



Date: October 12, 2020
To: Carl Springer, P.E., P.T.P.
DKS Associates, Inc.
From: David Running, P.E., G.E.
Subject: Geotechnical Consultation for Agate Beach
Project: Newport Transportation System Plan Update
Project No.: 2191027-103

This memorandum provides a brief summary of the geotechnical challenges and constraints related to siting and developing new transportation improvement projects in Agate Beach.

BACKGROUND

The City of Newport and the Oregon Department of Transportation are currently updating the City's Transportation System Plan (TSP) to enhance safety, improve access and mobility, and address future transportation needs. DKS Associates, Inc. (DKS) is the design lead for the project. DKS retained Foundation Engineering to provide geotechnical consultation. The current work is focused on evaluating transportation improvement options for the Agate Beach neighborhood.

DISCUSSION

The geotechnical challenges in Agate Beach include mapped landslide and coastal erosional hazards that will prohibit development of new transportation projects adjacent to the ocean bluff along the west margin of the neighborhood. Figure 1 (attached) shows the current landslide hazard map for Agate Beach obtained from the DOGAMI SLIDO 4.1 website (DOGAMI, 2020a). Figure 2 (attached) shows the current coastal erosion hazard map for Agate Beach obtained from the DOGAMI HAZVU website (DOGAMI, 2020b). Transportation improvements will need to be setback from existing bluffs or areas of mapped landslide topography and focus on the relatively flat terrain in the neighborhood to the east. The setback from the bluff may be assumed to coincide with the eastern extent of the landslide terrain shown on Figure 1, which also approximately corresponds to eastern boundary of the high coastal erosion hazard area.

The potential presence of undocumented fill in the flat terrain within the Agate Beach neighborhood is another geotechnical consideration. The flat terrain was formerly rolling hills and ravines similar to the terrain in the undeveloped areas to the east of Hwy. 101. The contrast between the developed and undeveloped terrain can be seen in the LiDAR imaging shown on Figure 3 (attached). Like much of the developed coastal areas in and around Newport, the current flat terrain in Agate

Beach is the result of extensive site grading. Much of the historic site grading in the coastal communities was not conducted in accordance with current engineering standards. Poorly-placed fill and buried organics are common in former ravines and low-lying areas. Therefore, even in the current flat terrain, potential geologic hazards may exist that can result in settlement of roadways and pathways. Once preferred alignments for the proposed transportation improvement projects are identified, the subsurface conditions will need to be evaluated and geologic hazards will need to be addressed, where they are encountered.

Stormwater management is another geotechnical consideration. The local soils are typically sandy and highly erodible. Therefore, discharge areas for stormwater outfalls need to be selected with erosion control in mind and erosion mitigation measures are needed where runoff will be concentrated.

We trust this information satisfies your current needs. Please feel free to contact us if you have questions or require additional information.

REFERENCES

DOGAMI, 2020a, *SLIDO (Statewide Landslide Information Database for Oregon) Viewer, SLIDO-4.1*: Oregon Department of Geology and Mineral Industries (DOGAMI), website: <https://gis.dogami.oregon.gov/maps/slido/>, accessed October 11, 2020.

DOGAMI, 2020b, *Oregon HazVu: Statewide Geohazards Viewer*: Oregon Department of Geology and Mineral Industries (DOGAMI), website: <https://gis.dogami.oregon.gov/maps/hazvu/>, accessed October 11, 2020.

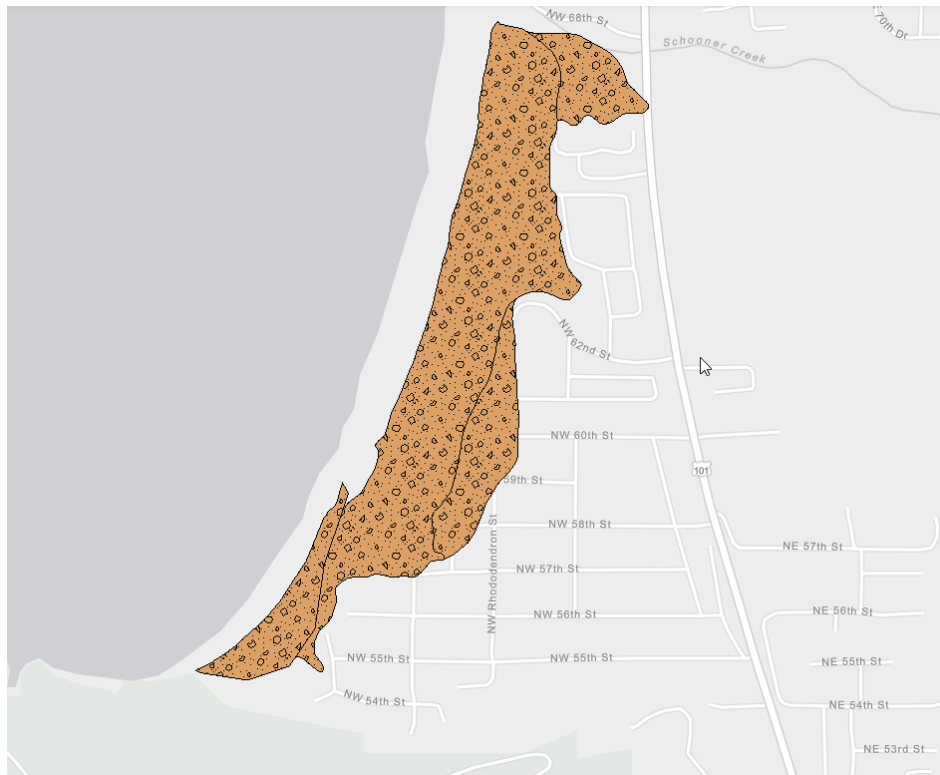


Figure 1. Landslide Hazard Map for Agate Beach (DOGAMI, 2020a).

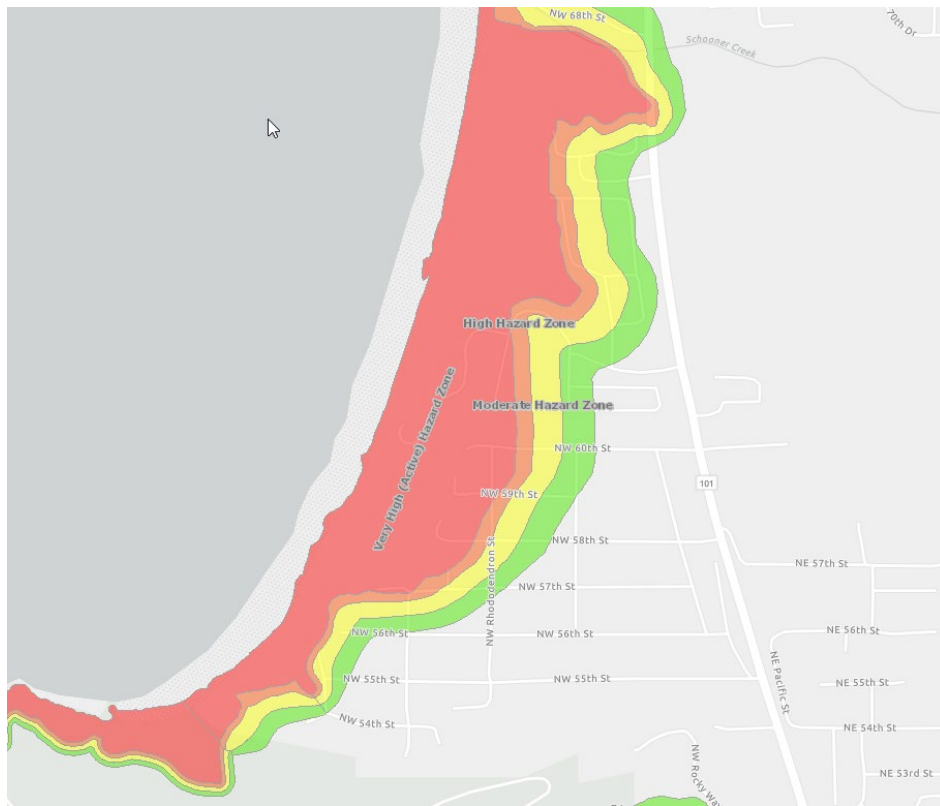


Figure 2. Coastal Erosion Hazard Map for Agate Beach (DOGAMI, 2020b).

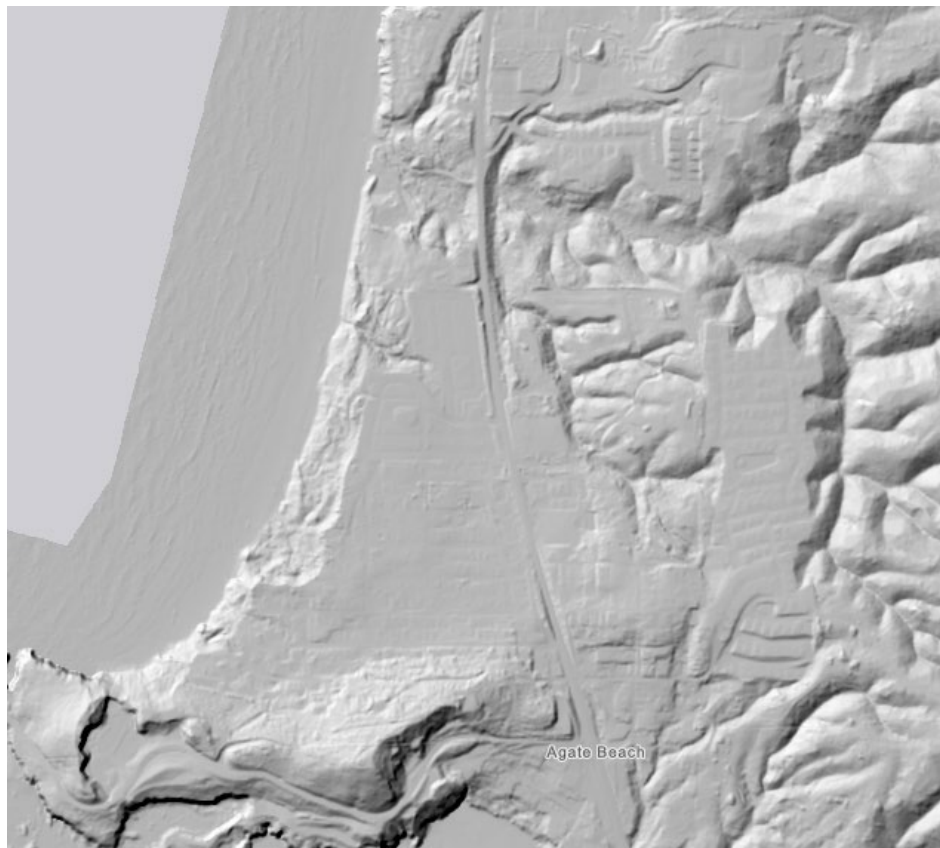


Figure 3. LiDAR Image for Agate Beach (DOGAMI, 2020a).