WASTEWATER SERVICES SECTOR

North Richmond Water Reclamation Plant and Richmond Advanced Recycling Expansion

Key Issue Statement

The North Richmond Water Reclamation Plant (NRWP) and Richmond Advanced Recycling Expansion (RARE) facilities may not be accessible to workers, supplies and equipment if the roadways that provide access are flooded. Additional problems may arise if power supplies are compromised and workers cannot access the facility with additional fuel needed to ensure there is back up power to maintain plant operations.



Asset Description

EBMUD was established in 1923 and provides wastewater, recycled water, and drinking water service throughout the East Bay, including Contra Costa County. The EBMUD North Richmond Water Reclamation Plant (NRWRP) and the Richmond Advanced Recycling Expansion (RARE) receive secondary treated wastewater from West County Wastewater District (WCWD) and treat it for reuse by industrial, public and private customers. The RARE delivers purified water to Chevron's Richmond Refinery, which is used to generate steam, and the NRWRP provides tertiary treated water to meet Chevron's tower cooling needs. The expected operating life of these EBMUD assets is to around mid-century.

Exposure to Flooding

The RARE could be impacted by 5 feet of sea level rise or more, while the NRWRP is not directly at risk from current or future flooding.

Vulnerabilities

INFO: There is limited information on contractual agreements between EBMUD and Chevron's Richmond Refinery, and it is unclear if the emergency response or operational plans for these particular facilities and for Chevron operations include contingencies to manage flood emergencies.

GOV: EBMUD owns the North Richmond Water Reclamation Plant (NRWRP) and the Richmond Advanced Recycling Expansion (RARE) but depends on West County Wastewater District (WCWD) for wastewater and on Chevron to use the treated recycled water. The process and relationships may not be in place to support the coordination and collaboration that will be needed to address shared vulnerabilities to sea level rise and storm event flooding.

Asset Profile Sheet

PHYS: The NRWRP is located in a zone of very high liquefaction susceptibility and the RARE is in a zone of high liquefaction susceptibility. A rising groundwater table may increase liquefaction potential, and may cause damage to the either one of the facilities during a seismic event.



Figure 2: Liquefaction Susceptibility (http://gis.abag.ca.gov)



Figure 1: NRWRP Liquefaction Susceptibility

FUNC1: Wastewater treatment systems are large, expensive, and complex, and there is little redundancy within each system. This includes the RARE and NRWRP, which are the only facilities of their type in the system, meaning their function would not be easily replaced if they were damaged or disrupted due to sea level rise or storm event flooding.

FUNC2: Wastewater facilities rely on roads and highways to bring employees, fuel and other supplies, materials and equipment to the site. If roads used to access these facilities experience extensive flooding they may not be able to continue operations. For example, the RARE may be inaccessible if Castro Street, Petrolite Street, or Xylene Street is flooded. Similarly, if Richmond Parkway, Parr Boulevard, Pittsburg Avenue, Central Avenue, Brookside Dr. or Fred Jackson Way are flooded then the NRWRP would not be accessible.

Consequences

Environment: The RARE and NRWRP facilities together provide Chevron with approximately 7.5 MGD. If these facilities stop functioning, treated and recycled water would be replaced with potable water. The environmental impact of this would depend on water supply conditions at the time.

Economy: EBMUD does not anticipate an economic impact if the RARE or NRWRP operations cease during a flooding event and treated and recycled water to support Chevron operations were replaced by potable water.