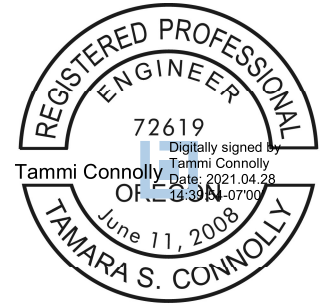




**Received Planning
Division**
 05/05/2021

Technical Memorandum

To: Clean Water Services
From: Tammi Connolly, PE
Copies: City of Beaverton, File
Date: April 28, 2021
Subject: Fee-in-lieu Request - Hydromodification
 South Cooper Mountain Blackbird Farms
Project No.: 19615



RENEWS: 12/31/2021

The purpose of this memo is to request a fee-in-lieu of flow control for hydromodification which would apply to public improvements along SW Scholls Ferry Road and recreational multi-use pathways in a natural area associated with the Blackbird Farms development in South Cooper Mountain. This portion of SW Scholls Ferry Road is owned by Washington County but the City of Beaverton is responsible for the operation and maintenance of stormwater infrastructure. The pathway system will be owned and maintained by Tualatin Hills Parks and Recreation District (THPRD).

Project Overview

The proposed 32.42-acre South Cooper Mountain Blackbird Farms development is located in the City of Beaverton, Oregon. The Blackbird Farms development lies within Washington County Tax Lots 2S106B000200, 2S106B000203, and 2S106B000204. The development site is bordered to the south by SW Scholls Ferry Road (Highway 210), to the west by The Ridge PUD, and to the east by the Main Street PUD (see Vicinity Map). The northern portion of the site contains mapped wetlands and a pond. The proposed development will include six lots, with multi-family residential buildings on lots 1-5 and commercial development on lot 6. Public improvements include several public connecting streets, expansion of SW Scholls Ferry Road and SW Mountainside Road, a public park, and a recreational pathway along the wetlands at the north end of the site.

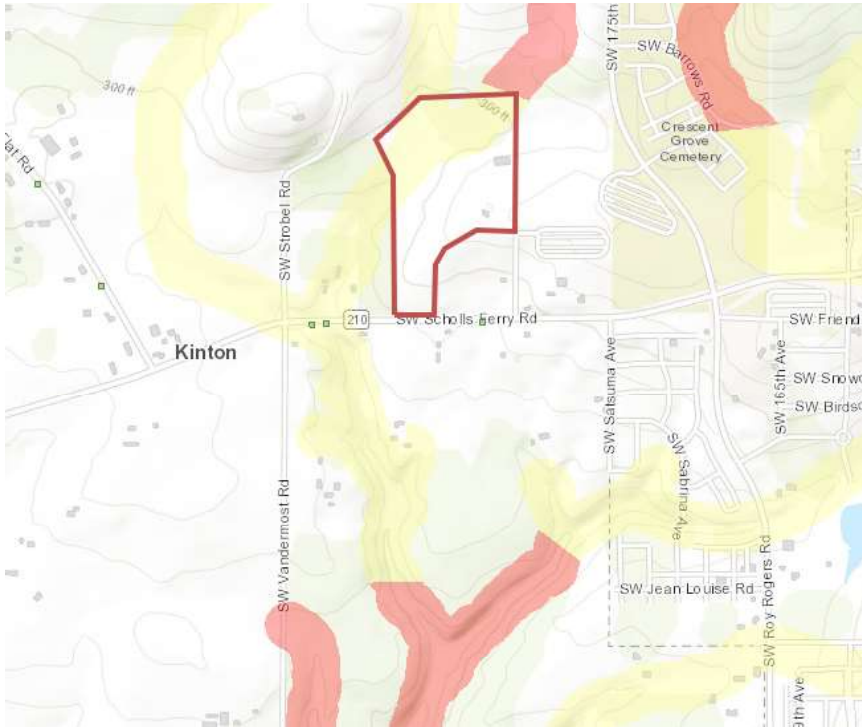


Vicinity Map (Google Earth)

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Hydromodification Assessment Summary

The site is in an expansion area and drains to an unnamed tributary of the Tualatin River that is identified by CWS as having moderate risk for hydromodification. There is a high-risk portion of the tributary 2,250 feet (0.4 miles) downstream of SW Scholls Ferry Road.



CWS Hydromodification Map

Fee-in-lieu for Hydromodification Request - Multi-use Pathway

CWS R&O 19-5 Section 4.03.7 requires applicable projects to implement a hydromodification approach unless the site qualifies to pay a fee-in-lieu by meeting one of the conditions listed in Subsection (a). The following condition applies to the recreational pathways:

3. **In the judgment of the District, implementation of an on-site hydromodification approach is impracticable or ineffective due to topography, soils, landslide risk, high water table, or other site conditions. The District may require a site-specific analysis (e.g., infiltration testing, geotechnical evaluation) to support such a determination; or**

The proposed Tualatin Hills Parks & Recreation (THPRD) multi-use pathway is located adjacent to or within the vegetated corridor and wetlands on the northern portion of the site, which is downhill from all of the site's proposed detention systems. The 10-foot wide paved, multi-use pathway will consist of approximately 24,000 sf of new impervious area that drains to the wetland. Water quality treatment will be provided by using the vegetated corridor as a filter strip under CWS standards. Portions of the vegetated corridor that are currently in degraded condition will be enhanced to good condition as described in the Natural Resource Site Assessment provided to Clean Water Services for this site.

Constructing flow control facilities within the natural area is not practicable because the location lacks adequate maintenance access and because additional construction could cause greater harm than benefit to the natural area. Pervious pavement was considered as an alternative pathway surface; however, pervious pavement is not recommended in a highly vegetated area due to the potential for leaf litter to clog the pores of the pervious pavement. The Blackbird Farms detention systems over-detain to meet the 10-year and 25-year flow targets for the site’s drainage to the wetland (North point of compliance). However, the 2-year hydromodification targets are exceeded by the runoff generated by the approximately 24,000 sf of undetained impervious area associated with the pathway (see Table 1). Therefore, a hydromodification fee-in-lieu is requested for the pathway.

Table 1—North Point of Compliance

Catchment/Facility ID	Peak Flow Rate (cfs)						
	42% 2-year	50% 2-year	2-year	10-year		25-year	
	Predev	Predev	Proposed (Detained)	Predev	Proposed (Detained)	Existing	Proposed (Detained)
North POC							
Lot 1A & Park	0.05	0.06	0.12	0.33	0.20	1.14	0.26
Lot 1B	0.03	0.03	0.01	0.17	0.07	0.60	0.17
Lot 2A	0.03	0.03	0.04	0.18	0.04	0.61	0.11
Lot 2B	0.01	0.01	0.01	0.02	0.02	0.06	0.02
Lot 3	0.03	0.03	0.03	0.18	0.13	0.61	0.20
Lot 4	0.03	0.04	0.02	0.20	0.10	0.67	0.15
ROW to Pond A	0.04	0.05	0.04	0.29	0.25	0.99	0.40
Pathway (undetained)	0.02	0.02	0.32	0.12	0.45	0.21	0.51
North POC	0.21	0.25	0.48	1.45	0.72	4.87	0.83
North POC not incl. pathway	0.19	0.23	0.19	1.37	0.55	4.66	0.87

Fee-in-lieu for Hydromodification Request – SW Scholls Ferry Road

R&O 19-5 Section 4.03.7 requires applicable projects to implement a hydromodification approach unless the site qualifies to pay a fee-in-lieu by meeting one of the conditions listed in Subsection (a). The following condition applies to the SW Scholls Ferry Road improvements:

4. In the judgment of the District, on-site implementation results in the inefficient use of District or City resources for long-term operations and maintenance; or

Blackbird Farms and adjacent developments along SW Scholls Ferry Road have proposed to construct underground detention systems beneath the sidewalk along SW Scholls Ferry Road to manage runoff from the right-of-way. This would burden the City with maintenance of multiple systems along a busy road. Without construction of the underground detention system at SW Scholls Ferry Road, that portion of the site will not meet CWS flow control requirements for hydromodification.

Proposed improvements to SW Scholls Ferry Road will consist of approximately 20,500 sf of new or replaced impervious surface that will continue to drain west along the right-of-way to an unnamed tributary of the Tualatin River. Water quality treatment will be provided by LIDA planters adjacent to the sidewalk. The onsite flow control systems that drain toward the southern point of compliance at SW Scholls Ferry Road are able to over-detain to offset the undetained SW Scholls Ferry Road runoff for the 10-year and 25-year flow targets, but they do not quite meet the 2-year hydromodification target (see Table 2).

Table 2—South Point of Compliance Without Scholls Ferry Road Detention

Catchment/Facility ID	Peak Flow Rate (cfs)						
	42% 2-year	50% 2-year	2-year	10-year		25-year	
	Predev	Predev	Proposed (Detained)	Predev	Proposed (Detained)	Existing	Proposed (Detained)
Lot 5	0.02	0.03	0.02	0.16	0.15	0.72	0.2
Lot 6	0.03	0.04	0.02	0.23	0.18	0.79	0.23
ROW to Pond B	0.02	0.02	0.02	0.12	0.12	0.45	0.21
ROW to Pond C*	0.02	0.02	0.01	0.12	0.05	0.44	0.07
Scholls Ferry LIDA	0.02	0.02	0.07	0.13	0.32	0.25	0.40
South POC	0.11	0.13	0.14	0.76	0.52	2.53	0.70

Conclusion

The SCM Blackbird Farms project does not fully meet the CWS flow control requirements for hydromodification. Runoff from the 24,000 sf of pathway in the natural area at the north side of the site will exceed the 2-year event flow control targets. Runoff from the 20,500 sf of improvements to SW Scholls Ferry Road will cause the point of compliance at the south end of the site to exceed the 2-year flow control requirements while meeting the 10-year flow control requirements.