HAZARD MITIGATION GRANT PROGRAM
PROJECT SUBAPPLICATION

DISASTER NUMBER:	DR-4558
JURISDICTION NAME:	Humboldt Bay Municipal Water District
PROJECT TITLE:	HBMWD TRF Power Resiliency Generator Project
PROJECT NUMBER:	0389

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

Cal OES

GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

HAZARD MITIGATION GRANT PROGRAM (HMGP)
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.

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 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

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.

☒ **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 6.0 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 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.

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 on two separate CD-RWs. 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 CD-RWs must include functional electronic versions of all subapplication 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) 6.0 must be included in a .zip file format
- All electronic attachments must be clearly titled

ORGANIZATION OF THE SUBAPPLICATION MUST BE 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. Cost Estimate (HMGP Cost Estimate Spreadsheet and cost estimate narrative)
9. Match (Local Match Commitment Letter Template)
10. BCA Report (BCA Version 6.0 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. Authorization (Agent Resolution Form)
14. Supporting Docs (Any additional 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: Humboldt Bay Municipal Water District

NAME OF STATE AGENCY, TRIBAL GOVERNMENT, LOCAL GOVERNMENT, PRIVATE NON-PROFIT OR SPECIAL DISTRICT APPLYING FOR FUNDING

2. TYPE:

STATE/LOCAL GOVERNMENT	FEDERALLY RECOGNIZED TRIBE	PRIVATE NON-PROFIT	SPECIAL DISTRICT
☐	☐	☐	☒

3. FIPS #: 023-91000 — IF YOU DO NOT KNOW YOUR FEDERAL IDENTIFICATION PROCESSING SYSTEM NUMBER (FIPS #), REQUEST BY EMAILING THE HMA@CALOES.CA.GOV MAILBOX

4. DUNS #: 047391776 — IF YOU DO NOT KNOW YOUR DATA UNIVERSAL NUMBERING SYSTEM (DUNS) #, CALL DUN & BRADSTREET (D&B) @ 1-866-705-5711 FOR INFORMATION

5. COUNTY: Humboldt — 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:	2
STATE ASSEMBLY:	2
STATE LEGISLATIVE:	2

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:** John **LAST:** Friedenbach

TITLE: General Manager

ORGANIZATION: Humboldt Bay Municipal Water District

ADDRESS: PO Box 95

CITY: Eureka **STATE:** CA **ZIP CODE:** 95502-0095

TELEPHONE: 707-443-5018 **FAX:** 707-443-5731

EMAIL: friedenbach@hbmwd.com

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:** Nathan **LAST:** Stevens

TITLE: District Engineer

ORGANIZATION: GHD

ADDRESS: 718 Third Street

CITY: Eureka **STATE:** CA **ZIP CODE:** 95501

TELEPHONE: 707-267-2204 **FAX:** 707-267-2289

EMAIL: nathan.stevens@ghd.com

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: Humboldt County Operational Area Hazard Mitigation Plan

B.

LOCAL **SINGLE** JURISDICTIONAL MULTIHAZARD MITIGATION PLAN:		**OR**	LOCAL **MULTI** JURISDICTIONAL MULTIHAZARD MITIGATION PLAN:	
DATE SUBMITTED TO CAL OES:			DATE SUBMITTED TO CAL OES:	10/24/19
DATE APPROVED BY FEMA:			DATE APPROVED BY FEMA:	1/2/20
DATE ADOPTED BY LOCAL AGENCY:			DATE ADOPTED BY LOCAL AGENCY:	3/12/20
			LEAD AGENCY:	Humboldt County

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
20	Volume 2	Table 20-10	20-10

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 project addresses five out of the six Humboldt County Operational Area Hazard Mitigation (HCOAHM) Plan goals and five objectives. The proposed project meets the goals of the HCOAHM Plan as stated in Chapter 18 of Volume 1, page 18-1 of the plan to protect health and safety, property, the economy, quality of life, and the environment. The project also meets the following objectives of the HCOAHM Plan as stated in Chapter 18 of Volume 1, pages 18-2: minimize disruption of local government operations (O-1); increase resilience of infrastructure and critical facilities (O-2); reduce hazard-related risks and vulnerability to the populations in Humboldt County (O-3); sustain reliable local emergency operations and facilities during and after a disaster (O-4); develop and implement hazard mitigation strategies that reduce losses to wildlife habitat and protect water supply and quality (O-9). In addition, the proposed project also falls under the following initiatives from the District's Hazard Mitigation Action Plan Matrix, in Chapter 20 in Volume 2, page 20-8, table 20-9 of the plan: HBMWD-5 – Conduct design and feasibility studies for construction of critical infrastructure; HBMWD-5 is listed as high priority in the Mitigation Strategy Priority Schedule (Table 20-11, page 20-11) of the same section of the HCOAHM Plan.
In addition, the January 2020 version of the plan which is still pending adoption, specifically includes Action HBMWD19 - Emergency Generator for Turbidity Reduction Facility in Table 20-10 Hazard Mitigation Action Plan Matrix on page 20-10.

The population of Humboldt County is approximately 135,000 people, of which 88,000 or almost 66% of the entire county receives its potable water directly or indirectly from Humboldt Bay Municipal Water District. This also directly corresponds to available firefighting and sanitation services. Under current conditions, if the District's turbidity reduction facility system were to fail during a seismic or flood event, it would impact the entire 88,000 customers. In addition, all of the communities which would be affected by the loss of these water lines are economically disadvantaged communities.

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

B. PROVIDE A NARRATIVE DESCRIPTION OF ALL OF FACTORS SELECTED FROM LIST ABOVE:
Humboldt County participates in Shakeout Drills.

C. IS YOUR JURISDICTION REQUIRED TO PROVIDE PUBLIC NOTICE OF THIS PROJECT?
☒ Yes ☐ No If yes, provide details: As a safety addition to existing utility systems and/or facilities involving negligible or no expansion of capacity it is anticipated that a Notice of Exemption (NOE) will satisfy CEQA requirements. Public notice will be given based on CEQA/NEPA requirements for the project.

PROJECT INFORMATION

11. PROJECT TITLE: HBMWD TRF Power Resiliency Generator

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

12. PROJECT LOCATION:

A. IDENTIFY THE COUNTY/COUNTIES WHERE THE ACTIVITY WILL OCCUR:
Humboldt 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
40.90742	-124.0634

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

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.

The proposed generator facility will be located at the coordinates 40.90742, -124.0634)

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.

The staging area, shown in Figure 2: Site Map, consists of open, paved driveway space at the HBMWD TRF.

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.

G. MAPPING REQUIREMENTS:

Provide the following mapping elements in the map section:

☒ 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.

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:

There are no Public Assistance Disaster Survey Reports (DSR) or Project Worksheets (PWs) that were completed at the project location from previous disasters.

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 are no deed restrictions on this property that would limit federal funding.

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	
☐ 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.

The problem to be mitigated is the prevention of the loss of water service, that meets treatment requirements, and associated loss of fire services to several communities in Humboldt County.

The Humboldt Bay Municipal Water District (HBMWD or District), a regional wholesale water provider, supplies water to approximately 88,000 people in the Humboldt Bay area. This is approximately two-thirds of the population of Humboldt County. At the TRF the raw water has coagulant added and is processed through six multi-media filters where the turbidity is removed. The treated water is then rechlorinated and distributed to over

88,000 people in the cities of Arcata, Blue Lake, and Eureka as well as the Fieldbrook/Glendale, Manila, McKinleyville, and Humboldt Community Services Districts.

The District currently has a 100kW emergency generator at the facility that provides sufficient power to operate only the chemical pumps. This will only operate a part of the system for a very limited duration during a power outage. The 100kW emergency generator is not an adequate power supply to operate major components such as the backwash pumps or filtration components of the TRF. Consequently, any time after a power outage that a filter is required to backwash, it is unable to do so. And within approximately 5 hours, enough filters will be unable to perform that the facility is no longer able to distribute water that meets the State mandated water quality drinking standards. This situation occurred during the recent power outage experienced during the February 2019 Federal Disaster DR-4434-CA that impacted Humboldt County.

The existing backwash pumps were not included on the original emergency generator circuit because they are two 250-horsepower pumps, plus two 75-hp airwash pumps which exceed the load capacity of the existing generator. The heaters for the Chemical Building are two, 10kW heaters, and the sludge pumps are two 20hp pumps, plus two 0.5hp collector pumps. All of this additional load was much more than the original emergency generator's load capacity and it was assumed that the treatment plant could successfully operate for short durations without these components. However, longer outages, even as short as an hour or two depending on the turbidity of the water from the collectors and the status of the filter/backwash cycle when the power goes out, can lead to breakthrough of turbidity through the filters and make it impossible to deliver water that meets the state mandated treatment standards.

To mitigate this problem a new 750kW generator will be added to the TRF to power the backwash pumps, the airwash pumps, the sludge pumps and other facilities not currently connected to the existing small scale emergency generator.

The project scope will consist of the installation of the new 750kW generator with enclosure, an external 3,000 gallon ConVault style fuel tank, and wiring, controls, and fuel piping to the new generator and the existing generator. The new 750kW generator will be installed at the TRF site. A portion of the preliminary design, for purposes of this grant application, has been performed by Cummins West, and the existing loads have been analyzed to size the necessary generator. A portion of the site will be graded, a driveway constructed, and an asphalt turnaround/access area will be provided to allow access to the generator and the new fuel tank. An enclosure with a slab foundation will be constructed to house the generator and associated electrical panels. A concrete foundation will also be constructed for the fuel tank. A portion of the existing security fencing will need to be relocated and extended to accommodate the new generator and fuel tank drive/access area. An automatic transfer switch (ATS) will also be installed to allow automatic transfer of power from the generator in the event of a power outage. Electrical wiring in conduits will be run to the backwash pumps and airwash pumps as well as the duct heaters in the chemical building and the sludge pumps, all of which are not on the circuits for the existing generator. The new ConVault fuel tank will be adjacent to the new generator enclosure, and pumps and double wall piping with leak detection

will be installed to supply fuel to the day tank for the new generator. Fuel piping with leak detection will also be run from this new fuel storage tank to the existing generator. This will allow for additional fuel capacity for both generators and will also allow for the generators to be filled at one location by the fuel supplier. Level controls will be installed to allow the generators to call for fuel when needed and shut off pumps when there is a low fuel level in the tank. These level switches will also be tied into the District's existing SCADA system to inform the operators of the fuel level in the tanks and when fuel levels are low. The new generator will also be connected to the SCADA system to inform the operators when it is operating or if there are any faults.

NOTE: As you can see through the projects 03. Designs and 05. Maps figures, a portion of the project site is currently wooded. Prior to the start of this project, through a 3-acre conversion timber harvest project, this area will be cleared. No HMG funds will be used for the 3-acrea conversion/tree clearing.

The proposed project would allow the entire water treatment facility to be powered in the event of a power outage, and ensure that water quality standards could be met in the event of power interruption due to an earthquake, flood, storms or power outages caused by other factors such as extreme weather.

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.

Recent experiences at the TRF, including the power outage during the February 2019 storms (Federal Disaster DR-4434-CA), resulting in treatment that did not meet the required standards, have further highlighted the necessity of a 750 kW generator to power all necessary components to treat water in the event of a power outage. The HCOAHM Plan has been updated to include this generator project into HBMWD's Hazard Mitigation Action Plan Matrix.

E. SCOPE OF WORK (SOW):

STATE EXACT SOW DOCUMENT TITLE: 02. 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.**

F. HAS YOUR JURISDICTION PREVIOUSLY RECEIVED HMGP FUNDING?

☒ Yes ☐ No ☐ Unknown	If yes, provide disaster number(s):	• DR-1731-3553 • DR-1911-0909 • DR-4240-0054

		• DR-4240-0017 • DR-4344-0040

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.).

1. Mad River Pipeline Crossing – horizontal directional drill a replacement pipeline to transport water across the Mad River to Blue Lake, Fieldbrook, and Glendale; funding sources Federal HMGP and State, CA Prop-84

2. Surge Tower Removal – removal of an old surge tower on the Samoa Peninsula; funding source Federal HMGP

3. Techite Pipeline Retrofit – replacement of an old Techite pipeline on the Samoa Peninsula; funding source Federal HMGP

4. Community Interties Project – installation of four water system interties to allow for sharing of water between Arcata and McKinleyville in emergencies; funding source State, CA Prop-50

5. Ranney Collector Lateral Retrofit – installation of new laterals on the HBMWD collector wells; funding sources State, CA Prop-84

6. 12-kV Switchgear Replacement – relocation of the power source for the HBMWD Essex facility out of the path of major flood and/or dam failure; funding source Federal HMGP

7. HBMWD Reservoirs Seismic Retrofit Project - retrofit of three tanks to bring them up to current seismic code, funding source Federal HMGP

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.

HBMWD has applied for three other HMGP (DR-4348-0014, DR-4348-0040 and DR4382-0115) involving upgrades to HBMWD facilities in the vicinity of the proposed project. DR-4348-0014 is the installation of a redundant collector mainline that will route an existing mainline from the Essex site around the Essex Control Building and up to the Korblex facility. DR-4347-0040 is the seismic retrofit of the existing reservoir tanks at the Korblex Facility- this project has been funded and is in Phase 1 preliminary design. DR-4382-0115 is the seismic retrofit of the Essex chlorination facility and addition of a chlorine scrubber to the Essex facility-this project has been denied. None of these projects are directly related to the project described in this subapplication, construction of these projects will not occur at the same time, nor will there be any cumulative impacts resulting from these projects

I. HAZARD ANALYSIS TYPE:

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

☐ BIOLOGICAL	☒ EARTHQUAKE	☐ LAND SUBSISTENCE	☐ TERRORIST
☐ CHEMICAL	☒ FIRE	☒ MUD/LANDSLIDE	☐ TORNADO
☐ CIVIL UNREST	☐ FISHING LOSSES	☐ NUCLEAR	☐ TOXIC SUBSTANCES
☐ COASTAL STORM	☒ FLOOD	☐ SEA LEVEL RISE	☐ TSUNAMI
☐ CROP LOSSES	☒ FREEZE	☐ SEVERE ICE STORM	☒ WINDSTORM
☐ DAM/LEVEE BREAK	☒ HUMAN CAUSE	☒ SEVERE STORM(S)	
☐ DROUGHT	☐ HURRICANE	☐ SNOW	

J. DESIGN PLANS:

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

The No Action alternative means that the HBMWD TRF will continue to operate without an emergency power backup sufficient to run all essential treatment plant components. As discussed in Question #13.C, The District currently has a 100kW emergency generator at the facility that provides sufficient power to operate only the filter pumps. This will only operate part of the system for a very limited duration during a power outage. The 100kW emergency generator is not an adequate power

supply to operate the essential backwash pumps and filtration components of the TRF. Consequently, if a power outage is more than an hour or two, the District is unable to adequately process and filter water to meet state mandated water quality drinking standards. This situation occurred during the recent power outage experienced during the February 2019 Federal Disaster DR- 4434-CA that impacted Humboldt County.

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 action is to install a 750kW generator at the HBMWD TRF. The proposed project would allow the water treatment facility to be completely powered in the event of a power outage, and ensure that water quality standards could be met in the event of power interruption due to an earthquake, flood, storms, or power outages caused by other factors such as extreme weather. This is the selected Alternative because this Alternative will provide the necessary emergency power to the entire HBMWD TRF and ensure properly treated potable water to HBMWD's 88,000 users. The new generator will supply power to the duct heaters, which will eliminate the hazard of the polymer tanks freezing up; the sludge pumps, which will eliminate the hazard of the sludge tanks overflowing; also power the lighting throughout the facility for operational safety. Because adding the minor loads to the new generator capacity is such a small additional cost to the overall project, this Alternative was selected.

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 provide a new generator that would be sized to only handle the essential backwash pumps and airwash pumps in the event of a power outage at the HBMWD TRF. Although this option would power the equipment necessary for the TRF to meet water quality standards of the effluent, for about the same cost, the slightly larger generator proposed will be able to handle the remaining minor loads not currently supported by an emergency generator at the TRF. These minor loads include the duct heaters, which will eliminate the hazard of the polymer tanks freezing up; the sludge pumps, which will eliminate the hazard of the sludge tanks overflowing; also power the lighting throughout the facility for operational safety. Because adding the minor loads to the generator capacity is such a small additional cost to the overall project, this Alternative was not selected.

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, 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**

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

#	DESCRIPTION	TIMEFRAME
1.	Prelim Survey/Engineering, NEPA/CEQA Special Studies, Geotech (Phase 1)	7 months
2.	Final Survey (Phase 2)	2 months
3.	Environmental/Air Permitting/CEQA - begins concurrently with #2 (Phase 2)	5 months
4.	Final Engineering- Plans and Specifications (Phase 2)	8 months
5.	Advertise for Bids (Phase 2)	2 months
6.	Issue Notice to Proceed (Phase 2)	1 months
7.	Construction (Phase 2)	7 months
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 month

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.

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 included to the subapplication in the budget section.
- 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
- 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
- Preparing design specifications
- Submission of subapplication
- Gathering environmental and historic data
- Workshops or meetings related to development

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.

16. FEDERAL/NON-FEDERAL SHARE INFORMATION:

A. FUNDING RESTRICTIONS:

There is no restriction or cap on the federal share that may be requested for each project subapplication. 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:

Enter total cost formulated on the HMGP Cost Estimate Spreadsheet

2,071,276
ENTER $ IN BOX ABOVE

VERIFY ALL AMOUNTS ENTERED ARE ACCURATE.

INCORRECT AMOUNTS WILL DELAY PROCESSING OF YOUR SUBAPPLICATION.

FEDERAL SHARE (75% MAXIMUM)	REQUESTED AMOUNT:	1,553,457
		ENTER $ IN BOX ABOVE
	PERCENTAGE AMOUNT:	75
		ENTER % IN BOX ABOVE
NON-FEDERAL SHARE (25% MINIMUM)	REQUESTED AMOUNT:	517,819
		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 section.

- 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 6.0 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. 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:**	$84,280,547
2.	**TOTAL PROJECT COST ESTIMATE:**	$2,081,612
3.	**BENEFIT COST RATIO:**	40.49

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): 2/12/2021

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.

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:

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.

2. Provide the following information for the location of the project:
   a. FIRM panel number: 06023C 0687F
   b. FIRM zone designations: X
   c. NFIP community ID number: 060060

C. LAST COMMUNITY ASSISTANCE VISIT (CAV) DATE: 1/17/14

ENVIRONMENTAL INFORMATION

20. ENVIRONMENTAL INFORMATION:

A. FEMA ENVIRONMENTAL CHECKLIST:

☒ Complete the FEMA Site Information, Environmental Review, and Checklist and attach to the environmental section. 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: John Friedenbach

TITLE: General Manager

ORGANIZATION: HBMWD

SIGNATURE: John Friedenbach, General Manager

DATE: 3/5/21