

Great Basin Earth Science, Inc.



2241 East Bendemere Circle
Salt Lake City, Utah 84109
Phone (801) 599-2189
elips@gbearthscience.com

PROJECT MEMORANDUM

Date: December 22, 2015

GBES Project No: 06-01

From: Elliott W. Lips, P.G.

To: Dana Shuler, P.E., CFM
Weber County Engineering Division
2280 Washington Blvd., Suite 240
Ogden, Utah 84401

Subject: Scoping Meeting
Lot 23 Big Sky Estates Phase I
2292 North Panorama Circle
Liberty, Utah

Status: Recommendation to Accept Work Plan

On December 11, 2015 a scoping meeting was held at the Weber County municipal building to discuss the proposed geologic hazards and geotechnical evaluations at the subject property. Prior to the scoping meeting, Western GeoLogic, the applicant's geologic consultant, submitted the following work plan for the project:

Work Plan, Geologic Hazards Evaluation, Lot 23 Big Sky Estates Phase I, 2292 North Panorama Circle, Liberty, Weber County Utah: Submitted to GSH Geotechnical. Dated December 9, 2015.

Present at the scoping meeting were:

Dana Shuler, Weber County Engineering Division;
Ben Hatfield, Weber County Planning Division;
Elliott Lips, Great Basin Earth Science, (GBES), Weber County Geologic Consultant;
Alan Taylor, Taylor Geotechnical (TG), Weber County Geotechnical Consultant;
Carl Lundin, Applicant;
Bill Black, Western GeoLogic, Applicant's Geologic Consultant;
Andrew Harris, GSH Geotechnical, Applicant's Geotechnical Consultant; and
Robert Gifford, GSH Geotechnical, Applicant's Consultant.



Discussion

1. There was a discussion that the property is mapped by Coogan and King (2001) as Norwood Formation, and by Elliott and Harty (2010) as landslide deposits. Both of these maps are at a scale of 1:100,000.
2. Mr. Lips and Mr. Black discussed that the Utah Geological Survey has conducted additional geologic mapping and that there is a "Progress Report" geologic map of the Huntsville Quadrangle at a scale of 1:24,000. This map, presented at scoping meeting, shows that the majority of the site is mapped as a landslide, with a narrow portion of the site near the road as Norwood Formation.
3. Based on this more detailed geologic mapping, it was agreed that the geologic hazards investigation would be focused on delineating the location of landslide on the property (if present) in order to address avoidance and/or mitigation issues.
4. Mr. Black and Mr. Harris explained that the subsurface investigations would begin with the trench, in the approximate location shown in the Work Plan. Some, but not necessarily all of the test pits would be excavated to correlate the subsurface information from the trench.
5. Mr. Harris stated that the boring would be placed closer to the proposed home site rather than near the road at the west side of the lot, but that it would not be drilled until after the geologic information from the trench was evaluated.
6. Mr. Black and Mr. Harris explained that additional subsurface investigations (test pits and/or trenches) may be necessary. Mr. Lips stated that there is flexibility in the field investigations to allow for this.
7. Mr. Harris and Mr. Taylor discussed the global stability analyses and the need to incorporate all site development (house, regarding, etc.) and a saturated zone with water levels at the ground surface at the proposed leach field into the analyses.
8. Mr. Taylor stated that the reports should include all input and parameters for the global stability analyses, and calculations to support recommended bearing capacity, settlement, at-rest earth pressures, active earth pressures, passive earth pressure, and foundation drainage. Additionally, the residual shear strengths should be used to model landslide materials.
9. Mr. Black stated that he would log the trench and test pits and would notify Weber County when they were ready for a field review by Mr. Lips and Mr. Taylor.

Recommendations

Based on the information provided in GeoLogic's December 9, 2015 Work Plan, and the discussions that took place during the scoping meeting on December 11, 2015, GBES recommends that Weber County accept the work plan.

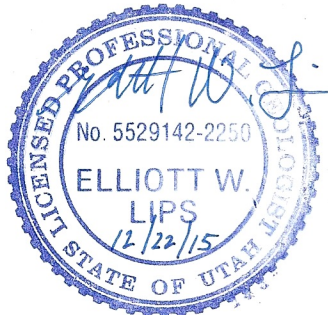


Closure

Comments presented herein are provided to assist Weber County in reducing risks from geologic hazards and to protect public health, safety, and welfare. All services performed by GBES for this project were provided for the exclusive use and benefit of Weber County; no other person or entity may, or is entitled to use or rely upon any of the information presented herein. This memorandum was reviewed and accepted by Taylor Geotechnical.

If you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,
Great Basin Earth Science, Inc.



Elliott W. Lips, P.G.
Principal Engineering Geologist

Taylor Geotechnical

A handwritten signature in green ink that reads "Alanson O. Taylor".

Alanson O. Taylor, P.E.
Principal