

June 6, 2012

Project 4401

Mulholland Height HOA
c/o Suzy Gallant
22128 Dardenne Street
Calabasas, California 91302

Subject: **PRELIMINARY GEOLOGIC EVALUATION REPORT**
Tract 33604 and 40932
Calabasas, California

Ladies and Gentlemen:

Pursuant to your request, presented herein is a preliminary geologic evaluation report covering the above referenced sites. The purpose of this investigation is to identify significant potential geologic hazards on the subject sites relative to the existing open space and common areas maintained by the HOA. Potential geologic hazards are discussed with suggestions relative to slope stability and general maintenance. Opinions contained in this report are based upon the limited data obtained from field mapping of the subject site, review of aerial photographs, review of published geologic and seismic maps, and literature; specific information as described and past experience with hillside properties.

SITE DESCRIPTION

Location and Description

Access to the property is via Dardenne Street from Eddingham Avenue (see Location Map). The tracts were developed with single-family residences and open spaces. Some of the open space and commons areas are maintained by the HOA with drainage improvements such as paved bench and down drains. Some of these areas have a light to dense growth of vegetation consisting of grasses, native brush, shrubs and trees.

Topography

Topographically, the tracts generally rest between northwest trending ridges within the northwest portion of the Santa Monica Mountains. The natural rugged topography consists of steep to moderately steep slopes and narrow drainage ravines, which were not a part of this evaluation.

Drainage

Surface water at the site consists of direct precipitation onto the property and runoff from surrounding hills to the north, south, and east. Much of this water drains as sheet flow down descending slopes to low-lying areas, paved swale drains, offsite and/or to the streets. These improved areas were observed for this evaluation.

Drainage from all slopes, pad areas and roofs should be collected and directed away from the foundations to the street or any approved non-erosive drainage devices. Drainage should not be allowed to pond on the pad, against foundations, behind retaining walls or spill over slope surfaces.

Groundwater

No active surface groundwater seeps or springs were observed on the subject site. Seasonal perched water conditions may occur within the local hill side areas. Due to the high elevation of the sites, seasonal high groundwater elevations are not anticipated. Seasonal fluctuations of groundwater levels may occur by varying amounts of rainfall, irrigation and recharge.

PREVIOUS WORK

Numerous geology and/or geotechnical reports covering original tract grading of the subject sites reviewed for our evaluation of the sites. Generally, the geotechnical consultant of the site was Pacific Soils Engineering, Inc. Their final geology and compaction reports indicate that the tract grading conformed to their recommendations.

GEOLOGY

Regional Geology

The subject site is located within the Transverse Range province that extends about 275 miles eastward from Point Arguello to the Mojave Desert. It is essentially an elongated province that trends east west with a width of 15 to 50 miles. Anacapa, Santa Cruz, Santa Rosa and San Miguel Islands form the southwest portion of the province. The southern and northern boundaries are fault scarps along the Santa Monica and Santa Ynez fault zones. Santa Monica Mountain Range is one of thirteen well-defined topographic and geologic units within the province. The eastern Santa Monica Mountains form a broad west-plunging anticline fold that is transected by a branch of the Santa Monica fault zone.

STRATIGRAPHY

The property is underlain by marine sedimentary rocks of Miocene time, which are covered by a relatively thin layer of surficial earth materials. A summary of the earth materials and geologic units from the referenced reports and surface exposures are described below.

Fill (Caf)

Previous grading has resulted in compacted and certified fill placement on the subject sites. Fill generally consists of clayey silt, sandy silt to silty sand and with occasional abundant rock fragments.

Native Soil

Native soils consist of clayey silt to silty sand. The soil was derived from weathered bedrock materials, which have accumulated on natural descending slopes.

Bedrock

Bedrock underlying the Holocene deposits and fill is assigned to the Modelo Formations of Miocene time (between 7 and 26 million years ago). Bedrock consists of shale, sandstone, conglomerate and siltstone beds.

ENGINEERING GEOLOGY

Geologic Structure

The geology of the subject property and surrounding vicinity is complex due to the past regional folding and faulting from tectonic movement. Regional mapping by the Dibblee Geological Foundation indicate that the local area has been uplifted and tilted by past tectonic forces forming a northeast trending homocline that is inclined to the northwest, (Plate 1).

Landslides

The State of California has prepared Seismic Hazard Evaluation reports to regionally map areas of potential increased risk of permanent ground displacement based on historic occurrence of landslide movement, local topographic expression, and geological and geotechnical subsurface conditions. The maps may not identify all areas that have potential for earthquake-induced landsliding, strong ground shaking, and other earthquake and geologic hazards. The subject sites are partially located within a landslide zone on the State of California Seismic Hazard Map.

Surficial Stability

Minor to moderate surficial slope failures or excessive erosion areas were observed on the subject sites, see details below. All slopes are subject to erosion, scour and/or shallow slumping during the rainy season. To impede surficial failure, runoff must be prevented from saturating the slopes. Slopes should be planted and maintained with dense hillside vegetation consisting of ground cover, shrubs, and trees possessing deep root structures, requiring a minimum of irrigation.

SEISMICITY

The subject sites are not located within the Earthquake Fault Zone.

There are several active and/or potentially active faults that could possibly affect the site within Los Angeles County. All of Southern California is in a seismically active region and some areas have a higher potential for seismic damage than others. Neither the time, location, magnitude of fault movement nor earthquake can be accurately predicted.

Maintenance Concerns

Fifty Six areas were identified and labeled on the attached Plot Map. Each area was geologically reviewed with the following preliminary assessment relative to the needed improvements as suggested below, see Table A below. Areas number in red need to be mitigated as soon as possible and the other area should be corrected prior to the next winter season that starts October 1.

TABLE A

Area No.	Comments
1	Pad drainage and lack of hillside vegetation are contributing to excessive erosion on the slope.
2	Pad drainage, animals borrows, and lack of hillside vegetation are contributing to excessive erosion on the slope.
3	Lack of hillside vegetation and animals borrows.
4	Clogged paved swale drain.
5	Damaged paved swale drain.
6	Clogged paved swale drain.
7	Clogged paved swale drain.
8	Clogged paved swale drain.
9	Damaged and clogged paved swale drain.
10	Clogged paved swale drain and lack of hillside vegetation.
11	Clogged paved swale drain and inlet area drain.
12	Clogged paved swale drain.
13	Damaged and clogged paved swale drain. Drainage Engineer should review.
14	Clogged paved swale drain and lack of hillside vegetation.
15	Catchment/debris basin is essentially full, should be cleanout.
16	Clogged paved swale drain and lack of hillside vegetation.
17	Partially clogged inlet drain.
18	Partially clogged inlet drain.
19	Partially clogged inlet drain.
20	Clogged paved swale drains, lack of hillside vegetation and broken irrigation pipes.
21	Partially clogged swale drains.
22	Partially full debris basin, should be cleanout.
23	Partially clogged swale drain.
24	Damaged and undermined swale drain, due to animals borrows and erosion, Drainage Engineer should review.
25	Damage wrought iron fencing.
26	Damaged and undermined swale drain, due to animals borrows and erosion. Drainage Engineer should review.

Area No.	Comments
27	Clogged swale drain inlets and bench drain.
28	Clogged swale drain.
29	Partially clogged paved swale drains, lack of hillside vegetation, and animal borrows.
30	Partially clogged paved swale drain and lack of hillside vegetation.
31	Partially clogged paved swale drain and lack of hillside vegetation.
32	Partially clogged paved swale drain.
33	Partially clogged paved swale drain, up to two feet of surcharged rear yard fence from collected debris, and damaged/leaking sprinkler.
34	Clogged swale drain inlets and bench drain.
35	Surficial slope failure, damaged wrought iron fencing, animals borrows, lack of hillside vegetation.
36	Partially clogged paved swale drain, surcharged fence from collected debris, animals borrows, and lack of hillside vegetation.
37	Clogged paved swale drain.
38	Location appears as non-permitted development and lack of maintenance, partially clogged paved swale drain, animals borrows, and lack of hillside vegetation.
39	Partially clogged paved swale drain.
40	Minor amount of debris within basin and inlet drain.
41	Partially clogged paved swale drain.
42	Partially clogged paved swale drain.
43	Partially clogged paved swale drains, lack of hillside vegetation, and animal borrows
44, 45, 46	Partially clogged paved swale drains, lack of hillside vegetation, and animal borrows
47	Partially clogged paved swale drains, lack of hillside vegetation, and animal borrows
48	Damaged wrought iron fencing, animals borrows, and lack of hillside vegetation
49	Partially clogged paved swale drains.
50	Surficial slope failure, animals borrows, and lack of hillside vegetation. A drainage engineer should review drainage system.
51	Damaged and undermined swale drain. A drainage engineer should review drainage system.
52	Partially clogged paved swale drain.
53	Partially clogged paved swale drain
54	Partially clogged paved swale drain
55	Partially clogged paved swale drains, lack of hillside vegetation, and animal borrows. A drainage engineer should review drainage system.
56	Partially clogged paved swale drains, lack of hillside vegetation, and animal borrows. A drainage engineer should review drainage system.

CONCLUSIONS

Based on the information herein, a lack of proper hillside maintenance of the commons areas was observed on the sites.

RECOMMENDATIONS

Specific:

1. Areas numbered in red within Table A need to be mitigated as soon as possible and the others areas should be corrected prior to the next winter season that generally starts October 1.
2. A civil engineering familiar with preparing drainage plans is needed to evaluate a few locations that appear to be distressed and/or not functioning as envision, see Table A.
3. A few of the paved swale drains are damaged and are in need of repair and/or replacement. Several of the pave swale drains have been partially blocked from proper drainage flow due to fencing to the bottom or near the bottom of the paved swale drains. Therefore, drainage is prohibited and backup with debris. All paved swale drains should be cleared of debris, dead vegetation and cross fencing.
4. The debris basin/catchment areas need to be cleanout of accumulated debris to allow for additional debris prior to the rainy season. These debris basins need to be check annually for debris.
5. GeoConcepts, Inc. should perform annual reviews of the subject sites prior to the winter seasons to ensure that the commons areas geologically comply with standard of care for hillside environment.

General:

Drainage and Maintenance

Maintenance of properties must be performed to minimize the chance of serious damage and/or instability to improvements. Most problems are associated with or triggered by water. Therefore, the existing comprehensive drainage system should be maintained. In addition, pad areas should be maintained and planted in a way that will allow this drainage system to function as intended. Therefore, alteration in grading, irrigation or installation of improper drainage system, may cause failure to the drain systems. The following are specific drainage, maintenance, and landscaping recommendations. Reductions in these recommendations will reduce their effectiveness and may lead to damage and/or instability to the improvements.

Drainage

Positive pad drainage should be incorporated into any future plans. All drainage from the site should be collected and directed via non-erosive devices to a location approved by the building official.

Paved swale, area drains, subdrains, weep holes, and downspouts should be inspected periodically to ensure that they are not clogged with debris or damaged. If they are clogged or damaged, they should be cleaned out or repaired.

Landscaping (Planting)

All slopes should be maintained with a dense growth of plants, ground-covering vegetation, shrubs and trees that possess dense, deep root structures and require a minimum of irrigation. Plants surrounding the development should be of a variety that requires a minimum of watering. It is recommended that a landscape architect be consulted regarding planting adjacent to improvements. Alterations of planting schemes should be reviewed by the landscape architect.

Irrigation

An adequate irrigation system is required to sustain landscaping. Over-watering resulting in runoff and/or ground saturation must be avoided. Irrigation systems must be adjusted to account for natural rainfall conditions. Any leaks or defective sprinklers must be repaired immediately. To mitigate erosion and saturation, automatic sprinkling systems must be adjusted for rainy seasons. A landscape architect should be consulted to determine the best times for landscape watering and the proper usage.

Plumbing

Leakage from a plumbing can produce a perched groundwater condition that may cause instability or damage to improvements. Therefore, all plumbing should be leak-free.

LIMITATIONS

This report is intended to be used only in its entirety. No portion or section of the report, by itself, is designed to completely represent any aspect of the project described herein. If any reader requires additional information or has questions regarding this report, GeoConcepts, Inc. should be contacted.

This limited report provides observable information regarding the geologic findings on the site. Past performance is not a guarantee of future results. No warranty of future site performance is expressed or implied. Therefore, this limited report is not designed to provide a guarantee that the site will be free of hazards in the future, such as, landslides, slippage, differential settlement, debris flows, seepage, concentrated drainage or flooding. Hillside properties are subject to hazards, which are not found with flatland properties. It may not be possible to eliminate all hazards, but homeowners must maintain their property and improve deficiencies to mitigate potential geologic concerns.

This report is not intended to identify every problem associated with the site, but to provide an overview of the observed geologic concerns as indicated herein. This opinion report is limited in scope and latent defects may be present but concealed by earth materials and/or vegetation. Earth materials and conditions beneath those observed may have different characteristics. Therefore, no representations are made as to the nature, quality or extent of those earth materials not observed.

A detailed engineering geology and soils engineering investigation including surface mapping, subsurface exploration and laboratory testing of earth materials could result in different conclusions and recommendations described herein.

No detailed surface mapping, subsurface exploration, or laboratory testing were performed for this limited opinion report. To determine the subsurface conditions, subsurface explorations would be required. If additional geologic information is desired and requested, a proposal to perform a detailed investigation with subsurface exploration will be provided. Also, this limited report is not intended for submittal to governmental authorities for the issuing of any permits.

This report is issued and made for the client's sole use and benefit and is not transferable. This limited report does not represent that all public records are complete, retrievable or reviewed for this report. Review of geologic reports and/or geotechnical reports or litigation of any kind from homeowner associates is beyond the scope of this site review. This report describes the conditions of the site at the time of the review. Additional work should be anticipated to update this report.

This report is not intended to be a substitute for the professional opinions of a building inspector, engineer, drainage consultant, environmental engineer, surveyor and/or landscape architect. To obtain information not related to geology, contact the appropriate consultant.

We appreciate the opportunity of serving you on this project. Should you have any questions regarding this report, please do not hesitate to contact the undersigned at your convenience.

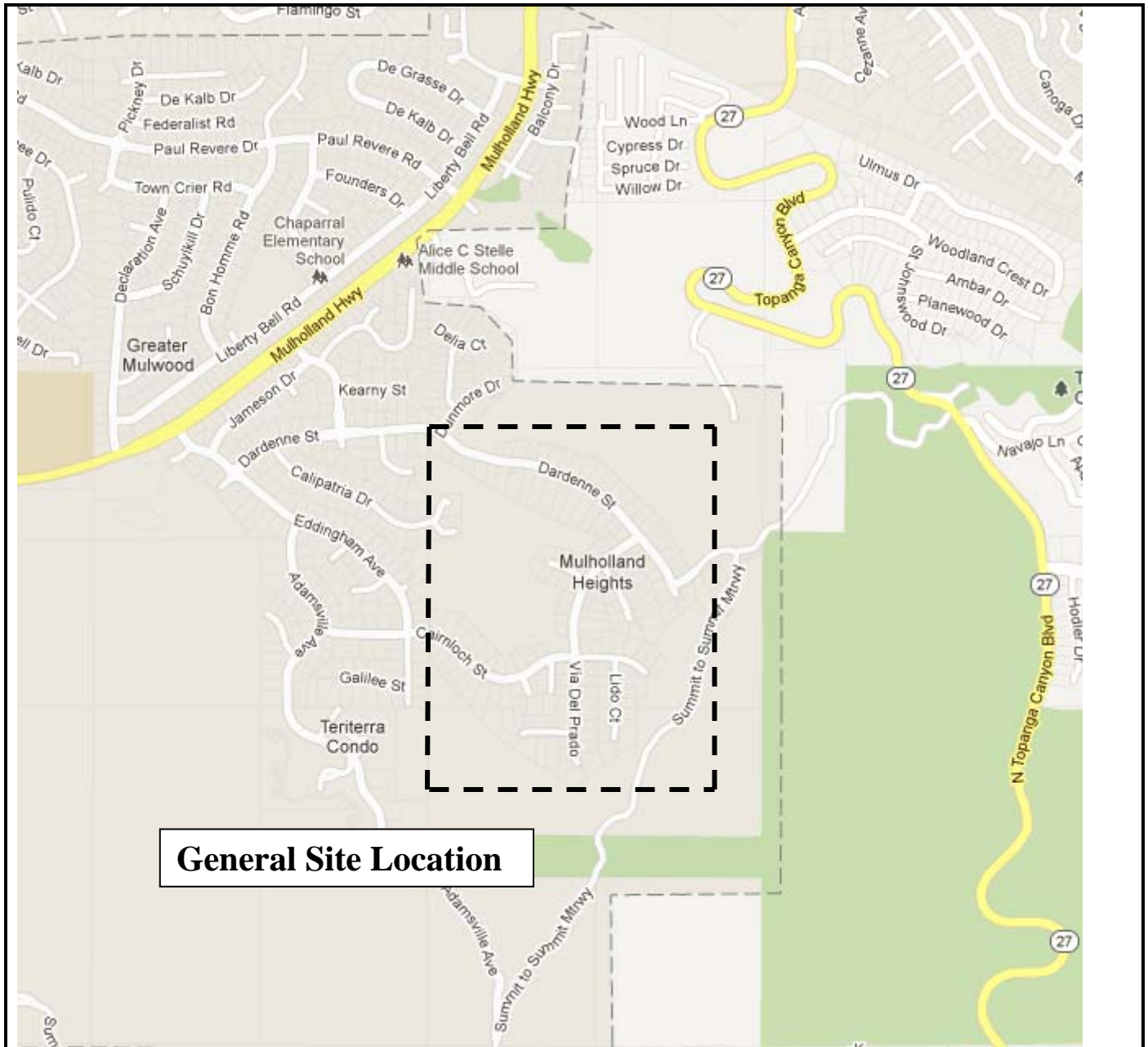
Respectfully submitted,
GeoConcepts, Inc.

Robert L. Sousa
CEG 1315,
4401-1

Attachment: Location Map
Regional Geologic Map, Plate 1
Regional Hazard Map, Plate 2
Geologic Map (pocket attachment)

Distribution: (6) Addressee

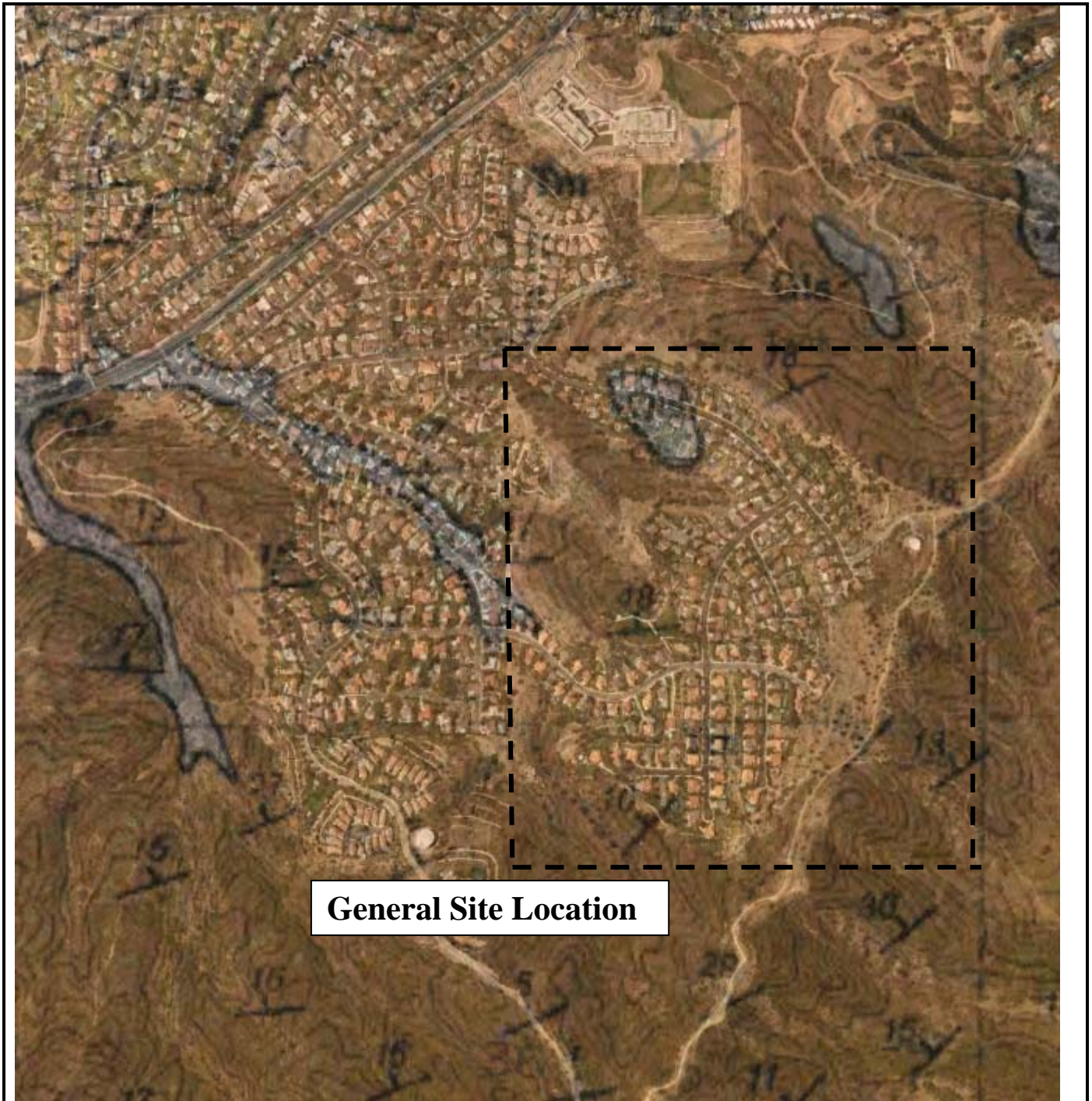
LOCATION



General Site Location

Reference:	Google Map
Project Address:	Tracts 33064 & 40932 Calabasas, California

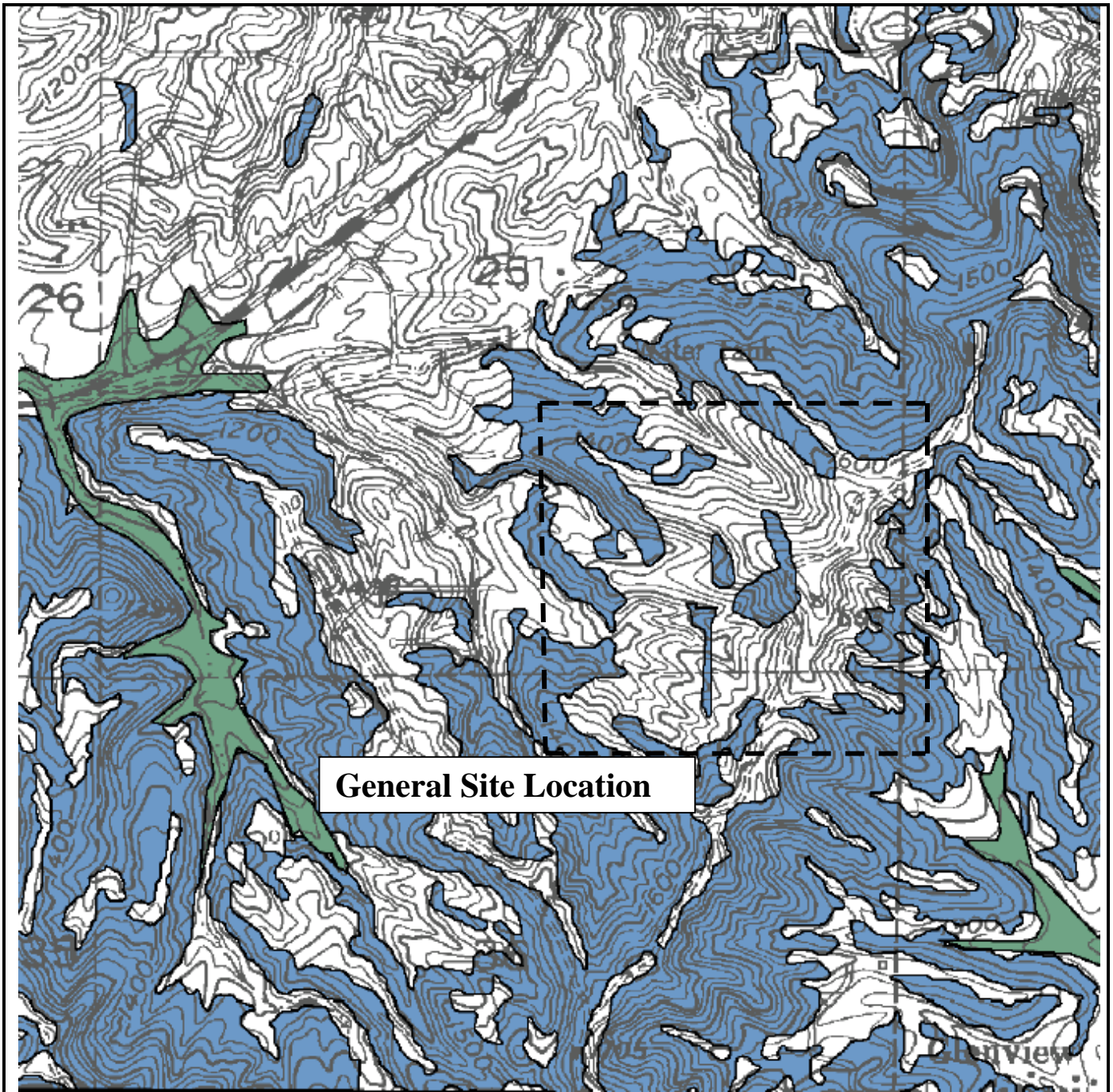
REGIONAL GEOLOGIC MAP



General Site Location

Reference:	Dibblee Geologic Foundation
Project Address:	Tracts 33064 & 40932 Calabasas, California

SEISMIC HAZARD MAP



Reference:	State of California
Project Address:	Tracts 33064 & 40932 Calabasas, California