PR 08-03

PROCEDURE: SCHOOL FACILITY PROGRAM/SEISMIC MITIGATION PROGRAM

Division of the State Architect (DSA) documents referenced within this publication are available on the <u>DSA Forms</u> or <u>DSA Publications</u> webpages.

PURPOSE: This document sets forth the procedures to be followed by applicants seeking funding for seismic mitigation of eligible buildings under the Seismic Mitigation Program (SMP) for California K–12 public schools.

BACKGROUND: The SMP is authorized by the Kindergarten–University Public Education Facilities Bond Act of 2006 (Proposition 1D) and School Facility Program (SFP) regulations (Title 2, California Code of Regulations, Section 1859.82(a)), and administered by the Office of Public School Construction (OPSC) on behalf of the State Allocation Board (SAB). Proposition 1D provided \$199.5 million of state matching funds for seismic mitigation projects, and related ancillary costs, begun on or after May 20, 2006, that meet the eligibility requirements. SMP regulations can be found on the OPSC website.

NOTE: This procedure corresponds to the amended program regulations adopted by the SAB on June 22, 2011, and approved by the Office of Administrative Law on September 8, 2011.

OVERVIEW: The following is a brief summary of the steps and the required submittals for review and approval by the Division of the State Architect (DSA):

Phase (Section)	Required Submittals	DSA Fee	References
1. Verify Eligibility	Eligibility Evaluation Report submitted to the DSA regional office.	\$1000	ASCE/SEI 31-03
2. Replacement Option Analysis: (not required for Rehabilitation projects)	Structural Engineer's Report, Geotechnical Engineer's Report (if applicable), and Cost Estimate. DSA regional offices review the scope of work in the request.	Initial fee of \$2000 per building. Additional fees based on DSA review hours	Section 2
3. Seismic Rehabilitation Pre-Application (not required for replacement projects)	Evaluation and Design Criteria Report. Submit to the DSA regional office.	Initial fee of \$2000 per building. Additional fees based on DSA review hours	ASCE/SEI 41-06, CBC Chapter 34, Title 24 Part 1 Section 4-306
4. Project Application	Construction Plans, Specifications, Calculations, and Geohazard Report submitted to the DSA regional office.	Standard plan review fee based on estimated construction cost (see Title 24, Part 1, Section 4-321)	Rehabilitation: ASCE/SEI 41-06, CBC Chapter 34 Replacement: CBC Chapter 16A
5. Seismic Mitigation Funding	See OPSC website for applicable requirements including OPSC Facility Hardship Checklist & form SAB 50-04.	Not Applicable	Section 5

- 1. PHASE 1 VERIFY ELIGIBILITY: Only buildings meeting the following eligibility criteria may be funded under this program. The school district must submit a completed Eligibility Evaluation Report Template to demonstrate the proposed building meets these eligibility criteria. If your district has an eligible building that was repaired or replaced prior to the issuance of this procedure, contact DSA headquarters for direction.
- **1.1 Building Occupancy:** Indicate whether the building was designed for occupancy by students and staff by providing the DSA application number for the original construction, or the applicable DSA number for projects involving pre-Field Act buildings per

Education Code, Section 17367.

- **1.2 Structural System:** Describe the structural system, using the definitions in the *Seismic Evaluation of Existing Buildings (ASCE/SEI 31-03), American Society of Civil Engineers, 2003,* for guidance in determining the structural system. Provide structural framing plan layout drawings/sketches or copies of the structural framing plans used for the original construction. The type of structural system must be one of the following:
 - C1 Concrete Moment Frames
 - C1B* Reinforced Concrete Cantilever Columns
 - C2A Concrete Shear Walls, Flexible Diaphragm
 - C3A Concrete Frame with Infill Masonry Shear Walls, Flexible Diaphragm
 - PC1 Precast/Tilt-up Concrete Shear Walls, Flexible Diaphragm
 - PC1A Precast/Tilt-up Concrete Shear Walls, Rigid Diaphragm
 - PC2 Precast Concrete Frames with Shear Walls, Rigid Diaphragm
 - PC2A Precast Concrete Frames without Shear Walls, Rigid Diaphragm
 - RM1 Reinforced Masonry Bearing Walls, Flexible Diaphragm
 - S1B* Steel Cantilever Columns
 - S3 Steel Light Frames
 - URM Unreinforced Masonry Bearing Walls, Flexible Diaphragm
 - URMA Unreinforced Masonry Bearing Walls, Rigid Diaphragm
 - M* Mixed Systems building containing at least one of the above lateral-forceresisting systems in at least one direction of seismic loading.

*These structural systems are a subset of the classification in ASCE 31 and are defined in the Category 2 building types in the AB 300 Seismic Safety Inventory of California Public Schools report (2002).

1.3 Building Collapse Potential Due to Ground Shaking: Provide evidence that demonstrates that the building poses an unacceptable risk of injury to its occupants due to ground motions, as determined in ASCE/SEI 31-03. Additionally, describe in detail the specific deficiencies and reasoning for these conclusions for at least one potential collapse scenario. The ASCE/SEI 31-03, as amended per the Eligibility Evaluation Report Template, shall be used for the evaluation of the building performance level.

NOTE: If eligibility can be determined based on ground shaking, then it is not necessary to provide a geohazard report in this phase, as referenced in Section 1.4 of this procedure.

1.4 Building Collapse Potential Due to Faulting, Liquefaction, Landslides: If eligibility is based on the presence of faulting, liquefaction or landslide, a geologic analysis must be prepared and submitted to the California Geological Survey (CGS). Refer to Appendix B for reporting of ground faulting, liquefaction and landslides, and consult with CGS (Jennifer Thornburg, 916-445-5488) prior to submittal of such reports to ensure a complete submittal. For additional information, please visit the CGS website at https://www.conservation.ca.gov/cgs/reviews/school-hospital-and-environmental-reviews/project-review-faq

Submit the reports to the address below and include a reference to the Seismic Mitigation Program.

Attn: Margaret Hyland California Geological Survey School Review Unit 801 K Street, MS 12-32 Sacramento, CA 95814

CGS will provide a letter to the school superintendent and provide a copy to DSA and OPSC indicating whether or not CGS concurs with the characterization of the geologic hazard and expected magnitude of displacements.

The Eligibility Evaluation Report shall contain a structural analysis demonstrating a high potential for local or global collapse in the evaluation earthquake as a result of the displacements imposed on the structure due to the faulting, liquefaction, or landslide, as indicated in the CGS approved geohazard report. The structural analysis shall comply with California Building Code (CBC), Section 1604A.4. To ensure the analysis approach is acceptable, consult with DSA (contact below) prior to completing the evaluation report.

1.5 Submittal Requirements: The school district must submit a complete application form *DSA 4: Application for Review of Eligibility Evaluation Report for the Seismic Mitigation Program*, application fee and an Eligibility Evaluation Report to the DSA regional office responsible for overseeing construction projects at the school site.

DSA Los Angeles Regional Office 355 South Grand Ave., Suite 2100 Los Angeles, CA 90071 ATTN: SMP Program

DSA Sacramento Regional Office 1102 Q Street, Suite 5200 Sacramento, CA 95811 ATTN: SMP Program DSA Oakland Regional Office 1515 Clay Street, Suite 1201 Oakland, CA 94612 ATTN: SMP Program

DSA San Diego Regional Office 10920 Via Frontera, Suite 300 San Diego, CA 92127 ATTN: SMP Program

The report must have the stamp or seal and signature of a California registered structural engineer.

The report and all related documents must be submitted in hard copy, accompanied by a CD containing all submitted documents.

Provide a separate application form DSA 4, application fee, and report for each building even if the buildings are similar or identical in design and construction.

1.6 DSA Review: Submittals will be reviewed within 10 working days of receipt of a complete submittal. If eligibility is based on the presence of faulting, liquefaction or landslide, the report will require additional review time by DSA and CGS. CGS concurrence must be obtained in order for DSA to issue a letter confirming building eligibility for SMP.

The DSA regional office will send a letter to the applicant, with copies to the school district superintendent, district facilities director or appropriate contact, structural engineer, and OPSC, indicating whether or not DSA concurs that the building is eligible for funding.

1.7 Evaluation of Mitigation Options: Once the applicant receives confirmation from DSA that the building meets the eligibility criteria for SMP, the applicant may proceed with rehabilitation of the building, replacement of the facility on the same school site, or replacement on a new site. Prior to proceeding with project design, school districts and their design professionals are advised to review OPSC requirements for funding of SMP projects. These requirements include, among other items, a justification by the district of the unmet pupil housing need and a cost benefit analysis that determines the building's qualifications for rehabilitation or replacement funding. The project's eligibility for SFP replacement or rehabilitation funding may not match a school district's desired construction outcome. For more information, see the OPSC website at www.dgs.ca.gov/opsc or contact OPSC (see Section 5 for OPSC contact information).

- 2. PHASE 2 REPLACEMENT OPTION ANALYSIS: To ensure compliance with SFP regulations, Section 1859.82(a)(1), California Code of Regulations (CCR), a school district seeking funding to replace an eligible building must demonstrate that the estimated cost of rehabilitation is equal to or greater than 50 percent of replacement value (replacement value is determined by OPSC in accordance with SFP regulations). SFP regulations also require DSA concurrence with the scope of the minimum work required to rehabilitate an eligible building. To obtain DSA concurrence, a school district must submit a structural engineer's report to the DSA regional office. The address for each regional office is given in Section 1.5. The report must contain the following as applicable to the building deemed eligible in Phase 1:
 - Detailed description of seismic deficiencies.
 - Description of minimum work required to mitigate seismic deficiencies.
 - Description of accessibility and fire and life safety upgrades. To determine applicable required work for fire and life safety and accessibility upgrades, refer to CBC Chapter 34 and Appendix C of this procedure.
 - Schematic plans for the above work.
 - Cost estimate for the above required work (summary cost estimate, i.e., square footage basis). Other work (including, but not limited to, repair, upgrades, or modifications, etc.) not required as a result of the seismic mitigation or applicable accessibility and fire and life safety work shall not be included in the cost estimate.

DSA will review the cost estimate to ensure that the required work is included, and will not review the estimate for actual cost of construction.

To ensure timely processing, the report must be accompanied by a cover letter requesting Phase 2 concurrence review. Include the Project Tracking Number (PTN) shown on the DSA 4 form submitted in Phase 1.

Upon review and concurrence, DSA will issue a letter to the applicant and provide a copy to the school district superintendent, facilities director, structural engineer, and OPSC. The school district may proceed to Section 4 below.

Should the school district seek conceptual approval through OPSC at Phase 2, the Phase 2 concurrence letter fulfills DSA's responsibility in the conceptual approval application process. Detailed information about the OPSC conceptual approval process is available on the OPSC website linked here: OPSC Seismic Mitigation Program Handbook.

NOTE: For projects involving liquefaction or landslides as the geologic hazard contributing to the collapse potential of the eligible building, a geohazard report will be required to document the potential for building displacement and recommended site improvements to mitigate the hazard. Such report shall be submitted to CGS for review if the geohazard report submitted in the eligibility phase (refer to Section 1.4 above) did not address the selected mitigation measures.

For projects involving faulting as a hazard contributing to the collapse of a building, a geohazard report is not required as this hazard cannot be mitigated and the building must be replaced.

3. PHASE 3 – SEISMIC REHABILITATION OPTION: The approval of a rehabilitation plan is a two-step process that includes the filing of the pre-application and the project application. The pre-application will establish the criteria for evaluation and design, material testing and condition assessment requirements, and is described in this section. The project application, described in Section 4, will include the design development of construction plans, specifications, and calculations, using the criteria established in the pre-application.

Projects with an estimated cost of rehabilitation equal to or greater than 50 percent of replacement value will only qualify for replacement funding under the provisions of the SMP.

It is advised that school districts contact OPSC for more information prior to submitting a Phase 3 approval request to DSA.

- **Pre-Application:** The district must submit to DSA a pre-application, form *DSA 1-REH:* Pre-Application for Approval of a Rehabilitation Project Evaluation & Design Criteria Report, required fees in accordance with Title 24 Part 1, Section 4-326, and an Evaluation and Design Criteria Report per Title 24 Part 1, Section 4-306 and CBC Sections 3417.4, 3419, and 3423.1. The Evaluation and Design Criteria Report shall also include the proposed fire and life safety and accessibility criteria (see Appendix C).
- **3.2 Scope of Work:** Rehabilitation projects funded by SMP shall be designed to meet the current CBC requirements for seismic rehabilitation. For the 2013 CBC, seismic rehabilitation shall be designed in accordance with Sections 3417 to 3423, utilizing the performance requirements in CBC Table 3417.5 for "public schools."

A seismic rehabilitation includes strengthening of all structural elements that do not comply with ACSE 41, Section 2.3.2 - *Systematic Rehabilitation Method* and is not limited to those deficient items found in the ASCE/SEI 31-03 analysis described in Section 1, above.

In addition, the seismic rehabilitation requires a full inventory, analysis, and strengthening, where required, of the non-structural components of the building in accordance with Section 11 in ASCE/SEI 41-06 utilizing the criteria in CBC Table 3417.5, and as outlined in CBC Section 3419.9. See Appendix C for applicable requirements for fire and life safety and accessibility.

Seismic rehabilitation projects under the SMP will be subject to a structural rehabilitation (wind and seismic force requirements) per Section 4-306 if alterations to the existing structural components, or additions of new structural components, exceed the limitation of Title 24, Part 1, Section 4-309(c) 2. The cost trigger for structural rehabilitation in Title 24, Part 1, Section 4-309(c)1 need not apply to seismic rehabilitation projects under the SMP since the cost of the seismic rehabilitation need not be included in this cost analysis. Conversely, the seismic rehabilitation costs shall be included in the Replacement Option Analysis in Section 2.

NOTE: A project consisting of repairs designed pursuant to only Section 3419.12, Part 2, Title 24 CCR (voluntary modifications to the lateral-force-resisting system) is not eligible for funding under the SMP. Only seismic rehabilitation in accordance with Section 3.2 of this procedure will be eligible for SMP funding.

DSA Review: Upon review and approval of the Evaluation and Design Criteria Report, DSA will date, sign, and stamp the report with the applicable REH application number. An REH application number is assigned to a project prior to the DSA application number to facilitate tracking of rehabilitation projects. The Evaluation and Design Criteria Report shall be used to prepare the project submittal, per Section 4.

The school district may choose to request a conceptual approval from the State Allocation Board once it has received the Phase 3 approval from DSA in accordance with the OPSC Seismic Mitigation Program Handbook. The school district must submit a cost estimate to DSA for the seismic rehabilitation work described in the Phase 3 approved report. Upon agreement that the cost estimate includes only the minimum work specified in Section 3.2, DSA will issue a letter serving as concurrence with the scope of minimum work required for purposes of submitting a request for conceptual approval to the State Allocation Board. DSA may invoice on an hourly basis for review of the cost estimate and preparation of the conceptual approval letter.

- **4. PHASE 4 PROJECT APPLICATION:** To facilitate a complete application submittal to DSA, applicant school districts should contact the DSA regional office to schedule a design phase consultation. For rehabilitation projects, the meeting should include verification of certification of prior construction projects involving the eligible building(s), and the scope of fire and life safety and accessibility upgrades to be included in the project.
- **4.1 DSA Submittal Requirements:** The submittal must include a form DSA 1, form *DSA 3:* Project Submittal Checklist along with all applicable documents, required fees in accordance with Title 24, Part 1, Sections 4-321 and 4-324, geohazard report in accordance with DSA *IR A-4:* Geohazard Report Requirements, construction plans, specifications, and the design phase meeting minutes (if applicable).
 - Replacement projects do not require an Evaluation and Design Criteria Report, per Section 3.1 above, as a prerequisite for submittal of plans.
 - The application package shall be submitted to the appropriate DSA regional office. DSA will assign a project application number.
- 4.2. Rehabilitation Project Scope: When an applicant school district wishes to expand the scope of the project beyond seismic rehabilitation, the project application must be submitted to DSA in increments per DSA IR A-11: Incremental Submittals. One of the increments must contain only the work which is expected to receive state funds for seismic rehabilitation and associated required fire and life safety and accessibility upgrades. The other increment(s) must include work unrelated to seismic rehabilitation and associated required fire and life safety and accessibility. For the purposes of the SMP only, each increment need not be independently complete and code compliant per DSA IR A-11, Section 1.1, provided the combined increments are complete, code compliant, and are submitted and approved concurrently, and construction certification of each increment is tied to each other. Application submittal must include form DSA 1-INC: Definition of Scope of Increments, and a letter from the design professional in general responsible charge stating that the scope of work in the seismic rehabilitation increment contains only the minimum work needed to mitigate the seismic deficiencies and associated required fire and life safety, and accessibility upgrades.
- **4.3 DSA Review:** The DSA regional office will review the construction documents and, upon determining compliance with CBC requirements for school buildings, issue a Plan Approval letter. Consult the DSA regional office regarding expected timeline of review and approval of projects.
- **4.4 OPSC Requirements:** SFP Regulation, Section 1859.82(a)(1), requires that project funding be limited to the work required to obtain DSA approval for the work required for the seismic rehabilitation and related fire and life safety, and accessibility upgrades. To fulfill this requirement, OPSC requires a school district to provide a letter of concurrence from DSA at the time of submittal of a funding application to OPSC.

A school district or its design professional in general responsible charge shall request the letter of concurrence from the DSA regional office after approval of the project plans and specifications. For project applications submitted in increments, the DSA concurrence letter will address the increment of the project containing seismic rehabilitation work and associated required fire and life safety, and accessibility upgrades.

5. PHASE 5 – SEISMIC MITIGATION FUNDING: Upon receipt of DSA Plan Approval letter, the school district must forward a copy of the letter to OPSC as a part of its application for funding (form SAB 50-04), along with any other applicable documents.

Any questions related to funding available for the SMP, including eligibility for various grants and allowances, should be directed to OPSC by calling (916) 376-1771.

A DSA Procedure documents a process or series of steps that DSA staff and/or external stakeholders must complete in order to fulfill one or more administrative requirements of DSA's review and approval of plans and specifications and construction oversight programs.

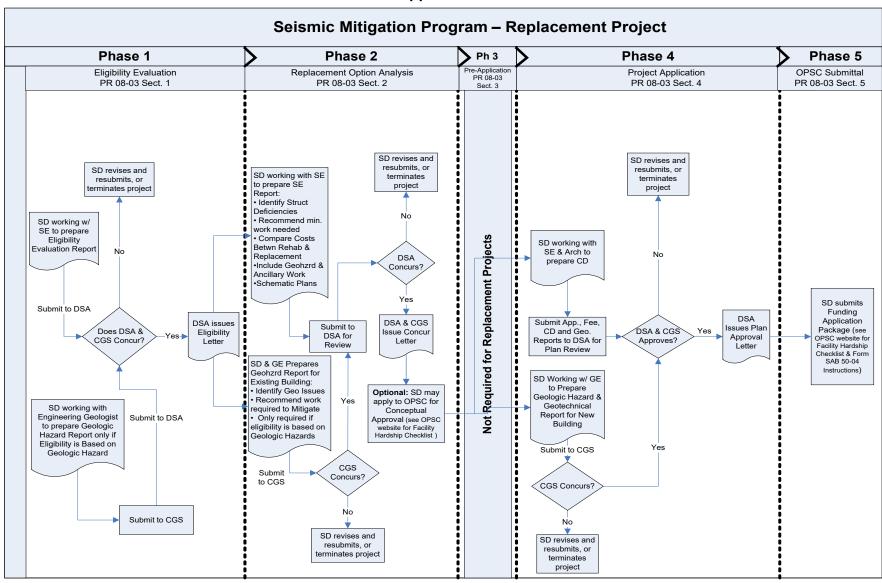
Appendix A: Process Flow Charts

Appendix B: Documenting Geologic Hazards for SMP Projects

Appendix C: Guidelines for Determining Fire Life Safety and

Accessibility Requirements

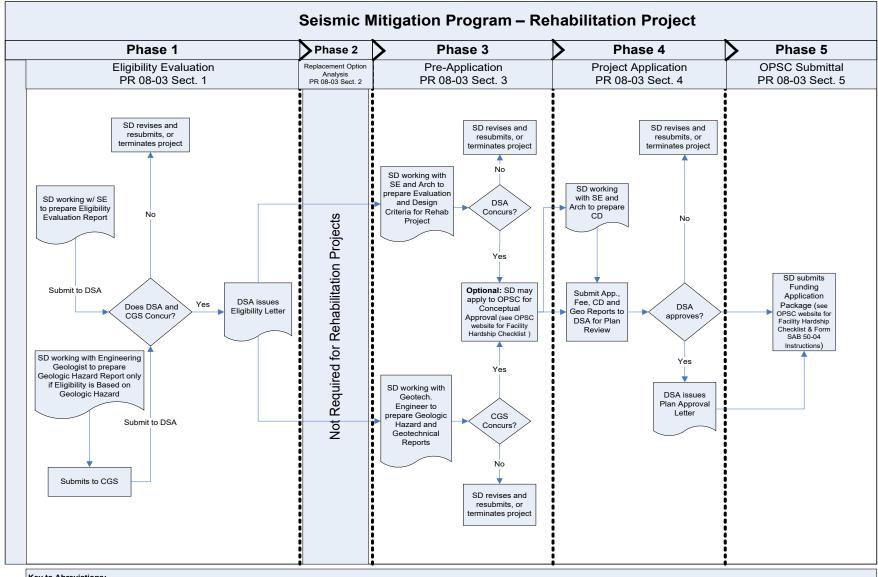
Appendix A



Key to Abreviations:

CD=Construction Document, CGS=California Geologic Survey, DSA=Division of the State Architect, GE=Geotechnical Engineer, OPSC=Office of Public School Construction, SAB=State Allocation Board, SD= School District SE= Structural Engineer

Disclaimer: This flowchart is intended as a general guide and tool for district use



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Appendix B – Documenting Geologic Hazards for SMP Projects

Introduction: If eligibility for Proposition 1D funding is based on the presence of faulting, liquefaction or landslide, a geologic analysis must be prepared and submitted to CGS.

Procedure: For each building evaluated for SMP eligibility, provide evidence that the geologic hazard is present on the site, and provide the anticipated magnitude of surface displacement in accordance with the guidelines below. Displacement results must be sufficiently detailed for structural engineers to use in their analysis of structural performance. These analyses are not typical geotechnical engineering or engineering geology practice, and each project will be reviewed for scientific credibility on its own merit. Supporting site data must be presented and must be shown to be directly relevant to the structure being evaluated. Adequate scientific justification for all interpretations must be presented. Overly "conservative" approaches may result in unreasonably large estimates of displacement which, for this program, will be questioned by CGS.

Resources: See these documents for guidance (all are available online):

- <u>California Geological Survey Note 48, 2013, Checklist for the Review of Engineering</u>
 <u>Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings</u> (PDF – 74 KB).
- <u>California Geological Survey, 2008, Guidelines for Evaluating and Mitigating Seismic</u>
 Hazards in California, CGS Special Publication 117A (PDF 1.24 MB).
- Martin, G.R. and Lew, M., 1999, Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Liquefaction in California; Southern California Earthquake Center (PDF – 2.13 MB).
- Blake, T.F. Hollingsworth, R.A., and Stewart, J.P., 2002, Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Landslide Hazards in California, Southern California Earthquake Center (PDF – 3.24 MB).
- <u>California Geological Survey Note 49, 2002, Guidelines for Evaluating the Hazard of Surface Fault Rupture</u> (PDF 351 KB).
- 1. **LIQUEFACTION:** Engineering geologists or geotechnical engineers working for the school district as consultants should estimate displacement of ground surface assuming the site is subject to peak ground acceleration (PGA) calculated with the adjusted MCE_G peak ground acceleration (PGA_M) in accordance with ASCE 7-10, Section 11.8.3, and historical high ground water level. The consultants should show how PGA and ground-water parameters are derived. Adequate site-specific density data should be provided through boring logs, cone penetration test correlated with borings, or down-hole shear-wave velocity data. Vertical and lateral extent of liquefiable layers should be shown in geologic cross sections.

Show calculations to document one or more of the following failure mechanisms:

- 1.1 Loss of bearing capacity:
 - Report undrained residual bearing capacity and analyze the potential for punching shear failure.

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1.2 Lateral spread:

- Provide geologic cross section showing extent of lateral spread with respect to the building. Indicate if the building is on the margins of expected lateral spread, or if it lies within a recognizable coherent block.
- Report vertical and lateral displacement at the location of the structure.

1.3 Differential settlement:

- Using a factor of safety for liquefaction of 1.3, report maximum differential settlement across the building footprint.
- Actual differential settlement must be supported by two or more borings. Assumption
 of some fraction of total liquefaction settlement will not be accepted.
- Dry seismic settlement above the historical high ground-water level will not be considered for this program.
- 2. **SEISMICALLY INDUCED LANDSLIDES:** Evaluate the potential for ground failure assuming the site is subject to PGA calculated with the design earthquake ground motion equal to $PGA_M/1.5$.
- 2.1 Site Geologic Map: Present a site geologic map and one or more geologic cross sections showing the relationship between topography, geologic units, existing or modeled slide planes, and all structures such as retaining walls and buildings. At least one cross section should be drawn along the critical profile for stability analyses. Document surface and subsurface observations, including evidence of slope movement, building distress, slope monitoring data, and depth and extent of slip surfaces or planes of weakness. Indicate if the building is on the landslide margin or recognizable graben feature, or if it lies within a recognizable coherent block. Justify assumptions regarding ground water, and provide evidence for unit weight and shear strength values used in slope stability calculations.
- 2.2 Slope stability profiles should be based on the geologic cross sections. If the slope fails a pseudostatic screening procedure, estimate vertical and horizontal earthquake-induced displacement at the location of the structure, and demonstrate whether the building straddles a critical slip surface or will be subject to severe deformation due to the modeled slope movement.
- 3. SURFACE FAULT RUPTURE: A probabilistic fault displacement analysis is not a practical approach at this time for most sites. Therefore, any Holocene-active fault will be considered to have sufficient *probability* of rupture, and an estimate of expected surface displacement should be presented. Unusually large displacement estimates will be carefully considered by CGS. CGS should be provided an opportunity to review in the field any new exploratory fault trenches excavated at the site. The project geologist is strongly encouraged to discuss the site with CGS prior to embarking on the fault investigation.

The consultants should provide evidence of the existence of Holocene surface rupture within the footprint of the building. Given the maximum characteristic magnitude on the main trace of this fault and the characteristics of the splay underlying the building, **estimate both vertical and horizontal components of fault displacement.** The consultants' analysis should be fully explained, and will be critically reviewed by CGS.

If the building is eligible for funding under the SMP due to surface fault rupture, the rehabilitation option is not allowed since rehabilitated buildings must meet current building code requirements, which is not possible for a building within 50 feet of a Holocene-active fault. Therefore, the building must be abandoned and replaced, rather than rehabilitated.

Appendix C – Guidelines for Determining Fire & Life Safety and Accessibility Requirements

C.1 Fire & Life Safety Requirements:

- **C.1.1** Fire & Life Safety provisions shall apply strictly to area(s) of rehabilitation work within the scope of proposed improvements (2013 California Building Code (CBC), Chapter 34, Sections 3401.4.1 and 3412.2).
- **C.1.2** Whatever portions of the building are demolished, new construction will be reviewed under current provisions of the CBC.
- **C.1.3** In compliance with 2013 CBC, Section 3423.1 (1) applicant shall include in the "Evaluation and Design Criteria Report" the following information pursuant to the code edition applicable at the time of original plan approval.
 - a) A complete building code analysis that includes construction type, building height and area, allowable building size increases, and occupancy group(s).
 - b) Identify means of egress configuration and characteristics in the building. Information shall include dead-ends where two or more exits are required, and travel distances. Rehabilitation work that affects the means of egress may generate additional requirements.
 - c) Identify location and type of fire rated construction; including corridor walls and vertical openings. Through membrane penetrations of rated systems will require a fire-rated fire stop system with the same or greater hourly rating as the violated rated construction.
 - d) Existing building fire rated components that require asbestos abatement within scope of work, shall be reconstructed with rated equivalent materials as needed to maintain fire-rating.
 - e) Identify existing individual room occupancy group as noted on the original approved plans. Identify if the occupancy group(s) have changed from the approved plans. Change of use in any room would require current code provisions to be met.
 - f) Identify the HVAC systems ability to resist the movement of smoke and fire beyond the point of origin. HVAC systems that are impacted by the rehabilitation, and incorporate smoke detector shut down, shall be tested prior to approval of the project to verify correct operation of the system. In the event that the system does not function as originally designed, repairs or replacements will be required for the automatic shutdown feature.

- g) Provide an evaluation of the fire alarm and fire suppression system features of the building. Where a system, or portion of a system, is temporarily removed to allow seismic upgrades, a complete test will be required of the system to verify correct operation of the system after it has been re-installed. Test(s) shall be in accordance with National Fire Protection Association Standards. In the event that the system or components of the system are found not operable, repairs or replacements will be required.
- **C.1.4** Compliance alternatives may be considered as found in the 2013 CBC, Chapter 34, Section 3412. Evaluations may trigger additional scope of work.
- C.2 Access Compliance Requirements: The seismic repair of an existing facility is governed by 11B-202 of the 2013 CBC. In addition, in Legal Opinion No. 94-1109, dated May 10, 1995, the Attorney General for the State of California concluded that seismic strengthening work in an existing building constitutes a "building alteration, structural repair or addition" for purposes of providing access to the building for persons with disabilities.

In existing buildings or facilities, if seismic strengthening or upgrade work does not alter the primary use or function of the building or facility and/or does not alter the design of specific rooms or spaces, then the requirement for an accessible path of travel to the area of specific alteration does not apply. However, the requirement to provide an accessible primary entrance, sanitary facilities, drinking fountains, signs, and public telephones, as well as an accessible path of travel connecting these elements comply with the currently effective regulations.

In existing buildings or facilities, when the primary use or function of the building or facility and/or design of specific rooms or spaces are altered, the seismic strengthening or upgrade work must comply with all applicable accessibility regulations for new construction. In addition, the obligation to provide an accessible primary entrance to the building or facility, and primary path of travel to the specific area of alteration, including sanitary facilities, drinking fountains, signs, and public telephones serving the area must be met.