Landslide Hazard Deviation Decision Response

Finding No. 15: For the purposes of SCC 30.62B.340(2)(b)(ii) [2007], the geotechnical reports (Exhibits V-16 and C-33) must meet the requirements of SCC 30.62B.320 [2007]. These reports fail to demonstrate compliance. This failure is in part attributable to the Applicant’s proposed site plan, geotechnical report, and recommendations, which are not reflected consistently on the site civil plans, see 2 sheets labeled C-300 one for the Urban Plaza and the other labeled Grading and Drainage (both stamped and dated 12-10-2019). Horizontal location of proposed storm infrastructure is not consistent and the vertical elevations suggested could cause a backup of groundwater behind the proposed wall systems at the base of the excavation resulting in a small dam at the foot of a Landslide Hazard Area. There is inadequate space shown to install the storm and groundwater lines to drain the Underground Parking Garage at Elevation 25 to meet the 10-foot building setback to these lines as shown on sheet C-300 Urban Plaza. This is also at odds with SCC 30.62B.320(1)(a)(i) [2007] since the Applicant has not applied for a variance with regard to this setback issue. SCC 30.62B.320(1)(a)(iii) [2007] requires the Applicant to prevent the collection and concentration of stormwater or groundwater within a Landslide Hazard Area. The plans and reports do not demonstrate compliance with this provision.

Response to comment:
There are multiple options to collect and convey wall drainage that include conveying to the swale along the rails at elevation 22 to collecting the ground water in a sump and pumping to one of the conveyance systems within the property. Detail 2 on sheet C-501 shows a typical swale at the top of the wall to collect and convey any surface water that is concentrated on the surface above the wall. The requested level of detail is typically not appropriate at this stage of design. The 10-foot setback refers to building setback from stormwater facilities and their convey systems. The wall showing the attached storm drain pipe for Chevron Creek is not a building. This wall is a retaining wall and the pipe is a minimum of 10’ away from the building structure.
Finding No. 16: Failure to address SCC 30.63A.520(2) [2010] is another reason that for the purposes of SCC 30.62B.340(2)(b)(ii) [2007], the geotechnical reports (Exhibits V-16 and C-33) fail to meet the requirements of SCC 30.62B.320 [2007]. SCC 30.62B.320(1)(a)(ii) [2007] specifically requires an applicant to “Utilize best management practices (BMPs) adopted by the department pursuant to chapter 30.63A.SCC,” one of which is the provision of off-site mitigation (SCC 30.63A.520(2) [2010]). As discussed in Finding No. 15 above, the plans and reports fail to prevent collection and concentration of groundwater within a Landslide Hazard Area. The location where this ground water would be concentrated is along property lines, creating a situation where offsite mitigation is necessary and conflicting with SCC 30.63A.520(2) [2010]. Specifically, the systems described in Figure 2A of Exhibit V-16 are not adequately shown on the civil plans (C-series sheets of Exhibits V-6). These systems would need to be on the Point Wells site as well as on adjacent properties if designed as proposed by the Applicant in Figure 2A of Exhibit V-16. Moreover, there is no indication that the proposed design concepts would protect adjoining properties from landslide hazard prior to wall placement, or during dewatering of the slope and up until installation of the wall systems. During construction, inadequate life safety measures are proposed in the limited space available (approximate 7 feet to install the necessary tie backs, and footing drains for an excavation likely in excess of 25 feet). This is in conflict with SCC 30.63A.820(2)(b) [2010] which requires detailed engineering and design information when public health, safety, and welfare are of concern due to site-specific conditions.

Response to comment:
Detail 2 on sheet C-501 identifies a collection swale at top of wall. Also, there are multiple options to collect and convey wall drainage from discharging to the existing swale to collecting in a sump and pumping to one of the conveyance systems. The requested level of detail is typically provided with the building permit application. See response by others for wall systems.

Finding No 28: The additional requirement in SCC 30.62B.340(3)(e) [2007] relates to conditions when construction of utilities in Landslide Hazard Areas is permissible. The civil construction plans provided by the Applicant as part of Exhibit V-6 fail to comply with these conditions. Of particular concern are the proposed wall-mounted storm conveyance for Chevron Creek and the re-routing of an existing conveyance serving the offsite Woodway Highlands development, both of which appear on Sheet C-300 of Exhibit V-6. The wall-mounted system does not comply with the Snohomish County Engineering Design and Development Standards (EDDS) in part because the curved nature of the proposed pipe and lack of cleanouts (EDDS requires cleanouts with a line of sight between along the entire length of the system). The wall itself is an integral component of an underground parking garage system and that requires a separate building permit and a 10-foot minimum setback is required for all major conveyance systems to a building (SCC 30.23.110(21)(b) [2010] and SCC 30.62B.320(1) [2007]). This requirement is in place in the event future maintenance or replacement of the conveyance line is necessary without damaging or impacting the structure at some future date. Comparing Sheets A-100, C-100,C-200 and C-300 in Exhibit V-6, the proposed new conveyance for Woodway
Highlands appears to conflict with the clearance at the proposed service drive, parking garage, retail building, and access ramps to the Urban Plaza. No vertical grades or invert elevations were provided for the individual storm lines or groundwater conveyance lines in this vicinity to demonstrate that these structures can function as designed.

Response to comment:
This is a new review comment. The 2011 urban center application identified the pipe mounted on the retaining wall. The plans identify intercepting Chevron Creek at elevation 59 and conveys the flow to the existing structure No. 16 at elevation 26.93. The 30 feet of elevation drop provide options in providing positive slope of the conveyance system. If necessary, a deviation may be provided for a privately maintained system. The retaining wall is not an integral part of the parking garage as it will be constructed in the first phase of development prior to the garage being constructed. For the conveyance of the Woodway Highlands development, the upstream invert is at approximately 47.88 and connects into an existing structure at the base of the slope at 20.58. (See Exhibt: Woodway highlands Record Drawings) The conveyance system routes the flows under the access roads and along the new parking garage. See architects plans for limits of walls. Another option would be to directionally drill a new railroad crossing and connect into the existing storm drain system on the west side of the tracks. We have completed projects where there was a build over condition for a combined sewer pipe. For these applications, the conveyance pipe was constructed in a sleeve that allows maintenance or replacement of the pipe without damage to the building structure. Pipe sleeves could be provided for both the Chevron Creek and Woodland Highlands stormwater conveyance systems.

Finding No. 29: The additional requirement in SCC 30.62B.340(3)(e) [2007] relates to conditions when construction of utilities in Landslide Hazard Areas is permissible. However, the civil construction plans provided by the Applicant as part of Exhibit V-6 fail to address any utilities necessary for the construction of the Sounder platform. For example, on Sheet C-300 of Exhibit V-6, Snohomish County would expect to see a plan for handling the drainage from the additional impervious surface created by the rail platform. Instead, Sheet C-300 has a note saying “Rail Station Under Separate Permit”. While it is correct that the station would need a
separate permit, the drainage for the station must go through the Point Wells site and tie into the utility plans in the civil plans for the Point Wells project. Additionally, per SCC 30.63A.595(3), any such private drainage easement on the Point Well site “shall be depicted on the face of the plat” for the preliminary short plat submitted to phase the project (Exhibit V-7). However, Exhibit V-7 does not show the required private drainage easement.

Response to comment:
The rail station is a future permit submittal. At that time of design, the natural discharge locations will be maintained. The existing site of the future station currently flows through the point well project. There is an existing inlet in the vicinity of the rail station that conveys the flows to outlet #2. See sheet C-302.

Finding No. 31: The additional requirement in SCC 30.62B.340(3)(e) [2007] relates to conditions when construction of utilities in Landslide Hazard Areas is permissible. The Applicant’s materials conflict with SCC 30.62B.340(3)(e) [2007] requirements for construction of utilities in Landslide Hazard Areas, in part, based on utility construction details that conflict with EDDS. In addition to these conflicts, there are many further drafting errors of concern. Both of the catch basins from in Figure 3, below, are from Sheet C-300 of Exhibit V-6 and illustrate these issues. First is a drafting error that applies to both catch basins. For the highlighted catch basin, the plans give a rim (top) elevation of 71.00’ and an invert (bottom) elevation of 77.61’. Top elevations should always be higher than bottom elevations, but of these catch basins are in reverse. Several other catch basins in the C-series plan sheets also appear with bottoms higher than the tops, all of these would require correction. Second, is a conflict with EDDS 5-07(B)(2) which requires cleanouts deeper than five feet to be either a Type-2 catch basin (or a manhole) rather than a standard Type-1 catch basin. Plans must depict Type-2 catch basins as “Storm Drain Maintenance Holes” (or SDMH’s) rather than as simple “Catch Basins.” Assuming the elevations on the highlighted catch basin were merely backwards, then it should have been depicted as an SDMH (a rim of 77.61’ and an invert of 71.00’ = a 6.71’ deep cleanout that should appear as an SDMH). The C-series plan sheets show many other catch basins deeper than five feet. All of these should appear as SDMH’s. The figure also shows an SDMH with similar (and also reversed) elevations as the highlighted catch basin, but with the correct symbol. Also, note that the rim elevation shown for the sedimentation vault is not clear. However, a nearby label shows the rim higher than the invert, which would be correct. Finally, the pipe between the two catch basins has a reverse slope causing water backup and failing to comply with EDDS requirements.

Response to comment:

Exhibit V-6 Sheets, Sheets C-300 series do not include pipe material. Material can be included in building permit application. This submittal identifies drainage approach, pipe alignments and sizes. Applicant can work with the county to identify appropriate material based on the location and other consideration of other road and retaining wall elements. We agree there are two structures with mistyped invert elevations and a few catch basin structures that can either have the invert raised or the structure changed to a type 2 catch basin. As noted in the Finding
example, the correct inverts are 67.xx and not 77.xx. See response to Finding No. 28 for providing positive drainage of the rerouted Chevron Creek.

Finding No. 32: Further conflicts with SCC 30.62B.340(3)(e) [2007] relate to conditions when construction of utilities in Landslide Hazard Areas is permissible. Due, in part, to numerous drafting errors and several conflicts between plans, the Applicant has failed to demonstrate compliance with these conditions. For instance, the drainage plans the civil construction plans provided by the Applicant as part of Exhibit V-6 are in conflict with the road design provided in second road design detail in Exhibit V-13. A drafting error on Exhibit V-13 relates to the retaining wall proposed at the south side of the road. Between elevation contours 170 and 175, the plans show top of the wall and the base of the wall as both being at 178 feet elevation. The base of the wall must be the same or below the road grade in order to hold back the surrounding hillside, which is higher than the road. The other wall points correctly depict the base of the wall as being lower than the top. An example of a conflict between plans is that the road design in Exhibit V-13 proposes a peak in the centerline of the road to shed water to both sides of the roadway, yet Sheet C-300 of Exhibit V-6 shows a storm drainage system only on the south side of the roadway. Undrained water would pond and run along the north side of the roadway, creating an unsafe condition. These examples illustrate design problems that would prevent the proposed storm drainage system from adequately draining the roadway and wall footings. Reliable and accurate information in the application documents and plans is crucial for determining wall design and drainage feasibility under review by the Chief Engineering Officer in this landslide hazard deviation request.

Response to comment: The plans submitted are not constructing plans as noted in the above findings as construction level plans are not required for this application. We agree there are a small percentage (3 out of 140) of the storm drain structures with mistyped invert elevations shown on Exhibit V-6 and the bottom of wall in Exhibit V-13 should have shown an elevation of 176. Exhibit V-6 and Exhibit V-13 are coordinated. Both exhibits show a crowned road. Exhibit V-6 identifies storm drain structures with grates on both the north and south side of the road preventing any ponding water. See a clip of Sheet C-300 below of structures at the curb on both sides of the roadway. Also, even if one of the structures becomes plugged, stormwater would continue passed the structure to the next collection structure. Water would not pond along this roadway.