CHAPTER 5

High Priority Measures for Public Resources

High priority sea-level rise adaptation measures for the City to begin planning now include relocating the City's Fire Station and Public Works Yard on Jimmy Durante Boulevard, as well as flood-proofing the sewer lift station along San Dieguito Drive (Figure 5.1). These facilities already have a medium to high risk of San Dieguito River flooding (i.e., 5% annual chance of flooding) or greater, as evidenced by the San Dieguito River flooding the fire station and public works yard in February 1980 (see the Coastal Hazards, Vulnerability, and Risk Assessment (ESA 2016) for additional information). Additionally, the city should immediately begin evaluation of beach nourishment options to maintain recreational opportunities for the citizens of Del Mar as well as enhanced protection of public infrastructure and private property. Beyond the vulnerabilities addressed in this chapter, the City should evaluate and monitor risks to all other public resources including roads, bridges, sewer lines, water supplies, storm drainage systems, parks, and public structures.

Figure 5.1
High Priority Infrastructure

City of Del Mar Fire Station Relocation. The fire station is an essential services building that should be operable during flooding in order to respond to flood-related calls and other emergencies. Given that flood risk has the potential to increase with sea-level rise, the adaptation plan calls for beginning a process to relocate the fire station to a location that is not anticipated to flood and would still allow the fire department to respond to an emergency. Moderate exposure of the fire station to flooding will make emergency services highly vulnerable with 1 ft of deposition because the fire station will be impacted when flooding is occurring and emergency response is needed, as occurred in the 1980 flood.

City of Del Mar public works yard. The City uses the public works yard for storage of City maintenance vehicles, equipment, and other supplies, some of which may be required to perform City services during or after flood and/or erosion events. The adaptation plan calls for beginning a process to relocate the public works yard to a location that is not flood-prone. Relocating the public works yard also provides the opportunity to construct a portion of a new levee system south of the San Dieguito River to reduce flood risk in combination with restoring wetland and upland habitat on the public works yard as described as an adaptation measure in Section 5.4, San Dieguito River Flooding adaptation plan.

Sewer lift station. The sanitary sewer lift station along San Dieguito Drive is subject to extreme flooding (1% annual chance of occurrence). The potential consequences of flooding are high, as the flooding of the pump machinery could potentially cause pump failure. The adaptation plan calls for flood proofing the lift station as a near-term measure to reduce this risk, which will otherwise increase with sea-level rise. Flood-proofing could be accomplished by raising the lift station above the 100-year flood level (12.8 ft NAVD per FEMA 2016) with an allowance for future sea-level rise (e.g., to an elevation of 15.8 ft NAVD with a 3 ft of sea-level rise allowance above the current above 100-year flood level). Other flood-proofing options include enclosing and water-proofing the pump motor and other vulnerable parts of the lift station.

Beach sand retention, replenishment, and management. The City's beaches from 15th St north to San Dieguito Lagoon (North Beach) and all beaches adjacent to the bluffs provide a first line of protection against river flooding and bluff erosion due to sea level rise. River flooding in the beach area would affect hundreds of homes. Bluff erosion would lead to increased risk of damage to the City's sewer, drainage, and fiber-optic cabling along the bluff-tops. Chapters 8 and 9 give details on vulnerabilities and adaptation options for both areas.

Beach nourishment is an adaptation option that can be acted upon immediately. It has the strongest potential to minimize damage risk while helping to maintain the City's valuable broad beaches. sand retention structures, including groins, breakwaters and artificial reefs, have limitations that must be studied carefully in the context of their benefits and the risks to the City's beachs. General benefits and limitations for these sand retention structures are given in Chapter 9, Section 9.1.3 (Table 9.1.3).

Rather than wait until beaches shrink further due to changes in the river channels, flooding, erosion, and storm damage, the City should establish a Beach Retention Advisory Committee (BRAC). The committee would receive reports on monitored sand levels, beach width, and distance from bluff-top to infrastructure; assess adaptation options that replenish or retain sand; and recommend timely pro-active and, as needed, reactive actions. The committee would be further charged to study and report on the costs and expected lifespan of sand replenishment or retention interventions. Such a committee would be positioned to study the suitability of sand-retention structures in the context of the City's Community Plan and other relevant guidance documents reviewed in Chapter 2, and receive feedback and suggestions from City residents and property owners. The BRAC could be realized initially as a subcommittee of STAC.