GEO-ENGINEERING SOLUTIONS, INC.
2570 San Ramon Valley Blvd., Suite A102
San Ramon, CA | 925-433-0450

September 28, 2021

San Leandro Unified School District
835 E 14th Street
San Leandro, California 94577

Attention: Mr. Nick Malve

***Subject:*** ***Proposal for Geotechnical Engineering Study and Geologic Hazard Report***
*Various Sites Shade Structure*
*San Leandro, CA*
*Geo-Eng Proposal No. 1370*

Dear Mr. Malve:

***Geo-Engineering Solutions Inc. (Geo-Eng)*** has prepared this proposal to provide geotechnical services for the proposed shade structures to be built at various school sites throughout the San Leandro Unified School District. These projects consist of shade structures which will have a drilled pier foundation support system. All these sites are located with a Geologic Hazard zone for liquefaction as designated by the California Geologic Survey. Based on DSA IR A4-13, we understand that a current Geologic Hazards Report is required for each of these project sites. In addition, the design of these structures will require standard geotechnical recommendations for foundation design as well as some minor grading associated with the construction of the shade structures. Over the last several years we have worked on many of these sites, and we believe that our previous work can be utilized with some updating depending on location of the shade structure relative to pervious work as well as the age of our work. In some cases, the geologic hazards reports are withing the current code cycle and in some cases they are not. We are trying to reutilize as much as possible our previous work to provide economy to the district.

The following table presents a summary of the school sites as well as our existing reports and investigation report status for each site.

| Project Location | Previous Geotechnical Site Investigation Geologic Hazards Report | Current Geologic Hazards Report | Existing proximate data |
|---|---|---|---|
| Madison E.S. | No | No | No |
| Garfield ES | Yes | No | No |
| Monroe ES | No | No | No |
| Wilson ES | Yes | No | No |
| Bancroft MS | Yes | Yes | No |
| Roosevelt ES | Yes | Yes | No |
| Washington ES | Yes | No | No |
| San Leandro HS | Yes | Yes | No |

For the project sites with no previous geotechnical report or geologic hazards report, a new complete report in accordance with CGS Note 48 will need to be performed. The detailed scope for this is outlined below. Due to the lack of proximate data, some level of investigation will be required for all sites, however, for existing sites with geologic hazard reports, a new report with cross sections, figures, and detailed hazard assessment will not be required. Only a abbreviated update letter with foundation recommendations will be required for those sites. For out of date geologic hazard sites and updating of the seismic design parameters will also be required.

Based on the 2019 CBC, a site-specific ground motion hazard analysis is required for sites where seismic design parameter $S_1$ is 0.2g or greater, **unless the specific exception enumerated in ASCE 7-16 Chapter 11.4.8 is invoked**. The seismic design parameter $S_1$ for the subject site is greater than 0.2, Therefore, a site-specific ground motion analysis is required unless the above-mentioned exception is included in the project design. Based on the types of structures planned, we are assuming that this exception is being taken and we are not proposing any site-specific ground motion hazard studies. If a site-specific ground motion hazard analysis is required, we should be notified so that we may provide the appropriate seismic design parameters

**New Geotechnical Engineering & Geologic Hazards Study (Madison and Monroe ES)**

Geo-Eng will conduct a design-level Geotechnical Study for the site for the purpose of developing sufficient geotechnical information to guide foundation design and site infrastructure development at the site, which will consist of the following work scope:

Preliminary Field Activities

1) Review available geotechnical and geologic literature for the site.
2) Mark the locations of the subsurface explorations at the site and contact Underground Service Alert.
3) We are assuming that the site utilities will be located as part of a separate utility location phase of work, and we can use this location for our work as well.

Field Exploration

1) The field exploration program will consist of advancing 2 Cone Penetrometer Tests (CPTs) to a maximum depth of 50 feet. The CPTs will be advanced in the vicinity of the shade structure.
2) The CPT will be backfilled with cement grout. Excess drill cuttings will be spread in landscape or undeveloped areas.
3) Several bulk samples from the upper surface may be collected using a hand auger in the vicinity of the proposed structure.

Laboratory Testing

1) Several in-situ moisture and density tests will be performed on bulk samples collected.
2) Up to two Sieve Analysis tests will be performed to determine subsurface soil characteristics of granular subsurface soils as needed for engineering analysis.
3) One to two Atterberg Limits tests will be performed to determine the expansive potential of the near surface soil.
4) One Corrosion test will be performed as required by the 2019 CBC to help evaluate the corrosive potential of onsite soil on buried structures.

Report Preparation

The geotechnical data generated from our field and laboratory testing program will be analyzed and used to develop conclusions and recommendations regarding geotechnical site development considerations, foundation selection and design, and geotechnical construction considerations.

1) A design-level Geotechnical Engineering Study report will be prepared and will contain a site plan showing boring locations, boring logs, subsurface cross-sections, laboratory test data, and a summary of site soil and groundwater conditions. 2019 CBC seismic design parameters and other pertinent information will be provided.
2) The report will contain but not necessarily be limited to, the following information:
   - Geotechnical considerations affecting site and building development, including undocumented fill materials; expansive soils, weak surficial soils, and potentially liquefiable soils, if encountered; and other seismic hazards such as ground shaking, and dynamic densification;
   - Generalized preliminary corrosion evaluation;
   - Discussion of feasible foundation support systems, as applicable;
   - Specific foundation design recommendations including bearing or axial support capacities, dimensions and embedment, and lateral load resistance;
   - Site grading, including site preparation, drainage and subdrainage, excavation, allowable engineered fill materials, including reuse of onsite soil materials as engineered fill; grading and fill compaction, and utility trench backfill construction.

**Geology and Geologic Hazards Study**

In accordance with the requirements of Title 24, DSA Interpretation of Regulations A-4.13, and the 2016 CBC, a Geologic Hazards Study report is also generally required for new structures exceeding 4,000 square feet in size or for sites located within a state identified geologic hazard zone***. This project is located within an identified Geologic Hazard Zone and therefore requires a Geologic Hazards Report***. Required information to be included in the study is dictated by Note 48 of the California Geologic Survey. The Geology and Geologic Hazards Study report would be integrated into the Geotechnical Study Report and will include site plans, geology maps, soil series maps, geologic cross-sections, and fault map. Geologic maps, literature, and historic aerial photographs will be reviewed. The local and regional geology and geologic hazards will be discussed.

**Summary of Fees**

We will perform the new site investigation services for Monroe and Madison for a lump sum Lump Sum fee of **$9,000 for each site**. The following table provides a breakdown of our proposed fees for this project:

| Scope Item | Amount | Fee Basis |
|---|---|---|
| ***Phase A - Geotechnical Engineering Study and Geologic Hazards Report*** | | |
| Planning and Coordination | $ 800.00 | Lump Sum |
| CPT, including Geo-Eng Staff Engineer/Geologist | $4,500.00 | Lump Sum |
| Lab Testing | $1,000.00 | Lump Sum |
| Liquefaction Analysis and Geologic Hazards | $1,200.00 | Lump Sum |
| Report Preparation | $1,500.00 | Lump Sum |
| **Total – Required Geologic Report and Geotechnical Report** | **$9,000.00** | Lump Sum |

**Update Geohazards Report and Provide Foundation and Earthwork Recommendations for Shade Structure Area (Garfield, Wilson, Bancroft, Roosevelt, Washington, and San Leandro HS)**

Geo-Eng will update the design-level Geotechnical Study for the site for the purpose of developing sufficient geotechnical information to guide foundation design and site infrastructure development at the site, which will consist of the following work scope:

Preliminary Field Activities

1) Review available geotechnical and geologic literature for the site.

Field Exploration

2) Several bulk samples from the upper surface may be collected using a hand auger in the vicinity of the proposed structure.

Laboratory Testing

3) Several in-situ moisture and density tests will be performed on bulk samples collected.
4) Up to two Sieve Analysis tests will be performed to determine subsurface soil characteristics of granular subsurface soils as needed for engineering analysis.
5) One to two Atterberg Limits tests will be performed to determine the expansive potential of the near surface soil.

Report Preparation

3) A letter report with updated foundation design recommendations as well as updated 2019 CBC seismic design parameters and other pertinent information will be provided. Our report will include an updated site figure showing our new hand auger borings as well as boring logs and lab test results.
4) The report will contain but not necessarily be limited to, the following information:
    - Geotechnical considerations affecting site and building development, including undocumented fill materials; expansive soils, weak surficial soils, and potentially liquefiable soils, if encountered; and other seismic hazards such as ground shaking, and dynamic densification;
    - Generalized preliminary corrosion evaluation;
    - Discussion of feasible foundation support systems for the proposed shade structures.
    - Specific foundation design recommendations including bearing or axial support capacities, dimensions and embedment, and lateral load resistance;
    - Site grading, including site preparation, drainage and subdrainage, excavation, allowable engineered fill materials, including reuse of onsite soil materials as engineered fill; grading and fill compaction, and utility trench backfill construction.

**Geology and Geologic Hazards Study**

We will provide an updated statement and attach an updated statement certifying that the previous geologic hazards report is valid and attach as addendum to the new letter report the previous geologic hazards report. As part of this, we will provide an updated site figure with the previous

**Summary of Fees**

We will perform our proposed base scope of work for services presented herein for a Lump Sum fee of **$3,500. Each of the sites.** The following table provides a breakdown of our proposed fees for this project:

| Scope Item | Amount | Fee Basis |
|---|---|---|
| ***Geotechnical Engineering Study and Geologic Hazards Report*** | | |
| Planning and Coordination with Private Utility Locator | $ 400.00 | Lump Sum |
| Hand Auger (prevailing wage), including Geo-Eng Staff Engineer/Geologist | $ 800.00 | Lump Sum |
| Lab Testing | $800.00 | Lump Sum |
| Engineering Analysis and Report Preparation | $1500.00 | Lump Sum |
| **Total – Required Geologic Report and Geotechnical Report** | **$3500.00** | Lump Sum |

**Summary of fees for all projects**

**The following table provides a summary of all fees for the geotechnical investigations for the shade structure projects.**

| Project Location | New Project Number | Proposed Fee |
|---|---|---|
| Madison E.S. | 13-1370-E:E | $9,000 |
| Garfield ES | 13-1370-C:C | $3,500 |
| Monroe ES | 13-1370-D:D | $9,000 |
| Wilson ES | 13-1370-I:I | $3,500 |
| Bancroft MS | 13-1370-A:A | $3,500 |
| Roosevelt ES | 13-1370-F:F | $3,500 |
| Washington ES | 13-1370-H:H | $3,500 |
| San Leandro HS | 13-1370G:G | $3,500 |
| **Total Fees for Project** | | $39,000 |

We anticipate that the services will be provided in accordance with our master services agreement with the district and a task order will be issued in accordance with the terms of our agreement. If you have any questions regarding this proposal, please contact the undersigned at eswenson@geo- eng.net or (925) 433-0450. We greatly appreciate the opportunity to provide this proposal.

Sincerely,
**GEO-ENGINEERING SOLUTIONS, INC.**

Nicolas Haddad, PE
Senior Geotechnical Engineer

Eric J. Swenson, GE, CEG
Principal Engineer/ Engineering Geologist

Alex Woodman AlexW@rgmkramer.com
Nick Malve NickM@rgmkramer.com

**SAN LEANDRO UNIFIED SCHOOL DISTRICT**
**Bond Department**

**To:** Facilities and Technology Committee
**From:** Bond Department
**F&T Meeting Date:** 10/06/2021
**Project Description:** New Proposal

**Bond Measure:** N
**Site location:** James Madison ES (04), Garfield ES (02), James Monroe ES (06), Woodrow Wilson ES (09), Bancroft MS (011), Roosevelt ES (07), Washington ES (08), San Leandro HS (016)
**Funding Source:** Shade Structure (805)

**Fiscal Impact:**
Madison ES: $9,000.00
Garfield ES: $3,500.00
Monroe ES: $9,000.00
Wilson ES: $3,500.00
Bancroft MS: $3,500.00
Roosevelt ES: $3,500.00
Washington ES: $3,500.00
San Leandro HS: $3,500.00

Owner 10% Contingency: $3,900.00

Total Fiscal Impact: $42,900.00

**Rationale:** Cost proposal for the geotechnical investigations for the multi-site shade structure project and the provision of geotechnical recommendations for foundation design and geologic hazards reports for each site.

**Contractor/Company on the project:** Geo-Engineering Solutions
**Phone**: 925-433-0450
**Full Name of person responsible to sign contract:** Eric Swenson
**Email to send contract to for DocuSign:** eswenson@geo-eng.net
**License #:** N/A

**Is this a new Company being used?:** No
**Do we have a W9 on file?** Yes