 should be considered next for acquisition. Several properties have a "Moderate" value; including the Ochsner, Biella-Menkick, Level 3 (discussed in Appendix B), Verhey, Spicer-Carlson, Zaharias, Bolejack, 76th Street, and Arsenault properties. Properties that offer either significant wildlife habitat attributes (wildlife corridors, large wetland areas, or other water resources) and/or large acreages of relatively continuous wildlife habitat are more desirable. The Ochsner, Biella-Menkick, Level 3, Verhey, Spicer-Carlson, and Zaharias properties generally fulfill both of these criteria. These six properties are listed below, in order of recommended acquisition, according to their OHQR ranking.

- The Ochsner property (6.3) has a moderate acreage and the most unique ecological diversity of any property. Water sources including Coal Creek and several irrigation ditches contribute to this diversity.
- Of the four properties with a 6.1 rating, the Biella-Menkick property should be acquired first. This property encompasses two main ecological types and incorporates the third largest amount of acreage of any of the properties. Coal Creek crosses the north end of this property and serves as a vital wildlife corridor, as it serves to connect montane and plains ecosystems.
- The Level 3 property (6.1) should be acquired second. It contains the largest acreage of any parcel. The property is dominated by two contiguous mixed-grass prairie ecological types, both in a relatively natural condition. The elevated south end of the property provides a scenic viewshed. Management activities for this property must consider the steep terrain present on the property.
- The Verhey property (6.1) has a desirable contiguous mixed-grass prairie ecological type and several biologically significant ponds. This property incorporates the second largest acreage of all the properties and an impressive viewshed.

Table 3.2-1. OHQR Ranking and Habitat Attribute Rating Table

- The Spicer-Carlson (6.1) property has a reasonably contiguous ecological type, with the exception of a biologically significant pond on the west side of the property. The Spicer-Carlson property also has the fourth largest acreage extent of all properties studied and an impressive viewshed.
- The Zaharias property (5.9) has a less favorable (less diverse) contiguous Weedy/Disturbed ecological type. The habitat and species diversity of the property is, however, enhanced by a 1.5-acre cattail/willow/cottonwood wetland area.

The other remaining properties receiving a "Moderate" rating include the Bolejack (5.7), 76th Street (5.5), and Arsenault properties (5.3). These properties are slightly less desirable due to smaller property sizes, generally less water availability, and lower habitat diversity. Of these three properties, the Bolejack property had the highest OHQR rating because it has two small wetland areas. Steep terrain, lack of water on site, and limited scenic quality for the southern half of the property limit the recreational use and value of this property. The 76th Street Property has a biologically significant pond and wetland area in the northern half of the property. The southern half of the property is moderately to heavily impacted by human activity and would require substantial financial investment to clean up debris piles and old vehicles, and find a suitable use or disposal of existing houses on the property. Various biological and human-disturbance factors cause the Arsenault property to have the lowest "Moderate" rating. The property, however, has a high scenic quality at the elevated south end of the site, offering views of Old Town Superior and the mountains. There is a developed water resource adjacent to the south end this property in the form of a concrete-lined irrigation canal. Access to and usage of this canal for the purposes of making habitat improvements to the Arsenault property would be largely dependent on the acquisition of senior water rights.

Eight of the seventeen properties evaluated earned a "Low" habitat rating. These properties include: Ridge II, Horizon, Rogers Farm, Weinstein, Richmond, Aweida, Madson, and Steward. Compared to the "High" and "Moderate" properties, these properties have smaller acreages, with lower biological quality (i.e., presence of various plant species listed as noxious weeds by the State of Colorado Department of Agriculture, higher level of or close proximity to of human disturbance, and a general lack of water resources) and lower aesthetic value. These properties may require more enhancement efforts and/or on-going maintenance upon acquisition, including higher financial investment associated with these activities. For these "Low" rated properties, their OHQR value does not necessarily reflect their priority for acquisition. Only three properties in this classification are recommended for potential acquisition for open space. Properties recommended for acquisition include Horizon (4.4), Rogers Farm (4.3) and Weinstein (4.3). Of these three properties, Rogers Farm should be acquired first to preserve the biological integrity of the Coal Creek corridor, despite the degradation present over much of the rest of the property. The Horizon property should then be acquired to preserve the pond on the eastern side of the property, adjacent to Flatirons Crossing Mall. The water resources on Rogers Farm and Horizon are important to numerous wildlife species. These water resources can be manipulated to improve wildlife habitat on these properties after more crucial enhancement steps have been taken. The Weinstein property should then be considered for acquisition as this property serves as a connection between two sizeable areas of wildlife habitat on the Spicer-Carlson and Zaharias properties. The Ridge II (4.5) and Richmond (4.2) properties are only marginally recommended for

acquisition due to a lack of biological features comprising significant habitat for any wildlife species. The usefulness of these properties is derived solely from their proximity to other undeveloped land properties owned by other entities. The Aweida (4.1), Madson (4.1) and Steward (3.7) properties are not generally recommended for open space acquisition based on the high level of human disturbance on these properties. There are two potential exceptions to this statement. The northwest corner of the Madson property adjacent to Coal Creek and the Ochsner property should be acquired to preserve the biological integrity of the Coal Creek corridor as it enters Old Town Superior. The other exception may include the southern half of the Aweida property, which is currently scheduled to remain as undeveloped open space.

Properties which contain floodplains may be considered by the Town to be more suitable for acquisition and open space designation, should private landowners be more willing to sell their properties based on the lower feasibility (i.e., risk of property loss, mandatory flood insurance requirement) for development within the floodplain.

3.3 BEST MANAGEMENT PRACTICES

After properties, or portions thereof have been acquired, SEI recommends four best management practices to the Town to ensure scenic opportunities, facilitate enjoyable recreational experiences, and foster a sense of public responsibility for local wildlife and their habitat. These suggestions are as follows:

1. **Acquire and protect properties along the Coal Creek and Rock Creek corridors** to preserve the biological integrity and connectivity of these areas as wildlife corridors. Properties with ponds and/or wetland areas sustaining or capable of sustaining fish, amphibians, reptiles and water-dependent bird species should then be acquired and protected.

2. **When feasible, acquire and protect large tracts of contiguous, quality habitat** to accommodate life history attributes for various wildlife species. These attributes include forage needs, proximity or arrangement of resources, home range and territory size, social structure, dispersal of young animals, genetic exchange within and among populations, and disease concerns, among others.

3. **No development within 100 yards of sensitive creek habitats** (primarily Coal Creek and Rock Creek) to allow wildlife species safe passage through and minimize potential conflicts with proposed protection corridors. Development should not be permitted within 50 yards of ponds or sensitive wetland areas. The purpose of this recommendation is two-fold. First the protection of wildlife species from human impacts (noise disturbance, pets, etc.) is important. Second, this buffer may also serve to minimize the risk of exposure to mosquitoes that carry the West Nile virus, a growing human health threat in Boulder County.

4. **Development impacting jurisdictional wetlands shall be mitigated for** according to the guidelines established by Section 404 of the Clean Water Act and the U.S. Army Corps of Engineers (as the regulating agency). Development should also be

done in consultation with wildlife professionals, especially the Colorado Division of Wildlife and the United States Fish and Wildlife Service to ensure compliance with all legal wildlife laws, such as the Migratory Bird Treaty Act, the Endangered Species Act, Title 33 within the Colorado Revised Statutes, and Colorado Division of Wildlife regulations.

5. **Creation of a public education program** that emphasizes the biological significance of developing habitat for and preserving native plant and wildlife species in the vicinity of the Town. A suitable example of this program is the National Wildlife Federation's Backyard Wildlife Habitat Program (2003). Informational kiosks could be built adjacent to proposed trails and/or open space trailheads to discuss the natural history of the Town and surrounding area and the importance of public stewardship of and responsibility for wildlife and other natural resources. This public education program should also discuss strategies to minimize human-urban wildlife conflicts (e.g., prairie dogs, raccoons, skunks, foxes, etc.). These guidelines are available from the Colorado Division of Wildlife.

4.0 CONCLUSION

SEI conducted a wildlife assessment and developed a GIS database of wildlife information for 17 properties in the Town during the summer of 2003. This assessment resulted in identifying the Lastoka property as having the highest overall habitat quality rating. Nine properties were identified as having a "Moderate" overall habitat quality rating. Six of these properties are specifically recommended for open space designation (Ochsner, Biella-Menkick, Level 3, Verhey, Spicer-Carlson, and Zaharias).

The results of this report are designed to assist Town administrators in land use (open space designation, future zoning determinations, development review, etc.) and land acquisition decisions. The results of this study may be used whether the Town wishes to acquire entire properties via fee title, acquire portions of individual properties, acquire conservation easements for portions of properties, or subsidize private landowners for maintaining wildlife habitat.

The recent development of several large residential subdivisions and commercial areas in the Town, and nearby Flatirons Mall (to the east of the Town) have resulted in a dramatic increase in pressure to develop the remaining undeveloped properties in the Superior area. Local land values are near record levels, making the sale of long-held, family-owned properties more likely. The citizens and administrators of the Town have proactively identified the need to preserve open space and wildlife resources contained therein, before there is no longer the capacity to do so. More importantly, with the initiation and completion of this study, they have begun to facilitate this process.

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APPENDIX A – List of wildlife species known or potentially occurring in the Superior vicinity and their estimated relative abundance

Group	Common Name	Scientific Name	Occurrence Status in the Superior area	Likely Relative Abundance in the Superior area
Amphibians	Bullfrog	*Rana catesbeiana*	Likely to occur	Common
Amphibians	Great Plains Toad	*Bufo cognatus*	May occur	Rare
Amphibians	Northern Leopard Frog	*Rana pipiens*	Likely to occur	Uncommon *State species of special concern
Amphibians	Plains Spadefoot	*Spea bombifrons*	Likely to occur	Uncommon
Amphibians	Tiger Salamander	*Ambystoma tigrinum*	Likely to occur	Common
Amphibians	Western Chorus Frog	*Pseudacris triseriata*	Likely to occur	Uncommon
Amphibians	Woodhouse's Toad	*Bufo woodhousii*	Likely to occur	Common
Reptiles	Common Garter Snake	*Thamnophis sirtalis*	Known to occur	Common *State species of special concern
Reptiles	Fence Lizard	*Sceloporus undulatus*	Likely to occur	Common
Reptiles	Gopher Snake/Bullsnake	*Pituophis catenifer*	Known to occur	Common
Reptiles	Lined Snake	*Tropidoclonion lineatum*	May occur	Rare
Reptiles	Milk Snake	*Lampropeltis triangulum*	Likely to occur	Rare
Reptiles	Northern Water Snake	*Nerodia sipedon*	May occur	Uncommon
Reptiles	Painted Turtle	*Chrysemys picta*	Known to occur	Fairly Common
Reptiles	Plains Black-headed Snake	*Tantilla nigriceps*	May occur	Rare

Reptiles	Plains Garter Snake	*Thamnophis radix*	Known to occur	Common
Reptiles	Racer	*Coluber constrictor*	Known to occur	Uncommon - Sparsely Common
Reptiles	Short-horned Lizard	*Phrynosoma hernandesi*	May occur	Uncommon
Reptiles	Six-lined Racerunner	*Cnemidophorus sexlineatus*	May occur	Uncommon
Reptiles	Smooth Green Snake	*Liochlorophis vernalis*	May occur	Rare
Reptiles	Snapping Turtle	*Chelydra serpentina*	May occur	Uncommon
Reptiles	Western Rattlesnake	*Crotalus viridis*	Known to occur	Fairly Common
Reptiles	Western Terrestrial Garter Snake	*Thamnophis elegans*	Known to occur	Common
Birds	American Avocet	*Recurvirostra americana*	Known to occur	Fairly Common
Birds	American Bittern	*Botaurus lentiginosus*	Known to occur	Rare
Birds	American Coot	*Fulica americana*	Known to occur	Fairly Common
Birds	American Crow	*Corvus brachyrhynchos*	Known to occur	Common
Birds	American Dipper	*Cinclus mexicanus*	May occur	Uncommon
Birds	American Golden Plover	*Pluvialis dominica*	May occur	Very Rare - Rare
Birds	American Goldfinch	*Carduelis tristis*	Known to occur	Common
Birds	American Kestrel	*Falco sparverius*	Known to occur	Fairly Common
Birds	American Pipit	*Anthus rubescens*	May occur	Uncommon
Birds	American Redstart	*Setophaga ruticilla*	May occur	Rare
Birds	American Robin	*Turdus migratorius*	Known to occur	Common
Birds	American Tree Sparrow	*Spizella arborea*	Known to occur	Fairly Common

Birds	American White Pelican	*Pelecanus erythrorhynchos*	Known to occur	Fairly Common *State species of special concern
Birds	American Wigeon	*Anas americana*	Known to occur	Uncommon
Birds	Ash-throated Flycatcher	*Myiarchus cinerascens*	May occur	Rare
Birds	Baird's Sandpiper	*Calidris bairdii*	May occur	Uncommon
Birds	Bald Eagle	*Haliaeetus leucocephalus*	Known to occur	Uncommon * Federally-threatened species
Birds	Baltimore Oriole	*Icterus galbula*	May occur	Rare
Birds	Band-tailed Pigeon	*Columba fasciata*	May occur	Uncommon
Birds	Bank Swallow	*Riparia riparia*	Likely to occur	Common
Birds	Barn Owl	*Tyto alba*	May occur	Rare
Birds	Barn Swallow	*Hirundo rustica*	Known to occur	Abundant
Birds	Barrow's Goldeneye	*Bucephala islandica*	May occur	Rare
Birds	Belted Kingfisher	*Ceryle alcyon*	Likely to occur	Fairly Common
Birds	Bewick's Wren	*Thryomanes bewickii*	May occur	Very Rare
Birds	Black Tern	*Chlidonias niger*	May occur	Rare
Birds	Black-and-white Warbler	*Mniotilta varia*	May occur	Casual - Rare
Birds	Black-beloccurd Plover	*Pluvialis squatarola*	May occur	Uncommon
Birds	Black-billed Cuckoo	*Coccyzus erythropthalmus*	May occur	Rare
Birds	Black-billed Magpie	*Pica pica*	Known to occur	Common
Birds	Black-capped Chickadee	*Poecile atricapillus*	Known to occur	Common
Birds	Black-crowned Night-Heron	*Nycticorax nycticorax*	Known to occur	Fairly Common

Birds	Black-headed Grosbeak	*Pheucticus melanocephalus*	May occur	Uncommon
Birds	Black-necked Stilt	*Himantopus mexicanus*	May occur	Rare
Birds	Blackpoll Warbler	*Dendroica striata*	May occur	Rare - Uncommon
Birds	Black-throated Gray Warbler	*Dendroica nigrescens*	May occur	Rare
Birds	Black-throated Sparrow	*Amphispiza bilineata*	May occur	Very Rare
Birds	Blue Grosbeak	*Guiraca caerulea*	Likely to occur	Uncommon
Birds	Blue Jay	*Cyanocitta cristata*	Known to occur	Fairly Common
Birds	Blue-gray Gnatcatcher	*Polioptila caerulea*	May occur	Rare
Birds	Blue-winged Teal	*Anas discors*	Known to occur	Fairly Common
Birds	Bobolink	*Dolichonyx oryzivorus*	Likely to occur	Uncommon
Birds	Bohemian Waxwing	*Bombycilla garrulus*	May occur	Rare
Birds	Bonaparte's Gull	*Larus philadelphia*	May occur	Rare
Birds	Brewer's Blackbird	*Euphagus cyanocephalus*	Likely to occur	Fairly Common
Birds	Brewer's Sparrow	*Spizella breweri*	May occur	Uncommon
Birds	Broad-tailed Hummingbird	*Selasphorus platycercus*	Known to occur	Uncommon
Birds	Broad-winged Hawk	*Buteo platypterus*	May occur	Rare
Birds	Brown Creeper	*Certhia americana*	May occur	Uncommon
Birds	Brown Thrasher	*Toxostoma rufum*	May occur	Very Rare
Birds	Brown-headed Cowbird	*Molothrus ater*	Known to occur	Fairly Common
Birds	Bufflehead	*Bucephala albeola*	Known to occur	Uncommon
Birds	Bullock's Oriole	*Icterus bullockii*	Known to occur	Uncommon

Birds	Bushtit	*Psaltriparus minimus*	May occur	Uncommon
Birds	California Gull	*Larus californicus*	Known to occur	Fairly Common
Birds	Calliope Hummingbird	*Stellula calliope*	May occur	Very Rare
Birds	Canada Goose	*Branta canadensis*	Known to occur	Abundant
Birds	Canvasback	*Aythya valisineria*	May occur	Rare
Birds	Carolina Wren	*Thryothorus ludovicianus*	May occur	Very Rare
Birds	Cattle Egret	*Bubulcus ibis*	Known to occur	Rare
Birds	Cedar Waxwing	*Bombycilla cedrorum*	May occur	Rare
Birds	Chestnut-collared Longspur	*Calcarius ornatus*	May occur	Rare
Birds	Chimney Swift	*Chaetura pelagica*	Likely to occur	Fairly Common
Birds	Chipping Sparrow	*Spizella passerina*	Known to occur	Common
Birds	Cinnamon Teal	*Anas cyanoptera*	Known to occur	Fairly Common
Birds	Clark's Grebe	*Aechmophorus clarkii*	May occur	Rare
Birds	Clark's Nutcracker	*Nucifraga columbiana*	May occur	Rare
Birds	Clay-colored Sparrow	*Spizella pallida*	May occur	Rare
Birds	Cliff Swallow	*Petrochelidon pyrrhonota*	Known to occur	Abundant
Birds	Common Goldeneye	*Bucephala clangula*	Known to occur	Uncommon
Birds	Common Grackle	*Quiscalus quiscula*	Known to occur	Abundant
Birds	Common Loon	*Gavia immer*	May occur	Rare
Birds	Common	*Mergus merganser*	May occur	Uncommon

	Merganser			
Birds	Common Nighthawk	*Chordeiles minor*	Known to occur	Fairly Common
Birds	Common Poorwill	*Phalaenoptilus nuttallii*	May occur	Uncommon
Birds	Common Raven	*Corvus corax*	May occur	Uncommon
Birds	Common Redpoll	*Carduelis flammea*	May occur	Rare
Birds	Common Snipe	*Gallinago gallinago*	May occur	Uncommon
Birds	Common Tern	*Sterna hirundo*	May occur	Rare
Birds	Common Yellowthroat	*Geothlypis trichas*	Likely to occur	Fairly Common
Birds	Cooper's Hawk	*Accipiter cooperii*	Likely to occur	Uncommon
Birds	Cordilleran Flycatcher	*Empidonax occidentalis*	May occur	Uncommon
Birds	Dark-eyed Junco	*Junco hyemalis*	Known to occur	Fairly Common
Birds	Double-crested Cormorant	*Phalacrocorax auritus*	Known to occur	Common
Birds	Downy Woodpecker	*Picoides pubescens*	Likely to occur	Uncommon
Birds	Dusky Flycatcher	*Empidonax oberholseri*	May occur	Uncommon
Birds	Eared Grebe	*Podiceps nigricollis*	Known to occur	Uncommon
Birds	Eastern Bluebird	*Sialia sialis*	May occur	Rare
Birds	Eastern Kingbird	*Tyrannus tyrannus*	Known to occur	Fairly Common
Birds	Eastern Phoebe	*Sayornis phoebe*	May occur	Rare
Birds	Eastern Screech-Owl	*Otus asio*	May occur	Uncommon
Birds	European Starling	*Sturnus vulgaris*	Known to occur	Abundant
Birds	Evening Grosbeak	*Coccothraustes vespertinus*	May occur	Uncommon

Birds	Ferruginous Hawk	*Buteo regalis*	Likely to occur	Fairly Common *State species of special concern
Birds	Field Sparrow	*Spizella pusilla*	May occur	Rare
Birds	Forster's Tern	*Sterna forsteri*	May occur	Rare
Birds	Fox Sparrow	*Passerella iliaca*	May occur	Uncommon
Birds	Franklin's Gull	*Larus pipixcan*	Known to occur	Uncommon
Birds	Gadwall	*Anas strepera*	May occur	Rare - Uncommon
Birds	Glaucous Gull	*Larus hyperboreus*	May occur	Rare
Birds	Golden Eagle	*Aquila chrysaetos*	May occur	Uncommon
Birds	Golden-crowned Kinglet	*Regulus satrapa*	May occur	Rare
Birds	Grace's Warbler	*Dendroica graciae*	May occur	Very Rare
Birds	Grasshopper Sparrow	*Ammodramus savannarum*	Likely to occur	Uncommon
Birds	Gray Catbird	*Dumetella carolinensis*	Known to occur	Uncommon
Birds	Gray Flycatcher	*Empidonax wrightii*	May occur	Very Rare
Birds	Great Blue Heron	*Ardea herodias*	Known to occur	Common
Birds	Great Horned Owl	*Bubo virginianus*	Known to occur	Fairly Common
Birds	Greater Scaup	*Aythya marila*	May occur	Rare
Birds	Greater White-fronted Goose	*Anser albifrons*	May occur	Rare
Birds	Greater Yellowlegs	*Tringa melanoleuca*	May occur	Rare
Birds	Great-tailed Grackle	*Quiscalus mexicanus*	May occur	Rare
Birds	Green-backed Heron	*Butorides striatus*	May occur	Rare
Birds	Green-tailed Towhee	*Pipilo chlorurus*	Known to occur	Common
Birds	Green-winged Teal	*Anas crecca*	Likely to	Uncommon

			occur	
Birds	Hairy Woodpecker	*Picoides villosus*	May occur	Uncommon
Birds	Harris' Sparrow	*Zonotrichia querula*	May occur	Uncommon
Birds	Hermit Thrush	*Catharus guttatus*	Known to occur	Common
Birds	Herring Gull	*Larus argentatus*	May occur	Uncommon
Birds	Hooded Merganser	*Lophodytes cucullatus*	May occur	Rare
Birds	Horned Grebe	*Podiceps auritus*	May occur	Rare
Birds	Horned Lark	*Eremophila alpestris*	Likely to occur	Common
Birds	House Finch	*Carpodacus mexicanus*	Known to occur	Abundant
Birds	House Sparrow	*Passer domesticus*	Known to occur	Abundant
Birds	House Wren	*Troglodytes aedon*	Known to occur	Common
Birds	Indigo Bunting	*Passerina cyanea*	May occur	Very rare
Birds	Killdeer	*Charadrius vociferus*	Known to occur	Common
Birds	Lapland Longspur	*Calcarius lapponicus*	May occur	Rare
Birds	Lark Bunting	*Calamospiza melanocorys*	May occur	Rare
Birds	Lark Sparrow	*Chondestes grammacus*	Known to occur	Fairly Common
Birds	Lazuli Bunting	*Passerina amoena*	Known to occur	Uncommon
Birds	Least Bittern	*Ixobrychus exilis*	May occur	Casual-Accidental
Birds	Least Sandpiper	*Calidris minutilla*	May occur	Uncommon
Birds	Lesser Goldfinch	*Carduelis psaltria*	Known to occur	Uncommon
Birds	Lesser Scaup	*Aythya affinis*	Known to occur	Fairly Common
Birds	Lesser Yellowlegs	*Tringa flavipes*	May occur	Uncommon

Birds	Lewis' Woodpecker	*Melanerpes lewis*	May occur	Rare
Birds	Lincoln's Sparrow	*Melospiza lincolnii*	Likely to occur	Uncommon - Fairly Common
Birds	Loggerhead Shrike	*Lanius ludovicianus*	May occur	Rare
Birds	Long-billed Curlew	*Numenius americanus*	May occur	Rare *State species of special concern
Birds	Long-billed Dowitcher	*Limnodromus scolopaceus*	May occur	Uncommon
Birds	Long-eared Owl	*Asio otus*	May occur	Rare
Birds	MacGillivray's Warbler	*Oporornis tolmiei*	Known to occur	Uncommon
Birds	Mallard	*Anas platyrhynchos*	Known to occur	Abundant
Birds	Marbled Godwit	*Limosa fedoa*	May occur	Rare
Birds	Marsh Wren	*Cistothorus palustris*	May occur	Uncommon
Birds	Merlin	*Falco columbarius*	Known to occur	Rare
Birds	Mountain Bluebird	*Sialia currucoides*	Known to occur	Fairly Common
Birds	Mountain Chickadee	*Poecile gambeli*	Likely to occur	Fairly Common
Birds	Mourning Dove	*Zenaida macroura*	Known to occur	Abundant
Birds	Nashville Warbler	*Vermivora ruficapilla*	May occur	Rare
Birds	Northern Flicker	*Colaptes auratus*	Known to occur	Fairly Common
Birds	Northern Goshawk	*Accipiter gentilis*	May occur	Rare
Birds	Northern Harrier	*Circus cyaneus*	Likely to occur	Fairly Common
Birds	Northern Mockingbird	*Mimus polyglottos*	May occur	Rare
Birds	Northern Pintail	*Anas acuta*	May occur	Uncommon

Birds	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Likely to occur	Fairly Common
Birds	Northern Saw-whet Owl	*Aegolius acadicus*	May occur	Uncommon
Birds	Northern Shoveler	*Anas clypeata*	Known to occur	Uncommon
Birds	Northern Shrike	*Lanius excubitor*	May occur	Rare
Birds	Oldsquaw	*Clangula hyemalis*	May occur	Rare
Birds	Olive-sided Flycatcher	*Contopus cooperi*	May occur	Uncommon
Birds	Orange-crowned Warbler	*Vermivora celata*	May occur	Uncommon
Birds	Orchard Oriole	*Icterus spurius*	May occur	Rare - Uncommon
Birds	Osprey	*Pandion haliaetus*	May occur	Rare
Birds	Ovenbird	*Seiurus aurocapillus*	May occur	Rare
Birds	Palm Warbler	*Dendroica palmarum*	May occur	Very Rare
Birds	Pectoral Sandpiper	*Calidris melanotos*	May occur	Uncommon
Birds	Peregrine Falcon	*Falco peregrinus*	Known to occur	Rare *State species of special concern
Birds	Pied-billed Grebe	*Podilymbus podiceps*	Known to occur	Fairly Common
Birds	Pine Grosbeak	*Pinicola enucleator*	May occur	Very Rare
Birds	Pine Siskin	*Carduelis pinus*	Known to occur	Uncommon
Birds	Plumbeous Vireo	*Vireo plumbeus*	May occur	Rare
Birds	Prairie Falcon	*Falco mexicanus*	May occur	Rare
Birds	Purple Finch	*Carpodacus purpureus*	May occur	Rare
Birds	Pygmy Nuthatch	*Sitta pygmaea*	May occur	Uncommon
Birds	Red Crossbill	*Loxia curvirostra*	May occur	Very Rare
Birds	Red Knot	*Calidris canutus*	May occur	Very Rare
Birds	Red-beloccurd Woodpecker	*Melanerpes carolinus*	May occur	Very Rare

Birds	Red-breasted Merganser	*Mergus serrator*	May occur	Rare - Uncommon
Birds	Red-breasted Nuthatch	*Sitta canadensis*	May occur	Uncommon
Birds	Red-eyed Vireo	*Vireo olivaceus*	May occur	Rare - Uncommon
Birds	Redhead	*Aythya americana*	Known to occur	Uncommon
Birds	Red-headed Woodpecker	*Melanerpes erythrocephalus*	May occur	Rare
Birds	Red-naped Sapsucker	*Sphyrapicus nuchalis*	May occur	Rare
Birds	Red-necked Grebe	*Podiceps grisegena*	May occur	Very rare
Birds	Red-necked Phalarope	*Phalaropus lobatus*	May occur	Rare - Uncommon
Birds	Red-tailed Hawk	*Buteo jamaicensis*	Known to occur	Common
Birds	Red-winged Blackbird	*Agelaius phoeniceus*	Known to occur	Abundant
Birds	Ring-billed Gull	*Larus delawarensis*	Known to occur	Common
Birds	Ring-necked Duck	*Aythya collaris*	Known to occur	Uncommon
Birds	Ring-necked Pheasant	*Phasianus colchicus*	May occur	Rare
Birds	Rock Dove	*Columba livia*	Known to occur	Abundant
Birds	Rock Wren	*Salpinctes obsoletus*	Likely to occur	Fairly Common
Birds	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	May occur	Casual/Accidental
Birds	Rough-legged Hawk	*Buteo lagopus*	May occur	Rare
Birds	Ruby-crowned Kinglet	*Regulus calendula*	May occur	Uncommon
Birds	Ruddy Duck	*Oxyura jamaicensis*	Known to occur	Uncommon
Birds	Rufous	*Selasphorus rufus*	May occur	Rare

	Hummingbird			
Birds	Sage Sparrow	*Amphispiza belli*	May occur	Very rare
Birds	Sage Thrasher	*Oreoscoptes montanus*	May occur	Rare
Birds	Sanderling	*Calidris alba*	May occur	Rare
Birds	Savannah Sparrow	*Passerculus sandwichensis*	May occur	Uncommon
Birds	Say's Phoebe	*Sayornis saya*	Known to occur	Uncommon
Birds	Scissor-tailed Flycatcher	*Tyrannus forficatus*	May occur	Very Rare
Birds	Scott's Oriole	*Icterus parisorum*	May occur	Casual
Birds	Semipalmated Plover	*Charadrius semipalmatus*	May occur	Rare
Birds	Semipalmated Sandpiper	*Calidris pusilla*	May occur	Rare - Uncommon
Birds	Sharp-shinned Hawk	*Accipiter striatus*	May occur	Uncommon
Birds	Short-eared Owl	*Asio flammeus*	May occur	Rare
Birds	Snow Bunting	*Plectrophenax nivalis*	May occur	Casual
Birds	Snow Goose	*Chen caerulescens*	May occur	Rare
Birds	Snowy Egret	*Egretta thula*	Known to occur	Rare
Birds	Snowy Owl	*Nyctea scandiaca*	May occur	Rare
Birds	Snowy Plover	*Charadrius alexandrinus*	May occur	Very Rare
Birds	Solitary Sandpiper	*Tringa solitaria*	May occur	Uncommon
Birds	Solitary Vireo	*Vireo solitarius*	Known to occur	Uncommon
Birds	Song Sparrow	*Melospiza melodia*	Likely to occur	Fairly Common
Birds	Sora	*Porzana carolina*	May occur	Uncommon
Birds	Spotted Sandpiper	*Actitis macularia*	Known to occur	Fairly Common
Birds	Spotted Towhee	*Pipilo maculatus*	Likely to	Fairly Common

			occur	
Birds	Steller's Jay	*Cyanocitta stelleri*	Likely to occur	Uncommon
Birds	Stilt Sandpiper	*Calidris himantopus*	May occur	Uncommon
Birds	Summer Tanager	*Piranga rubra*	May occur	Rare
Birds	Surf Scoter	*Melanitta perspicillata*	May occur	Rare
Birds	Swainson's Hawk	*Buteo swainsoni*	Known to occur	Fairly Common
Birds	Swainson's Thrush	*Catharus ustulatus*	Known to occur	Fairly Common
Birds	Swamp Sparrow	*Melospiza georgiana*	May occur	Rare
Birds	Tennessee Warbler	*Vermivora peregrina*	May occur	Rare
Birds	Townsend's Solitaire	*Myadestes townsendi*	Known to occur	Fairly Common
Birds	Townsend's Warbler	*Dendroica townsendi*	May occur	Rare - Uncommon
Birds	Tree Swallow	*Tachycineta bicolor*	Known to occur	Fairly Common
Birds	Tundra Swan	*Cygnus columbianus*	May occur	Rare
Birds	Turkey Vulture	*Cathartes aura*	Known to occur	Fairly Common
Birds	Varied Thrush	*Ixoreus naevius*	May occur	Rare
Birds	Veery	*Catharus fuscescens*	May occur	Rare - Uncommon
Birds	Vermilion Flycatcher	*Pyrocephalus rubinus*	May occur	Very Rare
Birds	Vesper Sparrow	*Pooecetes gramineus*	Known to occur	Common
Birds	Violet-green Swallow	*Tachycineta thalassina*	Likely to occur	Fairly Common
Birds	Virginia Rail	*Rallus limicola*	May occur	Uncommon
Birds	Virginia's Warbler	*Vermivora*	Likely to	Fairly Common

		virginiae	occur	
Birds	Warbling Vireo	*Vireo gilvus*	Likely to occur	Fairly Common
Birds	Western Bluebird	*Sialia mexicana*	May occur	Uncommon
Birds	Western Burrowing Owl	*Athene cunicularia*	May occur	Rare *State-threatened species
Birds	Western Grebe	*Aechmophorus occidentalis*	Known to occur	Fairly Common
Birds	Western Kingbird	*Tyrannus verticalis*	Known to occur	Common
Birds	Western Meadowlark	*Sturnella neglecta*	Known to occur	Common
Birds	Western Sandpiper	*Calidris mauri*	May occur	Uncommon
Birds	Western Scrub Jay	*Aphelocoma californica*	Known to occur	Uncommon
Birds	Western Snowy Plover	*Charadrius alexandrinus nivosus*	May occur	Very Rare *State species of special concern
Birds	Western Tanager	*Piranga ludoviciana*	Known to occur	Fairly Common
Birds	Western Wood-Pewee	*Contopus sordidulus*	Likely to occur	Fairly Common
Birds	Whimbrel	*Numenius phaeopus*	May occur	Rare
Birds	White-breasted Nuthatch	*Sitta carolinensis*	May occur	Uncommon
Birds	White-crowned Sparrow	*Zonotrichia leucophrys*	Known to occur	Common
Birds	White-rumped Sandpiper	*Calidris fuscicollis*	May occur	Rare
Birds	White-throated Sparrow	*Zonotrichia albicollis*	May occur	Very Rare
Birds	White-throated Swift	*Aeronautes saxatalis*	Known to occur	Common
Birds	White-winged Crossbill	*Loxia leucoptera*	May occur	Rare

Birds	White-winged Scoter	*Melanitta fusca*	May occur	Rare
Birds	Willet	*Catoptrophorus semipalmatus*	May occur	Rare
Birds	Williamson's Sapsucker	*Sphyrapicus thyroideus*	May occur	Rare
Birds	Willow Flycatcher	*Empidonax traillii*	Known to occur	Uncommon
Birds	Wilson's Phalarope	*Phalaropus tricolor*	May occur	Uncommon
Birds	Wilson's Warbler	*Wilsonia pusilla*	Known to occur	Fairly Common
Birds	Winter Wren	*Troglodytes troglodytes*	May occur	Rare
Birds	Wood Duck	*Aix sponsa*	May occur	Uncommon
Birds	Wood Thrush	*Hylocichla mustelina*	May occur	Rare
Birds	Yellow Warbler	*Dendroica petechia*	Known to occur	Fairly Common
Birds	Yellow-billed Cuckoo	*Coccyzus americanus*	May occur	Rare *Federal Candidate for listing
Birds	Yellow-beloccurd Sapsucker	*Sphyrapicus varius*	May occur	Very Rare
Birds	Yellow-breasted Chat	*Icteria virens*	May occur	Uncommon
Birds	Yellow-crowned Night-Heron	*Nyctanassa violacea*	May occur	Rare
Birds	Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*	Known to occur	Fairly Common
Birds	Yellow-rumped Warbler	*Dendroica coronata*	Known to occur	Common
Mammals	American Badger	*Taxidea taxus*	May occur	Uncommon
Mammals	Big Brown Bat	*Eptesicus fuscus*	Likely to occur	Common
Mammals	Black Bear	*Ursus americanus*	Likely to occur	Uncommon

Mammals	Black-tailed Jackrabbit	*Lepus californicus*	Likely to occur	Uncommon
Mammals	Black-tailed Prairie Dog	*Cynomys ludovicianus*	Known to occur	Common – Abundant *Federal candidate for listing
Mammals	Common Muskrat	*Ondatra zibethicus*	Likely to occur	Common
Mammals	Coyote	*Canis latrans*	Known to occur	Common
Mammals	Deer Mouse	*Peromyscus maniculatus*	Known to occur	Abundant
Mammals	Desert Cottontail	*Sylvilagus audubonii*	Known to occur	Abundant
Mammals	Eastern Cottontail	*Sylvilagus floridanus*	May occur	Uncommon
Mammals	Fox Squirrel	*Sciurus niger*	Known to occur	Common
Mammals	Fringed Myotis	*Myotis thysanodes*	May occur	Rare
Mammals	Golden-mantled Ground Squirrel	*Spermophilus lateralis*	Likely to occur	Fairly Common
Mammals	Gray Fox	*Urocyon cinereoargenteus*	May occur	Uncommon
Mammals	Hispid Pocket Mouse	*Chaetodipus hispidus*	Likely to occur	Fairly Common
Mammals	Hoary Bat	*Lasiurus cinereus*	Likely to occur	Fairly Common
Mammals	House Mouse	*Mus musculus*	Known to occur	Abundant
Mammals	Least Chipmunk	*Tamias minimus*	Likely to occur	Fairly Common
Mammals	Least Shrew	*Cryptotis parva*	May occur	Uncommon
Mammals	Little Brown Myotis	*Myotis lucifugus*	Known to occur	Abundant
Mammals	Long-eared Myotis	*Myotis evotis*	Likely to occur	Fairly Common
Mammals	Long-legged Myotis	*Myotis volans*	Likely to occur	Fairly Common

Mammals	Long-tailed Weasel	*Mustela frenata*	Likely to occur	Fairly Common
Mammals	Masked Shrew	*Sorex cinereus*	Known to occur	Fairly Common
Mammals	Meadow Vole	*Microtus pennsylvanicus*	Known to occur	Common
Mammals	Merriam's Shrew	*Sorex merriami*	May occur	Very Rare
Mammals	Montane Shrew	*Sorex monticolus*	May occur	Uncommon
Mammals	Mountain Lion	*Felis concolor*	May occur	Uncommon
Mammals	Mule Deer	*Odocoileus hemionus*	Known to occur	Fairly Common
Mammals	Northern Grasshopper Mouse	*Onychomys leucogaster*	May occur	Uncommon
Mammals	Northern Pocket Gopher	*Thomomys talpoides*	May occur	Unommon
Mammals	Plains Harvest Mouse	*Reithrodontomys montanus*	May occur	Rare
Mammals	Plains Pocket Gopher	*Geomys bursarius*	May occur	Uncommon
Mammals	Plains Pocket Mouse	*Perognathus flavescens*	Likely to occur	Fairly Common
Mammals	Prairie Vole	*Microtus ochrogaster*	Likely to occur	Fairly Common
Mammals	Preble's Meadow Jumping Mouse	*Zapus hudsonius preblei*	May occur	Rare – Uncommon *Federally-threatened species
Mammals	Raccoon	*Procyon lotor*	Known to occur	Abundant
Mammals	Red Bat	*Lasiurus borealis*	May occur	Rare
Mammals	Red Fox	*Vulpes vulpes*	Known to occur	Abundant
Mammals	Rock Squirrel	*Spermophilus variegatus*	May occur	Uncommon
Mammals	Silver-haired Bat	*Lasionycteris noctivagans*	Likely to occur	Fairly Common
Mammals	Spotted Ground	*Spermophilus*	May occur	Uncommon

	Squirrel	*spilosoma*		
Mammals	Striped Skunk	*Mephitis mephitis*	Known to occur	Abundant
Mammals	Thirteen-lined Ground Squirrel	*Spermophilus tridecemlineatus*	May occur	Uncommon
Mammals	Townsend's Big-eared Bat	*Plecotus townsendii*	May occur	Uncommon
Mammals	Virginia Opossum	*Didelphis virginiana*	May occur	Casual/Accidental
Mammals	Water Shrew	*Sorex palustris*	May occur	Uncommon
Mammals	Western Small-footed Myotis	*Myotis ciliolabrum*	Likely to occur	Fairly Common
Mammals	White-tailed Deer	*Odocoileus virginianus*	May occur	Uncommon
Mammals	White-tailed Jackrabbit	*Lepus townsendii*	Likely to occur	Uncommon

APPENDIX B

Level 3 Property

The southeast corner of the property begins just west of the intersection of Colorado Highway 128 (SH 128) and Eldorado Boulevard, at the junction of Boulder, Jefferson and Broomfield counties. It continues west along SH 128, to McCaslin Boulevard. The property borders the east side of the McCaslin Boulevard right-of-way, north to the southern end of the Hilltop subdivision. The property continues northeast along the south and east sides of the Hilltop subdivision; then extends approximately 1,315 feet east from the intersection of Maroon Peak Circle and Castle Peak Avenue (at the south end of the Rosewood subdivision); and turns more northernly, extending approximately 1,580 feet to the eastern boundary fence. The eastern boundary of the property extends south along the fence, which separates the property and the existing Level 3 office complex to the east. It encompasses approximately 195 acres, in the extreme southwestern portion of the Town. This property is an expanse of steep, gullied mixed-grass prairie receiving little human use. A narrow drainage, containing a small cattail wetland (approximately .03 acres) trends through the eastern portion of the property. Prairie dog activity occurs in southern upland portions of this site.

There are several land uses adjacent to this property. SH 128 forms the southern border of the property. Eldorado Boulevard forms the eastern border of the property. McCaslin Boulevard forms the western border of the property. The Hilltop subdivision forms a portion of the northern border. The property receives some human disturbance from a recreational trail that is parallel to the southern edge of the subdivision and a water detention basin. The property also receives slight human disturbance from a small parking area near the southeast corner of the property, adjacent to SH 128.

The ecological types present on the Level 3 property and their percentage of property coverage are listed on the following table and shown in Figure B-1.

Habitat Type	Acreage (approx.)	% of property covered (approx.)
Mixed-grass Prairie (34-66%)	174.51	89.4
Mixed-grass Prairie (0-33%)	13.96	7.1
Weedy/Disturbed (0 – 33% Cover)	5.95	3.0
Disturbed	0.78	<1
Cattail Marsh	0.07	<1

It is important to note that no wildlife species were directly observed on the date of survey (December 15, 2003). The weather was cold, clear and very windy (gusts to 30 miles per hour). This late survey date did not favor the observation of species that would ordinarily inhabit or use the property during the warmer months. Wildlife species visually evident on

the property during field surveys include: black-tailed prairie dog, coyote, and cottontail rabbit. Additional species not seen also use this property. Evidence of Canada geese was observed on the golf course adjacent to the Level 3 complex, east of the property. General wildlife habitat associations are shown in Figure B-2.

Wildlife enhancement and protection strategies are presented in Table B-1. Proposed wildlife protection areas and a range of enhancement strategies are presented in Figure B-3.

B-1. Level 3 Property Ecological Type and Condition Map

B-2. Level 3 Property Habitat Type and Corridor Map

Table B-1. WILDLIFE PROTECTION AND ENHANCEMENT STRATEGIES AND RELATIVE COSTS FOR THE LEVEL 3 PROPERTY

Wildlife Protection Strategies*	**Wildlife Enhancement Strategies***	**General Property Improvement Strategies***
Raptor Protection Area - prairie dog colonies	*Plant cottonwood trees to provide aesthetics, raptors, birds, small mammals and black-tailed prairie dog control - Moderate $$*	Exotic/noxious weed removal, re-seed weedy and disturbed areas with native plant species – Low to Moderate $$
	Plant upland shrubs to provide habitat for reptiles, birds and small mammals – Low $$	*Grade terrain to open wetland area to more sunlight – High $$*
	Plant willow shrubs and/or cottonwood trees along edges of cattail marsh to benefit amphibian, bird and small mammal species - Low to Moderate $$	Increase water flow/runoff to site to attempt to establish wetland areas in drainage bottoms – Low to Moderate $$
	Install raptor perches and prairie dog predator cover near southern edge of property to limit prairie dog movement and regulate populations by promoting predator success - Low to Moderate $$	

* = Italicized text denotes strategy tied to geographic feature and/or shown on Protection and Enhancement Map

B-3. Level 3 Property Wildlife Protection and Enhancement Map