

DEPARTMENT OF BUILDING AND DEVELOPMENT

COUNTY OF LOUDOUN

MEMORANDUM

DATE: September 22, 2022

TO: Rob Donaldson, Project Manager, Department of Planning and Zoning

FROM: Alexander Darr, Natural Resources Engineer

THROUGH: Anna Dougherty, Natural Resources Team Leader

CC: Mike Ronayne, County Urban Forester
Todd Taylor, Floodplain Administrator
Rana Abu Ghazaleh, Community Planner, Department of Planning and Zoning
Hilary Richardson, Zoning Planner, Department of Planning and Zoning

SUBJECT: CMPT-2022-0003, SPEX-2022-0038

The Natural Resources Team (NRT) reviewed the Commission Permit, received on August 23, 2022 and offers the following comments:

Floodplain:

Requirements

- 1) The plat identifies the existing emergency access road being widened and paved and the existing culverts being extended as part of the proposed project. Please note that an approved floodplain alteration (FPAL) for the widening of the existing floodplain crossing will be required prior to approval of the site plan application. (FSM 5.422)
- 2) FPST-2015-0002 was approved for the subject property on July 24, 2015. The previous modeling does not account for the updated rainfall standard. Please note that the floodplain study may need to be updated at the time of site plan to account for the correct rainfall and flow conditions. Staff recommends coordination with the Floodplain Management Team in the Department of Building Development regarding the floodplain study requirement. (FSM 5.411)

Please see me with any questions related to these comments. I would like to review the revised submission that addresses these comments.

Natural Resources:

Recommendations

- 1) Please delineate the 50-foot River and Stream Corridor Resource management buffer surrounding the minor floodplain on site. (General Plan RSCR Policy 2, Strategy 2.2, Action B)

- 2) Advisory Comment: Staff notes the location of the proposed facility within an Ecological Core, as determined by the Department of Conservation and Recreation. The particular ecological core that is the subject of this determination offers significant habitat value as well as providing a significant migration and wildlife route within the Goose Creek watershed, as well as to catoctin mountain and rural areas to the west. Preservation of such wildlife corridors has been prioritized in General Plan Policy 6.2. Actions associated with this strategy include:
 - a) Require development proposals to create links to adjacent open space and natural resources to help prevent habitat fragmentation and foster biodiversity.
 - b) Identify essential wildlife corridors and encourage protection of these areas through conservation easements acquired by the County or others, participation in the Open Space Preservation Program, development design, and other means.
 - c) Ensure that new development, redevelopment, and infill development incorporates existing native vegetation and plantings of native vegetation to protect pollinators, migrant birds, and other wildlife.

- 3) The impact of the proposed project on existing vegetation is a matter of consideration as part of a special exception application (RZO 6-1309(4)). Consistent with Forest, Trees, and Vegetation Strategy 4.1 Action B of the 2019 General Plan and to minimize the impact of the proposed project on existing vegetation staff recommends preserving forest cover within the site. Staff recommends that Tree Conservation Areas (TCA) be added to the plat sheets.
 - a) Include all Tree Conservation Areas and specimen trees on Concept Development Plan Sheet. (SPEX Checklist J.1)
 - b) In addition to the TCA, Staff further recommends a condition consistent with the Tree Conservation Area proffer template.
 - c) Staff strongly suggests reconsideration of the design to reduce habitat fragmentation and consolidate stormwater impacts outside of Reservoir Protection Area.

- 4) Staff notes that there are multiple specimen trees identified on CDP.
 - a) For any specimen trees that are to be preserved, staff recommends a proffer consistent with the Specimen Tree proffer template.

- 5) The property drains to Goose Creek. Goose Creek has been listed by the Virginia Department of Environmental Quality (DEQ) as impaired for aquatic life (aquatic insects and other small organisms that live on the stream bottom). In addition, the County's 2009 Stream Assessment Project found Goose Creek to be suboptimal for habitat and stressed for aquatic life. Impacts to water quality are an issue for consideration as part of the application. Consistent with the River and Stream Corridor Resources Strategy 2.3 Action B and Strategy 2.4 Action A of Chapter 3 of the 2019 General Plan staff recommends the following:
- a) Staff requests additional information regarding how stormwater will be addressed within the site, recent research from Virginia Tech suggests that "that modern stormwater management practices are not protecting surface waters from road salt contamination and suggest they create contaminated plumes of groundwater that deliver Cl^- and Na^+ to streams throughout the year." (J. Snodgrass, 2017) This research suggests that stormwater ponds will not be an appropriate strategy for managing saline runoff from this facility.
 - b) Staff has significant concerns about locating a proposed use with strong potential for water pollution stemming from vehicle maintenance, salt mixing and storage in a sensitive area in close vicinity to Goose Creek, and within the reservoir protection area. Staff would encourage consideration of alternative sites, with less potential for habitat loss and impact to sensitive watersheds.
 - c) Salinization of urban water supplies due to road salt runoff is an increasing and serious concern in drinking water sources throughout the region, without clear solutions beyond avoiding introduction of salt into water bodies used for drinking water. See further documentation: [Salt in fresh water sources becoming worrisome in D.C. region, experts say - The Washington Post](#)
- 6) Staff requests additional information within the statement of justification that addresses the need for locating this use on a previously undeveloped site as opposed to alternative options for co-locating the use on an alternative site that would not result in the natural resource impacts proposed by this application.
- 7) Staff requests a calculation of the site's impervious surface area in its existing condition, compared with its proposed condition.
- 8) Staff notes the close proximity of the proposed salt mixing area to existing forested wetlands, as delineated in the included Wetland Delineation Report, and notes the potential for ground and surface water contamination, as well as habitat degradation due to this proposed use.
- 9) Staff questions the impacts of the proposed use on existing or future programming at the Academies of Loudoun, existing mature forests and forested wetlands have

potential for curriculum enhancement and environmental education opportunities that may be disrupted by proposed use.

Citations:

- Casey, R. E., S. M. Lev, and J. W. Snodgrass. 2013. Stormwater ponds as a source of long-term surface and ground water salinization. *Urban Water Journal* 10:145-153.
- Olivo, A. (2022, August 16). *Salt in water sources becoming worrisome in D.C. Region, experts warn*. The Washington Post. Retrieved September 21, 2022, from <https://www.washingtonpost.com/dc-md-va/2022/08/08/salt-sodium-water-levels-dc/>