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DTSC Issues Guidance For Considering Sea-Level Rise In Site Cleanups

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California's toxics department is issuing first-time draft guidance for assessing a contaminated site's vulnerabilities to rising sea levels and determining whether such sites will be protective over time, a measure that is drawing praise from environmentalists, who hope it will also bolster the department's stance at federal sites in the state.

"Without proper protections and remedy resilience, [sea level rise (SLR)] may adversely affect public health and degrade the environment through an increased presence or release of uncontrolled hazardous substances in surface water, ground water, air, soil, and sediment," states [the Department of Toxic Substances Control's \(DTSC\) draft](#) "Sea Level Rise Guidance to DTSC Project Managers for Cleanup Activities," which was released Feb. 14.

DTSC is planning a "public information session" on the draft guidance document for the first quarter of 2023, and will be collecting input from the public on the document until Oct. 31. The department then intends to update the document during the 1st quarter of 2024.

Environmentalists and equity advocates are generally praising the plan. "This long-awaited and overdue DTSC Sea Level Rise Guidance for cleanup activities at contaminated sites is welcome and a positive first step to respond to concerns raised by Greenaction and community residents for several years," says Bradley Angel, executive director of Greenaction for Health and Environmental Justice, in an email comment to *Inside CalEPA*.

"Until now, DTSC had been ignoring the threat posed by rising sea levels and groundwater to shoreline contamination sites including the Hunters Point Naval Shipyard Superfund Site in Bayview Hunters Point," Angel charges. "At the Shipyard, the Navy, DTSC, EPA and other government agencies planned on leaving large amounts and high levels of toxic and radioactive waste buried by the shoreline of San Francisco Bay, where the contamination would eventually be inundated and spread further into neighborhoods and the Bay itself."

Now, "We will make sure that DTSC finally follows science and their new guidance, in decisions wherever climate change impacts threaten public health and the environment," he adds. "A key test for DTSC will be to see what comments they submit to the Navy in the upcoming 5 Year Statutory Review under the Superfund law."

Such federal sites could already be subject to [2021 EPA guidance](#) that recommends "approaches to consider when evaluating climate resilience throughout the remedy selection and implementation process for sites proposed or currently listed on the National Priorities List (NPL)" in accordance with the Superfund law.

The DTSC guidance document states that it "provides information on sea level rise and related phenomena which can result in damage to remedies"; identifies DTSC's "authority to address SLR during cleanup"; and "mandates that project managers consider SLR and related phenomena in the remediation process."

Predicted SLR scenarios used in the guidance are based on the "State of California Sea Level Rise Guidance by the Ocean Protection Council (OPC)," the document notes. "OPC's California SLR Work Plan provides that, statewide, 'SLR adaptation planning should include pathways to resiliency to 3.5 feet by 2050 and 6.0 feet by 2100.' To ensure remedy resilience, SLRVAs should, at a minimum, evaluate projects based on sea level rise of 3.5 feet by 2050, and 6.0 feet by 2100. These consistent targets, identified by OPC, may be revised as climate change science evolves."

Vulnerability Assessments

One of the key elements of the guidance covers requirements related to SLR vulnerability assessments (SLRVA). These assessments "should be conducted at each stage of the remediation process to specifically evaluate the resilience of the wastes and remedy at the site to future SLR impacts," the document states. "The degree of complexity of the SLRVA may vary, depending on the circumstances."

For example, "a simple and focused analysis would be performed for a site where it is unclear whether SLR is an impact. Progressively more robust analyses may be required based on results of the evaluation," the document continues. "The SLRVA may include consideration of community resilience infrastructure and plans. Based on the SLRVA, an "adaptation plan" may be required, according to the document. While DTSC "prefers full action taken now to address future impacts, DTSC will consider a phased adaptation approach on a case-by-case basis. Any phased construction of a remedy must include 30 years of protection against SLR."

An SLR evaluation “through the remedial process” is another important piece of the guidance. An evaluation for each remedy phase includes several elements. These include requirements to integrate “current and projected SLR and shallow groundwater rise impacts into risk assessments and the conceptual site model.” Operators must also “identify and analyze resilience for each remedial alternative based on current and projected SLR impacts,” the document states. “Note that alternatives which include land use restrictions should ensure the restrictions take into consideration SLR impacts.”

Remedies “should be protective under current conditions and future impacts due to SLR,” the provisions also say. In terms of remedial design, operators must “incorporate engineered resilience measures” and “the latest science and reflect the salient information regarding SLR at the site.”

Cost Estimates

Operators must also include a cost estimate in each SLRVA submittal consistent with current applicable state law. Prior to determining that the remedy is “operational and functional,” operators must “evaluate the remedy performance under current and future SLR conditions,” the document states. “In some cases, this may require evaluation to ensure modifications are identified and implemented at sites before determining the remedy is Operational and Functional.”

SLR should also be addressed when establishing requirements for remedy “Operation Maintenance & Monitoring” (OM&M) “and within any OM&M agreement.” During OM&M, operators must “evaluate remedy performance and monitoring systems under current and future SLR conditions, and any necessary modifications.”

If a remedial action is selected that results in hazardous substances, pollutants or contaminants remaining at the site above those levels required for unlimited use and unrestricted exposure, “DTSC reviews the remedial action no less often than every five years after initiation of the selected remedial action,” the document notes. “

In addition, when new information arises “that appears to affect the protectiveness of the remedy due to SLR, regardless of whether five years have elapsed since remediation began or since the prior [five year review (FYR)], a Protectiveness Determination should be initiated which includes an updated SLRVA.”

Should a remedy be determined to no longer be protective given the current or future SLR scenarios, “DTSC should take necessary action to protect public health and the environment (e.g., Remedial Action Plan Amendment, Removal Action Workplan Amendment, Explanation of Significant Differences, OM&M plan modification, minor changes documented appropriately, etc.),” the guidance adds.

In terms of meeting 30-year financial assurance requirements, the guidance states that SLR “may result in significant expenses well beyond 30 years”; as a result, “when calculating costs, sites should use a time horizon from remedy implementation through Completion Certification of Site Remediation, or equivalent, and revise these cost estimates periodically at the time of the 5-year review.” -- *Curt Barry* (cbarry@iwpnews.com)