

# Jim Glomb

*Geotechnical Consulting, Inc.*

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January 31, 2024  
Project 2115

Highland Church  
c/o Reese & Associates  
134 Lystra Court  
Santa Rosa, CA 95403

Re: **Geologic Hazard Evaluation Report**  
1110 Highland Drive  
Novato, California

Dear Highland Church:

## Introduction

At your request, on 1/29/24, we performed a geologic hazard evaluation of the subject property at 1110 Highland Drive in Novato, California. The purpose of our work was to map and describe the potential impacts of geologic hazards to the subject property. Our Geologic Hazard Map is attached as Plate 1.

## Scope

The scope of this evaluation was limited to the following:

1. Review of pertinent geotechnical data;
2. Geotechnical reconnaissance of the site and vicinity;
3. Discussions regarding geotechnical aspects of the property with Vivek Damodaran, Senior Planner for the City of Novato ;
4. Preparation of this geologic hazard evaluation report.

## Site Conditions

The subject property consists of a church building, concrete patios, driveway and parking area located about 1 mile west of the intersection of Ignacio Boulevard and Highway 101. Steep north-ascending slopes exist offsite along the north property boundary to the north. Moderate to steep onsite slopes descend to the east, south and west from the Church complex.

## Geologic Conditions

The building site and slopes on and adjacent to the subject site are underlain by sandstone bedrock of the Franciscan formation that is mantled by 2 to 11 feet of surface soil. The bedrock is very weathered. Surface soils on the site are generally considered to be prone to creep. A landslide exists offsite and upslope of the northeast corner of the upper parking lot. The references reviewed and our site reconnaissance indicates that the subject property is not underlain by faulting or deep-seated landsliding. The property, as is most of Northern California, is within an area of active seismicity.

## Geologic Hazards

### **Landsliding**

Landsliding can cause damage to structures on and adjacent to slopes and can cause risk to humans.

An approximately 130 foot wide by 370 foot long landslide exists offsite and upslope of the northeast corner of the parking lot. The feature does not display signs of recent landslide activity in the form of open ground cracks. However, hummocky irregular topography indicative of shallow surface soil movements in the past was observed. In our opinion, there is a risk of future landsliding resulting in downslope deposition of soil and rock. Such an event could damage the parking lot, requiring repairs and maintenance, and could require offsite mitigation in the form of engineered retaining walls or graded slope repairs.

### **Soil Creep**

Soil creep is an imperceptibly slow movement of soil downslope due to the force of gravity.

The steep slopes adjacent to the church complex and offsite slopes to the north are considered to be prone to soil creep. Soil creep can exert lateral pressure on structures on slopes. Those structures require design and construction methods to compensate for such forces. On site structures are not situated on steep slopes and do not appear to be effected by creep.

### **Liquefaction**

Liquefaction takes place when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking. Liquefaction occurring beneath buildings and other structures can cause major damage during earthquakes.

The subject property is underlain at shallow depths by bedrock that is not susceptible to liquefaction. Therefore, liquefaction is not considered to be a risk to the onsite buildings.

### **Earthquake Faulting and Ground Shaking**

Active earthquake faults can cause ground displacements that severely damage buildings located on fault ruptures. Ground shaking from an earthquake event can also severely damage buildings.

Published geologic and earthquake fault maps indicate that the nearest active fault is 9 miles. There is therefore negligible risk to the subject site from ground rupture. The effects of ground shaking from a future earthquake near the site have been addressed in the 2/24/23 Soil Investigation by Reese and Associates and have been mitigated by foundation design.

### **Shallow Groundwater**

Shallow groundwater conditions can make construction difficult and can cause mold conditions beneath floors.

Based on past subsurface investigation at the site, there does not appear to be a risk of shallow groundwater at the site.

## Limitations

This report has been prepared for the exclusive use of the Highland Church and their consultants for this site. Our services consist of professional opinions and conclusions developed by a certified engineering geologist in accordance with generally-accepted engineering geologic principles and practices. We provide no other warranty, either expressed or implied. Our conclusions and recommendations are based upon the information provided us regarding the proposed project and professional judgment. Site conditions and cultural features described in the text of this report are those existing at the time of our fieldwork and may not necessarily be the same or comparable at other times.

Site conditions and cultural features described in the text of this report are those existing at the time of our field reconnaissance on January 29, 2024, and may not necessarily be the same or comparable at other times.

The scope of our services did not include an environmental assessment or an investigation of the presence or absence of hazardous, toxic or corrosive materials in the soil, surface water, groundwater or air, on or below, or around the site, nor did it include an evaluation or investigation of the presence or absence of wetlands.

We trust this provides the information you require at this time. If you have questions or wish to discuss this further, please call.

Yours very truly,  
Jim Glomb Consulting, Inc.

*Jim Glomb*  
1/31/24



Jim Glomb  
Engineering Geologist, C.E.G. 1154

# GEOLGIC HAZARD MAP

## 1110 Highland Drive Overview



- Legend**
- Parcel Note
    - assessment
    - easements
  - Address
  - Parcel
  - Condominium Common Area
  - Mobile Home Pad
  - City
  - Community
    - Marin County Legal Boundary
    - Other Bay Area County
    - Stream - Potential (NHD)

**0 - landside**

1:2,400

**Notes**  
This map was automatically generated using Geocontext Essentials.

This map is a user generated sales exhibit from an Internet mapping site and is for reference only. Data layers that appear on this map are not guaranteed to be accurate, current, or otherwise reliable.  
THIS MAP IS NOT TO BE USED FOR NAVIGATION

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*Plate 1*