



Humboldt Bay Municipal Water District TRF Power Resiliency Generator Project Scope of Work

The mitigation goals and objectives of this project are to install an Emergency Generator at the Humboldt Bay Municipal Water District (HBMWD) Turbidity Reduction Facility (TRF), so when a power outage occurs at the TRF, the TRF will still be able to provide potable water to the 88,000 customers of the HBMWD.

An overall vicinity map and detailed site map of the project area, including staging area, can be found in the Map Tab, Figures 1 and 2. All project areas are HBMWD property; therefore, the project will not require land acquisition, rights-of-way, or access easements. The environmental setting of the project and staging areas are open spaces that are outside of the 100-year floodplain. Please note: as shown in 05 Maps Figures 1 and 2, a portion of the project area is currently wooded. However, prior to start of this project, this area will be cleared as part of a 3-acre timber harvest conversion project. No HMG funds will be used for this 3-acre conversion, and the 3-acre conversion is scheduled to proceed regardless of this project. The excavation and grading associated with this project will occur within previously disturbed areas that are part of the existing HBMWD Essex facilities. The lasting effect of construction will be a new asphalt driveway and access area which will be the location for the emergency generator and a 3,000 gallon fuel tank.

The project will be accomplished with a two-phased approach. The first phase will begin with initial studies, a geotechnical investigation, and preliminary engineering design. After approval of the chosen approach, the second phase will include finalizing the design plans and construction of the project. All professional services will be completed by a private consulting firm(s) that will be selected through a competitive process in accordance with Federal and State procurement requirements.

Phase 1

Phase 1 will include the performance of the special studies required for National Environmental Protection Act (NEPA) and California Environmental Quality Act (CEQA) permitting of the project. It is anticipated that biological, wetlands, and cultural resource surveys will be conducted for the site, and reports developed for each special study. These reports will be provided to CalOES/FEMA for their NEPA permitting.

Phase 1 Tasks will also include the geotechnical investigation, surveying, and preliminary engineering design of the new generator/fuel tank and all associated site work. A geotechnical analysis will need to be performed to finalize the structural design. This will consist of the installation of two to three geotechnical borings to approximately 20-feet to determine the underlying soils and guide the pad designs. This information will be written up into a report and provided to the contracted Civil Engineer. The engineering analysis will confirm the size and specify the generator and fuel tank system required. The design will also include the site work required to construct a driveway and access area for the generator and fuel tank, locate, and connect the generator and fuel tank system to the necessary motor control centers (MCCs) for the equipment to be powered, as well as construct the necessary pads to support the generator and fuel tank. The preliminary engineering analysis has determined that a 750kW generator will be required to power all of the above-mentioned equipment. Vendor information for the 750kW generator shows a footprint of approximately 15-feet by 7-feet for the generator. A double-walled, above-ground fuel tank will be located adjacent to the generator with dimensions of approximately 12-feet by 8-feet, and sit on a concrete pad approximately 15-feet by 11-feet. Minor excavations of 3-feet to 4-feet in depth will be

required for the generator/fuel tank pads and trenches approximately 2-feet wide by 3-feet deep will be required along the routes for the new electrical conduit. The design of the pads and equipment restraints will meet the current seismic code requirements.

Design plans will be developed detailing the installation of the generator and fuel tank system and required connections to existing facilities. During Phase 1, the design plans will be developed to approximately the 50 percent level, but will be sufficient to complete the NEPA and CEQA analyses and detail the project description.

Phase 2

Under Phase 2, the final survey will be completed, which will pick up any additional information determined to be missing after the preliminary design. After the final survey is completed, the design will be finalized. The project site and laydown areas will be detailed along with the grading and pad requirements. The generator and fuel tank system will be finalized along with the required electrical feeds and controls. Final plans and technical specifications will also be developed for all aspects of the project along with the other bid and contract documents required for bidding and constructing the project.

The CEQA permitting will also be completed for the project under Phase 2. It is anticipated that this project will be categorically exempt under the existing California code. If this is the case, a Notice of Exemption will be prepared for this project and filed with Humboldt County for a period of 30 days to notify the public of the performance of this work. However, it is possible that a Mitigated Negative Declaration may be required. Lastly, an Authority to Construct (ATC) and a Permit to Operate (PTO) permit from the North Coast Unified Air Quality Management District (NCUAQMD) will be developed for the new generator and submitted to the NCUAQMD.

The project will then be put out for competitive bid in accordance with Federal and State procurement requirements. The project will be listed in the local newspapers as well as on the California Builder's Exchange websites and bids solicited for approximately 30 days. The sealed bids will then be opened and the project awarded to the responsive, responsible bidder with the lowest price. It is anticipated that construction will largely consist of:

1. Mobilization, including review of submittals
2. Implementation of required sediment/erosion control
3. Site preparation including preliminary grading
4. Pouring concrete pads for the generator and the fuel storage tank
5. Trenching and installation of new conduit and fuel lines
6. Installation of generator and fuel tank
7. Installation of required electrical and control system wiring and accessories
8. Startup Testing
9. Final grading and driveway/access area paving/seeding
10. Fencing
11. Site demobilization

Throughout the construction process, an engineer will be onsite to provide Construction Monitoring services. The inspector will maintain detailed notes of the progress of the work, issue any required field

orders, prepare and issue necessary change orders, review and approve pay requests, and maintain as-built drawing details.

The Project Closeout/Grant Closeout process will commence upon completion of construction. This task includes the required documentation, reports, notices, drawings and monitoring to complete the project. The project team will prepare final project closeout documents (Deliverables) including photographs, observations logs, submittals and meeting notes, and other documents required by Cal OES/FEMA. In addition, a Notice of Completion will be prepared for approval by the District and submitted to the County for Recording. The project team will prepare and transmit Record Drawings (As-builts) to the District, incorporating any noted field orders, change orders, or other changes deemed necessary and provide hard copies and electronic copies to the District and CalOES/FEMA.

The expected life of the proposed project is 19 years (FEMA standard for generator facilities). The District conducts regular inspections of other District generator systems and will include the new system in those activities. Other maintenance/repair requirements for the generator and fuel tank would be extremely low. The installation of this generator will be effective in minimizing any potable water service interruption due to electrical power loss to approximately 88,000 residents of Humboldt County.