HAZARD MITIGATION GRANT PROGRAM
PROJECT SUBAPPLICATION

DISASTER NUMBER:	DR-4344 (Oct. 2017 California Wildfires)
JURISDICTION NAME:	San Francisco Bay Area Rapid Transit District
PROJECT TITLE:	Slope Stabilization and Erosion Control along BART's A-line and C-line
PROJECT NUMBER:	DR-4344-0055

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

Cal OES
GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

Notice of Interest (NOI) approved subapplications are due postmarked to Cal OES by:
DR-4344: July 2, 2018

HAZARD MITIGATION GRANT PROGRAM (HMGP)
INTRODUCTION

INTRODUCTION

As a result of the declaration of a major federal disaster, the State of California is eligible for HMGP funding. The State has established priorities to accept project subapplications from subapplicants state-wide, state agencies, tribal governments, local governments, and Private Non-Profits.

Hazard mitigation activities are aimed at reducing or eliminating future damages. Activities include cost effective hazard mitigation projects and hazard mitigation plans approvable by the Federal Emergency Management Agency (FEMA).

HMGP is successful in meeting the FEMA requirements to qualify as an Enhanced State Hazard Mitigation Plan (ESHMP) state. ESHMP accreditation has resulted in additional millions of dollars available for local agencies' hazard mitigation plan and project funding. In order to maintain ESHMP status, further information is requested by FEMA. This information is requested as a means of assessing the pro-activity of your community or agency.

PUBLIC ASSISTANCE

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

TIME EXTENSIONS

Time extensions may be requested, and will be approved or denied on a case-by-case basis. To request additional time to submit a subapplication, send an email to the HMGP@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: HMGP@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 lead 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.

☒ **Scope of Work:** The project scope of work (SOW) must be consistent with the SOW provided in the approved Notice of Interest (NOI).

☒ **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. 5% Initiative Projects do not need a BCA.

☒ **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)).

☒ **LHMP/MJHMP:** Subapplicant must have a FEMA approved and adopted Local or Multi Jurisdictional Hazard Mitigation Plan (LHMP or MJHMP) to be eligible for HMGP funding. If a jurisdiction has its own governing body, jurisdiction must be covered under its own plan. LHMP's/MJHMP'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).

☒ **Time Extensions:** Unless a time extension has been approved before the deadline, subapplications must be postmarked by the applicable deadline to be considered for funding.

☒ **CEQA Requirement:** 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). Environmental data is required for project. Environmental review is typically the most time consuming aspect of project funding approval.

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. Two complete subapplications must be submitted to Cal OES. Each subapplication must be in separate binders. 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 printed subapplications must be provided in 3-ring binders
- Each binder section must be tabbed in the format outlined below
- Each binder must be large enough to hold all of the contents
- The use of additional binders is permitted as needed
- All printed attachments must be clearly titled

☒ **TWO** identical CD-RWs must include functional electronic versions of all documents/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

ORGANIZATION OF THE BINDER SECTIONS MUST BE TABBED IN THE FOLLOWING FORMAT:

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

MAIL OR DELIVER COMPLETED SUBAPPLICATIONS TO:

California Governor's Office of Emergency Services
Hazard Mitigation Grants Program Unit
Attention: HMGP
3650 Schriever Avenue
Mather, CA 95655

PROJECT SUBAPPLICATION FORM

SUBAPPLICANT INFORMATION

1. **SUBAPPLICANT:** San Francisco Bay Area Rapid Transit District
   NAME OF STATE AGENCY, TRIBAL GOVERNMENT, LOCAL GOVERNMENT, PRIVATE NON-PROFIT OR SPECIAL DISTRICT APPLYING FOR FUNDING

2. **TYPE:**

STATE/LOCAL GOVERNMENT	TRIBAL GOVERNMENT	PRIVATE NON-PROFIT	SPECIAL DISTRICT
☐	☐	☐	☒

3. **FIPS #:** 001-9100 — IF YOU DO NOT KNOW YOUR FEDERAL IDENTIFICATION PROCESSING SYSTEM NUMBER (FIPS #), REQUEST BY EMAILING THE HMGP@CALOES.CA.GOV MAILBOX

4. **DUNS #:** 047409107 — IF YOU DO NOT KNOW YOUR DATA UNIVERSAL NUMBERING SYSTEM (DUNS) #, CALL DUN & BRADSTREET (D&B) @ 1-866-705-5711 FOR INFORMATION

5. **COUNTY:** Alameda County and Contra Costa County — THE NAME OF THE COUNTY WHERE THE PROPOSED PROJECT IS LOCATED

6. **POLITICAL DISTRICT NUMBERS:** PROVIDE ONLY THE NUMBERS OF THE POLITICAL DISTRICTS FOR THE SUBAPPLICANT

CONGRESSIONAL:	13
STATE ASSEMBLY:	18
STATE LEGISLATIVE:	09

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:** Sylvia **LAST:** Lamb
TITLE:	Group Manager, Capital Projects, Maintenance and Engineering
ORGANIZATION:	San Francisco Bay Area Rapid Transit District
ADDRESS:	300 Lakeside Drive, 9th floor
CITY:	Oakland **STATE:** CA **ZIP CODE:** 94612
TELEPHONE:	510.464.6801 **FAX:**
EMAIL:	Slamb@bart.gov

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:** Aileen **LAST:** Hernandez
TITLE:	Principal Financial Analyst
ORGANIZATION:	San Francisco Bay Area Rapid Transit District
ADDRESS:	300 Lakeside Drive, 16th Floor
CITY:	Oakland **STATE:** CA **ZIP CODE:** 94612
TELEPHONE:	510.464.6564 **FAX:**
EMAIL:	Ghernan@bart.gov

LOCAL HAZARD MITIGATION PLAN INFORMATION

9. LOCAL HAZARD MITIGATION PLAN (LHMP) REQUIREMENT:

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: San Francisco Bay Area Rapid Transit District, Local Hazard Mitigation Plan

B.

LOCAL **SINGLE** JURISDICTIONAL MULTIHAZARD MITIGATION PLAN:		OR	LOCAL **MULTI** JURISDICTIONAL MULTIHAZARD MITIGATION PLAN:	
DATE SUBMITTED TO CAL OES:	Jan, 2017		DATE SUBMITTED TO CAL OES:	
DATE APPROVED BY FEMA:	Jun. 2, 2017		DATE APPROVED BY FEMA:	
DATE ADOPTED BY LOCAL AGENCY:	Aug. 10, 2017		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
			66

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 project, included on page 66 of BART's LHMP, was identified as the 3rd highest ranking mitigation to be undertaken. "Erosion Control: Upgrade and repair facility foundations, embankments, and drainage to mitigate erosion issues. Work that may be included are excavation, fill placement, cut-fill transitions, slope stability, drainage and erosion control, slope setbacks, expansive soils, collapsible soils, environmental issues, geological and geotechnical investigations, grading plans, and specifications, protection of adjacent properties, and review and permit issuance."

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
☐ CWPP, FIRE WIRE, FIRE SAFE	☐ CRS PLAN	☒ SHAKEOUT DRILL PARTICIPATION

☐ CURRENT CEQA ACTIVITY ☐ DEFENSIBLE SPACE	☐ CURRENT CEQA ACTIVITY ☐ HYDROLOGY STUDY	☐ CURRENT CEQA ACTIVITY ☐ URM PARTICIPATION

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

The San Francisco Bay Area widely participates in the annual earthquake Shakeout Drill.

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

☐ Yes ☒ No If yes, provide details:

PROJECT INFORMATION

11. PROJECT TITLE: BART Slope Stabilization and Erosion Control Along the A-line and C-line trackways.

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 HMGP@CALOES.CA.GOV

12. PROJECT LOCATION:

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

Various locations in Alameda County and Contra Costa County.

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	LONGITUDE
37.797447 (please see additional coordinates in Map section)	-122.26663 (please see additional coordinates in Map section)

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

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.

N/A.

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 section of the binder.

There will not be a staging area for the project.

STOP **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 section of the binder.

G. MAPPING REQUIREMENTS:

Provide the following mapping elements in the map section of the binder:

- ☒ 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.

i **DO NOT SEND ROLLED MAPS – MAPS MUST BE FOLDED UNTIL 8.5" x 11" IN SIZE.**

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.

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.

There is no deed restriction or permanent conservation easement on the property at the project site.

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.

☐ EARTHQUAKE	☐ FIRE	☐ FLOOD	☐ OTHER
☐ CODE ENFORCEMENT	☐ DEFENSIBLE SPACE	☐ ACQUISITION	☐ CRITICAL FACILITY GENERATOR(S)
☐ NON-STRUCTURAL	☐ FIRE RESISTANT BUILDING MATERIALS	☐ DRY FLOOD PROOFING	☐ DROUGHT ☐ TSUNAMI
☐ STRUCTURAL	☐ FIRE VEGETATION MANAGEMENT	☐ FLOOD CONTROL	☐ WIND
☐ NON-STRUCTURAL & STRUCTURAL	☐ SOIL STABILIZATION	☐ ELEVATION	☒ OTHER: Landslide Mitigation
☐ CLIMATE RESILIENCY MITIGATION ACTION (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.

Since 1972, the San Francisco Bay Area Rapid Transit District (BART) has provided a reliable way for Bay Area residents and tourists to safely reach their destinations in the region. The transit system was developed in an urban area that has been rapidly expanding. Currently, millions of Bay Area residents and tourists ride BART to reliably get to and from places of employment, medical appointments, educational institutions, airports, and recreational activities. BART provides an average of 430,000 trips daily and 126,000,000 trips annually. During the peak commute hours alone, an average of 25,000 community members ride BART through the Transbay Tube, which connects the East Bay with San Francisco, including the San Francisco International Airport. With such high demand and in the face of aging equipment and infrastructure, BART is implementing projects to reduce risks to passengers, structures, and infrastructures. The Slope Stabilization and Erosion Control project has been identified as a project of priority. BART proposes to improve slope stabilization and erosion control along the A-line (orange) and C-line (yellow). Performing this project will mitigate the risk of landslides to BART's passengers, workers, and structures. The people affected the most would be residents of both Alameda County and Contra Costa County, with a population of 1.5M and 1M, respectively.

In the Bay Area, landslides can occur as a result of either earthquakes or during heavy and sustained rainfall events (weather induced landslides). A given area can be at risk for both earthquake-induced landslides as well as landslides caused by rain-saturated soils but the variables that contribute to each landslide risk might be different. Typically an earthquake-induced landslide occurs when seismic energy at the top of a slope gets concentrated and breaks off shallow portions of rock. In rainfall-induced landslides, the slide can begin much deeper in the slope, in very-saturated layers of soil. The movement of landslide material can vary from abrupt collapses to slow gradual slides and at rates which range from almost undetectable to extremely rapid. Sudden and rapid events are the most dangerous because of a lack of warning and the speed at which material can travel down the slope as well as the force of its resulting impact.

Generally, the main hazard of concern to BART facilities are related to earthquakes, followed by flooding. This is based on both asset exposure mapping information and

institutional understanding and past performance of the high priority assets. The BART service areas have experienced a number of disasters over the past decades. These disasters included earthquakes, floods, droughts, wildfires, energy shortages, landslides, and severe storms. If such events are left unmitigated, then BART's ability to provide safe, reliable, quality transit services for the Bay Area community would be impacted. Passengers who shift from BART to private automobiles due to poor service would exacerbate congestion on highways that are already at capacity. A reduction in BART riders would mean an increase in automobile users, which would lead to greater greenhouse gas emissions, air pollutions, and respective losses in the region's economic and environmental health.

BART's rail system was developed in urban areas that required to construct above grade facilities of aerial structures. These aerial structures include bridge abutments and embankments. Some of these structures have eroded over time and slope protection items, including concrete and soil, are now undermined. The destabilized embankments have caused soil to enter surrounding and adjacent facilities, including impact chain link fences and their sustaining poles.

The BART rail system was also constructed at grade through a "cut" area adjacent to Route 24 in Walnut Creek, CA. This cut area has experienced soil movement during the last several years. The soil movement may become a potential hazard for BART to peform maintenance. The soil movement may block the road BART uses to enter the tracks and their adjacent areas in order to perform maintenance. The current condition of the slopes and their surrounding areas are both a safety and security hazard to BART's passengers, workers, and structures.

During the past 25 years, BART has implemented various projects to mitigate hazards on the A-line and C-line. BART has installed barb wire along the bottom of the fence, temporary wood facilities to support undermined concrete slope protection, and plastic on slopes to prevent rain water from storms to enter and cause additional erosion and/or remove eroded soil. BART has also implemented multiple Earthquake Hazard Mitigation Projects, including: BART's Contract No. 15PB-110A, A Line North Aerials; Contract No. 15PB-120, A Line Aerials Fruitvale to Coliseum; Contract No. 15PC-110, A Line South Aerials; Contract No. 15PD-110, C Line Aerials; Contract No. 15PG-110, Rockridge Station; Contract No. 15PI-110, Underground Stations - Lake Merritt, MacArthur, Church St. (SFMTA Muni); Contract No. 15PJ-110B, A Line Stations; Contract No. 15PJ-130B, Fruitvale and Coliseum Stations; Contract No. 15PJ-140, Bayfair Station and Ashland Avenue Underpass; Contract No. 15PL-110, Yards and Shops; Contract No. 15PP-110A, C Line Stations; Contract No. 15QP-110, Concord Station; Contract No. 15PR-110, Lafayette Station. Out-of-these projects, Contract No. 15PJ-130B is currently in construction.

The Slope Stabilization and Erosion Control along the A-line and C-line project work will reduce hazard effects and risks to BART's passengers, workers, and structures. The project work includes installing drainage facilities and reconstructing eroding slopes. The project work activities will ensure that the slopes are no longer susceptible to erosion and soil movement. The work will also prevent the fences from becoming compromised, which is a hazard to the security of BART and its passengers. The mitigation work will also

prevent abutments from becoming damaged. Lastly, the work will mitigate risks to the service road located adjacent to the tracks in Walnut Creek, CA.

Slope stabilization activities will occur within and along the existing BART right-of-way and are not expected to impact any structure based on location of work along the slope areas. On-call general engineering consultants will perform environmental reviews and geotechnical studies. By implementing the described repairs, the BART system operation will be protected and continued service will be much less susceptible to disruption due to any potential landslide.

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.

In 2017, FEMA officially approved BART's Local Hazard Mitigation Plan. In the analysis BART conducted to prepare the plan, the EGIS department used geographical information system (GIS) tools and local understanding of the environment surrounding the San Francisco Bay Area to develop hazard exposure maps. GIS exposure mapping was peformed for seven hazards having potential to threaten the BART system. The potential for landslides was analized as one of the hazards. The greastest risk of landslides for the BART system was found in the mountainous regions of the Bay Area. Mitigating landslides in these areas is the goal of this project.

E. SCOPE OF WORK (SOW):

STATE EXACT SOW DOCUMENT TITLE: HMGP, BART, Scope of Work

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.

STOP ☒ **INSERT THIS DOCUMENT IN THE SOW SECTION OF THE BINDER.**

F. HAS YOUR JURISDICTION PREVIOUSLY RECEIVED HMGP FUNDING?

☒ Yes ☐ No ☐ Unknown	If yes, provide disaster number(s):	FEMA-1731-DR-CA, Project #0078, FIPS #001-91000

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.).

BART received Measure RR General Obligation Bond funds 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.

Transition Barriers, funded by DHSFEMA TSGP-CPO; Earthquake Safety Program (ESP) - Aerial Structures along the A-line and C-line, funded by FHWA. The ESP projects included BART's Contract No. 15PB-110A, A Line North Aerials; Contract No. 15PB-120, A Line Aerials Fruitvale to Coliseum; Contract No. 15PC-110, A Line South Aerials; Contract No. 15PD-110, C Line Aerials; Contract No. 15PG-110, Rockridge Station; Contract No. 15PI-110, Underground Stations - Lake Merritt, MacArthur, Church St. (SFMTA Muni); Contract No. 15PJ-110B, A Line Stations; Contract No. 15PJ-130B, Fruitvale and Coliseum Stations; Contract No. 15PJ-140, Bayfair Station and Ashland Avenue Underpass; Contract No. 15PL-110, Yards and Shops; Contract No. 15PP-110A, C Line Stations; Contract No. 15QP-110, Concord Station; Contract No. 15PR-110, Lafayette Station. Out-of-these projects, Contract No. 15PJ-130B is currently in construction.

I. HAZARD ANALYSIS TYPE:

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

☐ BIOLOGICAL	☐ EARTHQUAKE	☐ LAND SUBSIDENCE	☐ TERRORIST
☐ CHEMICAL	☐ FIRE	☒ MUD/LANDSLIDE	☐ TORNADO
☐ CIVIL UNREST	☐ FISHING LOSSES	☐ NUCLEAR	☐ TOXIC SUBSTANCES
☐ COASTAL STORM	☐ FLOOD	☐ SEVERE ICE STORM	☐ TSUNAMI
☐ CROP LOSSES	☐ FREEZING	☐ SEVERE STORM(S)	☐ WINDSTORM
☐ DAM/LEVEE BREAK	☐ HUMAN CAUSE	☐ SNOW	☐ OTHER (describe below):
☐ DROUGHT	☐ HURRICANE	☐ SPECIAL EVENTS	

J. DESIGN PLANS:

☐ If your project requires design plans, plans should be prepared to supplement the SOW and attached in the design section of the binder. 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.

STOP **DO NOT SEND PRINTED COPIES OF DESIGN PLANS, DRAWINGS OR BLUE PRINTS LARGER THAN 8.5' x 11" SIZE. DO NOT SEND ROLLED COPIES (FOLD TO OBTAIN 8.5" x 11" SIZE).**

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.

If no action is implemented to address slope stabilization issues, the slopes will continue to erode, resulting in the undermining of fence components, undermining of structures and soil entering facilities adjacent to the slopes. These issues may eventually cause damage to structures and adjacent facilities. Also, security of rail facilities may be compromised.

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 prefered alternative is to stabilize the existing slopes through various measures including planting vegetation, reconstructing the slopes, repairing drainage, removing unstable soil, replacing concrete slope protection, and installing erosion control matting material. To maintain security, the damaged fence will be replaced with a new fence.

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.

N/A.

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.
- 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 section of the binder Include this information as an example.

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
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
	TOTAL MONTHS:	**36 months**

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

#	DESCRIPTION	TIMEFRAME
1.	95% Design	9 months
2.	Final Design	2 months
3.	Procurement	6 months
4.	Construction 50% Complete	7 months
5.	Construction, Substantial Completion	7 months
6.	Final Punchlist Items	1 month
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.	Project Close-out	1 month
19.	**STANDARD VALUE (DO NOT CHANGE)** Grant Close-out	3 months
	TOTAL MONTHS:	36 months

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

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 section of the binder.
- 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
				Total Project Cost Estimate:	**$573480**

B. INELIGIBLE COSTS:

The following are ineligible line items:

- Lump Sums
- "Other" Costs
- Contingency Costs
- Indirect Charges
- Miscellaneous Costs
- Overhead 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

i **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 section of the binder.

16. FEDERAL/NON-FEDERAL SHARE INFORMATION:

A. FUNDING RESTRICTIONS:

HMGP funding is restricted to a maximum of $5 million federal share for each project subapplication. FEMA will contribute up to 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: A project with a total project cost of $6,250,000, the federal requested share (75 percent) would be $4,687,500. The non-federal match share (25 percent) provided would be $1,562,500.

A jurisdiction may contribute an amount greater than the 25 percent non-federal share.

For example: for a $10,000,000 total project cost, the federal requested share cannot exceed $5,000,000. Therefore, the non-federal match provided must be $5,000,000, which exceeds 25 percent of the total cost share. The sum of the non-federal and federal shares must equal the total project cost.

B. TOTAL PROJECT COST ESTIMATE:

Enter total cost formulated on HMGP Cost Estimate Spreadsheet

$15,000,000.00
ENTER $ IN BOX ABOVE

VERIFY ALL AMOUNTS ENTERED ARE ACCURATE.

INCORRECT AMOUNTS WILL DELAY PROCESSING OF YOUR SUBAPPLICATION.

FEDERAL SHARE (75% MAXIMUM)	REQUESTED AMOUNT:	$4,000,000.00
		ENTER $ IN BOX ABOVE
	PERCENTAGE AMOUNT:	26.67%
		ENTER % IN BOX ABOVE

NON-FEDERAL SHARE (25% MINIMUM)	REQUESTED AMOUNT:	$11,000,000.00
		ENTER $ IN BOX ABOVE
	PERCENTAGE AMOUNT:	73.33%
		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 section of the binder.

- 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.

ⓘ 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. 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:	$8,178,100 (PV of Benefits: $23,255,154; PV of Costs: $15,077,054)
2. TOTAL PROJECT COST ESTIMATE:	$15,000,000
3. BENEFIT COST RATIO:	1.54

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): June 28, 2018

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 section of the binder.

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 section of the binder.

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 section of the binder. 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: Robert Powers

TITLE: Deputy General Manager

ORGANIZATION: San Francisco Bay Area Rapid Transit District

SIGNATURE: Robt M. Powers

DATE: 28 June 2018