

# HAZARD MITIGATION GRANT PROGRAM PROJECT SUBAPPLICATION

**DISASTER NUMBER:**

DR-4407

**JURISDICTION NAME:**

City and County of San Francisco

**PROJECT TITLE:**

Mitigation of City-Owned Nonductile  
Concrete Buildings

**PROJECT NUMBER:**

0182

PROJECT NUMBER IS THE CONTROL NUMBER RECEIVED AT TIME OF SUCCESSFUL NOI SUBMITTAL



# Cal OES

**GOVERNOR'S OFFICE  
OF EMERGENCY SERVICES**

3650 SCHRIEVER AVENUE | MATHER, CA 95655  
RECOVERY SECTION | HAZARD MITIGATION ASSISTANCE BRANCH  
PHONE: (916) 845-8200 | FAX: (916) 845-8387



# HAZARD MITIGATION GRANT PROGRAM (HMGP) PROJECT SUBAPPLICATION INTRODUCTION

## INTRODUCTION

As a result of a major disaster declaration by the President of the United States, the State of California is eligible for HMGP funding. The State has established priorities to accept project subapplications from subapplicants state-wide including, state agencies, Federally Recognized Tribes, local governments, and Private Non-Profits consistent with Title 44 of the Code of Federal Regulations (44CFR), Part 206.2.

Eligible hazard mitigation activities are intended to reduce or eliminate damages to life and improved property. Activities include cost effective hazard mitigation projects, and hazard mitigation planning activities approvable by the Federal Emergency Management Agency (FEMA).

## PUBLIC ASSISTANCE

HMGP does not fund repairs for damages that result after a disaster. If your project proposes repairing a damaged facility resulting from a disaster, contact the Public Assistance (PA) Program at [disasterrecovery@caloes.ca.gov](mailto:disasterrecovery@caloes.ca.gov).

## TIME EXTENSIONS

Time extensions may be requested, and will be evaluated on a case-by-case basis. To request additional time to submit a subapplication, send an email to the [HMA@caloes.ca.gov](mailto:HMA@caloes.ca.gov) mailbox. The subject line must include: "Subapplication Time Extension Request (include Disaster Number and Project Control Number)". The body of the message must include justification and specific details supporting why more time is needed and how much additional time is requested.

## QUESTIONS

Submit all HMGP subapplication questions to the following mailbox: [HMA@caloes.ca.gov](mailto:HMA@caloes.ca.gov)

# HAZARD MITIGATION GRANT PROGRAM REGULATIONS

## REGULATIONS

Federal funding is provided under the authority of the [Robert T. Stafford Emergency Assistance and Disaster Relief Act \(Stafford Act\)](#) through FEMA and the California Governor's Office of Emergency Services (Cal OES). Cal OES is responsible for identifying program priorities, reviewing subapplications and forwarding recommendations for funding to FEMA. FEMA has final approval for activity eligibility and funding.

The federal regulations governing HMGP are found in Title 44 of the Code of Federal Regulations (44CFR), Part 201 (Planning) and Part 206 (Projects) and in Title 2 of the Code of Federal Regulations (2CFR), Part 200 (Uniform Administrative Requirements).

The Council on Environmental Quality (CEQ) has developed regulations to implement the National Environmental Policy Act (NEPA). These regulations, as set forth in Title 40, Code of the Federal Regulations (CFR) Parts 1500-1508, require an investigation of the potential environmental impacts of a proposed federal action, and an evaluation of alternatives as part of the environmental assessment process. The FEMA regulations that establish the agency-specific process for implementing NEPA are set forth in 44 CFR Part 10. FEMA will undertake the NEPA clearance process.

The subapplicant is responsible for complying with the regulations set forth in the California Environmental Quality Act (CEQA) (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387) and any other state/local permits or requirements.

## FEMA GUIDANCE

FEMA requires that all projects adhere to the [Hazard Mitigation Assistance Unified Guidance 2015](#).

## HAZARD MITIGATION GRANT PROGRAM ELIGIBILITY CHECKLIST

Before completing the subapplication, review the following HMGP eligibility checklist to ensure project meets the requirements for HMGP funding.

- Construction/Ground Breaking:** No construction or ground breaking activities are allowed prior to FEMA approval. HMGP does not fund projects that are in progress or projects that have already been completed.
- Approved Notice of Interest:** Subapplicant must have an approved Notice of Interest (NOI) to submit a subapplication for HMGP funding. Only activities approved through the NOI process can be submitted for HMGP funding consideration. The approved NOI must be consistent with the subapplication submitted.
- Benefit Cost Analysis:** Benefit Cost Analysis (BCA) Toolkit Version 5.3.0 must be used to conduct the BCA. FEMA will only consider subapplications that use a FEMA-approved BCA methodology. Documentation to support BCA must be included in subapplication. Projects with a benefit cost ratio (BCR) of less than 1.0 will not be considered. BCA will be verified by FEMA and Cal OES upon subapplication submittal.
- Subapplicant Eligibility:** Subapplicant must be an eligible State Agency, Local Government (City, County, Special Districts), Federally Recognized Tribe or Private Nonprofit (PNP) Organization. PNP is defined as private nonprofit educational, utility, emergency, medical, or custodial care facility, facilities providing essential governmental services to the general public and such facilities on Indian reservations (see 44 CFR Sections 206.221(e) and 206.434(a)(2)).
- MJHMP:** Subapplicant must have a FEMA approved and adopted Local Hazard Mitigation Plan (LHMP), or be participating in a Multi-Jurisdictional LHMP, to be eligible for HMGP funding. If a jurisdiction has its own governing body, jurisdiction must be covered under its own plan. LHMP/Multi-Jurisdictional LHMP's expire five years after FEMA approval. Failure to update plan before expiration date may cause project deobligation.
- Cost Share:** Local funding match of 25% of the total project cost is required by the subapplicant. HMGP matching funds must be from a non-federal source. State does not contribute to local funding match.
- Period of Performance:** Projects must be completed (including close-out) within the 36 month Period of Performance (POP). POP begins upon FEMA approval of the subapplication.

**HAZARD MITIGATION GRANT PROGRAM  
ELIGIBILITY CHECKLIST  
(continued)**

- Complete Subapplication:** Failure to include all required documentation will delay the processing of your subapplication and may result in denial of project. The SOW, cost estimate, cost estimate narrative, work schedule and BCA must accurately mirror each other to be considered for funding. The budget narrative must include a detailed description of every cost estimate line-item, including the methodology used to estimate each cost.
  
- Regulations:** Subapplications that are inconsistent with state and federal HMGP regulations, or do not meet eligibility criteria will not be considered.
  
- Duplication of Programs:** HMGP funding cannot be used as a substitute or replacement to fund activities or programs that are available under other federal authorities, known as Duplication of Programs (DOP).



**SUBAPPLICANT MUST BE ABLE TO CHECK EVERY BOX TO QUALIFY FOR HMGP FUNDING.**

## SUBAPPLICATION FORMAT INSTRUCTIONS

Cal OES requires the following format to be used for all HMGP subapplications. Subapplications must be submitted to Cal OES on two CDs or DVDs. Each Subapplication disc must have a file structure organized in accordance with the organization section of this template. The first copy is logged and retained for Cal OES records. The second copy will be forwarded to FEMA for review and final determination.

### COMPLETE SUBAPPLICATION PACKAGE CONSISTS OF THE FOLLOWING:

**TWO** identical CDs or DVDs must include functional electronic versions of all documents and/or attachments:

- Attachments must be in one of the following formats: Microsoft Word Version 2007 (or newer), Microsoft Excel or Adobe PDF
- Benefit Cost Analysis (BCA) 5.3.0 must be included in a .zip file format
- All electronic attachments must be clearly titled and organized in the following file structure

### CD OR DVD FILE STRUCTURE MUST BE ORGANIZED IN THE FOLLOWING FORMAT:

1. Table of Contents
2. Subapplication
3. Scope of Work
4. Designs
5. Studies
6. Maps
7. Photos
8. Schedule (Additional documentation work schedule components, Gantt chart, etc.)
9. Cost Estimate ([HMGP Cost Estimate Spreadsheet](#) and cost estimate narrative)
10. Match ([Local Match Commitment Letter Template](#))
11. BCA Report ([BCA Version 5.3.0](#) report and BCA supporting documentation)
12. Maintenance ([Project Maintenance Letter Template](#))
13. Environmental ([FEMA's Site Information, Environmental Review and Checklist](#) and all other environmental documentation)
14. Authorization ([Agent Resolution Form](#))
15. Supporting Docs (Any additional supporting documentation)

### MAIL OR DELIVER COMPLETED SUBAPPLICATIONS TO:

California Governor's Office of Emergency Services  
Hazard Mitigation Assistance Branch  
Attention: Hazard Mitigation Grant Program  
3650 Schriever Avenue  
Mather, CA 95655

# PROJECT SUBAPPLICATION FORM

## SUBAPPLICANT INFORMATION

**1. SUBAPPLICANT:**   
Name of state agency, local government, federally recognized tribe, private non-profit, or special district applying for funding.

**2. TYPE:**

<small>STATE/LOCAL GOVERNMENT</small>	<small>FEDERALLY RECOGNIZED TRIBE</small>	<small>PRIVATE NON-PROFIT</small>	<small>SPECIAL DISTRICT</small>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**3. FIPS #:**  IF YOU DO NOT KNOW YOUR FEDERAL IDENTIFICATION PROCESSING SYSTEM NUMBER (FIPS #), REQUEST BY EMAILING THE [HMA@CALOES.CA.GOV](mailto:HMA@CALOES.CA.GOV) MAILBOX

**4. DUNS #:**  IF YOU DO NOT KNOW YOUR DATA UNIVERSAL NUMBERING SYSTEM (DUNS) #, CALL DUN & BRADSTREET (D&B) @ 1-866-705-5711 FOR INFORMATION

**5. COUNTY:**  THE NAME OF THE COUNTY WHERE THE PROPOSED PROJECT IS LOCATED

**6. POLITICAL DISTRICT NUMBERS:**

<small>CONGRESSIONAL:</small>	12	<small>PROVIDE ONLY THE NUMBERS OF THE POLITICAL DISTRICTS FOR THE SUBAPPLICANT</small>
<small>STATE ASSEMBLY:</small>	1719	
<small>STATE LEGISLATIVE:</small>	11	

**7. PRIMARY CONTACT:**  
POINT OF CONTACT FOR YOUR PROJECT. CAL OES WILL CONTACT THIS PERSON FOR QUESTIONS AND/OR REQUESTS FOR INFORMATION

**NAME:**  Mr.  Ms. **FIRST:**  **LAST:**

**TITLE:**

**ORGANIZATION:**

**ADDRESS:**

**CITY:**  **STATE:**  **ZIP CODE:**

**TELEPHONE:**  **FAX:**

**EMAIL:**

**8. ALTERNATIVE CONTACT:**  
BACK-UP POINT OF CONTACT FOR YOUR PROJECT. CAL OES WILL CONTACT THIS PERSON IF PRIMARY CONTACT IS UNAVAILABLE

**NAME:**  Mr.  Ms. **FIRST:**  **LAST:**

**TITLE:**

**ORGANIZATION:**

**ADDRESS:**

**CITY:**  **STATE:**  **ZIP CODE:**

**TELEPHONE:**  **FAX:**

**EMAIL:**



# LOCAL HAZARD MITIGATION PLAN INFORMATION

**9. LOCAL HAZARD MITIGATION PLAN (LHMP) REQUIREMENT:**

**i** A FEMA approved and locally adopted LHMP is required to receive federal funding for all project subapplication activities. Subapplicants for HMGP funding must have a FEMA-approved Mitigation Plan in place at the time of sub-award. Subapplication will be reviewed to ensure that the proposed activity is in conformance with subapplicant’s plan.

**A. NAME/TITLE OF YOUR LHMP:** City and County of San Francisco Hazard Mitigation Plan

<p><b>B. LOCAL SINGLE JURISDICTIONAL MULTHAZARD MITIGATION PLAN:</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">DATE SUBMITTED TO CAL OES:</td> <td style="width: 20%; text-align: center;">12/19/13</td> </tr> <tr> <td>DATE APPROVED BY FEMA:</td> <td style="text-align: center;">11/4/14</td> </tr> <tr> <td>DATE ADOPTED BY LOCAL AGENCY:</td> <td style="text-align: center;">10/21/14</td> </tr> </table>	DATE SUBMITTED TO CAL OES:	12/19/13	DATE APPROVED BY FEMA:	11/4/14	DATE ADOPTED BY LOCAL AGENCY:	10/21/14	<b>OR</b>	<p><b>LOCAL MULTI JURISDICTIONAL MULTHAZARD MITIGATION PLAN:</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">DATE SUBMITTED TO CAL OES:</td> <td style="width: 20%;"></td> </tr> <tr> <td>DATE APPROVED BY FEMA:</td> <td></td> </tr> <tr> <td>DATE ADOPTED BY LOCAL AGENCY:</td> <td></td> </tr> <tr> <td>LEAD AGENCY:</td> <td></td> </tr> </table>	DATE SUBMITTED TO CAL OES:		DATE APPROVED BY FEMA:		DATE ADOPTED BY LOCAL AGENCY:		LEAD AGENCY:	
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DATE APPROVED BY FEMA:																
DATE ADOPTED BY LOCAL AGENCY:																
LEAD AGENCY:																

**C. IF YOUR PROJECT IS REFERENCED IN YOUR LHMP, INDICATE WHERE THE PROPOSED PROJECT CAN BE FOUND; USE N/A FOR NOT APPLICABLE BOXES:**

CHAPTER	PART	SECTION	PAGE
8			

**STOP DO NOT INCLUDE A COPY OF YOUR PLAN WITH SUBAPPLICATION.**

**D. PROVIDE A SHORT NARRATIVE DETAILING HOW YOUR PROJECT ALIGNS WITH THE RISK AND HAZARD ASSESSMENTS, STRATEGIES, GOALS AND/OR OBJECTIVES OF YOUR PLAN:**

The proposed activity is the identification and evaluation of city-owned non-ductile concrete buildings that are vulnerable to damage and collapse in a major earthquake. The goal of this evaluation project is to develop a framewrk to prioritize these buildings for retrofit and pilot an evaluation and retrofit program for privately-owned buildings. The goal is for this program to inform a citywide retrofit program for privately owned concrete buildings.

The proposed project is aligned with and consistent San Francisco's Local Hazard Mitigation Plan goal to “reduce the possibility of damages and losses due to seismic hazards, including ground shaking, ground failure, and tsunami” (Goal #3). The project is also aligned with action #1.E “Continue to implement the 50 tasks identified in the 30-year Earthquake Safety Implementation Program (ESIP).” ESIP is a 30-year plan to implement the recommendations of the CAPSS study, completed in 2010. CAPSS was a nine-year, \$1 million study undertaken by the Department of Building Inspection (DBI) to understand, describe, and suggest strategies for mitigation of the risk to San Francisco from earthquakes. The CAPSS report provided an extensive analysis of potential seismic impacts and community-supported recommendations for mitigating those impacts. Evaluation and retrofit of older non-ductile concrete buildings is an identified Task in the ESIP work plan.

# COMMUNITY INFORMATION

**10. COMMUNITY PARTICIPATION:**

**A. CHECK BOX(ES) IF YOUR COMMUNITY PARTICIPATES IN ANY OF THE FACTORS BELOW:**

Select a column appropriate to your type of project. Acronyms include: Community Wildfire Protection Plan (CWPP), California Environmental Quality Act (CEQA), Community Rating System (CRS) Plan and Unreinforced Masonry (URM) Participation.

FIRE	FLOOD	EARTHQUAKE
<input type="checkbox"/> CWPP, FIRE WIRE, FIRE SAFE <input type="checkbox"/> CURRENT CEQA ACTIVITY <input type="checkbox"/> DEFENSIBLE SPACE	<input type="checkbox"/> CRS PLAN <input type="checkbox"/> CURRENT CEQA ACTIVITY <input type="checkbox"/> HYDROLOGY STUDY	<input checked="" type="checkbox"/> SHAKEOUT DRILL PARTICIPATION <input type="checkbox"/> CURRENT CEQA ACTIVITY <input checked="" type="checkbox"/> URM PARTICIPATION

**B. PROVIDE A NARRATIVE DESCRIPTION OF ALL OF FACTORS SELECTED FROM LIST ABOVE:**

Shakeout Drills:

The City and County of San Francisco participates in the annual earthquake preparedness event, The Great California ShakeOut through a multitude of disaster-related exercises. A few examples of our participation including building inspection drills, drop-cover-hold drills, and communication drills.

Building Inspection drills are held with local agencies, simulating a post-earthquake scenario where City Hall and other facilities need seismic inspections. Mockup damage is installed and inspectors and engineers need to locate the simulated damage and assess the impact using existing forms and tablet-based inspection applications.

Multiple building-wide Drop-Cover-Hold drills are performed along with an annual fire drill. By conducting both drills on the same day, it teaches building tenants the difference between a fire alarm and a earthquake in their response actions.

The SF Department of Emergency Management coordinates a communications drill on ShakeOut day by supporting a test of all citywide communications devices, including but not limited to 800MHz Radios, Satellite Phones, Web applications, phones, alternate phone lines and online incident management software.

URM Participation:

As noted in the 2009 FEMA P-774 publication, Unreinforced Masonry Buildings and Earthquakes: Developing Successful Risk Reduction Programs, San Francisco has studied its URM buildings to understand what kinds of retrofits would be needed. That 1990 study grouped the city's 2,000 URM buildings into categories based on occupancy, size, and configurations. Since then retrofits have been accomplished at many of the city's URM sites, including City Hall, whose retrofit included seismic isolators.

San Francisco has an Unreinforced Masonry Building Program, described in the City's Community Safety Element of its General Plan. Established in 1992, the Unreinforced Masonry Building Seismic Hazard Reduction Program and Ordinance required the retrofit

of URM buildings to address their record of poor performance in earthquakes. The Department of Building Inspection is charged with oversight and enforcement of the program. As of February 2006, all URM buildings were required to be in full compliance with the Ordinance.

San Francisco also has a Seismic Safety Retrofit Bond and Loan Program, authorized by San Francisco voters in 1992. Voters authorized up to \$350 million in bonds for loans to owners of URM buildings.

**C. IS YOUR JURISDICTION REQUIRED TO PROVIDE PUBLIC NOTICE OF THIS PROJECT?**

Yes  No If yes, provide details:

**PROJECT INFORMATION**

**11. PROJECT TITLE:**

MUST USE THE SAME PROJECT TITLE ORIGINALLY USED IN THE APPROVED NOTICE OF INTEREST (NOI). IF YOU NEED TO CHANGE YOUR PROJECT TITLE, CONTACT CAL OES AT [HMA@CALOES.CA.GOV](mailto:HMA@CALOES.CA.GOV)

**12. PROJECT LOCATION:**

**A. IDENTIFY THE COUNTY/COUNTIES WHERE THE ACTIVITY WILL OCCUR:**

**B. LATITUDE/LONGITUDE COORDINATES:**

FEMA requires that all projects be geo-coded using latitude and longitude (lat/long) using NAD-83 or WGS-84 datum. The lat/long coordinates must be expressed in degrees including five or more decimal places (e.g., latitude 36.999221, longitude -109.044883).

LATITUDE
37.779480

LONGITUDE
-122.419222



**IF THERE ARE MORE THAN ONE SET OF LAT/LONG COORDINATES, PROVIDE ON SEPARATE DOCUMENT AND ADD TO MAP SECTION OF THE CDS OR DVDS.**

**C. STRUCTURE COORDINATES:**

- For projects that protect buildings or other facilities, provide coordinates for each structure at either the front door of the structure or the intersection of the public road and driveway that is used to access the property.
- For large activity areas, such as detention basins or vegetation management projects, the location must be described by three or more coordinates that identify the boundaries of the project.
- The polygon created by connecting the coordinates must encompass the entire project area.

**D. STAGING AREA:**

Describe the project staging area. This is the area where the project equipment, materials and/or debris will be staged. Include a vicinity map with the proposed staging area(s) in the map file folder of the CDs or DVDs.



**AERIAL MAP(S) OF STAGING AREA(S) MUST BE INCLUDED IN SUBAPPLICATION.**

**E. SEA LEVEL RISE (SLR):**

- 1. Is the risk to the project increased by SLR due to project location and project activity type? Yes  No
- 2. Was SLR considered and included in the mitigation measures implemented in this project? Yes  No

**F. SITE PHOTOS:**

- A minimum of three ground photos per project site are required. Include in photo file folder of the CDs or DVDs.

**G. MAPPING REQUIREMENTS:**

Provide the following mapping elements in the map file folder of the CDs or DVDs:

- If project area has been mapped using GIS software, include the completed Shapefiles on CD-RW.
- Include a vicinity map of the general area showing major roads. Aerial photographs may be used as vicinity maps.
- Prominently mark the project location on the vicinity map.
- Provide a detailed project map that clearly identifies the project boundaries.
- Project map must show all lat/long coordinates provided in the project description.
- Vicinity map and the project map must both have a north arrow and scale.

**H. PUBLIC ASSISTANCE (PA) PROGRAM FUNDING:**

List any Public Assistance Disaster Survey Reports (DSR) or Project Worksheets (PWs) that were completed at the project location from previous disasters. List all current engagement with PA for this current disaster and include date(s) if known:

N/A - project site will be identified in this project

**I. DEED RESTRICTIONS THAT LIMIT FEDERAL FUNDING:**

Is there a deed restriction or permanent conservation easement on the property at the project site that would prohibit federal disaster funding (e.g., a previously FEMA funded acquisition of a structure on this property)? If yes, describe in detail.

N/A - project site will be identified in this project

**13. PROJECT DESCRIPTION:**

**A. APPLICATION TYPE:**

- Project  5% Activity

*5% activities are defined as mitigation actions that are consistent with your local hazard mitigation plan and meet all HMGP requirements, but may be difficult to conduct a standard BCA to prove cost-effectiveness. Examples: early earthquake warning system, back-up generators for critical facilities, public awareness campaign, mitigation specific community outreach activities.*

**B. PROJECT TYPE:**

Select at least one project type; select as many as needed to accurately describe project.

<input checked="" type="checkbox"/> EARTHQUAKE	<input type="checkbox"/> FIRE	<input type="checkbox"/> FLOOD	<input checked="" type="checkbox"/> OTHER
<input type="checkbox"/> CODE ENFORCEMENT	<input type="checkbox"/> DEFENSIBLE SPACE	<input type="checkbox"/> ACQUISITION	<input type="checkbox"/> CRITICAL FACILITY GENERATOR(S)
<input type="checkbox"/> NON-STRUCTURAL	<input type="checkbox"/> FIRE RESISTANT BUILDING MATERIALS	<input type="checkbox"/> DRY FLOOD PROOFING	<input type="checkbox"/> DROUGHT <input type="checkbox"/> TSUNAMI
<input type="checkbox"/> STRUCTURAL	<input type="checkbox"/> FIRE VEGETATION MANAGEMENT	<input type="checkbox"/> FLOOD CONTROL	<input type="checkbox"/> WIND
<input type="checkbox"/> NON-STRUCTURAL & STRUCTURAL	<input type="checkbox"/> SOIL STABILIZATION	<input type="checkbox"/> ELEVATION	
<input type="checkbox"/> <a href="#">CLIMATE RESILIENCY MITIGATION ACTION</a> (CRMA): Projects that mitigate risk through restoration of the natural environment			

**C. DESCRIBE PROBLEM/HAZARDS/RISKS:**

Describe the problem this project is attempting to solve and the expected outcome. Describe the hazards and risks to life, safety and any improvements to property in the project area for at least the last 25 years. Describe in detail how the project reduces hazard effects and risks.

San Francisco faces a high seismic risk from earthquakes from a variety of faults in the region. A damaging earthquake similar to the 1906 earthquake or 1989 Loma Prieta earthquake are rare but likely to occur in the next 30 years. The United States Geological Survey (USGS) estimates there is a 72% chance of one or more magnitude 6.7 or larger earthquakes in the next 30 years on one of the Bay Area’s faults. There is a 33% likelihood of such an earthquake on the San Andreas Fault, the most damaging scenario for San Francisco. Smaller magnitude earthquakes are more likely to occur, potentially producing significant local damage, as experienced in downtown Napa in the 2014 South Napa earthquake.

Strong shaking from these earthquakes will likely damage large numbers of older, existing non-ductile concrete buildings that were not built to current seismic standards. It is generally recognized that many of these buildings will suffer severe damage in strong earthquakes and a few of them will likely collapse, with the potential for significant loss of life and major community impacts. Many non-ductile concrete buildings have high occupancies; in a modeled repeat of the 1906 earthquake, a large proportion of the deaths and serious injuries were attributed to the collapse of non-ductile concrete buildings. Initial analysis from the Concrete Coalition of the Earthquake Engineering Research Institute and City of San Francisco estimates there are approximately 3,400 publically and privately owned pre-1980 concrete buildings in San Francisco. A HAZUS analysis of city-owned buildings estimates that there are 116 older concrete buildings in San Francisco. Because of the complex nature of these buildings, it is nearly impossible to visually determine which of these buildings are at high risk of collapse. Additional detailed analysis is needed to positively identify these buildings.

**D. DESCRIBE RECENT EVENTS THAT INFLUENCED THE SELECTION OF THIS PROJECT:**

Describe recent events (e.g. changes in the watershed, discovery of a new hazard, zoning requirements, inter-agency agreements, etc.) that influenced the selection of this project.

San Francisco's Community Action Plan for Seismic Safety Earthquake Safety Improvement Plan (ESIP) identifies retrofit of non-ductile concrete buildings as a priority

action beginning in 2020. In preparation for this timeline, the City must begin evaluating cost effective analysis methods to evaluate and prioritize the collapse potential of older concrete buildings. The recently published FEMA P-2018, Seismic Evaluation of Older Concrete Buildings for Collapse Potential, provides a simplified methodology for evaluating collapse resistance using simplified estimates of drift demand. San Francisco wishes to test the tool on its own buildings as a pilot for a retrofit program of privately owned buildings and prioritize the risk of these buildings so it can begin a retrofit program.

San Francisco has also recently completed a review of the concrete building inventory developed by the Concrete Coalition and has been able to develop a list of addresses for these buildings for the first time, which will facilitate notification to owners of older concrete buildings. San Francisco recently completed a HAZUS study of all city-owned buildings to risks, potential losses, and impacts. Detailed structural evaluations have been completed of many city-owned concrete buildings using standard methodologies such as ASCE 41.

All of these developments have positioned the City to begin evaluating its older concrete buildings and piloting methodologies and tools that can be employed to evaluate and mitigate privately owned buildings as well.

**E. SCOPE OF WORK (SOW):**

**STATE EXACT SOW DOCUMENT TITLE:** 3. SOW Nonductile Concrete Buildings

1. Describe the entire SOW of the project in clear, concise, ample detail.
2. Must provide a thorough description of **all tasks and activities** to be undertaken.
3. Must be written in sequential order from start to finish of the project.
4. Describe any land acquisition activities, and/or right-of-way or access easements that need to be obtained.
5. If structural, discuss how the structure/building/facility will be constructed or retrofitted.
6. Include building or structure dimensions, material types, depth and width of excavations, volume of materials excavated, type of equipment to be used, staging and parking areas, and any phasing of the project.
7. If any tunneling is proposed, describe the method and any temporary trenches or pits.
8. Describe any demolition activities that need to occur prior to construction or retrofitting.



**INSERT THIS DOCUMENT IN THE SOW FILE FOLDER OF THE CDs or DVDs.**

**F. HAS YOUR JURISDICTION PREVIOUSLY RECEIVED HMGP FUNDING?**

<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	If yes, provide disaster number(s):	845, 872, 1008, 1628, 4158
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**G. HAS YOUR JURISDICTION RECEIVED ANY OTHER FUNDING?**

Describe all other funding received for this project and all other recent projects. Identify the funding source (i.e., Federal, State, Private, etc.).

Local general funds are the other funding source for this project

**H. RELATED PROJECTS:**

Describe any other projects or project components (whether or not funded by FEMA), which may be related to the proposed project, or are in (or near) the proposed project

area. FEMA must look at all projects to determine a cumulative effect. FEMA reviews all interrelated projects under NEPA regulations.

**I. HAZARD ANALYSIS TYPE:**

Select the hazard(s) below that this project will protect against. Select as many as needed.

- |   |   |   |   |
|---|---|---|---|
| <input type="checkbox"/> BIOLOGICAL       | <input type="checkbox"/> EARTHQUAKE     | <input type="checkbox"/> LAND SUBSISTENCE | <input type="checkbox"/> TERRORIST        |
| <input type="checkbox"/> CHEMICAL         | <input type="checkbox"/> FIRE           | <input type="checkbox"/> MUD/LANDSLIDE    | <input type="checkbox"/> TORNADO          |
| <input type="checkbox"/> CIVIL UNREST     | <input type="checkbox"/> FISHING LOSSES | <input type="checkbox"/> NUCLEAR          | <input type="checkbox"/> TOXIC SUBSTANCES |
| <input type="checkbox"/> COASTAL STORM    | <input type="checkbox"/> FLOOD          | <input type="checkbox"/> SEA LEVEL RISE   | <input type="checkbox"/> TSUNAMI          |
| <input type="checkbox"/> CROP LOSSES      | <input type="checkbox"/> FREEZE         | <input type="checkbox"/> SEVERE ICE STORM | <input type="checkbox"/> WINDSTORM        |
| <input type="checkbox"/> DAM/LEEVEE BREAK | <input type="checkbox"/> HUMAN CAUSE    | <input type="checkbox"/> SEVERE STORM(S)  |   |
| <input type="checkbox"/> DROUGHT          | <input type="checkbox"/> HURRICANE      | <input type="checkbox"/> SNOW             |   |

**J. DESIGN PLANS:**

If your project requires design plans, plans should be prepared to supplement the SOW and written to the design file folder section of the CDs or DVDs. If the project involves ground disturbance, (e.g. enlarging ditches or culverts, diversion ditches, detention basins, storm water improvements, etc.) include the following:

1. **Scale:** Plans should be drawn to scale (e.g. 1" to 100' or 1" to 200') depicting the entire land parcel, showing buildings, improvements, underground utilities, other physical features, dimensions and cross sections.
  2. **Identification:** Indicate agency name, land owner, civil engineer, soil engineer, geologist, map preparer, and date of map preparation. Also, indicate the name of the project.
  3. **Legend/Orientation:** Include a legend explaining all lines and symbols. Identify property acreage and indicate direction with a north arrow (pointing to top or right hand side of the plan).
  4. **Dimensions:** Show property lines and dimensions. Also, show boundary lines of project and their dimensions if only a portion of the property is being utilized for the project.
  5. **Structures:** Identify all existing and proposed buildings and structures including storm drains, driveways, sidewalks and paved areas.
  6. **Utilities:** Indicate names and location of utilities on property (water, sewage, gas, electric, telephone, cable).
  7. **Roads/Easements:** Indicate location, names, and centerline of streets and recorded roads. Identify any utility, drainage or right-of-way easements on the property.
  8. **Drainage:** Show the location, width and direction of flow of all drainage courses on site.
  9. **Grading/Topographic Information:** Show existing surface contours on-site and bordering the property.
  10. **Parking:** Show all construction parking and staging areas and provide dimensions.
  11. **Cross Sections:** Provide cross sections of proposed buildings, structures or other improvements, and any trenches, temporary pits or catchment basins.
- If applicable, provide studies and engineering documentation, including any Hydrology and Hydraulics (H&H) data.
- If applicable, provide drawings or blueprints that show the footprint and elevations.

**K. PROJECT ALTERNATIVES:**

Identify three project alternatives:

**1. ALTERNATIVE #1 – NO ACTION:**

Describe the No Action alternative below. The No Action alternative evaluates the consequences of taking no action and leaving conditions as they currently exist.

Nonductile concrete buildings are well known to be at high risk of catastrophic collapse in an earthquake, causing death and injury to occupants inside. San Francisco has prioritized the evaluation and retrofit of these buildings in its Earthquake Safety Implementation Plan beginning in 2020. Because a number of

these buildings are public city-owned buildings, not evaluating and retrofitting them is a public safety hazard and not an option.

**2. ALTERNATIVE #2 – PROPOSED ACTION:**

Describe the Proposed Action alternative below. The Proposed Action alternative is the proposed project to solve the problem. Explain why the proposed action is the preferred alternative. Identify how the preferred alternative will solve the problem, why the preferred alternative is the best solution for the community, why and how the alternative is environmentally preferred and why the project is the economically preferred alternative.

The proposed alternative is to develop and apply a sample screening, evaluation, and rating program using the new FEMA P-2018, Seismic Evaluation of Older Concrete Buildings for Collapse Potential methodology. This will lead directly to development of larger programs to understand which, if any, of the City-owned concrete buildings might be at high risk or very high risk of collapse in expected earthquakes. This initial program will focus on the development of necessary data collection and analysis tools followed by the application of FEMA P-2018 to a selection of 10 to 12 City-owned buildings that represent a variety of concrete building construction types, sizes, and possible hazards.

This is the preferred alternative because it allows the City of San Francisco to test and evaluate the newly developed FEMA P-2018 methodology on city owned buildings and begin the process of identifying those buildings that need to be retrofitted. It also allows the city to pilot the program components that will be used a privately owned buildings. This alternative is cost effective because it initially looks at a small subset of buildings and allows the City to refine the approach before analyzing the wider cohort of city- and privately-owned buildings.

**3. ALTERNATIVE #3 – SECOND ACTION ALTERNATIVE:**

Describe the Second Action alternative below. The Second Action alternative described must also solve the described problem. State why this alternative wasn't chosen. It must be a viable project that could be substituted in the event the proposed action is not chosen.

The second action alternative is to perform an FEMA P-2018 analysis on all 114 city-owned building immediately. This is not a cost effective approach because we do not yet know if the FEMA P-2018 methodology will be suitable for use for its intended purpose and if there are modifications to be made, it will require a new analysis of all 114 buildings, rather than just a smaller group of 12 buildings.

**WORK SCHEDULE INFORMATION**

**14. PROJECT WORK SCHEDULE:**

The intent of the work schedule is to provide a realistic appraisal of the time and components required to complete the project.

- Describe each of the major work elements and milestones in the description section below.
- Project subapplication examples are: construction, architectural, design, engineering, inspection, testing, permits, project management, mobilization and de-mobilization.
- State the total timeframe anticipated for each of the work elements.

WORK SCHEDULE EXAMPLE		
#	DESCRIPTION	TIMEFRAME
1.	Kick-off, 90% design meetings	3 months
2.	Final contract drawing development	5 months
3.	Open bids and award contract	4 months
4.	Construction – Mobilization	5 months
5.	Construction – Demolition	4 months
6.	Construction – Concrete and conduit work	2 months
7.	Construction – Trenching	2 weeks
8.	Construction – Utility relocation	4 months
9.	Construction – Electrical Installation	1 month



- State the total timeframe anticipated to complete the project.
- Work schedule must mirror SOW, budget and BCA.OPTIONAL:
- Provide the work schedule in GANTT chart form as supplemental documentation in the work schedule file folder of the CDs or DVDs.

10.	Construction – Site Restoration	1 week
11.	Construction – Complete punch list	2 months
12.	Construction – Demobilization	1 week
13.	Project Close-out and record drawings	2 months
14.	Grant Close out	3 months
<b>TOTAL MONTHS:</b>		<b>36 months</b>



**TOTAL PROJECT DURATION (INCLUDING CLOSE-OUT) MUST NOT EXCEED A 36 MONTH PERIOD OF PERFORMANCE (POP).**

#	DESCRIPTION	TIMEFRAME
1.	Building selection	2 weeks
2.	Contrator selection	2 months
3.	Comparison evaluations	1 month
4.	Initial screening form	1 month
5.	Evaluation forms	1 month
6.	FEMA P-2018 analysis	6 months
7.	Comparison of results	2 weeks
8.	Reporting	2 weeks
9.	Project management and oversight	1 month
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.	Project Close-out	2 weeks
19.	<b>STANDARD VALUE (DO NOT CHANGE)</b> Grant Close-out	3 months
<b>TOTAL MONTHS:</b>		<b>16 months</b>

If more lines are needed than provided, indicate the title of document in box 1 and attach a separate work schedule in the schedule folder of the discs.

# COST ESTIMATE INFORMATION

**15. HMGP COST ESTIMATE SPREADSHEET:**

**A. COST ESTIMATE INSTRUCTIONS:**

Using the [HMGP Cost Estimate Spreadsheet](#), provide a detailed cost estimate breakdown.

- Cost estimate describes the anticipated costs associated with the SOW for the proposed mitigation activity. Cost estimates must include detailed estimates of cost item categories.
- Only include costs that are directly related to performing the mitigation activity. If additional work, such as remodeling, additions, or improvements are being done concurrently with the mitigation work, do not include these costs in the submitted budget.
- Documentation that supports the budget must be attached to the subapplication in the budget file folder of the CDs or DVDs.
- Total costs must be consistent with the requested federal share plus the matching funds and must be consistent with the project cost in the Benefit Cost Analysis (BCA), SOW and work schedule.

HMGP COST ESTIMATE SPREADSHEET EXAMPLE					
#	ITEM NAME	Unit Qty	UNIT	UNIT COST	COST EST TOTAL
1.	Pre-Award Costs: Develop BCA	4	HR	\$150	\$600
2.	Temp. Inlet Filter Rolls	4	EA	\$250	\$1000
3.	Temp. Fiber Roll	1850	LF	\$3	\$5550
4.	Hydraulic Mulch	1000	SQYD	\$2	\$2000
5.	Plane Asphalt Concrete Pavement	650	SQYD	\$22	\$14300
6.	Street Sweeping for 30 days	30	EA	\$350	\$10500
7.	Roadway Excavation	70	CY	\$40	\$2800
8.	Aggregate Base, Class 2	210	CY	\$75	\$15750
9.	Remove Concrete Pavement	650	SQYD	\$340	\$10540
10.	Asphalt Concrete, Type B	180	TON	\$150	\$27000
11.	Asphalt Concrete, Leveling	10	TON	\$300	\$3000
12.	Asphalt Concrete Dike, Type A	235	LF	\$15	\$3525
13.	Asphalt Concrete Dike, Type F	125	LF	\$8	\$120
14.	Place Asphalt Concrete	15	SQFT	\$8	\$120
15.	18" Corrugated Steel Pipe Riser	5	LF	\$125	\$625
16.	24" Reinforced Concrete Pipe	275	LF	\$170	\$46750
17.	84" Reinforced Concrete Pipe Install	572	LF	\$400	\$228800
18.	Precast Triple Concrete Box Culvert	44	LF	\$1500	\$66000
19.	Curb Inlet - Type B-1 (L=9')	1	EA	\$6000	\$6000
20.	Curb Inlet - Type B-1 (L=13')	1	EA	\$6300	\$6300
21.	Curb Inlet - Type B-1 (L=15')	1	EA	\$6800	\$6800
22.	Storm Drain Cleanout - Type A-8	3	EA	\$7500	\$22500
23.	8" PVC Sewer	89	LF	\$100	\$8900
24.	Cellular Block (Precast)	4100	SQFT	\$20	\$82000
25.	Project Identification Sign	2	EA	\$1000	\$2000
<b>Total Project Cost Estimate:</b>					<b>\$573480</b>

**B. INELIGIBLE COSTS:**

The following are ineligible line items:

- Lump Sums
- Contingency Costs
- Miscellaneous Costs
- "Other" Costs
- Cents (must use whole dollar amounts, round unit prices up to whole dollars)

**C. PRE-AWARD COSTS:**

Eligible pre-award costs are costs incurred after the disaster date of declaration, but prior to grant award. Pre-award costs directly related to developing the application may be funded.

- Developing a BCA
- Submission of subapplication
- Workshops or meetings related to development
- Preparing design specifications
- Gathering environmental and historic data



**Subapplicants who are not awarded funds will not receive reimbursement for pre-award costs.**

**D. COST ESTIMATE NARRATIVE:**

FEMA requires a cost estimate narrative that explains all projected expenditures in detail. The cost-estimate narrative is intended to mirror the cost estimate spreadsheet and should include a full detailed narrative to support the cost estimates listed in the HMGP Project Cost Estimate Spreadsheet. If your cost estimate includes City, County, or State employees' time (your agency), include personnel titles and salary/hourly wages plus benefits for a total hourly cost. Detailed timesheets must be retained.

Title the document "Cost Estimate Narrative" and include in the budget file folder of the CDs or DVDs.

**16. FEDERAL/NON-FEDERAL SHARE INFORMATION:**

**A. FUNDING RESTRICTIONS:**

FEMA will contribute no more than 75 percent of the total project cost. A minimum of 25 percent of the total eligible costs must be provided from a non-federal source. State does not contribute to local cost share.

**For example:** for a \$10,000,000 total project cost, the federal requested share (75 percent) would be \$7,500,000. The non-federal match share (25 percent) provided would be \$2,500,000.

\*The sum of the federal and non-federal shares must equal the total project cost.

\*The federal share **MUST NOT** exceed 75 percent.

**B. TOTAL PROJECT COST ESTIMATE:**

\$392,576
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Enter total cost formulated on the [HMGP Cost Estimate Spreadsheet](#)

ENTER \$ IN BOX ABOVE



**VERIFY ALL AMOUNTS ENTERED ARE ACCURATE.**

**INCORRECT AMOUNTS WILL DELAY PROCESSING OF YOUR SUBAPPLICATION.**

<b>FEDERAL SHARE (75% MAXIMUM)</b>	REQUESTED AMOUNT:	\$294,432
		ENTER \$ IN BOX ABOVE
	PERCENTAGE AMOUNT:	75%
		ENTER % IN BOX ABOVE
<b>NON-FEDERAL SHARE (25% MINIMUM)</b>	REQUESTED AMOUNT:	\$98,144
		ENTER \$ IN BOX ABOVE
	PERCENTAGE AMOUNT:	25%
		ENTER % IN BOX ABOVE

**C. NON-FEDERAL MATCH SOURCE: MATCH COMMITMENT LETTER:**

Use the Local Match Commitment Letter Template to complete this section and add completed letter to the match file folder of the CDs OR DVDs.

- A signed Match Commitment Letter must be provided on agency letterhead.
- The non-federal source of matching funds must be identified by name and type.
- If "other" is selected for funding type, provide a description.
- Provide the date of availability for all matching funds.
- Provide the date of the Funding Match Commitment Letter.
- The funds must be available at the time of submission unless prior approval has been received from Cal OES.
- If there is more than one non-federal funding source, provide the same information for each source on an attached document.
- Match funds must be in support of cost items listed in the cost estimate spreadsheet.
- Requirements for donated contributions can be found in 2 CFR 200.306.

# BENEFIT/COST EFFECTIVENESS INFORMATION

## 17. BENEFIT/COST EFFECTIVENESS INFORMATION

### A. BCA INSTRUCTIONS:

FEMA will only consider subapplications from subapplicants that use a FEMA-approved methodology to conduct the Benefit Cost Analysis (BCA). BCA must be legible, complete and well-documented.

- Project BCAs must demonstrate cost-effectiveness through a Benefit Cost Ratio (BCR) of 1.0 or greater.
- Projects with a BCR of less than 1.0 will not be considered for funding.
- Total project cost must be used in the BCA.
- Maintenance of a completed HMGP project is not an eligible reimbursement activity, but must be included in the BCA.

BCA Version 5.3.0 is the only software that is allowed to conduct a BCA. Some project types may qualify for pre-calculated benefits. Additional information on the BCA Toolkit is available at: <https://www.fema.gov/benefit-cost-analysis>.

**i** The FEMA BCA Technical Assistance Helpline is available to provide assistance with FEMA’s BCA software by calling 1-855-540-6744 or via email at [BCHelpLine@FEMA.dhs.gov](mailto:BCHelpLine@FEMA.dhs.gov). The FEMA helpline is only to be utilized for technical assistance questions. The FEMA helpline will not verify the accuracy of your BCA.

### B. BCA INFORMATION:

Once the BCA is completed, enter information requested below.

- 1. NET PRESENT VALUE OF PROJECT BENEFITS:
- 2. TOTAL PROJECT COST ESTIMATE:
- 3. BENEFIT COST RATIO:

### C. ANALYSIS TYPE:

- FLOOD                       WILDFIRE                       EXEMPT (5% PROJECTS)                       EARTHQUAKE
- HURRICANE WIND                       DROUGHT                       PRE-CALCULATED                       LANDSLIDE
- DAMAGE FREQUENCY ASSESSMENT (DFA)

D. ANALYSIS DATE (date BCA was conducted):

### E. PROVIDE BCA HARD AND SOFT COPIES IN FORMAT DESCRIBED BELOW:

- Copy the exported BCA in a .zip file format and add to the CD-RW.
- Provide a hard copy of the report in the BCA file folder of the CDs or DVDs.

## MAINTENANCE ASSURANCE INFORMATION

**18. PROJECT MAINTENANCE INFORMATION:**

**A. MAINTENANCE ASSURANCE LETTER:**

- Using the [Project Maintenance Letter Template](#), identify all maintenance activities required to preserve the long-term mitigation effectiveness of the project.
  - Examples of maintenance include: inspection of the project, cleaning and grubbing, trash removal, replacement of worn out parts, etc.
  - Attach a maintenance schedule, estimated annual costs, and a signed maintenance commitment letter for the useful life of the project.

## NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

**19. NFIP INFORMATION:**

***i* CONTACT YOUR COUNTY OR LOCAL FLOODPLAIN ADMINISTRATOR FOR NFIP INFORMATION.**

**A. NFIP PARTICIPATION:**

- 1. Is the jurisdiction where the project is located participating in the NFIP? YES  NO 
  - a. If yes, are they in good standing? YES  NO
  - b. If no, explain:

**B. PROJECT LOCATION:**

- 1. Is this project located in a floodplain or floodway designated on a FEMA Flood Insurance Rate Map (FIRM)? YES  NO 
  - a. Mark the project location on the FIRM and attach to subapplication in the maps file folder of the CDs or DVDs.
- 2. Provide the following information for the location of the project:
  - a. FIRM panel number:
  - b. FIRM zone designations:
  - c. NFIP community ID number:

- c. LAST [COMMUNITY ASSISTANCE VISIT \(CAV\)](#) DATE:

## ENVIRONMENTAL INFORMATION

**20. ENVIRONMENTAL INFORMATION:**

**A. FEMA ENVIRONMENTAL CHECKLIST:**

- Complete the [FEMA Site Information, Environmental Review, and Checklist](#) and attach to the environmental file folder of the CDs or DVDs. Provide a detailed response to each

question. Attach supporting documentation in compliance with FEMA's frontloading requirements.

## PRINT THIS PAGE – ORIGINAL SIGNATURE IS REQUIRED

### PROJECT CONDITIONS

Indicate by checking each box below that you will adhere to these listed project conditions.

- If during implementation of the project, ground-disturbing activities occur and artifacts or human remains are uncovered, all work will cease and FEMA, Cal OES, and the State Historic Preservation Officer (SHPO) will be notified.
- If deviations from the approved scope of work result in design changes, the need for additional ground disturbance, additional removal of vegetation, or will result in any other unanticipated changes to the physical environment, FEMA will be contacted and a re-evaluation under NEPA and other applicable environmental laws will be conducted.
- If wetlands or waters of the U.S. are encountered during implementation of the project, not previously identified during project review, all work will cease and FEMA will be notified.
- Due to the Federally mandated Environmental and Historic Preservation (EHP) review; no construction will occur for this project prior to FEMA and Cal OES approval.

### AUTHORIZATION

The undersigned does hereby submit this subapplication for financial assistance in accordance with the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP) and the State Hazard Mitigation Administrative Plan and certifies that the subapplicant (e.g., organization, city, or county) will fulfill all requirements of the program as contained in the program guidelines and that all information contained herein is true and correct to the best of our knowledge.

Subapplicant Authorized Agent:

**NAME:** Ken Bukowski

**TITLE:** Deputy City Administrator

**ORGANIZATION:** City and County of San Francisco

**SIGNATURE:** 

**DATE:**

June 25, 2019

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