



SMITH ENVIRONMENTAL & ENGINEERING
Delivering Smart Solutions for Planning, Permitting, & Design

TO: Allison James, Management Analyst II, Town of Superior
FROM: Rebecca Hannon, Smith Environmental and Engineering
RE: Development Review for Parq at Rock Creek
DATE: March 11, 2020

This memorandum was prepared to provide an ecological assessment of the proposed Parq at Rock Creek development (Project) in the Town of Superior (Town). Steel Wave is proposing to construct multi-family housing units on a parcel known as the “Zaharias Property” located adjacent to the Hodgson-Harris Reservoir. Smith Environmental and Engineering (SMITH) has reviewed the development application and will provide our assessment on the following issues: buffering and setbacks, movement corridors, water quality, and landscaping. We have also compiled some recommendations based on best management practices to implement in advance of construction.

Property Background

The Property is located in the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 29, Township 1 S, Range 69 W at the southeast corner of the South 88th Street overpass of U.S. 36 and encompasses approximately 24 acres within the Town. The Property abuts the Hodgson-Harris Reservoir Open Space to the south. The Reservoir was constructed in 1882 to store irrigation water (Spaulding and Kesler 2018). As a persistent waterbody in a semi-arid shortgrass prairie setting, the Reservoir has been a locally important habitat for migratory and resident waterfowl and shorebirds for over a century. A productive aquatic ecosystem developed over the life of the Reservoir as evidenced by the diversity of vertebrates and invertebrates known to occur (Spaulding and Kesler 2018, Jones et al. 2017).

Following construction of U.S. 36 in the early 1950s, uplands surrounding the Reservoir remained undeveloped until 1996 when the Saddlebrooke at Rock Creek development was constructed abutting the Open Space to the south. In 2003, SMITH was contracted to evaluate undeveloped lands in the Town (including the Property) for potential open space acquisition. SMITH evaluated wildlife habitat values and developed management and purchase recommendations. At that time, the Property was a weedy vacant lot and was rated lowest of five properties characterized as “moderate” in habitat value, relative to other parcels evaluated during the study.

In 2013, the Reservoir was drained and dredged, and the dam was reconstructed to meet State dam safety standards. Mitigation measures were recommended by Boulder County Parks and Open Space in an attempt to minimize the impact of this project on wildlife and habitats. However, dewatering, dredging, and dam reconstruction significantly altered habitats and the food webs that were established at the Reservoir over the prior 131 years, resulting in an apparent decrease in the abundance and

diversity of aquatic vertebrates and invertebrates as well as a decrease in the abundance of diving ducks observed on the Reservoir (Spaulding and Kesler 2018).

In December 2018, the Superior Open Space Advisory Committee engaged SMITH to provide an evaluation of the potential impact of a proposed development on the Property on wildlife and habitat values at the Open Space. SMITH addressed specific topics of concern identified by the Committee, including prairie dogs and raptors; increased human disturbance; opportunities for maintenance or enhancement; setbacks and buffering; connectivity; and long-term management. SMITH determined that the Property is ecologically degraded and occurs in a fragmented landscape, but that actions can still be taken to minimize impacts during site development.

Buffering and Setbacks

Buffers or setbacks to maintain the functionality of wildlife habitats and movement corridors is a topic frequently addressed in urban planning and widely supported by biologists. However, there is essentially no widely accepted guidance or published literature addressing it. Setbacks of 100-150 feet are most frequently employed, though there is limited evidence to support the use, or effectiveness, of such setbacks for the benefit of wildlife.

That said, buffers do insert physical space between human disturbance and potential wildlife use areas, and this approach can serve to lessen negative impacts such as lighting and noise. Additionally, when used in combination with signage and/or fencing, buffers can discourage human entry into sensitive areas. Though the Reservoir already experiences a high level of baseline light and noise pollution from the Saddlebrooke development and U.S. 36, discouraging human encroachment into the Reservoir area will be crucial to maintaining wildlife use.

According to the Parq at Rock Creek application, a minimum 118-foot distance is maintained between the high-water line of the Reservoir and the closest buildings. This is nearly double the minimum distance of 61 feet at Saddlebrooke, and the Reservoir still receives year-round use by water birds. Furthermore, the majority of this buffer space, shown on the site plan as Tract A, will be dedicated to the Town as Open Space, thus preserving the area long-term.

The proposed concrete trail is generally also over 100 feet from the high-water line, and it will also be separated from the Reservoir by two fences (the existing barbed wire fence marking the property line and a proposed vinyl fence along the trail). Although the trail represents a potential source of additional disturbance, providing a defined route for dog walkers, birdwatchers, and other recreators at least confines the disturbance and discourages trespassing.

Additional Recommendations: Consider signage requesting that residents and trail users stay on designated paths for the benefit of local wildlife. If pets will be allowed at the Parq at Rock Creek, consider including language in the pet agreement that states that off-leash or roaming pets will not be tolerated.

Movement Corridor

A movement corridor refers to a preserved, restored, or created natural area that facilitates the movement of plants and animals between habitat patches in fragmented landscapes. In urban areas, the

most significant corridors typically occur along creeks. In the vicinity of the Property, Rock Creek and its tributaries connect open lands west of McCaslin Boulevard with parks and greenspaces in developed areas within the Town. An intact riparian zone provides space and cover for wildlife and enhances the value for wildlife movement.

Because they are situated between U.S. 36 to the north, South 88th Street to the west, and Saddlebrooke to the south, the Property and Open Space are already a functionally isolated patch of habitat in the urban matrix. Therefore, maintaining any pre-existing movement corridors was considered essential. The only such corridor on the Property occurs along a tributary to Rock Creek, referred to as Varra Reservoir, that parallels U.S. 36 along the northeastern edge of the Property.

The Parq at Rock Creek development does not include any structures in the Varra Reservoir area, shown on the site plan as Tract C, and no landscaping is currently planned. The area will be preserved as privately owned common open space, but it will not have any means of access for the public. The concrete trail will overlook the area, but no fencing will be installed between the trail and wetlands that occur within the drainage.

Additional Recommendations: Fencing or signage to discourage humans and pets from entering the area would be preferred. Though not as sensitive as the Reservoir, wildlife are likely to use this area and could be disrupted by frequent human activity. Dogs and cats especially should not be permitted.

Water Quality

In undeveloped areas, precipitation falls on vegetated surfaces, where it infiltrates into the ground and/or flows along natural drainage patterns into creeks. Paved surfaces disrupt this natural flow. Water no longer infiltrates directly into the ground; it first flows over roads, parking lots, and rooftops, picking up pollutants along the way. If these pollutants enter our natural drainageways, their effects can be widespread, causing algal blooms if excess nitrogen is present or creating chemical environments that limit the macroinvertebrate populations that form the base of aquatic food webs.

States and municipalities enact stormwater regulations to mitigate the effects of these pollutants entering our drainageways. The majority of the stormwater runoff from the Parq at Rock Creek will be diverted to two detention ponds: one existing pond located west of South 88th Street and a proposed pond in the eastern extent of the Property. The existing topography will be maintained in Tract C, preserving natural runoff into the Varra Reservoir. The only water that will continue to flow towards the Hodgson-Harris Reservoir will come from the slope southeast of the proposed trail. This water will flow over a vegetated surface, allowing natural infiltration and filtering of pollutants. The Project, therefore, should not degrade the water quality at the Reservoir.

Additional Recommendations: Ensure that plowed snow is placed such that it will melt and drain into existing storm sewers wherever possible. Minimize the use of salt-based ice melts, especially on the trail. Do not allow vehicles that are leaking oil or other fluids to remain parked on the Property.

Landscaping

While landscaping is generally designed for the human environment, the placement and selection of vegetation can influence wildlife, specifically in buffer areas and open spaces. Trees, shrubs, and ground

cover that require little maintenance, and thus minimal human disturbance, can provide nesting and roosting areas for birds. Native vegetation is not only well-adapted to local soil and moisture conditions, it is also beneficial for local insects, including pollinators.

The Parq at Rock Creek will include traditional landscaping (mowed lawns, pruned trees) throughout the interior of the development. However, Tracts A (Town Open Space), B (Detention Pond), and C (Varra Reservoir) have been designed as naturalized areas. Grass seed mixes will be used in these areas rather than irrigated bluegrass sod, and trees and shrubs will be clumped in a more natural spacing. Mowing will only occur directly adjacent to the trail.

Additional Recommendations: Consider adjusting the species in the Rock Creek Irrigated Native Seed mix to reflect native species more typical of the area. Consider adding more forbs (wildflowers) to this mix and the Irrigated Basin Native Seed mix.

Pre-Construction Requirements

The following items are already requirements for final approval of the construction documents, but they are reiterated here for their ecological significance.

1. Protection of Nesting Birds: All but a handful of bird species are protected by the Migratory Bird Treaty Act. If surface disturbance activities, especially clearing and grubbing, will begin during the bird nesting season (approximately April through August), nesting bird surveys should be conducted by a qualified wildlife biologist. Ground-nesting species would be the primary focus, but a raptor survey within a 1/3-mile radius would also be recommended. The prairie dog colony should also be surveyed for Burrowing Owls, which are known to occur in Colorado between March 15 and October 31.
2. Removal of Prairie Dogs: Prairie dogs should be removed in accordance with Town policy and state law prior to the start of construction. If prairie dogs cannot be relocated to a different property, SMITH recommends that they be trapped and donated either to the black-footed ferret recovery center or a raptor rehabilitation program. In-burrow fumigation should be the least preferred option.
3. Stormwater BMPs: Though not included in the current application, a stormwater management plan should be prepared for the proposed Project and should include sufficient BMPs to prevent sediments or pollutants from entering waterways, especially the Reservoir, during construction.

References

Jones, S.J., Bauer, S., Hansley, and P., Mah, P. 2017. Hodgson-Harris Reservoir Breeding Bird Survey. Unpublished Report. 24 pp.

SMITH. 2003. Wildlife Survey and Habitat Evaluation for the Town of Superior. Westminster, CO.

Spaulding, S. and J. Kesler. 2018. Hodgson Harris Reservoir Ecological Values Assessment. Unpublished Boulder County Parks and Open Space Memorandum. 11 pp.