Environmentally Sensitive Areas Report

for

Lakeview Development

January, 2023

Prepared for:

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1.0 INTRODUCTION

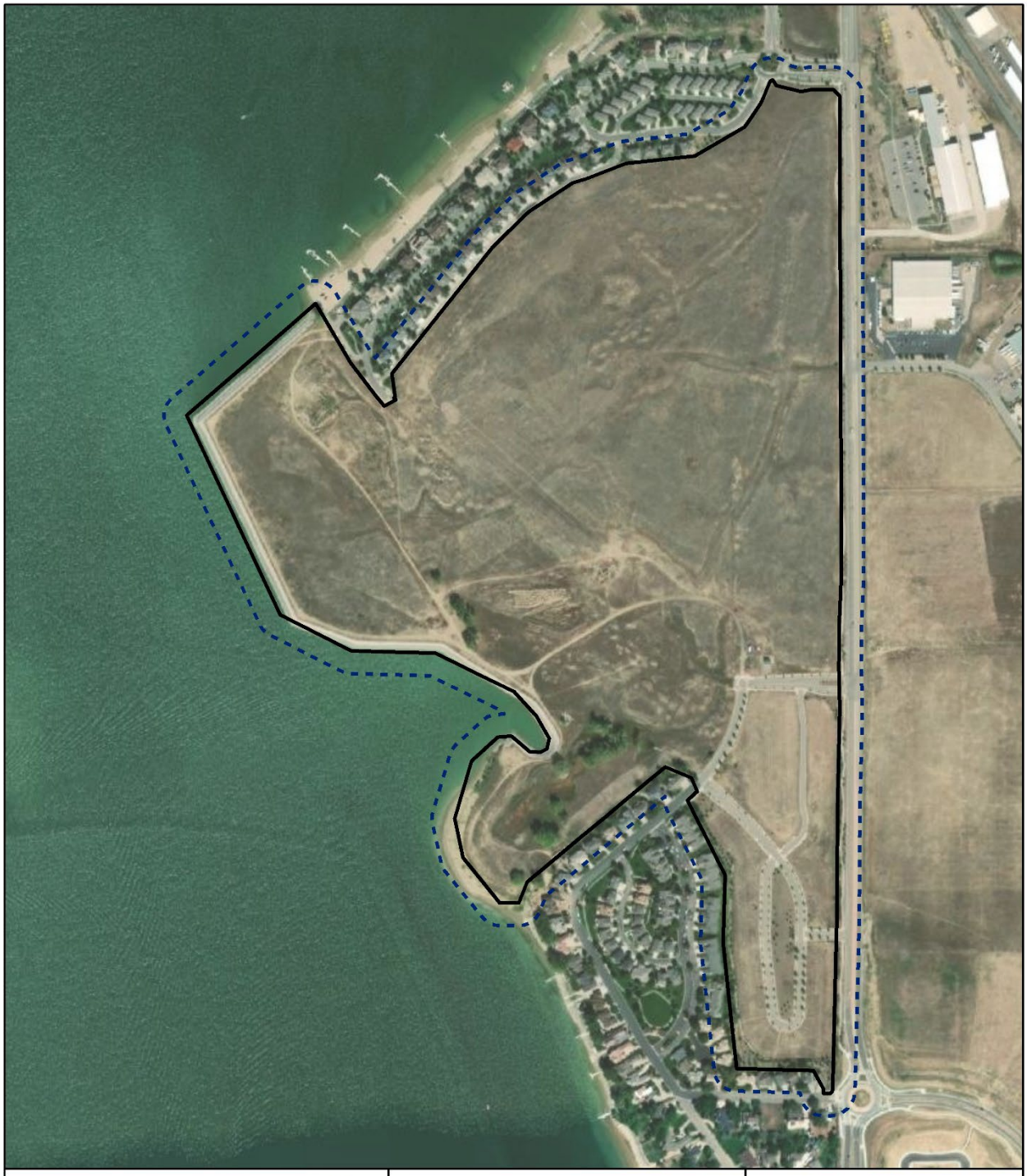
This Environmental Stie Assessment Report (ESAR) documents the environmental conditions and natural areas on the proposed Lakeview Development (Project) in accordance with City of Loveland Current Planning Division requirements (January 2019). The project area comprises approximately 155 acres along the eastern shore of Boyd Lake in northeast Loveland, Colorado (within Section 32 - Township 6 North - Range 68 West and Section 5 - Township 5 North - Range 68 West). The property location and approximate boundary is shown on Figure 1.

2.0 METHODOLOGY

In accordance with the City of Loveland - Current Planning Division ESAR requirements (January 2019), a study area was created to include all land within the project area plus land within 100 feet from the project boundary that are likely to be affected by the proposed development.

Cedar Creek completed a wetland survey and habitat evaluation for the project in September/October 2022. Undeveloped areas within 100 feet of the project were also evaluated to determine if any additional "environmentally sensitive areas" are located within the vicinity. The habitat evaluation surveys were conducted to characterize existing wildlife habitats, as well as to identify any unique or sensitive natural resource features. Observations recorded during the field evaluation included: major vegetation communities, dominant vegetation associated with each community, wildlife habitats present within the property, unique habitat features, and observations of wildlife species and/or definitive sign. Photographs showing representative views of existing habitats and all wetland areas were taken to document site conditions. Wildlife presence and habitat use was based on on-site observations and habitat presence in conjunction with the known habitat requirements of potential wildlife species. Existing habitats were also evaluated regarding their ability to support populations of threatened, endangered, and other sensitive plant and wildlife species. Natural Resources Conservation Service (NRCS) soils mapping was also reviewed to determine if any known hydric (wetland) soil units are located on the property.

The wetland surveys and sampling work were completed using the methods and techniques specified for "routine on-site delineations" in the publication, *Corps of Engineers Wetlands Delineation Manual* (USACOE 1987) and supplemented by the document, *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region, Version 2.0* (USACOE 2010). Wetland evaluations were restricted to the property boundaries in 2022. All wetlands within the study area were flagged in the field to facilitate the collection of spatial data by Northern Engineering. Boundaries and acreages presented in this report were collected by Cedar Creek using Garmin GPS handheld units with limited accuracy. All wetlands delineated on-site are constrained to the stormwater drainage in the southern portion of the property and isolated within the study area.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Property Boundary
Study Area
CEDAR CREEK
ASSOCIATES, INC.
Coordinate System:
State Plane
Sources:
Cedar Creek
Lakeview
Development
Figure 1: Project
Boundary and Study Area

3.0 ENVIRONMENTALLY SENSITIVE AREAS

In accordance with the City of Loveland Current Planning Division EASR requirements (January 2019), a study area was created to include all land within the project area plus land within 100 feet from the project boundary that are likely to be affected by the proposed development.

3.1 Site Inventory

Figure 2 shows that there are three habitats identified within the study area: upland grassland (146.7 acres), wetland/riparian (1.3 acres), and mature tree groves (1.6 acres), the remaining acres are associated with the rock armored and vegetated bank slopes of Boyd Lake. Most of the study area consists of the grassland habitats that are dominated by non-native grasses and forbs, such as smooth brome (*Bromus inermis*), western wheatgrass (*Pascopyrum smithii*), crested wheatgrass (*Agropyron cristatum*), and upland associated annual weeds such as Canada thistle (*Cirsium arvense*) or burningbush (*Bassia scoparia*), which are frequently disturbed through grazing and occasional mowing.

The wetland complex consists of narrow wetland strips along the drainage and a basin to retain stormwater runoff. This basin also supports the mature stand of cottonwood trees that surround the wetlands. The central and more saturated portions of the wetland complex support dense stands of narrowleaf cattail *(Typha angustifolia*), reed canary grass (*Phalaris arundinacea*), witchgrass (*Panicum capillare*) and field horsetail (*Equisetum arvense*). Mature woody species observed include eastern cottonwood (*Populus deltoides*), narrowleaf willow (*Populus angustifolia*), and Wood's rose (*Rosa woodsii*). The wetland/upland boundary was typically defined by a transition from dominance by hydric species to upland species described above, and more elevated topography. The riparian habitat exists along the stormwater drainage located in the southern portion of the property.

There are no slopes over 20 percent within the Lakeview project area. However, some of the shoreline vegetated slopes along the bank of Boyd Lake exceed 20 percent.

3.2 City of Loveland Identified Natural Areas

The west side of project area is the shore to Boyd Lake, which is identified as natural area #93 in the *City of Loveland Natural Areas Sites* (2008). This natural area has an overall habitat rating of 8. Boyd Lake is the largest water body in the vicinity of Loveland. The large amount of open water provides the greatest benefit to wildlife, especially migrating waterfowl. A small number of large trees and shrubs are located near the lake, which provide suitable songbird habitat and perches for raptors. The shoreline is varied but many shoreline areas have shallow gradients with habitat suitable for shorebirds, especially during periods of drawdown. The current shoreline is comprised of rock armored steep slopes for ~3,300 feet and vegetated slopes for 850 feet. Colorado Parks and Wildlife note that the lake is an important fishery for walleye, bass, crappie, bluegill, catfish and trout.


Valley Oak Dr
Mountain Shore Cir
Sunny Shore Dr
Rocky Shore Cir
Rocky Shore Dr
Medford Dr
N Boyd Lake Ave
Raptor Nest
Lake Shore Dr
Sunny Shore Cir
Raptor Nest
Valley Oak Dr
Via Del Oro Dr
Avenida del Sol Dr Northbound
Emerald Shore Cir
N Boyd Lake Ave Northbound
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Legend
Habitat
Mature Trees
Rockarmored Shore
Upland Grassland
Vegetated Slope
Wetland
Property Boundary
Lakeview Development
CEDAR CREEK ASSOCIATES, INC.
Coordinate System: State Plane
Sources: Cedar Creek
Figure 2: Project Habitats

3.3 Land Within the Ordinary High-Water Mark

Boyd Lake has an ordinary high-water mark, but it is currently well below capacity. A May 2022 article in the Loveland Reporter-Herald indicated the Boyd Lake was 17 feet below bank full and 55% of capacity. It is recommended that the ordinary high-water mark at capacity be used to establish a protective buffer.

3.3.1 Soils With a High Water Table or Being Highly Erodible

According to the NRCS soils mapping for the property, Ulm clay loam (in two map units 0%-3% slopes and 3%-5% slopes) comprises the majority of the project area. The NRCS indicates Ulm clay loam as a well-drained soil, where runoff is slow, and the erosion hazard is slight to moderate.

Areas of saturation and inundation were observed during the field survey within the riparian habitats. No problematic erosion sites were observed during the field survey, which supports NRCS assessment that the potential of erosion is slight to moderate for the study area.

3.4 Jurisdictional or Non-jurisdictional Wetlands

The U.S. Army Corps of Engineers (USACE) requires evidence of three hydric parameters (hydric soils, wetland hydrology, and wetland vegetation) to be exhibited in an area for it to qualify as wetland. Evidence of all three wetland parameters was found along the unnamed drainage (Figure 2). At this time, a formal wetland report has not been prepared for the U.S. Army Corps of Engineers (USACE).

According to the NRCS soils mapping, aquepts soils make up 7.6% of the project site and are classified as hydric soils. Their natural drainage is poor or very poor and if the soils have not been artificially drained, ground water is at or near the soil surface at some time during normal years. On the project site, these soils are associated with the wetlands that have been delineated. Wetlands supported within the stormwater drainage may be jurisdictional since the drainage has continuous hydrologic connection to Boyd Lake. However, wetlands are not continuous along the stormwater drainage channel, nor does it exhibit continuous characteristics (defined bed and bank) of a Waters of the United States channel along its length within the study area. Wetlands in the southern portion of the property have developed in relatively shallow drainage basins that collect surface water runoff from adjacent uplands (see Figure 2). No defined, unvegetated channels are present in these drainages.

3.5 Physical Linkages to Other Natural Areas or Open Space

The project area borders Boyd Lake, a Natural Area defined by City of Loveland. There are no additional physical linkages to other natural areas or open space.

3.5.1 Natural Areas and Open Lands

As indicated above, the Boyd Lake Natural Area borders the project area.

3.5.2 Wildlife Habitat Areas and Corridors

The majority of the project site is comprised of seasonally mowed pastures. Pastureland is a non-native habitat that has been cleared of native vegetation and woody species, and as a result, does not support any natural habitat features and has minimal wildlife habitat value. Urban adapted wildlife may occasionally graze pastures after spring green-up and likely support a viable prey base for higher trophic level species including resident populations of small mammals such as deer mouse (*Peromyscus maniculatus*) and prairie vole (*Microtus ochrogaster*), but overall habitat value is limited by seasonal cultivation and lack of cover from fall through early spring.

The riparian woodland/non-native grassland and wetland mix in the southwest corner are the most valuable and unique habitat features within the project area. In terms of vegetation and wildlife species diversity, wildlife habitat value, and potential to support sensitive plant and wildlife species, this habitat mix in addition to the proximity to Boyd Lake represent the most important habitats within the study area. These habitats are limited in areal extent along the Front Range and are usually only found in association with perennial and intermittent drainages and other sources of surface water. Wetlands and associated seasonal open water habitats provide foraging, resting, and breeding habitat for some urban adapted species of waterfowl such as mallard (*Anas platyrhynchos*) and Canada geese (*Branta canadensis*). Wetlands with herbaceous and woody vegetation cover also support a variety of other wildlife populations including small mammals, mammalian predators, songbirds, reptiles, and amphibians. The mature trees located along the stormwater wetland in the south end of the project site provides suitable perching, nesting, and foraging habitat for songbirds and raptors. Larger trees and snags in riparian habitats provide important foraging and/or nesting habitat for woodpeckers, variety of songbirds, and raptors such as Swainson's hawk (*Buteo swainsoni*), Cooper's hawk (*Accipiter cooperii*) and great horned owl (*Bubo virginianus*). Other species likely to occur within these wetlands are great blue heron, Woodhouse's toad (*Anaxyrus woodhousii*), chorus frog (*Pseudacris triseriata*), garter snake (*Thamnophis sirtalis*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), and striped skunk (*Mephitis mephitis*).

Non-native grassland and non-native grassland/weedy areas along previously disturbed areas also have relatively low habitat value because of the general lack of native vegetation. The non-native grassland/weedy area in the western property corner is dominated by smooth brome and prairie bindweed with scattered individuals of rubber rabbitbrush (*Ericameria nauseosa*). Rubber rabbitbrush is the only woody species supported in this area. In the northern pastures, smooth brome, western wheatgrass, crested wheatgrass, field bindweed (*Convolvulus arvensis*), burningbush (*Kochia scoparia*), Canada thistle (*Cirsium arvense*), curly dock (*Rumex crispus*), and musk thistle (*Carduus nutans*) are the dominant species. In general, wildlife species capable of existing within or using the project site are limited to those species that are either habitat generalists capable of existing in modified urban environments or species which use a wide variety of habitats for foraging over a large area.

The properties proximity to Boyd Lake provides its greatest potential as a possible wildlife movement corridor. Wetland obligate species such as double crested cormorant (*Phalacrocorax auritus*) or American white pelican (*Pelecanus erythrorhynchos*) could potential utilize the wildlife features on the project area given its location adjacent to a large, perennial waterbody. None of the habitats within project area provide suitable habitat conditions for any listed threatened or endangered species.

A red-tailed hawk was observed vocalizing and defending a nesting structure in a cottonwood tree surrounding the south wetland complex during the September field survey. This nest status was undetermined due to the survey timing; however it is likely active that year evidenced by down feathers and prey remains that were observed in the vicinity of the nest. Another small, inactive stick nest was observed in the other mature cottonwood stand on the property. Future raptor nesting in trees within the project site is likely due to proximity to Boyd Lake and lack of availability of surrounding suitable nesting habitat. No active prairie dog colonies were observed throughout the upland portion of the project area.

3.5.3 Sensitive and Specially Valued Species

A current list of federally threatened, endangered, proposed, and candidate species, and designated critical habitat that may occur within the boundary of the Site and/or may be affected by the proposed development was obtained from the USFWS IPaC website (2022). Table 3 lists the species and their designated and proposed critical habitats. Suitable habitat for CPW, Larimer County, and the City's species of concern/interest is limited due to the habitat alteration resulting from current land uses, including the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) and the burrowing owl (*Athene cunicularia*).

The bald eagle was removed from the federal list of Threatened and Endangered species in 2007, but is still afforded protections under the Migratory Bird Act Treaty (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA).

Mammals – No habitat for either of these species exists within the study area.

Birds – No bald eagle were observed in flight during the field surveys and no nests were identified in the study area. No significant burrow complexes were observed within the study area. Burrowing owls were not observed during the field survey.

Fishes – No habitat for either for either of these species exists within the study area.

Insects – Milkweed is present in the southern portion of the project area. This genus (*Asclepias sp.*) serves as the obligate host plant for the Monarch butterfly (*Danaus plexippus*), a USFWS candidate species.

Flowering Plants - The size and functionality of the wetlands along with the lack of native grasses in adjacent areas greatly reduces the likelihood that either of these species inhabit the study area or adjacent areas.

Table 3 Special Status Species with Potential to Occur on the Site

Species	Federal Status [1]	Habitat	Habitat Present?	Determination
Mammals				
Canada Lynx (Lynx canadensis)	T	Moist boreal/subalpine forests in the Western U.S. with cold, snowy winters and a high-density snowshoe hare prey base.	No	No Effect
Preble's Meadow Jumping Mouse (Zapus hudsonius preblei)	T	Lush vegetation along watercourses or herbaceous understories in wooded areas near water.	No	No Effect
Birds				
Bald Eagle (Haliaeetus leucocephalus)	DL	Winter in forested areas adjacent to large bodies of water; utilize super-canopy roost trees that are open and accessible	Yes	No Effect (surveys during nesting season)
Burrowing Owl (Athene cunicularia)	NL	Open, treeless areas within grassland, steppe, and desert biomes. Gently-sloping areas, characterized by low, sparse vegetation; associated with high densities of burrowing mammals such as prairie dogs.	Yes	No Effect (surveys during nesting season)
Eastern Black Rail (Laterallus jamaicensis ssp. jamaicensis)	T	Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy "swamps."	Yes	Habitat Not Impacted
Piping Plover (Charadrius melodus)	T	Sandy beaches, sandflats, dredge islands, and drained river floodplains.	No water depletion	No Effect
Whooping Crane (Grus americana)	E	Wetlands, inland marshes, lakes, ponds, wet meadows and rivers, and agricultural fields.	Yes	Habitat Not Impacted
Fishes				
Greenback Cutthroat Trout (Oncorhynchus clarkii stomias)	T	This species inhabits cold water streams and lakes with adequate stream spawning habitat during spring.	No	No Effect
Pallid Sturgeon (Scaphirhynchus albus)	E	Large, free-flowing, warm-water, and turbid rivers with a diverse assemblage of physical habitats.	No free-flowing water	No Effect
Insects				
Monarch Butterfly (Danaus plexippus)	C	No critical habitat has been designated for this species. Known to inhabit open fields and meadows with milkweed in the spring and summer months.	Milkweed present	Habitat Not Impacted
Flowering Plants				
Ute Ladies'-tresses (Spiranthes diluvialis)	T	Seasonally moist soils and wet meadows of drainages below 7,000 ft. of elevation.	No	No Effect
Western Prairie Fringed Orchid (Platanthera praeclara)	T	Tall grass prairie on unplowed, calcareous soils, and sedge meadows.	No	No Effect

[1]DL = Delisted, NL = Not Listed, E = Endangered, T = Threatened, PT = Proposed Threatened, C = Candidate

3.6 Existing Drainage Patterns and Floodway and Flood Fringe Boundaries

Surface runoff from the existing urban development and pastures drains toward the southern wetland complex. Floodway and flood fringe boundaries are addressed in other documents submitted for the Lakeview Development.

3.6.1 Irrigation Canals, Ditches, and Water Courses

Dryland farming is practiced on the Lakeview property, and there are no active irrigation canals or ditches present. Several swales are present in the northern pastures but provide no natural route for water to flow. This drainage appears to be ephemeral and carries water only seasonally in response to significant precipitation events.

4.0 ASSESSMENT OF POTENTIAL IMPACTS OF PROPOSED DEVELOPMENT

The proposed development would occur primarily in seasonally mowed pasture and non-native grassland habitats, which offers very limited habitat value. The development of these areas could remove potential low quality foraging habitat for avian species visiting Boyd Lake. The proposed development avoids directly impacting the higher value habitats, such as wetlands and shoreline. A small grove of mature trees may be disturbed during development.

5.0 RECOMMENDED PROTECTION MEASURES, MITIGATION, AND ENHANCEMENT

The following recommended mitigation measures should be implemented to protect or enhance habitats within the project area:

- The shoreline is divided into two segments based on similarity of features and habitat value:
    1. Rock Armored Banks – The rock armored banks are very steep and contain no vegetation cover for urban adapted wildlife species. Therefore, a buffer of at least 35 feet should apply from the ordinary high-water mark of Boyd Lake (at capacity) to protect this limited value shoreline habitat, which is in accordance with the buffer distances presented on the existing plat.
    2. Vegetated Banks – The vegetated banks along the southern portion of the property are currently degraded but could provide valuable cover and habitat for urban adapted wildlife species if restored. In addition, this area provides a connection between the wetland habitats and Boyd Lake. Therefore, a buffer of 100 feet should apply from the ordinary high-water mark of Boyd Lake (at capacity) to protect this higher value shoreline habitat. Ecological restoration of the buffer area should be considered.

- The delineated wetlands within the project area are likely jurisdictional because of the connectivity to Boyd Lake. These should be protected with a 50-foot buffer.

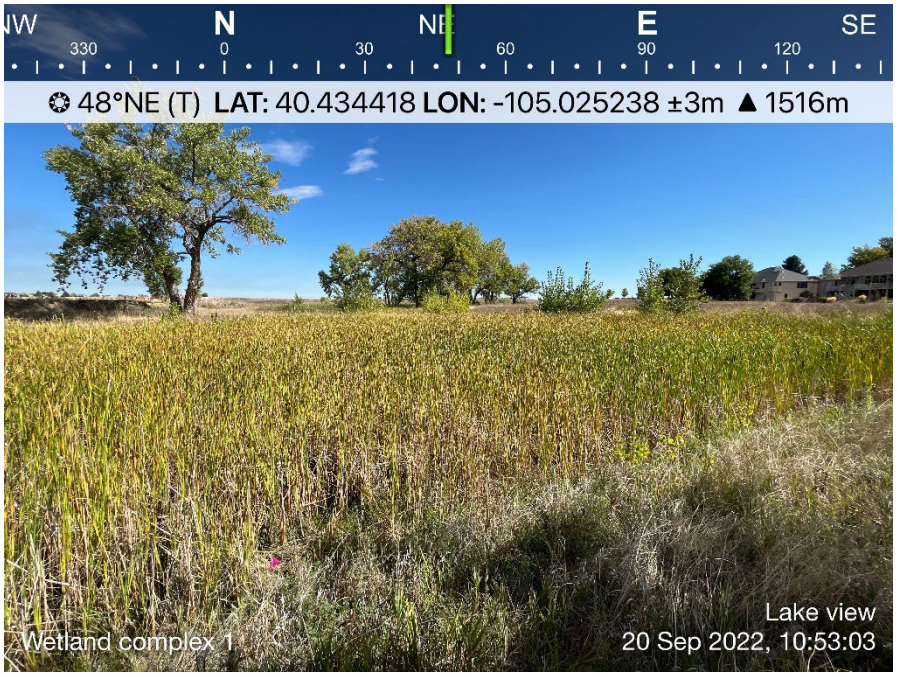
- The intensity of night lighting from portions of the proposed development facing the Boyd Lake or the wetland habitats should be shielded or directed to minimize the intrusion of artificial nighttime light into these areas. Plantings of native shrub and trees can shield light and provide valuable habitat for native species.

- With the presence of habitat for migratory birds and and raptors, its suggested that pre-clearance survey be conducting if ground-disturbing are planned during the breeding and nesting seasons. Should active nests be found, the Colorado Parks and Wildlife buffer guidance should be used.

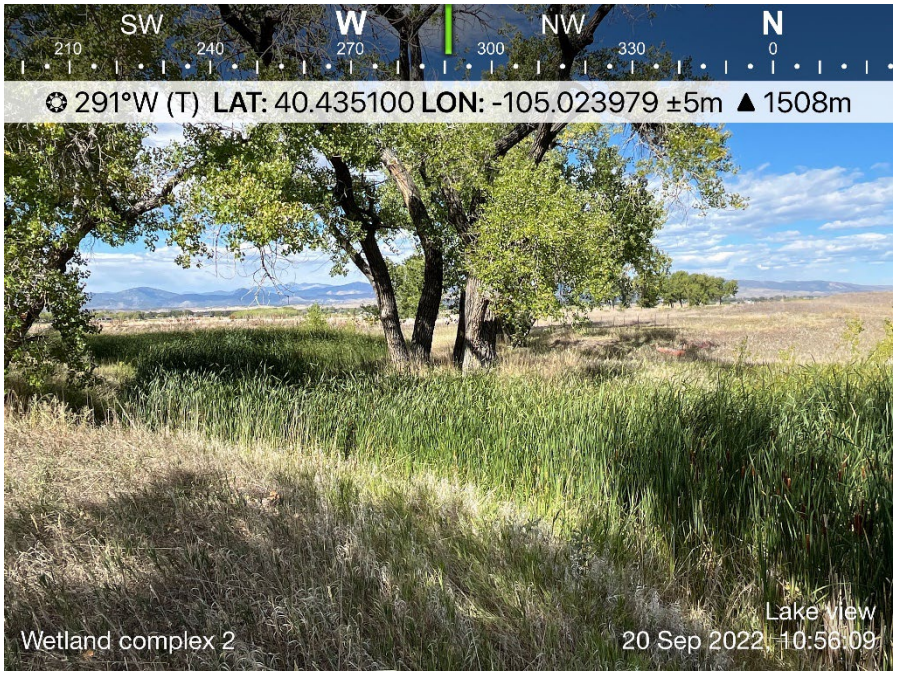
- To the extent practicable, the mature tree supporting the potential active raptor nest adjacent to the wetland should not be removed.

Appendix A: Representative Photographs

Photograph 1. Wetland complex.



Photograph 2. Wetland complex with mature trees.



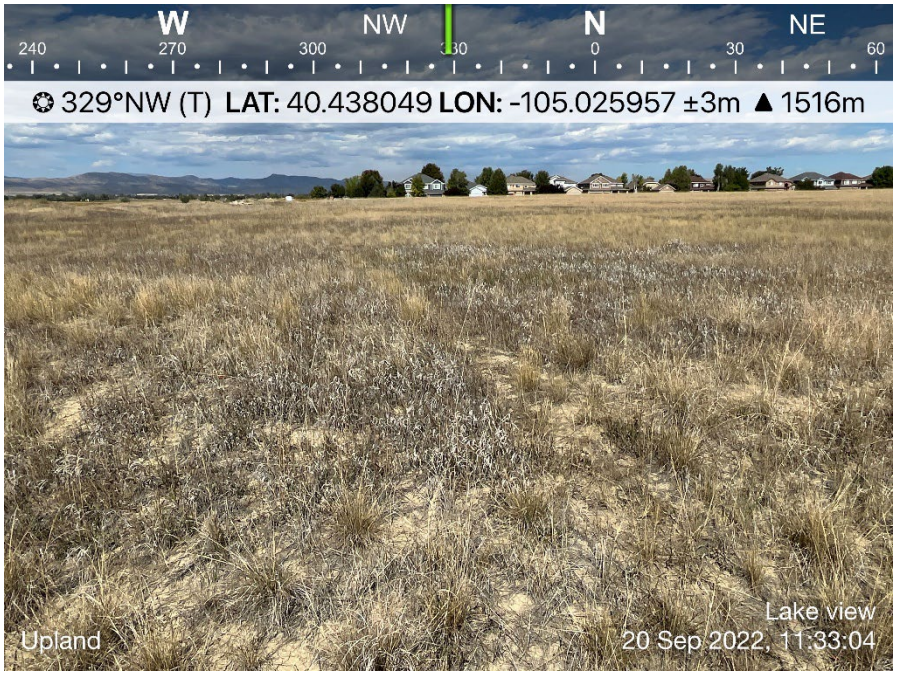
Photograph 3. Wetland complex with mature trees.

Photograph 4. Wetland complex with mature trees.

Photograph 5. Upland grassland.

Photograph 6. Mature tree grove with raptor nest.

Photograph 7. Upland grassland.



Photograph 8. Upland grassland.

Photograph 9. Rock armored banks of Boyd Lake.

Photograph 10. Vegetated banks of Boyd Lake.