Outlook

FW: C9727: BY_SR527_Final Hydraulic Design (FHD) and lateral migration

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Date Tue 12/23/2025 3:26 PM
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FYI. In preparing for the position paper for later migration

From: Pao, Evelyn C.
Sent: Monday, April 21, 2025 9:24 AM
To: Prendergast, Patrick <Patrick.Prendergast@skanska.com>; Prescott, Ryan <Ryan.Prescott@skanska.com>
Cc: Holmquist, Dan (Consultant) <Dan.Holmquist@consultant.wsdot.wa.gov>
Subject: C9727: BY_SR527_Final Hydraulic Design (FHD) and lateral migration
Importance: High

Hi Pat and Ryan,

Good morning. As per our conversation last week, the current FHD didn't include the lateral migration as required by RFP section 2.30, Water Crossings (specifically section 2.30.5.2.1, Certain Structures and Channel Design Characteristics). According to the contract, "The Sammamish River "not low" lateral migration determination discussed in the Sammamish River Migration Risk Assessment (Appendix H) **shall apply** to the new structures within the river flow limits defined by the 500-year flood elevation."

As you requested at the meeting, please see below a quick summary of the mandatory standards set forth in the contract under RFP section 2.30:

1. WSDOT Hydraulics Manual M 23-03 (Appendix D), Chapter 7, Water Crossing, establishes the criteria for evaluating total scour and how to apply the total scour with and without consideration for lateral migration (ie: section 7-4.8, 7-4.9, and figure 7-6)
2. FHWA Evaluating Scour at Bridges (HEC-18) (Appendix H), specifically chapters 7-4 and its subsections regarding total scour and Channel Migration for Structural Design. In addition, Section 2.4, Detailed Procedures and Specific Design Approach, discusses the approaches for determining scour values through a six-step approach and references HEC-20.
3. FHWA Stream Stability at Highway Structures (HEC-20) (Appendix H), Sections 7-2.5.4 and 7-4.4.4 for additional guidance on assessing channel migration and maintaining continuity of channel processes, respectively.
4. FHWA Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance Volume 1 and 2 (HEC-23) (Appendix H)
5. WSDOT Bridge & Structures Office Design Memoranda (Appendix D)
6. WSDOT Bridge Design Manual LRFD M 23-50 (Appendix D), specifically chapter 7.1.7 and its associated figures (ie: scour with lateral migration)

As we discussed, WSDOT will provide comments via the FHD review and comment process. WSDOT does not concur with the current analysis, saying the Sammamish River Migration Risk Assessment is "low."

This topic appears to require multi-discipline (i.e., hydraulic, structural, and geotech) discussion and coordination. We highly recommend that the Skanska team start engaging those SMEs to find a path forward efficiently and effectively. Please don't hesitate to reach out to us if it needs engagement with WSDOT SMEs so we can set up a meeting for discussion.

Thanks,
Evelyn
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