DEPARTMENT OF PUBLIC WORKS
SANTA CRUZ, CALIFORNIA

Frequently Asked Questions
San Lorenzo River Levees Federal Emergency Management Agency Accreditation Vegetation Management and Burrowing Rodent Mitigation Projects

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Project Background

The San Lorenzo River levees were constructed in the late 1950s as the main component of a large-scale cooperative flood control project between the City of Santa Cruz (City) and the United States Army Corps of Engineers (USACE). On July 7, 2020 the City received notification from the USACE that the San Lorenzo River flood control project construction had been officially deemed "complete" and was turned over to the City for continued operation and management (O&M). FEMA certification of the flood control project must be completed within three years from the July 7, 2020 notification date, or risk the elimination of the 50% discount on flood insurance rates for all properties within the City flood plain of the San Lorenzo River. This discount saves property owners about $1.5 million annually in flood insurance rates.

The City has retained MBK Engineers (MBK) to provide program management and certify the San Lorenzo River levee system by ensuring FEMA evaluation criteria is met. The FEMA certification effort primarily entails establishing an updated base flood elevation, conducting all necessary engineering evaluations, and identifying deficiencies in operation and maintenance activities as required per the conditions outlined in in the Code of Federal Regulations, Title 44, Section 65.10. MBK has identified two maintenance activities that must be addressed before the submission of the City's certification package to FEMA. The City's Vegetation Management Project (VMP) and Burrowing Rodent Mitigation Project (BRMP) address the identified maintenance issues. Completion of project scopes will bring the levees into compliance for the FEMA certification effort and meet the city's operational needs for continued maintenance throughout the accreditation period (10 years).

Frequently Asked Questions

	Question	Answer
1	Has the VMP considered the San Lorenzo River Flood Risk Reduction Project, initiated in 1998 which included raising the levees, incorporating landscaping and habitat restoration among other improvements to the San Lorenzo River Levees?	Yes, vegetation permitted and installed as part of the 1998 San Lorenzo River Flood Risk Reduction Project will largely remain in place. As the levee maintaining agency (LMA), the City is responsible for regular and routine maintenance of vegetation on the levees to ensure compliance with USACE's Engineering Pamphlet (EP), EP 1110-2-18, "Guidelines for Landscape Planting and Vegetation Management at Levees,

		Floodwalls, Embankment Dams, and Appurtenant Structures." This EP outlines the requirements for managing vegetation on levees. The VMP will address vegetation that has become overgrown and is out of compliance with EP 1110-2-18.
2	In 2014 Congress requested that the USACE update their 8/25/1986 44 CFR 65.10 policies to reflect environment friendly legislations, and in response, the USACE issued the Engineering with Nature (EWN) report in response. Does this apply to the City's FEMA certification effort?	Documentation issued by EWN is based on a philosophy to encourage adopting nature-based solutions in capital improvement projects, which does not apply to FEMA certification efforts.
3	In April of 2022 President Biden issued Executive Order 14072 (EO), 'which recognizes the importance of forests and other nature-based solutions …'. Does this apply to the City's FEMA certification effort?	EO 14072 does not include any implementable strategies for FEMA certification, and thus does not apply to FEMA certification efforts.
4	Community groups including Coastal Watershed Council and The Estuary Project have worked on portions of the levee, will these areas be impacted by the VMP?	City staff will work closely with the selected VMP contractor and their licensed arborist throughout the duration of the project to identify necessary management activities on a site-by-site basis. The level of effort and management actions required to bring vegetation into compliance will vary significantly over the project area.
5	How will the contractor know which plants are to be grubbed, mowed, trimmed or limbed?	The City will coordinate with the VMP contractor through a project kick-off meeting/walk-through, site visits, and other methods to ensure the contractor is meeting specifications. In general, single-stem trees will be limbed to a minimum of 5' above ground surface, large shrubs will be trimmed to allow visibility to ground surface, low-lying understory and dense non-compliant vegetation that obscures visibility will be cut to ground level, and tall herbaceous vegetation will be mowed. Ice plant (Caprobrotus edulis) will be grubbed out.
6	Under what conditions would an herbicide be used? Which plants besides Cotoneaster and Carpobrotus edulis might require a herbicide? What products would be approved?	Ice plant (Caprobrotus edulis) can be effectively managed by shallow grubbing. Cotoneaster will resprout, and a cut-stump herbicide treatment would provide effective long-term control without disruptive grubbing. Based on the amount of cotoneaster found, the City and VMP contractor will evaluate whether an herbicide treatment is advisable. If so, the contractor will work with a licensed Pest Control Advisor to recommend a product.
7	Can the deadline to achieve FEMA certification be extended?	On July 7, 2020 USACE notified the City of Santa Cruz that the San Lorenzo River flood control project construction has been officially deemed "complete." The City has three years from the date of notification to demonstrate the levees meet FEMA 65.10 in the CFR. The San Lorenzo River levees are currently considered provisionally accredited levees (PAL) until documentation is provided to demonstrate the levees meet FEMA 65.10 in the CFR. The extension of a PAL designation would typically only occur when additional time

		to complete levee improvements is needed. Routine O&M activities are not considered a levee improvement effort and thereby would not qualify for a PAL extension.
8	Will modifications made to the VMP Appendix A prior to the Dec. 13, 2022 City Council meeting affect whether the project brings the vegetation into compliance for the City's FEMA certification effort?	The modifications made to the VMP appendix A focused on the allowable methods to conduct the work. The project scope as approved by City Council will bring the vegetation into compliance for the City's FEMA certification effort.
9	What company was awarded the VMP contract? Were there any modifications to the project scope approved by City Council on Dec. 13, 2020?	The City of Santa Cruz awarded the San Lorenzo River FEMA Accreditation Vegetation Management project to Community Tree Services. There have been no modifications to the project specifications approved by City Council. The bid summary has been publicly posted on the City's Public Works Projects webpage since the bids were accepted, on 1/10/23. The official award date was 1/17/23. Community Tree Services retains an ISA certified arborist on their staff who will be supporting this project. Work is anticipated to proceed as outlined in the project specifications. The Burrowing Rodent Mitigation project is still accepting bids. The bid opening is on 2/14/23. The bid summary will be posted on the same website as noted above and an award will officially be made by 2/16/23.
10	How will the City protect birds and sensitive wildlife during the project?	The City of Santa Cruz has hired Gary Kittleson, Kittleson Environmental Consulting, to complete a preconstruction survey/biological monitoring for nesting birds and other wildlife species before both projects start. Mr. Kittleson will also conduct a mandatory training for all contractor staff at the beginning of the first day of work for each project. The project sequencing will be modified as necessary if the City's biologist locates nesting birds or other sensitive species.
11	Has the City explored any alternatives to on-site visual monitoring?	Visual inspection of the levee and access to the levee are required to monitor levee performance and identify any issues as they arise. Regardless of alternative methods available, on-site inspections are standard and must be completed on a routine basis for all federal project levees.
12	Has the City explored remote sensing instrumentation in place of visual inspections?	Although there may be other technologies available to monitor specific items that pertain to levee performance (e.g. piezometers, ground penetrating radar), such technologies would serve to complement, not replace, current routine inspection and flood prevention practices.
13	Will the City explore the use of raptors to help control rodent populations?	City staff will explore the potential use of raptors to help control rodent populations as a complement to future ongoing routine O&M activities.
14	Have signage and other forms of public education about strictly controlling food waste in levee areas been considered here as a means of reducing rodent populations?	The City provides daily trash and recycling collection from receptacles along the Riverwalk. Signage alone has not been found to be an effective solution. The City's Homelessness Response team organizes outreach and cleanup efforts for areas impacted by camping along the River.

15	Are there alternative methods of rodent control?	As types of rodents and behaviors vary by location, so do the methods and practices to reduce this activity that can cause damage to the levee and adversely reduce levee performance and function during a high-water event. The overall purpose of burrowing rodent mitigation is to reduce burrowing activity and, therefore, reduce potential seepage paths though voids caused by burrowing rodents within the levee embankment. The University of California provides integrated pest management information on ground squirrels at this link.
16	Can you direct us to resources that are available through FEMA that have evaluated the current state of our levee in terms of stability?	There is no indication that FEMA has documentation evaluating the stability of the City's levees. FEMA does not evaluate levees; FEMA accredits levees based on certification by others that all criteria is met per CFR 65.10.
17	Have specific hydrologic and hydraulic patterns in the San Lorenzo River been evaluated?	The forthcoming FEMA certification submittal package will include hydrologic and hydraulic evaluations. The engineering evaluations that have been performed to date do not support any variances from routine O&M activities which must be regularly completed by the LMA and are required for FEMA certification.
18	Can you direct us to federal and/or local data and graphs that would document the streamflow in the San Lorenzo River and especially the duration of hydrostatic pressure against the levees? (Our understanding is that peak flows can last from a few minutes to an hour, quite different from rivers and canals fed by large watersheds or snow-melt.)	Real-time and historic data from the United States Geological Survey (USGS) gage for the San Lorenzo River, located just upstream of the Hwy 1 bridge, can be found on https://waterdata.usgs.gov/monitoring-location/11161000. Water surface elevations do rise and fall rapidly along the San Lorenzo River due to the fluvial characteristics of the watershed when runoff travels from the Santa Cruz mountains and into the levee channel before exiting into the Pacific Ocean. However, a shorter duration of high-water events, as compared to longer durations seen on the Mississippi or Sacramento Rivers, does not qualify for an exception or variance from FEMA criteria that a levee must meet to achieve certification and subsequent accreditation.