

CONTAMINATED LANDS SECTOR

West Contra Costa Sanitary Landfill

Key Issue Statement

The West Contra Costa Sanitary Landfill provides permanent containment for non-hazardous and municipal wastes. The WCCSL is vulnerable to flooding because of its proximity to the Bay, limited access, type of onsite facilities and uses, and the potential for long-term flooding. The direct disruption of the closed landfill, particularly the HWMF, could have significant consequences for public health and nearby ecosystems if contaminants were released into the environment. While there is currently a leachate collection system in place, the current system may or may not be sufficient to collect and treat additional water volumes that might result from sea level rise.



Photo: City Lab

Asset Description

The West Contra Costa Sanitary Landfill (also known as the West County Sanitary Landfill or WCCSL) is a closed and capped facility that includes both Class I and Class II landfill components. The Class I landfill is located within the Class II landfill and is a Hazardous Waste Management Facility (HWMF). The HWMF is 28 acres and the Class II landfill is approximately 160 acres. The HWMF and the Class II landfill are each surrounded by slurry walls with leachate extraction and monitoring wells. Leachate is conveyed to the nearby West County Wastewater Treatment Plant for treatment and discharge.

The WCCSL is located at Parr Boulevard and Garden Tract Road in Richmond, adjacent to tidal wetlands (including Wildcat Marsh) and San Pablo Bay. The Golden Bear Transfer Station and the three-megawatt Nove power generation facility are located within the footprint of the landfill. Additional permitted activities at WCCSL include a concrete crushing plant, a green waste grinder, and a construction and demolition debris recycling facility. The WCCSL provides public access and recreational benefits and there is Bay Trail access around the closed the landfill (Wildcat Marsh and Landfill Loop Trails).

West County Landfill, Inc. owns the facility, and West Contra Costa Sanitary Landfill, Inc. operates the facility. They are both subsidiaries of Republic Services, Inc. Additionally, Republic Services is the parent company for Nove Power (Nove Investments, Inc.), which owns the on-site power generation facility. The State Department of Toxic Substance Control (DTSC) oversees the HWMF, and the Regional Water Quality Control Board (RWQCB) oversees the Class II landfill. The WCCSL is under the jurisdiction of the City of Richmond and Contra Costa County, and the Bay Trail segment on the landfill is managed by the East Bay Regional Park District.

The WCCSL is a closed landfill with site closure and postclosure maintenance plans submitted and adopted with approval from CalRecycle, the RWQCB, the County Local Enforcement Agency (LEA), and with RCRA Subtitle D prescribed regulations for final cover. The final cover consists of a foundation layer of greater than 2 feet, a clay barrier of 1 foot, a vegetative layer of 1 foot, and on working surfaces, an additional 3-foot

working/protective layer of soil concrete and or rubble. The landfill final cover has been designed to prevent water infiltration. A bay mud barrier wall and slurry walls serve to confine any leachate formed. The top elevation of this confinement barrier varies around the site perimeter. The top is approximately elevation +9 feet MSL on the south side to +17 on the north and west (Bay) side. The tops of these walls have been connected to the clay barrier layer of the final cover, where the final cap has been placed on the landfill and HWMF. Finally, the landfill has a leachate extraction system that may or may not be sufficient, depending on the volume of inundation, to collect and dispose of the additional leachate should a flood occur.

Exposure to Flooding

The majority of the WCCSL site is unlikely to be directly impacted from current or future flooding due to its elevation. However, lower-elevation facilities onsite may be at risk, and the single access road on and off the site is also at risk from current and future flooding. Additional exposure to storm events, including increased tidal and wave energy, could result in an increase need for maintenance of landfill perimeter closest to the Bay, which is currently protected by rip rap, or for other interventions. The landfill is currently protected from groundwater, which could rise as sea levels rise, by a slurry wall. The slurry wall is constructed around the perimeters of the landfill and HWMF, and provides additional protection from leachate and water intrusion. A significant depth of natural bay mud underlies the landfill. The thickness of the mud is approximately 100 feet. This mud and the upward movement of the ground water provide control against downward travel of the leachate from the base of the landfill. Lateral waste and leachate containment control facilities include the bay mud barrier wall and slurry walls, which are keyed into the underlying bay mud, and the leachate collection and removal drains.

Vulnerabilities

GOV1: The HWMF and WCCSL serve multiple objectives, including hazardous and municipal waste storage, respectively, and are subject to a complex regulatory process. Any comprehensive planning or major changes at the site would require Republic Services to coordinate internally among its subsidiaries, as well as obtain multiple permits and coordinate with multiple entities, including DTSC, RWQCB, BCDC, City of Richmond, Contra Costa County, West County Wastewater District, and EBRPD.

FUNC1: The landfill site has one access road, and both this road and local surface streets are at risk from current and future flooding. With long-term flooding of this access, the WCCSL could effectively become an island, and site management (e.g. monitoring, repairs or upgrades to waste containment systems) will become difficult.

FUNC2: The WCCSL is a multi-use asset, and the Bay Trail loop on the landfill provides important public recreation opportunities and scenic views. The portion of the Bay Trail east of the WCCSL along Richmond Parkway does not provide redundancy for shoreline access, but does provide connectivity between Bay Trail points north and south of the WCCSL loop.

PHYS1: The waste contained in the landfill would be very challenging and expensive to relocate, and most likely needs to be protected in place.

PHYS2: While the landfill final cover has been designed to prevent water infiltration, there is a leachate extraction system in place which may or may not be sufficient, depending on the volume of inundation, to collect and dispose of the additional leachate should flooding occur.

PHYS3: The current waste containment systems may not be designed to withstand permanent flooding and increased storm wave erosion.

Consequences

Society and Equity: The WCCSL poses a risk to public health if onsite contaminants are released, particularly from the HWMF. However, in place leachate collection systems may or may not be sufficient to collect and treat additional water-intrusive volumes. Flooding could also result in a disruption or loss of public access and recreation, including the use of picnic areas and trails suitable for walking, biking, and wheelchair access.

Environment: There could be significant water quality impacts if there was a release of contaminants from the landfill, particularly from the HWMF. The site provides habitat for a variety of species, both as part of the covered and vegetated landfill and at a 40-acre onsite retention pond. If the asset were disrupted, it could cause the direct loss of habitat and species onsite, as well as having impacts on surrounding natural areas such as San Pablo Bay, San Pablo Creek, San Pablo Creek Marsh, and Wildcat Marsh.

Economy: A release of contaminants from the landfill could strain local emergency resources and could result in high cleanup and recovery costs. Additionally, onsite services and facilities, such as Nove Power and the Golden Bear Transfer Station, could cease operation either temporarily or permanently, resulting in the need for alternative and comparable services. Jobs at onsite facilities could also be impacted.