REPORT OF THE EXECUTIVE OFFICER
State Allocation Board Meeting, July 22, 2009

# SEISMIC MITIGATION PROGRAM

## PURPOSE OF REPORT

To present options for proposed regulatory amendments in order to promote participation in the Seismic Mitigation Program.

## DESCRIPTION

At the March 25, 2009 State Allocation Board (SAB) meeting, Staff presented a report discussing options to promote the participation in the School Facility Program (SFP) Seismic Mitigation Program (Seismic). The report provided a historical perspective on the Field Act and the passage of Assembly Bill (AB) 300 (Corbett, Statutes of 1999), which required the Division of the State Architect (DSA) to prepare a report on the seismic safety of public school facilities in California. The AB 300 report entitled, "Seismic Safety Inventory of California Public Schools" identified 7,537 buildings that may not perform well in earthquakes. These buildings require detailed seismic evaluation to determine if they can meet life-safety performance requirements. However, some of the buildings identified in the AB 300 report have already been rehabilitated, replaced, demolished, or are no longer used for students and teachers. As a result of concerns arising from the AB 300 report, Proposition 1D provided $1.9 billion for new construction of school facilities and up to 10.5 percent of that amount (or $199.5 million) for seismic repair, reconstruction, or replacement of the "most vulnerable" school facilities.

In considering the report, the SAB requested Staff to meet with the DSA, the Department of Finance (DOF), and the Seismic Safety Commission (SSC) and to report back with proposed regulations that promote the allocation of funds for Seismic. Staff prepared a report for the June 2009 SAB meeting that presented proposed regulatory amendments to revise the definition of "most vulnerable" facilities as required by Education Code (EC) Section 17075.10(a). Staff proposed both to lower the ground shaking intensity (GSI) factor requirement and/or to add new building structure types into the definition. The proposed regulatory changes, if approved, would allow additional facilities to be eligible for Seismic funding.

Staff's June 2009 report also included options for the SAB's consideration to initiate and maintain an unfunded list of projects. Options include (a) initiating an unfunded list up to the SAB's current bonding authority, or (b) initiating an unfunded list up to and beyond the SAB's current bonding authority.

At the June 2009 SAB meeting, the SAB requested that Staff add the following information into the report for discussion at the July 2009 SAB meeting:

- Determine whether SFP Regulation Section 1859.82(a)(1), which requires the construction contracts for Seismic projects to be signed on or after May 20, 2006, may be revised to allow the Newhall Elementary School District (Newhall) to receive reimbursement for Seismic projects.

- Determine whether an additional building structure type should become eligible for funding to allow a facility at the Piedmont City Unified School District (Piedmont) to receive Seismic funding.

- Determine whether regulations may be revised to allow districts to receive supplemental funding for interim housing and seismic evaluations and to estimate the funding impact to the State.

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STAFF COMMENTS

***Determining a Methodology for Amending the Definition of "Most Vulnerable Category 2 Buildings"***

In implementing the Seismic Mitigation Program, the criteria below were approved in regulation at the September 2007 SAB meeting, based on input from the DSA, the SSC, and the SAB Implementation Committee. In order to qualify for Seismic funding, the facility:

1. Must be one of the following "Category 2" construction types- Concrete Moment Frame (C1), Precast/Tilt-up Concrete Shear Wall with Flexible Roof (PC1A), Precast Concrete Frame and Roofs with Concrete Shear Walls (PC2), or Unreinforced Masonry Bearing Wall Buildings (URM);
2. Must be located in a zone where the GSI factor (or short period spectral acceleration) is 1.70g or more based on the United States Geological Survey National Seismic Hazard maps;
3. Must be designed for occupancy by students and staff; and,
4. Must have an accompanying structural engineer's report identifying the building deficiencies and reasoning for concluding that the building has a potential for catastrophic collapse.

Using the above criteria, the original estimate of facilities likely to be eligible was 77. The Office of Public School Construction (OPSC) and the DSA have since conducted extensive outreach, and it has been determined that many of the buildings identified have either been rehabilitated, replaced, demolished, or are no longer used for students and teachers, and that 25 of the 77 facilities remain eligible. This includes four districts that have submitted applications to the DSA for review, one of which received an unfunded approval at the June 2009 SAB meeting.

Staff met with the DSA and the DOF on April 2, April 14, and May 8, 2009. The purpose of these meetings was to determine a methodology for amending the GSI factor requirement that would allow additional facilities to qualify for funding consideration. (The GSI factor provides a measure of the relative probability of a given critical level of earthquake ground motion from one location to another. In simple terms, higher values equal higher risk.) On June 1, 2009, Staff invited the SSC to attend a meeting with the DSA to determine the next most vulnerable "Category 2" building structure types in addition to already eligible for Seismic funding. In response to the SAB's inquiries at the June 2009 meeting, Staff met with the DSA and the DOF on July 6, 2009 to discuss issues related to the Newhall Elementary School District and the Piedmont City Unified School District.

The methodology selected during these meetings allows additional facilities to become eligible for funding, but also addresses concerns that setting the criteria too low could (a) divert funds from the "most vulnerable" facilities to less vulnerable facilities, and (b) leave many projects unfunded and expose school districts and the State to liability.

***Estimated Average Cost to the State Per Square Foot***

The OPSC, DSA, and the DOF determined a methodology for estimating the cost to the State for additional projects that would become eligible for funding if the program criteria were changed. Many unknown factors will vary the cost to the State, and therefore the analysis performed was based on a set of assumptions. Staff used the following assumptions in an attempt to approximate the cost per square foot for each Seismic project:

1. Approximately 75 percent of the Seismic projects will qualify for replacement of the facilities, while 25 percent of the projects will only qualify to rehabilitate the existing facilities[1];

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[1] If a project qualifies for replacement facilities under the facility hardship program, but the school district requests to rehabilitate the existing facility rather than replace it, the SAB has historically allowed the school district to rehabilitate the facility. However, the maximum funding provided could not exceed the replacement value, and no additional funds would be provided if the rehabilitation exceeded that amount.

***Estimated Average Cost to the State Per Square Foot (cont.)***

2. Based on the total number of financial hardship districts in the State, 18 percent of the projects will be financial hardship and therefore the State will pay 100 percent of the eligible project costs;
3. Ancillary costs are eligible for Seismic funding and are included in the grants provided; and,
4. All code triggered costs are eligible for Seismic funding, including work required by the Federal Americans with Disabilities Act or by the DSA handicapped access or fire code requirements.

For projects that qualify for replacement of the facilities, the estimated average cost to the State per square foot was calculated using the 2009 Current Replacement Cost (CRC). An additional 35 percent was added for site development. (The same methodology is used when Facility Hardship grants are approximated for SAB conceptual approval.) It is important to note that Seismic does not always provide grants to replace the total square footage of an existing building. Under the provisions of the program, grants are limited based on the minimum essential facility square footage calculation listed in SFP Regulation Section 1859.82.

If the cost to mitigate the facility is less than 50 percent of the replacement value based on the 2009 CRC, projects only qualify for rehabilitation funding. The estimated average cost per square foot was calculated assuming the cost per square foot is approximately 50 percent of the CRC to replace the building.

For projects that qualify for replacement, the estimated average cost to the State per square foot equals $243. For projects that qualify for rehabilitation, the estimated average cost to the State per square foot equals $90. To estimate the expected cost per square foot for each project, the OPSC used both of these figures to calculate a blended rate of $204.50 per square foot. These costs seem to be consistent with two of the projects received to date, which consist of a $7.3 million replacement project and an estimated $5 million retrofit.

***Amending Program Criteria to Fund Additional Building Types***

The Hazards United States (HAZUS) is a risk assessment software program developed and distributed by the Federal Emergency Management Agency. It is a Geographic Information Systems based program that analyzes potential losses from many natural disasters including earthquakes. The DSA reviewed the HAZUS equivalent structural fragility tables that provide the peak ground acceleration that would cause a high probability of complete damage for various types of structural systems. HAZUS also provides tables for the collapse probability of various structural systems when subjected to high ground acceleration. The DSA then ranked the buildings taking into account both collapse probability and total economic loss. The HAZUS results were that the precast building types (all grouped together) were the most vulnerable. The non-ductile concrete frames type buildings were the next most vulnerable, and last were the other Category 2 buildings (including concrete and masonry shear wall buildings). The DSA presented the HAZUS results and requested input from a working group that included the SSC and structural engineers from the field. Their input confirmed the HAZUS results.

In conclusion, the HAZUS program and field professionals both recommended that non-ductile concrete frame buildings and the precast buildings were the most vulnerable Category 2 buildings. The chart below lists the Category 2 building types that were recommended to be considered the most vulnerable.

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***Amending Program Criteria to Fund Additional Building Types (cont.)***

| **Vulnerable Category 2 Building Types Currently Eligible for Seismic Funding** | |
|---|---|
| C1 | Concrete moment frame |
| PC2 | Precast concrete frame and roofs with concrete shear walls |
| PC1A | Precast/tilt-up concrete shear wall with flexible roof |
| URM | Unreinforced masonry bearing wall buildings |
| **Additional Category 2 Building Types Recommended HAZUS Study and Field Professional Input** | |
| C3A | Concrete frame with infill masonry shear walls and flexible floor and roof diagrams |
| PC1 | Precast/tilt-up concrete shear wall with concrete floor and roof diagrams |
| PC2A | Precast concrete frame without concrete shear walls and with rigid floor and roof diaphragms |
| C1B | Reinforced concrete cantilever columns with wood roofs.<br>This building type is a subset of C1 building type and is currently considered eligible for Seismic funding. However, the regulations may be revised to provide clarity to school districts. |

***Amending Program Criteria to Decrease the GSI Factor Requirement***

The DSA and members of the working group of field professionals noted that lowering the GSI factor requirement to expand the number of facilities in the chart that may receive funding is preferable to adding the other Category 2 buildings that are not listed here (including concrete and masonry shear wall buildings).

The DSA has compiled a list of facilities from the AB 300 report that may be eligible for Seismic funding including the additional Category 2 building structure types in the chart as well as facilities that would become potentially eligible in GSI zones lower than 1.70g. The chart below illustrates the estimated number of facilities and total square footage that would potentially become eligible, and the estimated cost to the State based on the known data set and the assumptions stated.

| | Total Number of Facilities Estimated to Be Eligible | Estimated Square Footage | Expected Cost to the State ($204.50 per Square Foot) | Expected Cost to the State, Assuming All Projects Qualify for Replacement ($243 per Square Foot) |
|---|---|---|---|---|
| Current Regulations | 25 | 420,954 | $86,085,093 | $102,291,822 |
| • Add the new building types from chart<br>• Do not lower the GSI | 40 | 645,778 | $132,061,601 | $156,924,054 |
| • Add the new building types from chart<br>• Lower the GSI to 1.68 | 48 | 688,262 | $140,749,579 | $167,247,666 |
| • Do not add new building types<br>• Lower the GSI to 1.65 | 38 | 516,458 | $105,615,661 | $125,499,294 |

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***Amending Program Criteria to Decrease the GSI Factor Requirement (cont.)***

Using all the stated assumptions, it appears that as additional facilities become eligible, the program retains its statutory focus on the most vulnerable facilities, and the $199.5 million may be sufficient to fund additional projects. Based on the above analysis, the Board may select to either (1) add the additional building structure types and to lower the GSI to 1.68g, (2) add the additional building structure types but do not change GSI factor requirement, or (3) lower the GSI to 1.65g but do not change the eligible building structure types.

***Reverting Seismic Funds to the New Construction Account***

The SAB took action in January 2008 to formally set aside the $199.5 million available to fund Seismic projects as a subaccount in the New Construction fund. If the SAB wished to provide a catalyst to encourage applications for Seismic retrofitting or replacement, these funds could revert to the main New Construction account at a date declared by the SAB. For example, the SAB could declare that any funding remaining on July 1, 2010 could revert to the main New Construction account.

***Newhall Elementary School District***

At the May 27, 2009 SAB meeting, the Superintendent from Newhall addressed the SAB requesting special consideration to receive Seismic reimbursement funding for projects where construction contracts were signed prior to May 20, 2006. AB 127 (Proposition 1D)(Nunez/Perata), Statutes of 2006, created the Seismic program and was signed in to law on May 20, 2006. As an urgency statute, it therefore became effective on that date. Currently, SFP Regulation Section 1859.82(a)(1) requires that all contracts for construction must be signed on or after May 20, 2006 in order projects to be eligible for Seismic funding. This is consistent with the implementation of other new SFP programs, where the date the Governor signed the bill into law is used as a cut-off date.

Amending the starting date would be inconsistent with how new programs have been implemented in the past. In addition, there are legal concerns that as funds become low, the practice of retroactively applying funds could be challenged. AB 127 (Nunez/Perata), Statutes of 2006, which established the Seismic Mitigation Program did not specifically state it was meant to have retroactive application. In addition, to reimburse school districts for Seismic projects already complete would divert funds from replacing or retrofitting buildings that have a potential for catastrophic collapse.

The OPSC met with the DSA and the DOF on July 6, 2009 to discuss (a) a starting date that may be used other than May 20, 2006, and (b) the potential impact to the Seismic Program. The following issues were raised:

- Newhall has suggested to use the date of the DSA mass mailer for AB 300 that was sent to school districts in January 2003. However, this date does not appear to be legally defensible.

- The DSA stated that in the past letters were regularly mailed to school districts if seismic issues were discovered during the review of an application. School districts that performed seismic mitigation because of these letters may also request to change the date to allow their projects to be reimbursed on the same grounds as Newhall.

- One of the key policy issues to be considered is whether the Seismic funds should be used to maximize the number of facilities that are eligible for Seismic retrofitting in order to keep California's schoolchildren safe. To retroactively fund projects would divert funds from this purpose.

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***Newhall Elementary School District (cont.)***

- The DSA ran a keyword search to identify projects known to include seismic retrofitting since August 27, 1998. (This date was arbitrarily selected because it was the date that the SFP was signed into law by the Governor.) Only projects with some sort of seismic notation could be identified. The search produced 392 projects noted to include seismic work in the scope of the project. This list is imprecise. The DSA estimated that 25 locally funded projects have had seismic work completed for facilities located in GSI zones of 1.70g and higher. The estimated hard construction costs for these projects is approximately $34 million with estimated soft costs totaling $14 million for a total of $48 million. The DSA also estimated that 8 locally funded projects have had seismic work completed for facilities located in GSI zones of 1.65 and higher. Should the SAB lower the GSI factor requirement to 1.65g, the estimated hard construction costs for these projects is approximately $37 million with estimated soft costs totaling $15 million for a total of $52 million. This is our best effort to analyze and quantify the impact of moving the date, but it cannot capture all of the facilities that have had seismic retrofit. There are likely facilities that would become eligible for funding that are not included on this list. In addition, this list does not include the facilities that would become eligible if the GSI factor requirement is lowered.

- The EC states that the funds are to be used to repair, reconstruct, or replace the most vulnerable facilities. Facilities where seismic work has been completed are no longer vulnerable, and therefore do not meet the definition.

- There is no way to determine the number of facilities that met the Seismic criteria but were demolished and taken out of service or replaced. To change the starting date may allow districts to build new facilities to replace buildings that were demolished.

The OPSC and the DOF held a conference call with Newhall. While reviewing the projects for Newhall, it was discovered that one of the two projects received a Full and Final apportionment in the SFP Modernization Program. To fund the same project in the Seismic Mitigation would fund the same project twice and would violate EC Section 17070.63, which states that the State's funding provided shall constitute the full and final contribution to the project, and that the District Representative must certify that the grant amount would be sufficient to complete the project.

***Piedmont City Unified School District***

At the June 24, 2009 SAB meeting, the SAB requested whether an additional building structure type can become eligible for funding to allow a facility at Piedmont to receive Seismic funding. Staff discussed the issue with the DSA. The DSA has been working to determine whether the facility would be eligible under the current or the proposed regulations. While the south wing of classrooms meets the criteria in current regulation, the east wing is a Concrete Shear Wall Flexible Diaphragm (C2A), which is not a part of the current or proposed regulations.

Based on the research completed in conjunction with the SSC (described in this report), which included the HAZUS study as well as input from field practitioners, the C2A building type was not determined to be the most vulnerable. To amend the program criteria to fund this facility would divert funding from the "most vulnerable" facilities to less vulnerable facilities.

The DSA has compiled a list of C2A facilities from the AB 300 report that may be eligible for Seismic funding should this structure type become eligible for funding. The OPSC has used this list to approximate the expected cost to the State, based on the known data set and using the assumptions stated. The chart below indicates the expected costs to the State for GSI factors of 1.70g and higher, and 1.65g and higher (at the time of this report, 1.68g and higher was not yet completed.)

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***Piedmont City Unified School District(cont.)***

| | Total Number of Facilities Estimated to Be Eligible | Estimated Square Footage | Expected Additional Costs for C2A Buildings ($204.50 per Square Foot) | Expected Additional Cost to the State, Assuming All Projects Qualify for Replacement ($243 per Square Foot) |
|---|---|---|---|---|
| • Add C2A Buildings<br>• Do not lower the GSI | 21 | 325,586 | $66,582,337 | $79,117,398 |
| • Add C2A Buildings<br>• Lower the GSI to 1.65 | 43 | 670,940 | $137,207,230 | $163,038,420 |

Depending on the option selected, adding the C2A building type would exceed available funding.

***Additional Funding for Interim Housing and Structural Engineer's Reports***

At the March 25, 2009 SAB meeting, Staff provided an item to facilitate discussion for providing supplemental grants for interim housing and for structural engineering reports.

During the completion of Seismic projects, the needs of the displaced students must be served. Districts meet interim housing needs either by using portable classrooms, increasing utilization or repurposing non-affected facilities at school sites, or redirecting students to alternative school sites.

The SFP does not provide specific additional funding for interim housing expenses under any program – modernization, facility hardship, etc. – where students are displaced. (However, these costs are allowable expenses – meaning that the State grants and local matching funds can be expended to provide interim housing.) The program accommodates Financial Hardship districts by allowing these districts to reserve local funds to meet interim housing needs rather than the district contributing these funds to reduce Financial Hardship funding from the State.

The SFP also does not provide specific additional funding for facility assessments such structural engineer's reports. (Again, these costs are allowable expenses – meaning that they count as legitimate project costs.)

In addition to the overall framework of the SFP, the statute enacting the Seismic Mitigation Program specifically enumerates three purposes for the funds – to repair, reconstruct, or replace the most vulnerable school facilities. The statute does not authorize a specific grant for interim housing or for structural engineer's reports. According to SAB Legal Counsel, implementing a specific grant for interim housing and for structural engineer's reports would require legislation.

Legislative Counsel has provided an oral opinion contrary to SAB Counsel's opinion. As an oral opinion, there is no written analysis for SAB Counsel to review and consider.

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***Additional Funding for Interim Housing and Structural Engineer's Reports (cont.)***

Staff has determined a methodology for estimating the cost to the State per square foot of project for interim housing and structural engineer's reports if the program criteria were to be changed. Many unknown factors will vary the cost to the State, and therefore the analysis performed was based on a set of assumptions. Staff used the following assumptions in an attempt to approximate the cost per square foot:

1. Each seismic project will receive funding for one building evaluation;
2. One-half of impacted square footage is used for classroom or toilet space, and interim housing funding will only be provided for classroom and toilet space;
3. Estimate that the average seismic mitigation project will require interim housing for two years;
4. Based on the total number of financial hardship districts in the State, 18 percent of the projects will be financial hardship and therefore the State will pay 100 percent of the eligible project costs;
5. The cost of an annual unit for classroom (960 square feet) and toilet interim housing is $32,298, based on a calculation according to SFP Regulation Section 1859.81.

Based on the set assumptions, the estimated cost to the State for interim housing $19.84 per square foot. The estimated cost to the State for structural engineer's reports equals $1.15 per square foot.

The chart below illustrates the estimated number of facilities that could potentially become eligible, and the estimated cost to the State based on the known data set and the assumptions stated should additional grants for interim housing and structural engineer's reports be included with the project apportionments.

| | Total Number of Facilities Estimated to Be Eligible | Estimated Square Footage | Expected Additional Costs for Interim Housing and Seismic Evaluations |
|---|---|---|---|
| Use current Regulations, but fund interim housing and engineer's reports | 25 | 420,954 | $8,835,824 |
| • Add the new building types from chart<br>• Do not lower the GSI<br>• Fund interim housing and engineer's reports | 40 | 645,778 | $13,554,880 |
| • Add the new building types from chart<br>• Lower the GSI to 1.68<br>• Fund interim housing and engineer's reports | 48 | 688,262 | $14,446,619 |
| • Do not add new building types<br>• Lower the GSI to 1.65<br>• Fund interim housing and engineer's reports | 38 | 516,458 | $10,840,453 |

It should be noted that in February 2009, the SSC awarded $200,000 to the OPSC to conduct a pilot program to provide funding for structural engineers' reports for school facilities that meet all of the Seismic criteria. The intent of this pilot program will be to ascertain the seismic vulnerability of certain K-12 school buildings that may be at risk during a seismic event and to develop a more systematic and cost-effective approach to determine the seismic safety status of school facilities.

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***Unfunded List***

SAB members expressed concerns at the March 25, 2009 SAB meeting regarding the generation of an unfunded list when the bonding authority for the Seismic Program has been exhausted. Specifically, there was a question of whether assembling a list of facilities that have been determined to be subject to catastrophic collapse in a seismic event may expose districts and the State to liability. In addition, eligibility for seismic funding in future bonds may change, leaving projects on the unfunded list ineligible for funding.

At the request of the SAB, Staff has reviewed existing regulatory language and now believes that amendments are not necessary to initiate a list of unfunded projects for Seismic. It appears that the language in SFP Regulation Section 1859.95 is sufficiently broad to enable the SAB to direct Staff to compile a list of unfunded projects. In addition, the SAB would need to determine whether the unfunded list should include only those applications up to the existing bonding authority, or to include applications beyond the existing bonding authority. It is important to note that an unfunded list does not constitute a guarantee or commitment of future State funding.

***Program Barriers***

At the June 24, 2009 SAB meeting, the SAB requested Staff to report back on the potential program barriers preventing districts that may be currently eligible from obtaining Seismic funding. The OPSC Staff has contacted all potentially eligible districts and is waiting for their reply. Based on the preliminary information collected by the OPSC and the DSA, it appears that the most common reason districts are not applying is insufficient local matching funds. Some of the school districts, however, stated they were planning to apply, and that they were trying to coordinate the Seismic project alongside with their modernization projects.

AUTHORITY

***Seismic Mitigation Program Criteria***

EC Section 17075.10(a) states: "A school district may apply for hardship assistance in cases of extraordinary circumstances. Extraordinary circumstances may include, but are not limited to, the need to repair, reconstruct, or replace the most vulnerable school facilities that are a Category 2 building, as defined in the report submitted pursuant to Section 17317, determined by the department to pose an unacceptable risk of injury to its occupants in the event of a seismic event."

SFP Regulation Section 1859.2. states: "Most Vulnerable Category 2 Buildings," as defined by the DSA, means the building is located where the short period spectral acceleration is 1.70g or more based on the 2002 United States Geological Survey National Seismic Hazard Maps adjusted for site class factors; the building is designed for occupancy by students and staff; the building type is either C1 – Concrete Moment Frame, PC1A – Precast/Tilt-up Concrete Shear Wall with Flexible Roof, PC2 – Precast Concrete Frame and Roofs with Concrete Shear Walls, or URM – Unreinforced Masonry Bearing Wall Buildings; and a structural report is provided by a structural engineer that demonstrates the lateral force-resisting system of the building does not meet collapse prevention performance objectives and the specific deficiencies and reasoning for concluding that the building has a potential for catastrophic collapse.

SFP Regulation Section 1859.82(a) states: The total available funding for seismic mitigation related and ancillary costs for the Most Vulnerable Category 2 Buildings is $199.5 million for projects where the construction contract was executed on or after May 20, 2006, and the project funding provided shall be for the minimum work necessary to obtain DSA approval.

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AUTHORITY (cont.)

***SFP Full and Final Apportionments***

EC Section 17070.63(a) states: "The total funding provided under this chapter shall constitute the state's **full** and **final** contribution to the project and for eligibility for state facilities funding represented by the number of unhoused pupils for which the school district is receiving the state grant. As a condition of receipt of funds, a school district shall certify that the grant amount, combined with local funds, shall be sufficient to complete the school construction project for which the grant is intended.

OPTIONS

***Amending Program Criteria***

The following options are presented for the Board's consideration:

**1a. Add New Building Structure Types/Lower the GSI Factor to 1.68g.**
**Estimated Cost to the State: Up to $167.2 million**
Authorize Staff to file emergency regulations with the Office of Administrative Law (OAL) that will add the following building types to the list of eligible Category 2 buildings: C3A, PC1, ~~PC2,~~ PC2A, and C1B and that will lower the GSI factor requirement to 1.68g.
Pro:
- Adding the building structure types and lowering the GSI will enable additional facilities to qualify for funding consideration.
- Based on the above analysis, it appears that the $199.5 million available may be sufficient to fund the known eligible facilities.
- The option is recommended by the DSA based on a detailed analysis performed in conjunction with the SSC and verified by a field practitioners group.

Con:
- Adding additional building structure types and lowering the GSI factor requirement may divert funds from the "most vulnerable" facilities to less vulnerable facilities.

Action Needed by the SAB:
- Adopt the proposed Regulations shown on the Attachment.
- Authorize Staff to file the proposed Regulations with the OAL.

**1b. Add New Building Structure Types/Lower the GSI Factor to 1.68g/Revert Seismic Funds to New Construction Account After Given Length of Time.**
**Estimated Cost to the State: Up to $167.2 million**
Authorize Staff to file emergency regulations with the Office of Administrative Law (OAL) that will add the following building types to the list of eligible Category 2 buildings: C3A, PC1, ~~PC2,~~ PC2A, and C1B and that will lower the GSI factor requirement to 1.68g. Revert the remaining Seismic funds to the main New Construction account at a date declared by the SAB.
Pro:
- Adding the building structure types and lowering the GSI will enable additional facilities to qualify for funding consideration.
- Based on the above analysis, it appears that the $199.5 million available may be sufficient to fund the known eligible facilities.

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OPTIONS (cont.)

***Amending Program Criteria (cont.)***

Con:

- Adding additional building structure types and lowering the GSI factor requirement may divert funds from the "most vulnerable" facilities to less vulnerable facilities.

Action Needed by the SAB:

- Adopt the proposed Regulations shown on the Attachment.
- Authorize Staff to file the proposed Regulations with the OAL.

2. **Add New Building Structure Types and Develop a Process to Incrementally Reduce the GSI Factor Over Time.**
**Estimated Cost to the State: Up to $156.9 million Plus an Amount to Be Determined at a Later Time.**
Authorize Staff to file emergency regulations with the Office of Administrative Law (OAL) that will: **1)**add the following building types to the list of eligible Category 2 buildings: C3A, PC1, ~~PC2,~~ PC2A, and C1B, and **2)** establish a process for incrementally reducing the GSI factor in six month intervals that would also represent finite periods of eligibility for qualifying facilities. Districts that choose not to apply within the six month period in which their facility would qualify, would be asked to verify that they have no need for Seismic Repair Program funding during their period of eligibility.

Pro:

- Adding the building structure types noted above, while maintaining the existing GSI of 1.70 initially, would allow more facilities to qualify for funding while ensuring that facilities located in areas with the most severe ground shaking intensity are given the first opportunity for funding.
- By incrementally reducing the GSI in six month intervals, and by linking those intervals with periods of eligibility, the State would be able to provide multiple rounds or opportunities for funding across a potentially greater number of districts. This would allow the State to better gauge local interest in the program, and also the scope or magnitude of facilities that need to be addressed based on local priorities.
- The addition of the building types noted above is recommended by the DSA based on a detailed analysis performed in conjunction with the SSC and verified by a field practitioners group.

Con:

- The incremental adjustments to the GSI, and the related specified periods of eligibility, could extend the timeframe for allocating all available Seismic Repair Program funding.

Action Needed by the SAB:

- Adopt the proposed Regulations shown on the Attachment.
- Authorize Staff to file the proposed Regulations with the OAL.

3. **Add New Building Structure Types Only.**
**Estimated Cost to the State: Up to $156.9 million**
Authorize Staff to file emergency regulations with the OAL that will add the following building types to the list of eligible Category 2 buildings: C3A, PC1, ~~PC2,~~ PC2A, and C1B but will not lower the GSI factor requirement.

Pro:

- Adding the additional building types will enable additional facilities to qualify for funding consideration.
- Based on the above analysis, it appears that the $199.5 million available may be sufficient to fund the known eligible facilities.
- This option is based on a detailed analysis performed by the DSA and confirmed by the field practitioners group.

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OPTIONS (cont.)

***Amending Program Criteria (cont.)***

Con:
- Adding additional building structure types may divert funds from the "most vulnerable" facilities to less vulnerable facilities.

Action Needed by the SAB:
- Adopt the proposed Regulations shown on the Attachment.
- Authorize Staff to file the proposed Regulations with the OAL.

4. **Lower the GSI Factor to 1.65g Only.**
**Estimated Cost to the State: Up to $125.5 million**
Authorize Staff to file emergency regulations with the OAL that will lower the GSI factor to 1.65g, but will not allow additional Category 2 building types to become eligible for Seismic funding.
Pro:
- Lowering the GSI factor will enable additional facilities to qualify for funding consideration.
- Based on the above analysis, it appears that the $199.5 million available may be sufficient to fund the known eligible facilities.

Con:
- Based on input from the DSA and the participating field practitioners, it was recommended to add the additional building structure types before lowering the GSI factor requirement.
- Setting the GSI factor at too low a level may divert funds from the "most vulnerable" facilities to less vulnerable facilities.
- Setting the GSI factor at too low a level may leave many projects unfunded and expose school districts and the State to liability.

Action Needed by the SAB:
- Adopt the proposed Regulations shown on the Attachment.
- Authorize Staff to file the proposed Regulations with the OAL.

5. **Change the Starting Date from May 20, 2006 to an Earlier Date.**
**Estimated Cost to the State: Increases costs by up to $100 million for any of the above options.**
Authorize Staff to file emergency regulations with the OAL that will change the starting date of May 20, 2006 to an earlier date.
Pro:
- Would reimburse districts for seismic work that was already completed.

Con:
- Would be providing Seismic funds to facilities that are no longer defined as the "most vulnerable", as required by the EC.
- Would be inconsistent with how new programs have been implemented in the past. Legislation that created the Seismic Program did not specifically state that it was meant to have retroactive application.
- Changing to a different date may be legally challenged by districts if funds are diverted from funding the most vulnerable Category 2 facilities.
- Choosing a legally defensible date would be difficult.
- There is no way to determine the number of facilities that were unsafe due to seismic issues and were therefore demolished, and would subsequently qualify for replacement.

(Continued on Page Thirteen)

OPTIONS (cont.)

***Amending Program Criteria (cont.)***

Con (cont.)

- Seismic funds may be used to reimburse projects that had partial seismic retrofit work completed (or work not completed to current code) and therefore the facility is still unsafe in the event of an earthquake.
- Changing the starting date will divert funds from the "most vulnerable" facilities to facilities that have already been replaced or retrofitted.

Action Needed by the SAB:

- Choose a new starting date for Seismic Mitigation projects.
- Direct Staff to draft proposed Regulations for adoption at a future SAB meeting.

6. **Add the New Building Structure Types- Include the C2A Building Structure Type**
**Estimated costs to the State: Increases Cost up to $163.0 million for any of the above options**.
Authorize Staff to file emergency regulations with the OAL that will add the C2A building structure type to the list of "most vulnerable" Category 2 buildings.
Pro:
- Would allow districts with the C2A building type to qualify for funding consideration.

Con:
- Based on the HAZUS study performed by the DSA, and input from field practitioners and the SSC, this would divert funding from the "most vulnerable" category 2 buildings to fund less vulnerable facilities.
- Adding the C2A building structure type may divert funds from the "most vulnerable" facilities to less vulnerable facilities.
- Adding the C2A building structure type may leave many projects unfunded and expose school districts and the State to liability.

Action Needed by the SAB:
- Amend and approve the proposed Regulations presented on the Attachment to include the C2A Building Structure Type
- Authorize Staff to file the proposed Regulations with the OAL.

7. **Authorize a Supplemental Grant for Interim Housing and Structural Engineer's Reports**
**Estimated Cost to the State: Increases Cost by up to $14.4 million for any of the above options.**
Authorize Staff to file emergency regulations with the OAL that will allow districts to receive a supplemental grant for interim housing and for structural engineer's reports.
Pro:
- Would assist districts in executing seismic mitigation projects.

Con:
- Implementing this approach would require legislation. The EC states that the hardship funding is only to repair, reconstruct, or replace the most vulnerable school facilities.
- Adding this funding may leave projects unfunded and exposed to liability.

Action Needed by the SAB:
- Direct Staff to draft proposed legislation.

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OPTIONS (cont.)

***Amending Program Criteria (cont.)***

8. **Approve an Alternative Set of Criteria than Outlined Above**
   Authorize Staff to file emergency regulations with the OAL that will allow an alternate set of criteria as determined by the SAB.
   Pro:
   - Will enable additional facilities to qualify for funding consideration.

   Con:
   - Setting criteria at too low a level may divert funds from the "most vulnerable" facilities to less vulnerable facilities.
   - Setting criteria at too low a level may leave many projects unfunded and exposed to liability.

   Action Needed by the SAB:
   - Direct Staff to draft proposed Regulations for adoption at a future SAB meeting.

9. Take no action.

***Unfunded List***

The following options are presented for the Board's consideration:

1. **Unfunded List Up to Bonding Authority**
   Authorize Staff to initiate an unfunded list up to the SAB's current bonding authority.
   Pro:
   - An unfunded list provides assurances to school districts that projects may qualify for funding
   - If funding becomes available in the future, such as in a future bond, districts could reapply for funding. If the criteria for funding is changed, districts would be required to meet the new criteria before receiving SAB approval that their project qualifies for seismic funding.

   Con:
   - Establishing an unfunded list may cause districts to misconstrue the list as a guarantee of future State funding. Districts with qualifying projects would have no assurances that the projects qualify for funding.
   - Assembling a list of facilities that have been determined to be subject to catastrophic collapse in a seismic event may expose districts and the State to liability.

   Action Needed by the SAB:
   - Direct Staff to initiate an unfunded list as specified above.

2. **Unfunded List Beyond Bonding Authority**
   Authorize Staff to initiate an unfunded list up to and beyond the SAB's current bonding authority.
   Pro:
   - An unfunded list provides assurances to school districts that projects may qualify for funding

   Con:
   - Establishing an unfunded list may cause districts to misconstrue the list as a guarantee of future State funding. Districts with qualifying projects would have no assurances that the projects qualify for funding.
   - Assembling a list of facilities that have been determined to be subject to catastrophic collapse in a seismic event may expose districts and the State to liability.
   - Eligibility for seismic funding in future bonds may change – leaving projects on the unfunded list ineligible for future funding.

   Action Needed by the SAB:
   - Direct Staff to initiate an unfunded list as specified above.

RECOMMENDATION

Staff recommends adoption of Option 1a for amending the program criteria and adoption of Option 1 for initiating an unfunded list.

OPTIONS

Option 1:

Section 1859.2 Definitions.

For the purpose of these regulations, the terms set forth below shall have the following meanings, subject to the provisions of the Act:

….

"Most Vulnerable Category 2 Buildings," as defined by the DSA, means the building is located where the short period spectral acceleration is ~~1.70~~ 1.68g or more based on the 2002 United States Geological Survey National Seismic Hazard Maps adjusted for site class factors; the building is designed for occupancy by students and staff; the building type is either C1 – Concrete Moment Frame, C1B – Reinforced Concrete Cantilever Columns with Wood Roofs, PC1 – Precast/Tilt-up Concrete Shear Wall with Concrete Floor and Roof Diaphragms, PC1A – Precast/Tilt-up Concrete Shear Wall with Flexible Roof, PC2A – Precast Concrete Frame without Concrete Shear Walls and with Rigid Floor and Roof Diaphragms, PC2 – Precast Concrete Frame and Roofs with Concrete Shear Walls, C3A – Concrete Frame with Infill Masonry Shear Walls and Flexible Floor and Roof Diaphragms, or URM – Unreinforced Masonry Bearing Wall Buildings; and a structural report is provided by a structural engineer that demonstrates the lateral force-resisting system of the building does not meet collapse prevention performance objectives and the specific deficiencies and reasoning for concluding that the building has a potential for catastrophic collapse.

….

Note: Authority cited: Sections 17070.35 and 17078.64, Education Code.

Reference: Sections 17009.5, 17017.6, 17017.7, 17021, 17047, 17050, 17051, 17070.15, 17070.51(a), 17070.71, 17070.77, 17071.10, 17071.25, 17071.30, 17071.33, 17071.35, 17071.40, 17071.75, 17071.76, 17072.10, 17072.12, 17072.18, 17072.33, 17073.25, 17074.10, 17074.30, 17074.32, 17075.10, 17075.15, 17077.40, 17077.42, 17077.45, 17078.52, 17078.56, 17078.72(k), 17079, 17079.10, 17280, 56026, and 101012(a)(8), Education Code; Section 53311, Government Code; and Section 1771.5, Labor Code.

Option 2:

Section 1859.2 Seismic Repair Program Facilities Definitions.

For the purpose of these regulations, the terms set forth below shall have the following meanings, subject to the provisions of the Act:

Most Vulnerable Category 2 Buildings," as defined by the DSA, means the building is located where the short period spectral acceleration is 1.70g or more based on the 2002 United States Geological Survey National Seismic Hazard Maps adjusted for site class factors; the building is designed for occupancy by students and staff; the building type is either C1 – Concrete Moment Frame, C1B – Reinforced Concrete Cantilever Columns with Wood Roofs, PC1 – Precast/Tilt-up Concrete Shear Wall with Concrete Floor and Roof Diaphragms, PC1A – Precast/Tilt-up Concrete Shear Wall with Flexible Roof, PC2A – Precast Concrete Frame without Concrete Shear Walls and with Rigid Floor and Roof Diaphragms, PC2 – Precast Concrete Frame and Roofs with Concrete Shear Walls, C3A – Concrete Frame with Infill Masonry Shear Walls and Flexible Floor and Roof Diaphragms, or URM – Unreinforced Masonry Bearing Wall Buildings; and a structural report is provided by a structural engineer that demonstrates the lateral force-resisting system of the building does not meet collapse prevention performance objectives and the specific deficiencies and reasoning for concluding that the building has a potential for catastrophic collapse.

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Option 2 (cont.):

Section 1859.3 Seismic Repair Program Funding Eligibility.

(a) Notwithstanding Section 1859.2, Beginning January 1, 2010, the short period spectral acceleration of 1.70g shall be incrementally reduced by 0.01g every six months to allow additional facilities to qualify for Seismic Repair Program funding. Each adjustment shall be operative for a period of six months and shall constitute a finite period of eligibility for districts with Category 2 buildings, as defined in Section 1859.2, that meet the spectral acceleration requirements of that six month period.
(b) The Office of Public School Construction shall notify all eligible districts of their ability to apply for funding at the commencement of each six month period. As part of this notification, the Office of Public School Construction shall request each district to either: 1) indicate their intent to apply for funding for their qualifying facility or facilities, or 2) verify that they have no need for Seismic Repair Program funding during their six month period of eligibility.
(c) OPSC shall have the ability to reduce any six month interval if they have verified the intent of each district with qualifying facilities in that interval in a period of less than six months.

Option 3:

Section 1859.2 Definitions.

For the purpose of these regulations, the terms set forth below shall have the following meanings, subject to the provisions of the Act:
….
"Most Vulnerable Category 2 Buildings," as defined by the DSA, means the building is located where the short period spectral acceleration is 1.70 or more based on the 2002 United States Geological Survey National Seismic Hazard Maps adjusted for site class factors; the building is designed for occupancy by students and staff; the building type is either C1 – Concrete Moment Frame, C1B – Reinforced Concrete Cantilever Columns with Wood Roofs, PC1 – Precast/Tilt-up Concrete Shear Wall with Concrete Floor and Roof Diaphragms, PC1A – Precast/Tilt-up Concrete Shear Wall with Flexible Roof, PC2A – Precast Concrete Frame without Concrete Shear Walls and with Rigid Floor and Roof Diaphragms, PC2 – Precast Concrete Frame and Roofs with Concrete Shear Walls, C3A – Concrete Frame with Infill Masonry Shear Walls and Flexible Floor and Roof Diaphragms, or URM – Unreinforced Masonry Bearing Wall Buildings; and a structural report is provided by a structural engineer that demonstrates the lateral force-resisting system of the building does not meet collapse prevention performance objectives and the specific deficiencies and reasoning for concluding that the building has a potential for catastrophic collapse.
….

Note: Authority cited: Sections 17070.35 and 17078.64, Education Code.

Reference: Sections 17009.5, 17017.6, 17017.7, 17021, 17047, 17050, 17051, 17070.15, 17070.51(a), 17070.71, 17070.77, 17071.10, 17071.25, 17071.30, 17071.33, 17071.35, 17071.40, 17071.75, 17071.76, 17072.10, 17072.12, 17072.18, 17072.33, 17073.25, 17074.10, 17074.30, 17074.32, 17075.10, 17075.15, 17077.40, 17077.42, 17077.45, 17078.52, 17078.56, 17078.72(k), 17079, 17079.10, 17280, 56026, and 101012(a)(8), Education Code; Section 53311, Government Code; and Section 1771.5, Labor Code.

(Continued on Page Three)

Option 4:

Section 1859.2 Definitions.

For the purpose of these regulations, the terms set forth below shall have the following meanings, subject to the provisions of the Act:

….

"Most Vulnerable Category 2 Buildings," as defined by the DSA, means the building is located where the short period spectral acceleration is ~~1.70~~ 1.65g or more based on the 2002 United States Geological Survey National Seismic Hazard Maps adjusted for site class factors; the building is designed for occupancy by students and staff; the building type is either C1 – Concrete Moment Frame, PC1A – Precast/Tilt-up Concrete Shear Wall with Flexible Roof, PC2 – Precast Concrete Frame and Roofs with Concrete Shear Walls, or URM – Unreinforced Masonry Bearing Wall Buildings; and a structural report is provided by a structural engineer that demonstrates the lateral force-resisting system of the building does not meet collapse prevention performance objectives and the specific deficiencies and reasoning for concluding that the building has a potential for catastrophic collapse.

….

Note: Authority cited: Sections 17070.35 and 17078.64, Education Code.

Reference: Sections 17009.5, 17017.6, 17017.7, 17021, 17047, 17050, 17051, 17070.15, 17070.51(a), 17070.71, 17070.77, 17071.10, 17071.25, 17071.30, 17071.33, 17071.35, 17071.40, 17071.75, 17071.76, 17072.10, 17072.12, 17072.18, 17072.33, 17073.25, 17074.10, 17074.30, 17074.32, 17075.10, 17075.15, 17077.40, 17077.42, 17077.45, 17078.52, 17078.56, 17078.72(k), 17079, 17079.10, 17280, 56026, and 101012(a)(8), Education Code; Section 53311, Government Code; and Section 1771.5, Labor Code.

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