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memorandum

date April 22, 2020

to Mary Heberling, AICP

from Sarah Hartung, Senior Biologist

subject Natural Resource Review for Railroad Ave Subdivision – Revised Application

This memorandum summarizes ESA's technical review of revised land use application materials relating to site natural resources regulated by Milwaukie's Municipal Code, including Habitat Conservation Areas (HCAs) and Water Quality Resources (WQRs). Responses to specific technical review tasks are identified in *italics*.

1. Is the HCA alternatives analysis adequate?

Response: In addition to a preliminary plat of 7 units, the proposal highlights five alternatives: Alternatives 1, 2 and 3 are depicted with graphics and Alternatives 4 and 5 are described in text only with limited details. The table below is ESA's assessment of key features of each alternative based on the staff report, revised application materials and estimates of impact areas from the graphics provided.

Table 1: Comparison of Alternatives 1 – 5, with a Suggested 6th Alternative

Alternative	# Units	Unit Type	HCA Impacts[a]	Stream Buffer	Size of open space tract	Notes
1: Roadway Crossing to the East	6	Single-family	~27,000 ft.²	15 feet	20,926 ft.²	--
2: Connection via Pedestrian Path	6	Single-family	~23,000 ft.²	15 feet	24,598 ft.²	--
3: Preferred alternative - Expanded Buffer	6	Single-family	~20,600 ft.²	25 feet	26,998 ft.²	--
4: Avoidance of HCA with three lots	3	Single-family	Not provided	~ 75 feet	Not provided	Not economically viable; "The quality of the HCA does not warrant total avoidance"
5: Attached housing, outside of the HCA	Not provided	Cluster / Attached units	Not provided	Not provided	Not provided	"It won't work economically" and "Total avoidance of the HCA is not warranted"
6: Five units, single-family homes	5	Single-family	~15,400 ft.² to 17,800 ft.²	15 to 25 feet	TBD	Dropping one unit would reduce the mitigation burden.

[a] ESA's estimate based on the graphics provided

The alternatives analysis is an improvement from earlier applications, but the proposal does not seriously consider Alternatives 4 and 5. Due to site geometry and the requirement to extend SE 56th Avenue through the site, total avoidance of the HCA is not feasible. The analysis is missing an evaluation of whether 5 units would be economically viable. Additionally, no detailed calculations are provided in order to compare the impacts. The proposal should be providing impact calculations for easy comparison of viable alternatives and a stronger overall justification for selecting the preferred alternative.

2. Are the proposed pattern of plantings, density, and type of plants sufficient enough to mitigate the impacts from Lots 1, 2, and 3 within the new HCA boundary?

Response: While the applicant's planting plan includes a diverse mix of native shrubs and trees, the density and total area of planting appear insufficient to offset a significant impact to HCA – approximately 20,600 ft.² of impact from Lots 1, 2 and 3 as well as 56th Avenue. The applicant does not provide reasonable justification for the low density of proposed mitigation plantings except to state, "Better mitigation can be achieved when plant materials are spaced appropriately and well maintained." While this may be true when considering whether to plant shrubs (for example) at 2 feet on center versus 6 feet on center, it would be better to plant the shrubs 6 feet on center because 2 feet on center would be too stifling. However, the proposal of planting shrubs at 10 feet on center is taking the concept too far and is not adequately justified.

Based on the code and the extent of estimated HCA impacts, the number of required trees and shrubs is as follows:
20,600/500 = 42
42 x 5 = ***210 trees***
42 x 25 = ***1,050 shrubs***

The actual amount of planting area within the proposed open space tract of 26,998 ft.² (minus the sidewalk, stream channel and wetland) appears to be approximately 20,500 ft.²; however, a more thorough impact analysis and calculations from the applicant are needed to better assess the available planting space.

The code requires planting trees between 8 and 12 ft on center and shrubs between 4 and 5 ft on center or clustered in single-species groups of no more than 4 plants. Each shrub cluster should be planted between 8 and 10 ft on center.

Input is as follows:

- *The required density of 210 trees would be achievable with tree plantings between 9 and 11 ft on center with certain areas like the riparian buffer planted more densely than areas next to the pedestrian path or sidewalk. While this spacing may be too dense for park-like settings, the purpose of the planting plan is to add diversity and complexity to the riparian corridor and*

wetland buffer. Additionally, up to 20 percent mortality is allowed by the code and a certain level of mortality should be expected and incorporated into the plan. Only 15 trees are proposed in the revised planting plan, presumably in part to maintain an open landscape and in part because there are existing mature ash trees on-site. ESA recommends a recalculation of the proposed number of trees at a higher density using different species like cascara (Rhamnus purshiana) and bitter cherry (Prunus emarginata) which are sparse/wispy in character and would maintain a more open feel at maturity.

- *At a density of 4 feet on center, the number of shrubs that could be planted in the available space in the open tract is 1,076 shrubs, which is 26 shrubs in excess of the required amount of 1,150 (if our math is correct). ESA's suggestions for shrubs include planting at the recommended density of 4 to 5 feet on center or in clusters. The planting palette for shrubs seems reasonable, although we recommend planting Douglas spirea (Spiraea douglasii) along the intermittent stream or even live cuttings/stakes of Scouler's willow (Salix scouleriana) and red osier dogwood in the wetland as a way to achieve density standards. Installing live stakes in the wetland would not trigger permitting requirements for DSL or the Corps.*
- *The city's arborist input of adding ponderosa pine would add diversity to the list of trees proposed and would be compatible with the area. Western red cedar is not recommended because it does not appear to be thriving with increasing summer temperatures and its range is likely moving north or higher in elevation due to climate change. This is based on conversations with Metro land managers.*
- *The low plant density within 10 feet of the pedestrian path and sidewalk as shown in the plan is reasonable, but these strips could still be densely planted with low-growing shrubs (dull Oregon grape, Mahonia nervosa, and common snowberry, for example) that would maintain openness, but also achieve plant density and habitat structure goals.*
- *The planting plan should provide a native seed mix for groundcover or discuss how weeds will be controlled.*
- *If the applicant is not able to meet the mitigation requirements, another approach is to reduce the proposed units from 6 single-family units to 5 in order to reduce HCA impacts. The applicant did not discuss a 5-unit subdivision in their alternatives analysis and whether it would still be economically viable.*