Raedeke Associates, Inc.

Wetland & Aquatic Sciences
Wildlife Ecology
Landscape Architecture

TECHNICAL MEMORANDUM

December 9, 2022

To:	Gretchen Brunner, EA Engineering, Science, and Technology, Inc.
From:	Christopher W. Wright, B.S. Soil and Wetland Scientist Raedeke Associates, Inc. Richard W. Lundquist, M.S. President/ Wildlife Biologist
RE:	47º North – Master Plan Update Analysis (R.A.I. No. 2019-084-005)

This memorandum compares impacts of the Master Plan Update for 47º North (Atwell, LLC 2022, received November 18, 2022) on wetlands and plants and animals with SEIS Alternative 6 (Raedeke Associates, Inc. 2020).

Based on review of the Master Plan Update plans (Atwell, LLC 2022) and the ESM Consulting Engineers, LLC (2022) addendum to the site engineering report for 47º North, the revised site plan occupies the same general footprint as SEIS Alternative 6, would result in approximately the same area of vegetative clearing (145 acres versus 143 acres), but would involve less cut and fill grading and result in less area of new impervious surfaces (53 acres versus 71 acres).

WETLANDS

Under the revised site plan, the proposed project would result in no direct impacts to wetlands. As under the previously evaluated proposal, all wetlands in the project area would be preserved and buffered within an open space tract that includes the required buffers and additional retained open space beyond the buffer limits

A decrease in the extent of impervious area in the vicinity of the wetlands would reduce the potential loss of hydrologic support of Wetlands 4, 5, and 6 compared with SEIS Alternative 6. As with SEIS Alternative 6, the stormwater plan under the revised site plan

would match pre-development flows to Wetland 4 with pervious and pre-treated runoff from adjoining lots, as needed, and the catchment areas contributing to Wetlands 5 and 6 would be relatively unaffected.

Proposed stormwater management facilities would meet or exceed all applicable detention/retention and water quality standards. Development regulations requiring adequate wetland buffers would be implemented and the buffers would remain in their natural state to protect wetland hydrology maintained primarily through precipitation. No significant adverse impacts are anticipated.

AQUATIC RESOURCES

The revised site plan would continue to retain the entire Cle Elum River and associated riparian wetlands and habitat within dedicated open space. An adjoining area of managed open space would be retained as well, allowing only recreational activities, such that no residential or RV resort development would occur within at least 1,900 feet of the river. Thus, no direct impacts to aquatic and fish habitat would occur under the revised proposal.

No additional clearing will occur under revised proposal than was evaluated under SEIS Alternative 6. As no other stream channels occur on site, infiltration of stormwater will result in no stormwater discharges to the Cle Elum or Yakima Rivers during construction.

At full buildout, stormwater collection and treatment will follow recommended treatment in the WDOE (2019) Stormwater Management Manual for Eastern Washington (SWMMEW) (ESM Consulting Engineers, LLC 2020). These measures provide collection and treatment through combined infiltration ponds, swales, and dispersion to upland infiltration, with no surface discharges to the Cle Elum or Yakima Rivers. No discharge of stormwater runoff from developed areas would occur within the Cle Elum drainage basin.

Because the soils in the areas of infiltration provide considerable transmissivity, infiltrated stormwater will disperse broadly in the near surface groundwater beginning 2000 feet or more from Yakima River surface waters. The resulting transmission of stormwater through the near surface groundwater should result in no discernable impact to Yakima River surface water quality or associated fish and habitat.

Several species of salmonid fish, including steelhead, and bull trout, both listed as federal threatened species, are known to occur within the Cle Elum and Yakima Rivers. Middle Columbia Chinook salmon, though not listed, also occur in these rivers. Under the revised proposal, no direct impacts to riparian habitat on the Cle Elum or Yakima Rivers will occur, and infiltrated stormwater will not have a measurable direct effect on the Yakima River. Thus, impacts to fish and associated habitat should be minimal under the revised proposal, as under SEIS Alternative 6.

VEGETATION

Impacts to vegetation under the revised proposal would be comparable to that described in the SEIS. No additional area of clearing would occur under the revised proposal.

WILDLIFE

The clearing, grading, and construction of the revised proposal would have similar impacts to SEIS Alternative 6 and would result in similar habitat loss and increased fragmentation. This, together with increased disturbance (e.g., vehicular traffic, human presence throughout the trail systems) may affect movement patterns of some wildlife species, creating a barrier to movements of small mammals, reptiles, and amphibians. Increased mortality would likely result from animals attempting to cross roads, and some animals may alter movement patterns to avoid areas or time periods of high activity. However, many species would probably continue to use undeveloped areas of the site.

LIMITATIONS

We have prepared this document for the exclusive use of EA EST and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from EA EST.

The determination of stormwater quality or ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such agency determinations. Therefore, the conclusions of this document should be reviewed by the appropriate regulatory agencies prior to any detailed site planning or construction activities.

We warrant that the work performed conforms to standards generally accepted in our field, and has been prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

Thank you for the opportunity to provide this information. If you have any questions or need additional information, please do not hesitate to contact me at (206) 525-8122 or via email at cwright@raedeke.com.

LITERATURE CITED

Atwell, LLC. 2022. Master Plan Update for 47º North, Kittitas County, Washington. September 30, 2022 plan set prepared for Sun Communities, Inc., Southfield, MI. 12 plan sheets.

ESM Consulting Engineers, LLC. 2022. Supplement to the Site Engineering Technical Report for 47º North. November 18, 2022 report prepared for Sun Communities, Inc., Southfield, MI.

Raedeke Associates, Inc. 2020. Wetlands, Plants & Animals, and Fisheries Assessment for 47º North, Cle Elum, Washington. September 10, 2020 Draft Supplemental EIS Report to EA Engineering, Science, and Technology, Inc., Seattle, WA.

Washington Department of Ecology. 2019. Stormwater Management Manual for Eastern Washington. Water Quality Program. Publication #18-10-044. August 2019.