

5.11 Hazards and Hazardous Materials

5.11.1 Introduction

This section describes the existing setting of the project area in relation to hazards and hazardous materials, and evaluates whether the development of the proposed desalination plant and related facilities would result in adverse effects from hazards or hazardous materials. Specifically, the evaluation focuses on whether the proposed project would result in or be subject to adverse effects related to the use, transportation, disposal, or release of hazardous materials or wastes during construction, operation, or maintenance; or from the emission or handling of hazardous materials near schools. The evaluation will also include a determination on whether the project would be located on or near a known hazardous materials site.

The description of the existing setting and evaluation of impacts is based on current Environmental Data Resources, Inc., (EDR) database searches provided in [Appendix Y, Potential Hazardous Materials Release Sites](#); and publically available databases such as the Department of Toxic Substances Control (DTSC) “EnviroStor” database (DTSC, 2007), and State Water Resources Control Board (SWRCB) “GeoTracker” database (SWRCB, 2013b). Additional information in this section related to environmental setting, regulatory framework, and the analysis of impacts and mitigation measures is derived from Section 5.11, Hazards and Hazardous Materials, of the *Integrated Water Plan Program Environmental Impact Report* (IWP Program EIR) (City, 2005a), as well as from other references, as cited throughout this section¹.

Public and agency comments related to hazards and hazardous materials were received during the public scoping period in response to the Notice of Preparation, and are summarized below.

- Evaluate chemical usage at the plant or associated with the project.
- Evaluate the characteristics of the solid waste generated from the project.

To the extent that issues identified in public comments involve potentially significant effects on the environment according to the California Environmental Quality Act (CEQA), and/or are raised by responsible and trustee agencies, they are identified and addressed in this EIR. For a complete list of public comments received during the public scoping period, refer to [Appendix A, Scoping Report City of Santa Cruz and Soquel Creek Water District \(scwd²\) Regional Seawater Desalination Project](#).

¹ Referenced documents in this EIR are available for review at the City of Santa Cruz Water Department offices at 212 Locust Street, Suite D, Santa Cruz, California 95060, Monday through Thursday 8:00 a.m. to Noon and 1:00 p.m. to 5:00 p.m., except holidays. Likewise, these documents are available for review at the Soquel Creek Water District offices at 5180 Soquel Drive, Soquel, CA 95073, Monday through Friday 8:00 a.m. to Noon and 1:00 p.m. to 5:00 p.m., except holidays.

5.11.2 Environmental Setting

Regional Setting

Hazardous Materials

A variety of land uses, including residential, commercial, light-industrial/manufacturing, and institutional uses, are located in the City of Santa Cruz (City), unincorporated Santa Cruz County (County), and the City of Capitola (Capitola). Most hazardous materials use and waste generation in the region relates to businesses, such as gas stations, automotive repair, dry cleaners, and light-industrial/manufacturing uses. Institutions, such as schools, universities, hospitals, and other medical uses, also use hazardous materials and generate hazardous waste.

Businesses are located throughout the region, with the primary commercial areas in downtown Santa Cruz and in Capitola. The University of California, Santa Cruz (UCSC) Main Campus and the UCSC Marine Science Campus are both on the western side of the City, and Cabrillo College is in the mid-County area. Dominican and Sutter hospitals and a variety of medical offices are clustered along Soquel Drive, just north of Highway 1. Some light-industrial and manufacturing uses are also in the region; primarily in the Harvey West industrial area near the intersection of Highway 1 and Highway 9 in the City, and in the Natural Bridges industrial area on the western side of the City.

Contamination of soil or groundwater can result from improper handling and/or storage of hazardous materials. This type of contamination is typically related to underground fuel storage, such as at gas stations, or historic uses, such as chemicals in manufacturing processes.

To identify and characterize any known hazardous materials releases in the project area, EDR provided a list of hazardous materials release sites within 1 mile of the project area. The EDR reports and a complete list of hazardous materials release sites in or near the project area are included in [Appendix Y](#). In the EDR searches, the primary databases reviewed to evaluate potential impacts to the project area included:

- Hazardous Waste and Substances Sites (CORTESE) List (state index of properties with hazardous waste per California Government Code 65962.5).
- Leaking Underground Storage Tanks (LUST; Regional Water Quality Control Board [RWQCB]).
- DRYCLEANERS (state database of drycleaners sites).
- EnviroStor (DTSC database).
- National Priorities List (NPL or Superfund; U.S. Environmental Protection Agency [USEPA]).

The publically accessible databases maintained by the DTSC (EnviroStor) and the SWRCB (GeoTracker) were also directly reviewed. This review was conducted to determine if these agencies listed any other hazardous materials release sites within the project area, or provided additional detail about known sites identified in the EDR reports.

Based on the above information, 54 hazardous materials release sites were identified within ¼ mile of the project area. Sites more than ¼ mile from the nearest project component were briefly reviewed, but are considered unlikely to have any potential impact on the project area or potentially be impacted by the project. The 54 sites within ¼ mile of project components underwent detailed review in relation to the status of the investigation, the extent of contamination, and proximity to the project area, as summarized in Table 1 of **Appendix Y**. Potential exists that soil and/or groundwater contamination associated with 14 of these sites may be encountered as a result of project construction activities (excavation and/or dewatering). **Figure 5.11-1, Potential Hazardous Materials Sites Near Project Area**, and **Table 5.11-1, Potential Hazardous Materials Sites Near Project Area**, identify these 14 sites in relationship to the project components described in detail in **Section 4, Project Description**.

Airport Zones

The project area is not in the vicinity of a public airport or private air strip. As indicated in **Section 5.6, Noise and Vibration**, aircraft activity in the area is limited to flyovers of airplanes to and from Watsonville Municipal Airport, occasional California Department of Forestry aircraft, as well as sporadic commercial over-flights.

Wildland Fire

The *City of Santa Cruz Local Hazard Mitigation Plan 2007-2012* (Hazard Mitigation Plan) identifies five wildland/urban interface areas within the City, including three areas designated as mutual threat zones². These mutual threat zones are located in and around DeLaveaga Park, the Pogonip, and the Arroyo Seco/Meder Canyon. Wildland fires also present a risk to open-space areas within the City and adjacent to residential homes. The Moore Creek Preserve is an additional area of concern for these wildland/urban interface zones (City, 2007c). The *City of Santa Cruz General Plan 2030 Draft EIR* also identifies these areas as fire hazard areas (City, 2012a).

² Mutual threat zones are defined as areas where a wildfire would threaten property within the Santa Cruz fire protection district, as well as property covered by another fire protection service. For major emergencies that require more resources than can be provided by a single agency, the City, the County, UCSC, and the State of California have an extensive mutual aid and emergency coordination system. Developed and managed in cooperation with the Governor's Office of Emergency Services, this system allows departments and districts to share personnel and equipment as needed to address and control emergencies.

The only project components located within fire hazard areas would be buried pipelines associated with the potable water distribution system in the vicinity of the DeLaveaga water storage tanks.

Project Area Setting

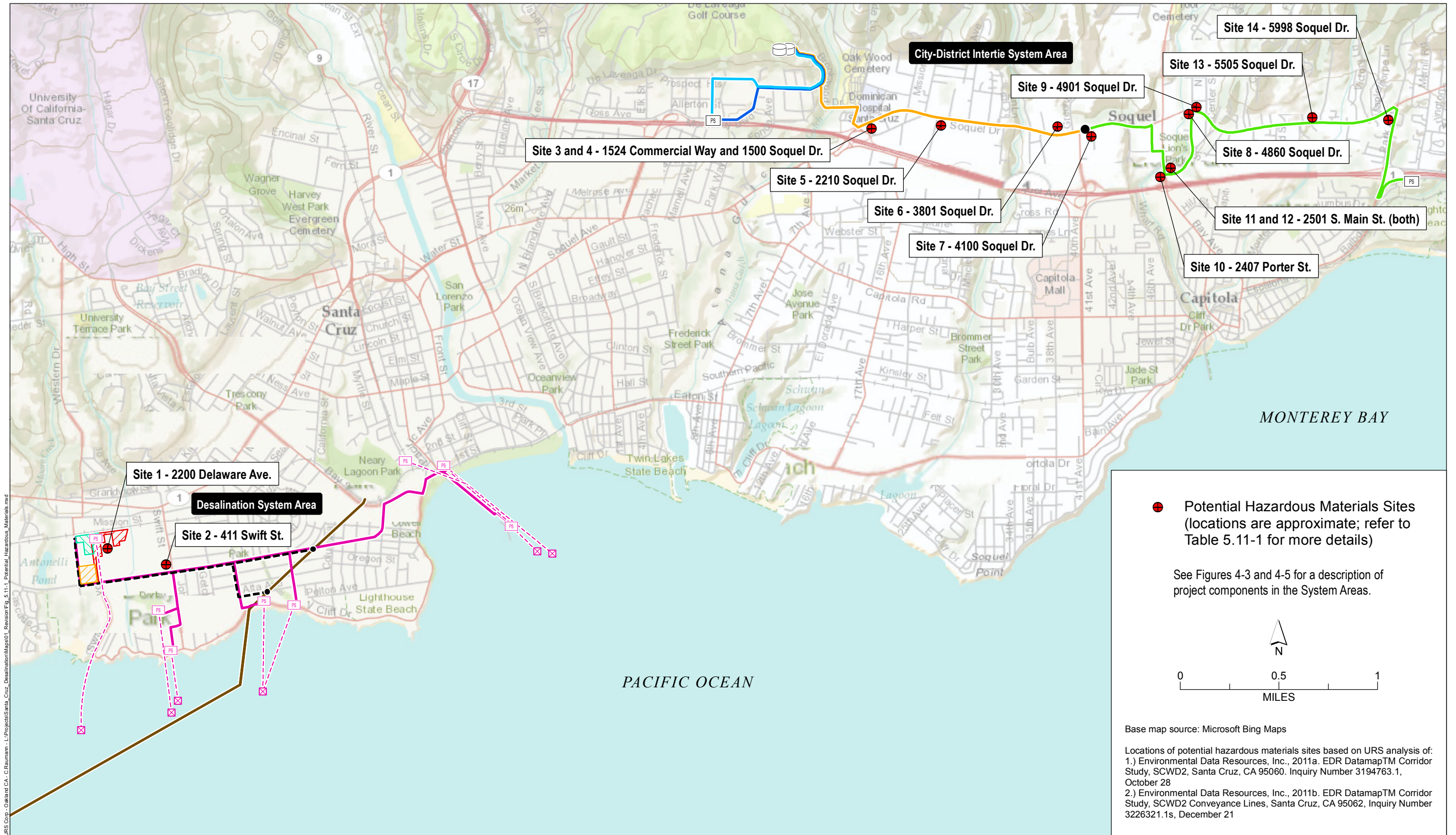
The setting for each of the project components is further described below. See [Section 4](#) for a full description of the proposed project.

Seawater Intake System

The various intake pump station site alternatives are located in the Beach Area, along West Cliff Drive, or inland near the plant site alternatives. No hazardous materials release sites were identified in these areas, although a previous Phase II site investigation along the Santa Cruz Branch Line reported elevated levels of arsenic above background concentrations along the railroad corridor, including borings on or near intake pump station site SI-18 (AMEC Geomatrix, Inc., 2009). In addition, the SI-18 pump station site has been used as a storage area by the City for wharf maintenance and other equipment for a number of years. During a site visit by the project team, stacks of timber and metal, drums of unknown content, tires, roll-off bins, trash receptacles, and a shed with a sign reading “dangerous” were observed. It is possible that creosote-treated wharf pilings may have been historically stored on the site, or that creosote-treated railway ties were used within the adjacent rail corridor. Soil staining of some kind is visible on aerial photographs and was also observed during the site visit.

The offshore components of the seawater intake system could be located in areas that have buried, creosote-treated piles—particularly those intake sites near the existing Municipal Wharf (SI-9, SI-17 and SI-18).

The proposed conveyance alignments for raw water and brine are located along paved public rights-of-way between the shoreline and the plant sites. The conveyance alignments run primarily through residential areas, but some commercial and light-industrial uses are also present. The Elkhof Inc./Santa Cruz Industries facility at 411 Swift Street was identified during the database review as the site of an historic display manufacturing and metal plating facility, which resulted in metals and volatile organic compounds (VOC) contamination of soil and/or groundwater (refer to Site 2 on [Figure 5.11-1](#) and [Table 5.11-1](#)). This site is currently under remediation, and the groundwater plume extends northwest across the intersection of Swift and Delaware Streets.



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Table 5.11-1 Potential Hazardous Materials Sites Near Project Area

Address (Site # on Figure 5.11-1)	Database Review	Site Name	Additional Notes	Project Component ¹	Potential for Contamination to Soil/Groundwater ²
Sites within Desalination System Area					
2200 Delaware Avenue (Site 1)	EDR Map 42; LUST Site	Former Lipton, Inc.	Petroleum Leak. Case Closed 1997. The 2200 Delaware Avenue LUST case site is associated with the former Lipton, Inc. facility, at which an underground storage tank failure occurred in approximately 1989. In 1997, the Santa Cruz County Environmental Health Services granted closure to the Site.	Immediately adjacent to Plant Sites A-1 and A-3 ~600 feet Northeast of Plant Site A-2. ~800 feet north of Delaware Avenue conveyances for brine and raw water.	High ³ . For Plant Sites A-1 and A-3 due to proximity. Low . Elsewhere due to distance and case status
411 Swift Street (Site 2)	EDR Map 43 SLIC Site	Elkhof Inc./Santa Cruz Industries	Historic display manufacturing and metal plating resulted in metals in soil and possibly in groundwater, and VOCs in soil and groundwater. Open site under remediation. Plume extends northwest across intersection of Swift and Delaware Streets.	Adjacent to Swift Street and Delaware Avenue conveyances for brine and raw water.	High . Due to proximity and case status.
Sites within City-District Intertie System Area					
1524 Commercial Way (Site 3)	EDR Map 9; LUST Site	Chevron	Gasoline Leak. Case Closed 1995. A gasoline leak at this site triggered an investigation. The Site was closed in 1995. This site is located immediately adjacent to the alignment. As the site has been granted regulatory closure, it is considered to have a medium potential for impacting the Project Area.	At intersection of Soquel Drive and Commercial Way, along alignment from DeLaveaga Tank to City-District intertie connection point.	Medium . Although site has been closed since 1995, it is located directly along alignment.
1500 Soquel Drive (Site 4)	EDR Map 9; LUST Site	Unocal Station/ Union Service	Gasoline and Diesel leak. Investigation ongoing. This site is the subject of an ongoing investigation regarding diesel and gasoline contamination. It is known that soil and groundwater immediately adjacent to the Corridor has been impacted (Stantec Consulting Corporation, 2012). This site is considered to have a high potential for impacting the Project Area.	At intersection of Soquel Drive and Commercial Way, along alignment from DeLaveaga Tank to City-District intertie connection point.	High . Known soil and groundwater contamination immediately adjacent to alignment.
2210 Soquel Drive (Site 5)	EDR Map 10; HIST CORTESE /	ULTRAMAR Beacon	Gasoline leak. Case Closed 1992. A gasoline leak at this site triggered an investigation. The Site was closed in 1992. This site is located immediately	Located on Soquel Drive, along alignment of DeLaveaga Tank to City-District intertie connection point.	Medium . Although site has been closed since 1992, it is located

Table 5.11-1 Potential Hazardous Materials Sites Near Project Area

Address (Site # on Figure 5.11-1)	Database Review	Site Name	Additional Notes	Project Component ¹	Potential for Contamination to Soil/Groundwater ²
	LUST site		adjacent to the alignment. Because the site has been granted regulatory closure, it is considered to have a medium potential for impacting the Project Area.		directly along alignment.
3801 Soquel Drive (Site 6)	EDR Map 11; LUST site	Ocean Honda Chevrolet	Gasoline Leak. Case Closed 2011. A gasoline leak at this site triggered an investigation. The Site was closed in 2011. This site is located immediately adjacent to the alignment. Because the site has been granted regulatory closure, it is considered to have a medium potential for impacting the Project Area.	Located on Soquel Drive, along alignment of DeLaveaga Tank to City-District intertie connection point.	Medium. Although site has been closed since 2011, it is located directly along alignment.
4100 Soquel Drive (Site 7)	EDR Map 11; LUST site	Former Texaco fuel and auto repair station/ now Safeway	Gasoline Leak. Case Closed 2005. A gasoline leak at this site triggered an investigation. The Site was closed in 2005. This site is located immediately adjacent to the alignment. As the site has been granted regulatory closure, it is considered to have a medium potential for impacting the Project Area.	Located on Soquel Drive, along alignment of DeLaveaga Tank to City-District intertie connection point.	Medium. Although site has been closed since 2005, it is located directly along alignment.
4860 Soquel Drive (Site 8)	EDR Map 8; LUST and CORTESE site	TOSCO / Unocal Facility #2452	Gasoline Leak. Other Groundwater impacted. Cleanup site, Open-remediation 2007. This site is the subject of ongoing groundwater remediation related to a gasoline leak. This site is located immediately adjacent to the alignment. It is known that soil and groundwater immediately adjacent to the Corridor has been impacted (Stantec Consulting Corporation, 2011). This site is considered to have a high potential for impacting the Project Area.	Adjacent to Soquel Drive/Main Street, along alignment from City-District intertie connection point to McGregor pump station.	High. Known groundwater contamination immediately adjacent to alignment.
4901 Soquel Drive (Site 9)	EDR Map 8; HIST CORTESE / LUST site	E-Z Serve	Gasoline Leak. Case Closed 2007. A gasoline leak at this site triggered an investigation. The Site was closed in 2007. This site is located immediately adjacent to the alignment. Because the site has been granted regulatory closure, it is considered to have a medium potential for impacting the Project Area.	Adjacent to Soquel Drive/Main Street, along alignment from City-District intertie connection point to McGregor pump station.	Medium. Although site has been closed since 2007, it is located directly along alignment.

Table 5.11-1 Potential Hazardous Materials Sites Near Project Area

Address (Site # on Figure 5.11-1)	Database Review	Site Name	Additional Notes	Project Component ¹	Potential for Contamination to Soil/Groundwater ²
2407 Porter Street (Site 10)	EDR Map 23; HIST CORTESE / LUST site	ARCO Station	Gasoline Leak. Case Closed 1997.	Adjacent to intersection of Porter and Main, and City-District intertie connection point to McGregor pump station.	Medium. Although site has been closed since 1997, it is located directly along alignment.
2501 S. Main Street (Site 11)	EDR Map 23; LUST and CORTESE site	EXXON Station 7- 0281	Gasoline Leak. Case Closed 1991.	Adjacent to intersection of Porter and Main, and City-District intertie connection point to McGregor pump station.	Medium. Although site has been closed since 1997, it is located directly along alignment.
2501 S. Main Street (Site 12)	EDR Map 23; LUST site	Former EXXON Station 7- 0281	Gasoline Leak. Case Closed 2011.	Adjacent to intersection of Porter and Main, and City-District intertie connection point to McGregor pump station.	Medium. Although site has been closed since 2011, it is located directly along alignment.
5505 Soquel Drive (Site 13)	EDR Map 14; LUST site	Quik Stop Market No. 78	Fuel Oxygenates, Gasoline Leak. Drinking water aquifer, soils, surface water, and other groundwater impacted. Cleanup site, Open-remediation, 2007. This site is the subject of ongoing groundwater remediation related to a gasoline leak. This site is located immediately adjacent to the alignment. It is known that soil and groundwater immediately adjacent to the Corridor has been impacted (Compliance and Closure Inc., 2012). This site is considered to have a high potential for impacting the Project Area.	Located on Soquel Drive, along alignment from City-District intertie connection point to McGregor pump station.	High. Known contamination of several media immediately adjacent to alignment.
5998 Soquel Drive (Site 14)	EDR Map 29; LUST site	Chevron Station	Gasoline Leak. Case Closed 1985. A gasoline leak at this site triggered an investigation. The Site was closed in 1985. This site is located immediately adjacent to the alignment. Because the site has been granted regulatory closure, it is considered to have a medium potential for impacting the Project Area.	Located on Soquel Drive, along alignment from City-District intertie connection point to McGregor pump station.	Medium. Although site has been closed since 1985, it is located directly along alignment.

Table 5.11-1 Potential Hazardous Materials Sites Near Project Area

Notes:

1. Where indicated, the specific street listed is that nearest to the hazardous materials release site.
2. Sites for which there is considered a "Low" possibility of affecting the project area include closed sites not located immediately in the project area, and open sites located more than 300 feet from the project area. However, it is noted that case closure does not necessarily indicate that all potential contamination has been remediated. Sites for which there is considered a "Medium" possibility of affecting the project area include closed or open sites within 300 feet of the project area. Sites for which there is considered a "High" possibility of affecting the project area include open sites on or immediately adjacent to the project area. "Low" sites are not shown in this table, but are included in Table 1 of Appendix Y, Potential Hazardous Materials Release Sites.
3. The potential for contamination was considered "High" at Plant Sites A-1 and A-3 due to proximity and due to the extent of excavation that is possible during plant construction.

Acronyms/Terms Used:

EDR = Environmental Data Resources (copy of EDR Report is contained in Appendix Y).

VOC = volatile organic compounds

LUST = Leaking Underground Storage Tank database

SLIC = Statewide Spills, Leaks, Investigations and Cleanup program

CORTESE = Statewide Hazardous Waste and Substances Sites List

HIST CORTESE = Historical CORTESE list

Seawater Desalination Plant Sites

The proposed desalination plant sites in Area A are primarily vacant, but lie within an overall industrial area that includes several light industrial and commercial uses, including warehouse and loading dock areas. The Santa Cruz County Regional Transportation Commission (SCCRTC) Santa Cruz Branch Line railroad corridor passes along the northern boundary of Area A. The Harmony Foods building (former Lipton building) is located immediately east or south of the three plants sites under consideration. Additionally, the surrounding area includes an administrative and research building owned and operated by UCSC, which is to the west of the plant sites on Natural Bridges Drive, and the U.S. Geological Survey Pacific Coastal & Marine Science Center, which is to the north of the plant sites.

The former Lipton building was identified during the database review as the site of an underground storage tank failure that occurred in approximately 1989 (refer to Site 1 on **Figure 5.11-1** and **Table 5.11-1**). In 1997, Santa Cruz County Environmental Health Services (SCCEHS) granted closure to the site.

A Phase II site investigation report for the Santa Cruz Branch Line revealed elevated levels of arsenic above background concentrations along the railroad corridor (AMEC Geomatrix, Inc., 2009). The nearest borings to the proposed desalination plant sites were approximately 400 feet east of Plant Site A-3. Arsenic was detected above the site-specific background concentration in three samples at this location, consistent with the general presence of arsenic in shallow soil throughout the railroad corridor, and likely attributable to historic railroad operations.

The report concluded that while the incremental cancer risk to construction workers from arsenic is within the USEPA's target cancer risk range, arsenic was detected at some locations at concentrations that could require special handling during construction activities (e.g., disposal classification). Selected polycyclic aromatic hydrocarbons (PAHs) were also detected above their respective industrial environmental screening levels in one shallow soil sample in this location, but not in deeper or adjacent samples, indicating that the PAH impacts were surficial and laterally limited in extent, and likely attributable to historical dumping of miscellaneous debris in this area.

While the borings from that study were approximately 400 feet from the nearest plant site alternative, it is noted that the railway corridor runs immediately adjacent to the northern boundary of Plant Sites A-1 and A-3. The report also indicated that spur rail lines may have extended through Plant Site A-3 in the past, which was confirmed through review of historic aerial photographs and a report prepared in relation to potential development of an adjacent property (City, 2008d). Historically, creosote-treated wooden railway ties may have been used, and old ties may be buried within the rail corridor.

There are other release sites in the vicinity of the three plant sites; however, they are considered to have low risk for release of contaminants during construction given their distance and status.

Potable Water Distribution System

The proposed intertie system that would connect the City and District service areas would run from Morrissey Boulevard and Trevethan Avenue in the City, to Park Avenue and McGregor Drive in Capitola. The alignment would be located along Soquel Drive for the majority of its length. The pipeline alignment would be located primarily in paved public rights-of-way, with the exception of short segments near the DeLaveaga water storage tanks, and where Brookwood Drive crosses Arana Creek. There are a number of hazardous materials release sites along Soquel Drive, all of which are associated with LUSTs (refer to Sites 3 through 12 on [Figure 5.11-1](#) and [Table 5.11-1](#)).

5.11.3 Regulatory Framework

The proposed project would be subject to applicable regulations pertaining to hazardous substances (including hazardous wastes, and worker health and safety), lead and asbestos, sewer discharges, and emergency response. Regulations pertaining to hazards and hazardous waste in the project area that are relevant to the analysis of project impacts are detailed below. See also [Section 5.4, Land Use, Planning, and Recreation](#) for evaluation of potential conflicts with relevant land use plans, policies, and regulations of agencies that have jurisdiction over the proposed project.

Hazardous Substances

Hazardous substances are extensively regulated by federal, state, regional, and local regulations, with the major objective of protecting public health and the environment. In general, these regulations provide definitions of hazardous substances, establish reporting requirements, require health and safety provisions for both workers and the public, and set guidelines for the handling, storage, transport, remediation, and disposal of hazardous wastes. Regulatory agencies also maintain lists or databases of sites that are classified as hazardous waste generators, or that store hazardous substances in underground storage tanks, as well as sites where soil or groundwater quality may have been affected by hazardous substances.

Federal Regulations

The USEPA is responsible for implementation and enforcement of federal laws and regulations pertaining to hazardous materials. The primary legislation includes the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) and the Emergency Planning and Community Right-to-Know (SARA Title III). These laws and associated regulations include specific requirements for the generation, use, storage, treatment, transportation, and/or disposal of hazardous materials.

Cleanup of sites designated NPL sites is performed according to requirements of CERCLA and SARA, as well. Cleanup of sites is typically performed with input from the responsible party, their engineering consultants, the community and members of the public, as well as the USEPA. At its most conservative, soil and/or groundwater cleanup may be performed to reach Regional Screening Levels³ (RSLs), or even background, based on the specific nature of the site in question, in order to reduce hazards effects to less than significant. Of potential importance to this project is federal law regulating soil that is considered a hazardous waste. Concentrations at which soil and groundwater are determined to be a federal hazardous waste are identified in 40 Code of Federal Regulations (CFR) Part 261.

Under the Hazardous Materials Transportation Act of 1976, the U.S. Department of Transportation (USDOT), Office of Hazardous Materials Safety, regulates the transportation of hazardous materials and enforces guidelines created to protect human health and the environment and reduce potential impacts to less than significant through the creation of hazardous material packaging and transportation requirements. The USDOT provides hazardous materials safety training programs and supervises hazardous materials activities. The USDOT also develops and recommends regulations governing the multimodal transportation of hazardous materials.

The U.S. Department of Labor Occupational Safety and Health Administration (OSHA) is responsible for implementation and enforcement of federal laws and regulations that address worker health and safety. OSHA requires training for those using or otherwise handling hazardous materials, which includes personal safety, hazardous materials storage and handling procedures, and emergency response procedures.

State Regulations

As permitted by RCRA, in 1992, USEPA approved California's program called the Hazardous Waste Control Law (HWCL), administered by the California Environmental Protection Agency (Cal-EPA) DTSC, to regulate hazardous wastes in California. HWCL differs little from RCRA (although it covers a larger set of materials); both laws impose cradle-to-grave regulatory systems for handling hazardous wastes in a manner that protects human health and the environment and would reduce potential resulting impacts to less than significant. Concentrations at which soil and groundwater are determined to be a California hazardous waste are identified in CCR, Title 22, Chapter 11, Article 3, Soluble Threshold Limits Concentrations (STLC)/Total Threshold Limits Concentration (TTLC) Regulatory Limits.

Regulations implementing HWCL list hazardous chemicals, as well more common materials that may be hazardous; would reduce potential impacts to less than significant by establishing criteria for identifying, packaging, and labeling hazardous wastes; prescribing management practices for

³ Formerly known as Preliminary Remediation Goals (PRGs). The most recent standards for RSLs for USEPA Region IX, which includes California, were published in May 2012, and are available online at <http://www.epa.gov/region9/superfund/prg/>

hazardous wastes; establishing permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identifying hazardous waste that commonly would be disposed of in landfills. Under both RCRA and HWCL, hazardous waste manifests must be retained by the generator for a minimum of 3 years. The generator must match copies of the hazardous waste manifests with copies of manifest receipts from the treatment, disposal, or recycling facility. For the project area, the agency delegated to implement these requirements locally is the SCCEHS.

The State Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business (for the purpose of this act, the term ‘business’ includes public agencies) that handles hazardous materials prepare a Business Plan, which must include the following: (1) details, including floor plans of the facility and identification of business conducted at the site; (2) an inventory of hazardous materials that are handled or stored on the site; (3) an emergency response plan; and (4) a training program in safety procedures and emergency response for new employees who may handle hazardous materials, with an annual refresher course in the same topics for those same employees.

In Santa Cruz County, remediation of contaminated sites is performed under the oversight of the Cal-EPA, with the cooperation of the SCCEHS. The Central Coast RWQCB would also be involved in remediation if groundwater is affected, as it was charged by the Porter-Cologne Water Quality Control Act, codified in Division 7 of the California Water Code, to implement programs to control pollution into state waters. The Cal-EPA DTSC would typically be involved if the primary medium impacted was soil. As with Superfund sites, cleanup criteria are typically set for a contaminated site following a review of site data, and with contributions from the relevant agency, the responsible party, their engineering consultants, and with input from the public and community. Cleanup standards vary based on site characteristics; however, at the current time, the most applicable cleanup criteria are generally the San Francisco Bay RWQCB Environmental Screening Levels⁴ (ESLs) and DTSC California Human Health Screening Levels⁵ (CHHSLs).

Storage of hazardous materials in underground storage tanks is regulated by the SWRCB, which has overall responsibility for implementing regulations set forth in Title 23 of the CCR. State standards cover the installation and monitoring of new tanks, the monitoring of existing tanks, and corrective actions for removed tanks. State underground storage tank regulations, including permitting for all hazardous materials storage, are enforced by the SCCEHS.

Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations. These regulations concern the use of hazardous materials in the workplace, including

⁴ Although the project site is within the Central Coast RWQCB, that region does not maintain ESLs, and typically refers to San Francisco Bay ESLs. The most recent ESLs were published in May, 2012, and can be found at <http://www.waterboards.ca.gov/sanfranciscobay/esl.shtml>

⁵ The most recent CHHSLs were published in January, 2005 and can be found at <http://www.calepa.ca.gov/brownfields/documents/2005/CHHSLsGuide.pdf>

requirements for employee safety training; availability of safety equipment; accident and illness prevention programs; hazardous substance exposure warnings; and emergency action and fire prevention plan preparation. Cal/OSHA also enforces hazard communication program regulations, including procedures for identifying and labeling hazardous substances, and requires Material Safety Data Sheets (MSDSs) to be available for employee information and training programs.

In addition, CEQA Guidelines Section 15186(b) states that when a project located within ¼ mile of a school involves the construction or alteration of a facility that might reasonably be anticipated to emit hazardous or acutely hazardous air emissions, or that would handle acutely hazardous material or a mixture containing acutely hazardous material in a quantity equal to or greater than that specified in subdivision (a) of Section 25536 of the Health and Safety Code, which may impose a health or safety hazard to persons who would attend or would be employed at the school, the lead agency must:

(1) Consult with the affected school district or districts regarding the potential impact of the project on the school when circulating the proposed negative declaration or draft EIR for review.

(2) Notify the affected school district of the project, in writing, not less than 30 days prior to approval or certification of the negative declaration or EIR.

Santa Cruz County Environmental Health Services

The DTSC oversees the implementation of the hazardous waste generator and onsite treatment program, one of six environmental programs at the local level, through Certified Unified Program Agencies (CUPAs). CUPAs have authority to enforce regulations, conduct inspections, administer penalties, and hold hearings.

In 1996, Cal-EPA designated the SCCEHS as the CUPA within the geographic boundaries of the County (including all four Cities). As the CUPA, the SCCEHS is responsible for enforcing state statutes and regulations, as well as the local ordinance (Chapter 7.100) pertaining to the storage, use, and disposal of hazardous materials and hazardous wastes. A Hazardous Materials Business Plan (HMBP) must be submitted if a facility handles, at any time, any individual hazardous material in an aggregate amount equal to or greater than 55 gallons (liquids), 500 pounds (solids), or 200 cubic feet (gases).

Required elements of an HMBP include inventory information, a Hazardous Materials Management Plan (HMMP), a hazardous waste Contingency Plan, and a facility map indicating the locations of stored materials. The CUPA also maintains compliance with Spill Prevention, Control, and Countermeasures Plan (SPCC) requirements, which are to be prepared in accordance with 40 CFR 112.5(b), and the California Aboveground Petroleum Storage Act (California Health and Safety Code, Chapter 6.67) for any facility that stores oil and petroleum

products at a cumulative volume of greater than 1,320 gallons in containers sized 55 gallons or larger.

SCCEHS is responsible for implementing the unified hazardous materials regulatory program throughout the County. Compliance is verified through annual routine inspections of all regulated facilities, facilities that maintain an HMBP, and investigation of citizen-based complaints or inquiries regarding improper handling and/or disposal of hazardous materials or hazardous wastes.

Lead and Asbestos

The removal and handling of asbestos-containing materials is governed primarily by USEPA regulations under Title 40 CFR. OSHA also has a survey requirement under Title 29 CFR, which is implemented by California Occupational Safety and Health Administration (Cal/OSHA) under Title 8 Code of California Regulations (CCR). These regulations require facilities to take all necessary precautions to protect employees and the public from exposure to asbestos.

The Cal/OSHA lead standard for construction activities is implemented under Title 8, CCR. The standard applies to any construction activity that may release lead dust or fumes—including, but not limited to—manual scraping, manual sanding, heat gun applications, power tool cleaning, rivet busting, abrasive blasting, welding, cutting, or torch burning of lead-based coatings.

Sewer Discharges

Storm Sewer Discharges

The Central Coast RWQCB has been delegated with the responsibility for the disposal of water, under the USEPA National Pollutant Discharge Elimination System (NPDES). In this role, the RWQCB is responsible for regulating the disposal of water, including water resulting from construction dewatering activities, into waters of the United States (essentially all water, including creeks, rivers, lakes, and the ocean). In the event that groundwater from dewatering operations must be disposed of, the requirements of the *NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order No. 2009-0009-DWQ, NPDES No. CAS000002) (SWRCB, 2009b) would be observed. This permit requires verification that groundwater meets disposal criteria, identification of receiving water bodies or storm sewer connections, and a description of pre-treatment requirements, if necessary.

Sanitary Sewer Discharges

The Santa Cruz County Sanitation District has regulations regarding the disposal of water in the local sanitary sewer systems. In the event that groundwater must be disposed of from a site undergoing active remediation, the requirements of Santa Cruz County Sanitation District Code 7.04.280 would apply, and a special discharge permit would be required. Pretreatment may be required if the discharge does not meet the required water quality standards.

Similarly, the City's Sewer Use Ordinance, Section 16.08, regulates discharges to the sanitary sewer within the city boundaries, and a wastewater discharge permit would be required. Pretreatment may be required if the discharge does not meet the required water quality standards.

Emergency Response

The City maintains an *Emergency Operations Plan* (EOP) that describes the roles and operations of the departments and personnel of the City during a major emergency (City, 2011f). The plan sets forth standard operating procedures for managing public emergencies resulting from fire, floods, storms, earthquakes, tsunamis, hazardous material incidents, and other natural or man-made disasters. The EOP defines and describes the emergency management organization that shall be used during emergencies. The plan also addresses the integration and coordination with other governmental levels when required. The EOP is based on the functional elements of California's Standardized Emergency Management Systems. It outlines and uses the Firefighting Resources of California Organized for Potential Emergencies (FIRESCOPE) Incident Command System. This framework conforms to the requirements of the National Incident Management System, as mandated by the Federal Department of Homeland Security.

Additionally, the City Water Department maintains a *General Emergency Plan and Emergency Response Plan for Terrorist Activity and Natural Disasters* specifically for the protection of the City's water supply system and its customers in the event of an emergency (City, 2005b).

5.11.4 Impacts and Mitigation Measures

This section contains the evaluation of potential environmental impacts associated with the proposed project related to hazards and hazardous materials. The section identifies the standards of significance used in evaluating the potential environmental effects, the methods used in conducting the analysis, and a detailed evaluation of impacts for the proposed project and any potential future expansion.

Standards of Significance

Based on CEQA Guidelines Section 15065; Appendix G of the CEQA Guidelines; applicable agency plans, policies, and/or guidelines; and agency and professional standards; the proposed project would cause a significant impact related to hazards and hazardous materials if it would:

- 11a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 11b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- 11c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school;

- 11d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- 11e. Be located within an area covered by an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and would result in a safety hazard for people residing or working in the project area.
- 11f. Be located within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area.
- 11g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- 11h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildland.

Analysis Methodology

The above standards of significance are assessed in this section as the basis for determining the significance of impacts related to hazards and hazardous materials. If necessary, mitigation measures are proposed to reduce significant impacts to less than significant. Impacts are analyzed for all project components and related component alternatives, where relevant, and where impacts would differ between alternatives.

In evaluating potential impacts related to hazardous materials, databases of hazardous materials use or release sites were reviewed, the types of chemicals and hazardous materials that may be used during construction or operation of the proposed project were researched, and the location of the project area in comparison to known schools was evaluated. The extent to which mandatory compliance with various federal, state, and local statutes, regulations, plans, policies, and permitting requirements could reduce effects to less than significant was also considered.

Impacts and Mitigation

This section provides a detailed evaluation of hazards and hazardous materials impacts associated with the proposed project. The analysis addresses impacts related to the release of or exposure to hazardous materials that may be present in excavated soils or groundwater from existing hazardous materials release sites at or near the project site (standard 11d), or accidental release of hazardous materials and/or wastes from construction activities (standard 11b); the routine use and/or accidental release of hazardous materials during operation (standards 11a and 11b); and the potential for hazardous materials impacts near schools (standard 11c).

As indicated in the IWP Program EIR (Section 5.9) and the Initial Study (see [Appendix A](#)), the proposed project would not be located within the vicinity of a public airport or private air strip and therefore would not result in airport-related safety hazards (standards 11e and 11f); and

would not interfere with emergency response plans or emergency evacuation plans (standard 11g). The only project components that would be within any wildland fire hazard areas would be buried pipelines; therefore there would be no impacts from wildland fire hazards (standard 11h). Therefore, these topics are not further evaluated in this EIR.

The impacts related to hazards and hazardous materials for each project component are summarized in **Table 5.11-2, Summary of Potential Hazards and Hazardous Materials Impacts**, and are categorized as either “not applicable,” “no impact,” “less than significant impact,” “less than significant impact with mitigation,” or “significant and unavoidable impact.” The impacts are presented for each project component, where relevant. The detailed analysis of hazards and hazardous materials impacts and mitigation measures follows this table.

Table 5.11-2. Summary of Potential Hazards and Hazardous Materials Impacts

Impacts	LEVEL OF SIGNIFICANCE													
	Seawater Intake Site Alternatives								Plant Site Alternatives			Other Components	Project Overall	Possible Future Expansion
	SI-4	SI-5	SI-7	SI-9	SI-14	SI-16	SI-17	SI-18	A-1	A-2	A-3			
5.11-1: Construction Impacts	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM
5.11-2: Operational Impacts	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
5.11-3: Hazardous Materials Impacts Near Schools	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTS

Notes:

SU = Significant and Unavoidable Impact

LTSM = Less Than Significant Impact With Mitigation

LTS = Less Than Significant Impact

NI = No Impact

-- = Not applicable

HAZARDOUS MATERIALS IMPACTS – CONSTRUCTION

Impact 5.11-1: If not properly controlled, construction of the proposed project could create a significant hazard to the public or the environment due to: (1) the release of or exposure to hazardous materials that may be present in excavated soils or groundwater due to existing hazardous materials release sites at or near the project; or (2) the accidental release of hazardous materials and/or wastes from construction activities.

Significance before Mitigation: Potentially significant

Mitigation Measures: See Mitigation Measures 5.11-1a, 5.11-1b, 5.11-1c and 5.11-1d. See also Mitigation Measure 5.1-1a in [Section 5.1](#).

Significance after Mitigation: Less than significant

Proposed Project

If not properly controlled, construction of the proposed project could create a significant hazard to the public or the environment due to: (1) the release of or exposure to hazardous materials that may be present in excavated soils or groundwater due to existing hazardous materials release sites at or near the project; or (2) the accidental release of hazardous materials and/or wastes from construction activities. These potential hazards are evaluated below.

Exposure to Contaminated Soil or Groundwater

Project construction would involve excavation, grading, trenching, and tunneling activities as appropriate for the various project components. Construction on or near potential hazardous materials release sites increases the risks that workers and/or the public could be exposed to contamination during excavation and other ground-disturbing activities. Additionally, disturbance of contaminated soils could further release these materials into the environment.

As discussed in [Section 5.11.2, Environmental Setting](#), there are several potential hazardous materials release sites within ¼ mile of the project area (see [Table 5.11-1](#) and [Appendix Y](#)). Five of these sites are listed on the CORTESE database of hazardous materials sites, pursuant to Government Code 65962.5; all of which are adjacent to the proposed pipeline alignment for the City-District intertie. No part of the project is located directly on a property that is listed in the CORTESE database.

It is considered unlikely that listed hazardous materials release sites located further than ¼ mile from the project site could have impacted soil or groundwater within the project corridor. Sites listed on the NPL (Superfund) may impact distances greater than ¼ mile; however, no NPL sites

were identified within 1 mile of the project corridor. The potential that the listed hazardous materials release sites have affected the project area has been evaluated for each site. Sites for which there is considered a “Low” possibility of affecting the project area include closed sites not immediately in the project area, and open sites more than 300 feet from the project area. However, case closure does not necessarily indicate that all potential contamination has been remediated. Sites for which there is considered a “Medium” possibility of affecting the project area include closed or open sites within 300 feet of the project area. Sites for which there is considered a “High” possibility of affecting the project area include open sites on or immediately adjacent to the project area. “Medium” and “High” sites are shown on [Figure 5.11-1](#).

The presence of a hazardous materials (petroleum) release site at the Harmony Building (former Lipton building) to the east of Plant Site A-1 and intake pump station site for SI-14, and to the south of Plant Site A-3, as well as the likelihood of elevated arsenic levels or creosote-treated rail ties within the rail corridor along the northern boundary of these sites, could result in significant impacts on worker health and safety, and/or further release of contamination, if such contamination were not appropriately identified, handled, and disposed of during construction.

Similarly, potential elevated levels of arsenic within the rail corridor near the intake pump station site for SI-18, along with potential for contamination of soil and/or groundwater from historic activities at the site or adjacent rail corridor, could result in significant impacts on worker health and safety if not appropriately identified, handled, and disposed of during construction. Mitigation Measure 5.11-1a calls for a Phase I Environmental Site Assessment prior to construction, if any of these sites are selected and pursued.

The results of the Phase I Environmental Site Assessment(s) will identify the need for any additional soil and groundwater sampling. Additional sampling would be conducted if needed to determine whether plans and specifications would be required to appropriately manage the excavation of contaminated soil or dewatering of contaminated groundwater, and worker health and safety during construction. If such plans and specifications are required, they would be developed in accordance with Mitigation Measure 5.11-1b, which would ensure that contaminated soils are properly handled and disposed of consistent with RCRA and State Title 22 regulations.

Based on information reviewed during preparation of this EIR, it is considered likely that a Phase I for the area of Plant Sites A-1 and A-3 and intake pump station site for SI-14 would identify the possible presence of creosote and/or arsenic within the rail corridor as a Recognized Environmental Condition, and would recommend Phase II sampling for these constituents. It is unlikely that remediation would be required, but if so, it would likely be limited to excavation and off haul of soil excavated during construction. Mitigation Measure 5.11-1b would require a soil management plan be developed to guide management and disposal of arsenic and/or creosote impacted soil (in addition to any other potential impacts found at the site during the Phase I or II investigations).

Any residual contamination from the Harmony/Lipton LUST case would be expected to be very slight, as any diesel remaining in the soil at the time of case closure would have degraded further over the 16 years since the case was closed. Additional remediation efforts are unlikely to be required, unless evidence of previously unidentified contamination is found during sampling. In the highly unlikely event of such previously unidentified contamination being discovered, Mitigation Measure 5.11-1b would require that a soil management plan be prepared to specify the measures to be taken during construction to (1) protect worker and public health and safety, and (2) identify, manage, and remediate wastes (if necessary).

Additionally, soil and groundwater sampling shall be conducted under Mitigation Measure 5.11-1b for any portion of the intertie pipeline constructed within 100 yards of 1500, 4860, and 5505 Soquel Drive, or the raw water and brine conveyances within 100 yards of 411 Swift Street, because these sites are identified as having high potential for having soil and/or groundwater contamination (gasoline, diesel and/or fuel oxygenates for the Soquel Drive sites; metals and/or VOCs for the Swift Street site) that could affect project construction. If such contamination is present, plans and specifications per Mitigation Measure 5.11-1b would be developed.

In addition to the specific sites identified in the various environmental databases, it is possible that other contaminated soils or groundwater could be discovered during construction, or that construction might disturb buried creosote-treated railroad ties (near railroad corridors). Implementation of Mitigation Measure 5.11-1c would ensure that any contamination or contaminated materials inadvertently discovered during construction would be properly handled and disposed of consistent with RCRA and State Title 22 regulations.

There is also a possibility that offshore construction may disturb buried, creosote-treated piles, particularly for construction near the existing Municipal Wharf, which could cause sheening, odors, and localized contamination. Implementation of Mitigation Measure 5.11-1d would ensure that any contamination or contaminated materials inadvertently disturbed during offshore construction would be properly handled and disposed of consistent with RCRA and State Title 22 regulations.

Overall, the implementation of Mitigation Measures 5.11-1a through 5.11-1d and compliance with all applicable federal, state, and local laws and regulations would reduce construction impacts associated with the potential release of or exposure to hazardous materials that may be present in excavated soils or groundwater to less than significant. There would be no impacts associated with the potential release of or exposure to hazardous materials from the construction of proposed project components that do not involve ground-disturbing activities.

Accidental Release of Hazardous Materials during Construction

Project construction activities may involve the use, storage, and transport of hazardous materials. Construction activities throughout the project area would require the use of potentially hazardous materials such as fuels, oils, solvents, lead solder, glues, petroleum-based asphalt, and other chemicals. These materials would generally be used to power excavation equipment, prepare

surfaces such as asphalt, and service construction equipment; and would be stored in vessels engineered for safe storage or at designated storage locations. Preparation of a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the NPDES General Permit for construction operations would mitigate these potential impacts (see Mitigation Measure 5.11-1a, in **Section 5.1, Hydrology and Water Quality**) to less than significant. The SWPPP would provide specifications about hazardous materials storage, vehicle parking and fueling, development of spill prevention and emergency response plans to handle potential fuel or other spills, and other measures that address hazardous materials used during construction. If necessary based on the volume of materials stored at any one time (i.e., if containers greater than 1,320 gallons of petroleum products are present), an SPCC Plan would be also required, as discussed in more detail under Impact 5.11-2 below.

For construction in the ocean, accidental oil or chemical releases could be harmful to the health of workers on board, to the local community, and to the ocean ecosystem. On-board chemicals could include solvents, decontamination chemicals, and fire suppressant chemicals. Vessels capable of drilling into the ocean floor are likely to include diesel fuel to power the auger components of the vessel. Hydraulic oil may also be required to operate or move equipment. In addition, work on the ocean could be disrupted if a reasonably foreseeable event, such as an earthquake or weather emergency, forces the evacuation of the vessel, or other type of emergency response. Any work done by contractors on the project would include requirements for containment of all materials, and secondary containment of fuel and hazardous materials. Implementation of Mitigation Measure 5.11-1e would reduce the risks associated with construction over the ocean to less than significant.

Overall, with the implementation of Mitigation Measures 5.11-1a (see **Section 5.1**) and 5.11-1e, and compliance with all applicable federal, state, and local laws and regulations, construction of the proposed project would not create a significant hazard due to an accidental release of hazardous materials, and the impacts would be reduced to less than significant.

Potential Future Expansion

Exposure to Contaminated Soil or Groundwater

If expansion of the proposed plant and related facilities were pursued in the future, the majority of the additional equipment would be installed in existing structures at the plant, and at the intake pump station. Some additional ground-disturbing activities would be involved in the construction of additional brine storage structure(s) and dissolved air flotation basin(s) at the plant, but would not occur elsewhere in the project area. Any specific plans and specifications for the excavation and disposal of contaminated soil or groundwater developed under Mitigation Measures 5.11-1a and 5.11-1c would also need to be implemented during additional ground-disturbing activities, as warranted. The measures would also reduce the potential for significant hazards to the public or the environment from exposure to contaminated soil or groundwater to less than significant.

Accidental Release of Hazardous Materials during Construction

Potential construction-phase effects of any future expansion related to the accidental release of hazardous materials would be controlled below the level of significance through preparation and implementation of an erosion control plan/Best Management Practices, in accordance with the City's Stormwater Management Plan (SWMP), which would require good housekeeping measures at construction sites related to the use and storage of construction equipment and vehicles, paints and other hazardous materials, site cleanup and sweeping, and waste management.

Any potential future expansion of the offshore seawater intake system would involve the installation of two additional screen assemblies of the same or similar design as the proposed project. Implementation of Mitigation Measure 5.11-1e would minimize the risk of accidental release of hazardous materials during offshore construction, and reduce the potential for significant hazards to the public or the environment from the accidental release of hazardous materials to less than significant.

Mitigation Measures

See Mitigation Measure 5.1-1a (**Section 5.1**); as well as the mitigation measures outlined below.

Mitigation Measure 5.11-1a

This mitigation measure applies only to Plant Sites A-1 and A-3 and intake pump station sites for SI-14 and SI-18. Prior to issuance of Grading Permits, the City and District shall conduct due diligence review of the selected desalination plant and/or intake pump station site to ensure that known hazardous materials contamination is avoided or properly addressed. This shall include preparation of a Phase I Hazardous Materials Site Assessment in conformance with American Society for Testing and Materials Standard E1527-05. All recommendations of the Phase I, which may include soil and/or groundwater sampling, shall be followed with the intention of conforming to applicable federal and state regulations. If recommended, soil and/or groundwater sampling shall be performed in accordance with Mitigation Measure 5.11.1b below. The specifications in Mitigation Measure 5.11-1c would also be implemented, as warranted.

Mitigation Measure 5.11-1b

This mitigation measure applies only to the raw water, brine discharge, and intertie pipeline corridors; and to Plant Sites A-1 and A-3 and intake pump station sites for SI-14 and SI-18, if soil and/or groundwater sampling is recommended for those sites following implementation of Mitigation Measure 5.11-1a, above. Prior to issuance of Grading Permits, an environmental sampling plan shall be developed to analyze soil and groundwater, in advance of construction within 100 yards of 1500, 4860, and 5505 Soquel Drive and 411 Swift Street, or at those plant sites or pump station sites identified as requiring soil and/or groundwater sampling through a Phase I investigation in accordance with Mitigation Measures 5.11.1a above.

Sampling results shall be compared to established thresholds such as the DTSC's CHHSLs or the USEPA's RSLs to determine areas for soil management. A soil management plan shall be prepared, which should include the following:

- Background information, including details of prior investigations and most recent analytical results;
- Minimum requirements for a health and safety plan, prepared by a qualified and approved industrial hygienist, to protect the general public and workers in the construction area. (Note: sampling results shall be provided to contractors who shall be responsible for developing their own construction worker health and safety plans⁶ and training requirements);
- Training and health and safety requirements for construction workers;
- Identification and delineation of contaminated areas and procedures for limiting access to such areas to properly trained personnel;
- Procedures for excavating, characterizing and managing excavated soils including potential procedures for managing and disposing of hazardous wastes soil;
- Information on how to identify additional suspected contaminated soil during excavation activities and procedures for temporary cessation of construction activity and evaluation of the level of environmental concern; and
- Procedures for notification and report, including internal management and local agencies, as needed.

The soil management plan shall be formulated with the objective of handling and disposing of excavated soil and groundwater in accordance with state and federal hazardous waste disposal laws, including RCRA and the state HWCL; and in accordance with the stormwater and sanitary sewer requirements of NPDES, the Santa Cruz SWMP, and the Santa Cruz County Sanitation District⁷.

Excavated soil and groundwater determined to be hazardous waste shall be removed by personnel who have been trained through the OSHA-recommended 40-hour safety program (29 CFR 1910.120) with an approved plan for groundwater extractions, soil excavation, control of contaminant releases to the air, and off-site transport or on-site treatment. The specifications in Mitigation Measure 5.11-1c would also be implemented, as warranted.

⁶ Contractor Health and Safety Plans may consider a variety of criteria related to the presence of hazardous materials, including those established by the National Institute for Occupational Safety and Health, the federal and state Occupational Safety and Health Administrations (OSHA and Cal-OSHA), and the RWQCB ESLs for construction/trenching workers.

⁷ Concentrations at which soil and groundwater are determined to be a California hazardous waste are identified in CCR, Title 22, Chapter 11, Article 3. STLC/TTLC Regulatory Limits; concentrations at which soil and groundwater are determined to be a federal hazardous waste are identified in 40 CFR Part 261.

Mitigation Measure 5.11-1c

This mitigation measure applies to all project components. During all project excavation activities at all sites, the contractor(s) shall inspect the exposed soil for visual evidence of contamination. If visual contamination indicators are observed during excavation or grading activities, all work shall stop, and an investigation shall be designed and performed to verify the presence and extent of contamination at the site. The investigation shall include collecting samples for laboratory analysis, and quantifying contaminant levels within the proposed excavation and surface disturbance areas. If contamination is confirmed, a soil management plan, as described above under Mitigation Measure 5.11-1b, shall be prepared and implemented.

Mitigation Measure 5.11-1d

This mitigation measure applies only to offshore construction. During offshore construction, if visual evidence of contamination is observed (e.g., oily sheen), all work shall stop and appropriate containment measures (e.g., sorbent booms) shall be used, and Santa Cruz County Environmental Health Services or Department of Toxic Substances Control shall be contacted. The source of the contamination shall be identified (e.g., creosote piles), and methods to remove the source shall be investigated. Any hazardous materials needing to be removed shall be handled and disposed of in accordance with the requirements of RCRA and State Title 22.

Mitigation Measure 5.11-1e

This mitigation measure applies only to offshore construction. Prior to any construction activity in the ocean, the City and District shall develop plans and specifications to prevent or reduce the likelihood of accidental release of chemicals or petroleum hydrocarbons into the ocean. The plans and specifications shall be incorporated into construction contracts for the intake structure and pipelines. These plans and specifications shall require the following, at a minimum:

- Secondary containment shall be required for all liquid hazardous material.
- Secondary containment shall be required for storage of petroleum products in containers.
- All vessels shall prepare and implement an emergency response plan detailing proposed response procedures for the accidental spill of hazardous materials. The plan shall identify a responsible person and include a written commitment of resources necessary to contain the spills; procedures to shut down operating equipment which could malfunction resulting in a release of petroleum or chemicals; and procedures to follow to minimize the potential for spills or releases in the event of other reasonably anticipated upset conditions including on-board fire, earthquake, or tsunami warning.

HAZARDOUS MATERIALS IMPACTS – OPERATION

Impact 5.11-2: With the implementation of existing regulations and requirements, the operation of the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; or through the accidental release of hazardous materials.

Significance: Less than significant

Mitigation Measures: None required

Proposed Project

Chemical Use

If not properly controlled, the operation of the project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Operational impacts of the proposed project would be limited primarily to the desalination plant. Once constructed, the various pipelines, the intake pump station, and the seawater intake structure would not generate, store, or dispose of significant quantities of hazardous materials.

Operation of the desalination plant would involve the transport, use, storage, generation, and disposal of hazardous materials. A number of chemicals would be required for treatment, disinfection, and cleaning at the desalination plant. A summary of the chemicals, the purpose of their use, and estimated usage under average and maximum operating conditions is provided in **Table 5.11-3, Chemical Use and Storage Requirements**. The chemicals to be used at the proposed desalination plant will be refined during the final design.

Table 5.11-3. Chemical Use and Storage Requirements

Chemical	Description of Use	Primary Application Points	Daily Use (gallons per day) ¹	Concentration (% by weight) ²	Volume (gallons)
Ferric Chloride	Continuous coagulant addition to improve removal of suspended particulates and dissolved constituents during pretreatment.	Raw water before pre-treatment; Used washwater	Max: 167 Ave: 14	40.0%	7,000
Sodium Hypochlorite	Continuous use as a disinfectant at various process stages.	Raw water before pre-treatment; Post-treatment – before and after calcite contactors; MF/UF cleaning tanks	Max: 2,344 Ave: 300	12.5% or 6.25%	5,000 – 12,000
Sodium Hydroxide (Caustic Soda)	Intermittent use to improve boron rejection, control product water pH, clean MF/UF and SWRO membranes, and neutralize acidic cleaning solutions.	SWRO desalination treatment – before cartridge filters; Post-treatment – after calcite contactors; MF/UF and SWRO cleaning and neutralization tanks	Max: 192 Ave: 74	25.0%	7,000
Carbon Dioxide	Continuous alkalinity addition and pH reduction to improve calcium uptake during post-treatment.	Post-treatment – before and after calcite contactors	Max: 125 Ave: 48	100.0%	3,100
Calcite (Calcium Carbonate)	Continuous use to increase calcium levels and raise pH during post-treatment.	Post-treatment – within calcite contactors	Max: 7 cubic feet per day Ave: 3 cubic feet per day	100.0%	No on-site storage ³
Sodium Bisulfite	Use to de-chlorinate SWRO feedwater and prior to disposal of chlorinated discharges/solutions.	SWRO desalination treatment – before feedwater equalization basin; MF/UF and SWRO cleaning and neutralization tanks	Max: 168 Ave: 57	38.0%	3,000
Corrosion Inhibitor (phosphate)	Continuous phosphate addition to inhibit corrosion in the distribution system.	Post-treatment – before or after calcite contactors	Max: 9 Ave: 2	28.5%	1,000
Anti-scalant	To minimize SWRO membrane scaling and/or iron fouling	SWRO desalination treatment – before cartridge filters	Max: 14 Ave: 4	100.0%	500
Citric Acid/ Other Cleaning Chemicals	Used intermittently as a chelating agent to clean MF/UF and SWRO membranes. Other membrane-cleaning chemicals may also be recommended.	MF/UF and SWRO cleaning and neutralization tanks	Intermittent Use	50.0% Various	1,000 ⁴
Future/ Spare Chemicals	Space included allowing up to two chemicals for future treatment or cleaning requirements.	MF/UF and SWRO cleaning and neutralization tanks; Post-treatment - before or after chlorine contact basin (clearwell)	TBD	TBD	TBD

Source: Adapted from Appendix L, scwd2 Seawater Desalination Plant – Phase 1 Preliminary Design: Volume 1 – Report & Volume 2 – Drawings, with additional information provided by CDM Smith.

Notes:

1. Maximum daily chemical use is based on operation of the plant at 2.5 mgd. Average daily chemical use is based on operation at an average of 1.6 mgd.
2. Typical concentrations provided; actual concentrations may vary based on availability and proprietary blends.
3. Delivered in bulk for loading into calcite contactors.
4. Ordered as needed and stored temporarily.

Acronyms:

MF/UF = microfiltration/ultrafiltration
mgd = million gallons per day
SWRO = seawater reverse osmosis
TBD = to be determined

None of the chemicals proposed for use are flammable, except for a small volume of diesel associated with the emergency generator, which would be stored within an integrated, double-contained tank at the base of the generator. No chlorine gas would be used or stored on site. Further information regarding the proposed chemicals to be used at the plant site, including the hazards posed by such chemicals, can be found within the MSDSs contained within Appendix B of **Appendix L, scwd² Seawater Desalination Plant – Phase 1 Preliminary Design: Volume 1 – Report & Volume 2 - Drawings**.

Hazardous materials transport, use, storage, and disposal are regulated by numerous federal, state, and local laws and regulations that stipulate minimum standards for storage requirements, spill prevention procedures, emergency response and contingency plans, risk management, and employee training procedures. The City and District would conform to all relevant requirements, including Article 80 of the Uniform Fire Code regarding hazardous materials.

Pursuant to state (California Health and Safety Code Section 25500-25520) and local (Chapter 6.50 of the Santa Cruz Municipal Code) regulations, the City and District must develop an HMMP for the project, also called a Business Plan. The HMMP is developed along with a Hazardous Materials Disclosure Form as part of the City's Hazardous Materials Permit. The HMMP would be subject to review by the City's Fire Department hazardous materials inspectors, who regulate, inspect, and enforce the proper storage and handling of hazardous materials.

The HMMP would include a description of materials stored, quantity stored, method of storage, type of business conducted, location maps, emergency equipment, employee training plan, and emergency response plan. In the event of an emergency at the plant site, the HMMP would facilitate the coordination and response by on-site officials and emergency responders. Regular compliance inspections would be conducted by the City, and the County Fire Department. According to the City's Municipal Code (Chapter 6.50), a Hazardous Materials Permit would not be granted until it is demonstrated that the design and construction of the storage facilities would result in a suitable manner of storage of hazardous materials, per all relevant regulatory requirements.

As indicated in **Section 4** the chemicals would be stored in accordance with applicable regulatory requirements for hazardous materials storage. In particular, chemicals would be stored in bulk in tanks with secondary containment, with no potential for mixing of incompatible substances. Storage tanks for daily use would also be located in some of the process buildings (e.g., the microfiltration/ultrafiltration [MF/UF] building). Chemical storage tanks would be in separate concrete containment structures with sufficient volume to capture the entire tank volume, plus a safety factor (at least 110 percent), in case a spill or leak occurs. Secondary containment areas would be separated or divided from other chemicals with non-combustible partitions to ensure that chemicals do not mix, in the event of accidental spillage.

All storage tanks would be constructed of appropriate, non-reactive materials, compatible with the recommendations of the supplier of the hazardous material. Tanks would be mounted on elevated concrete pads and anchored to meet applicable building, safety, and seismic codes. All concrete surfaces within the containment area subject to spills or leaks would be treated with chemical-resistant coating to prevent leakage. A sump and pumping system would be provided to remove any spilled materials, which would be disposed of to an appropriate, licensed disposal facility by a specialized contractor licensed in hazardous waste handling and disposal, using hazardous waste containment trucks. Local alarms and links to the automated control system would be provided to notify operators of any chemical leaks.

Additionally, given that chemicals in vessels greater than 55 gallons, and petroleum products in vessels greater than 1,320 gallons, could be stored on site, an SPCC would be prepared in accordance with 40 CFR 112.5(b) and the California Aboveground Petroleum Storage Act (California Health and Safety Code, Chapter 6.67).

The transport of hazardous materials to and from the plant would be in accordance with all California Department of Transportation regulations. Chemicals would be delivered in trucks suitable for chemical transport by registered haulers, which would reduce the potential for accidental release during transport. Truck deliveries for all equipment and supplies, including chemicals, would average about five per week. In addition, all workers who use hazardous materials would be provided with appropriate training, MSDSs, and proper personal protection equipment.

The generators to be installed at the seawater intake, Morrissey, McGregor, and Aptos pump stations for emergency power generation would each have an integrated, double-contained diesel storage tank in the base of the generator. The size and details of the tanks will be determined during final design, but are unlikely to be greater than 1,320 gallons, and therefore would not trigger the requirements for an SPCC. The diesel would be stored in accordance with applicable regulatory requirements for hazardous materials storage. The micro-hydro system to potentially be installed at the Graham Hill Water Treatment Plant would not contain any hazardous materials or use such materials during operation or maintenance.

Through compliance with existing local, state, and federal regulations, the potential environmental impacts associated with the transport, use, storage, and disposal of hazardous materials during project operations would be less than significant.

Residual Solids

The proposed project would generate solid waste from operation of the dissolved air flotation units and maintenance of the MF/UF system. As described under Residuals Handling and Disposal in [Section 4.4.3, Seawater Desalination Plant](#), two options for handling solids are under consideration: (1) the sanitary sewer disposal option; and (2) the landfill disposal option. Further discussion of these options is also given in [Section 5.9, Utilities and Service Systems](#).

The solids would contain naturally occurring organic and inorganic matter from the raw seawater, iron precipitated from coagulation with ferric chloride used in the pretreatment system, and low concentrations of other chemicals used in the treatment process. Technical studies for the Marin Municipal Water District pilot study found that the solid waste generated by dewatered solids met typical local non-hazardous waste disposal criteria, and was suitable for disposal at a Class III (non-hazardous) municipal landfill (Kennedy/Jenks, 2006).

Prior to disposal of solids from the proposed project to a landfill, testing for non-hazardous waste disposal criteria would be required in accordance with USEPA RCRA and DTSC Title 22 requirements.

The transportation of solid waste materials associated with the proposed project would be in accordance with USDOT requirements; and characterization and disposal of the waste would be in accordance with USEPA RCRA and DTSC Title 22 requirements governing solid waste. These regulations require characterization of waste material and comparison to the criteria set forth in RCRA to ensure that the solid waste is transported and disposed of appropriately.

Compliance with existing local, state, and federal regulations would ensure that the potential environmental impacts associated with disposal of residual solid wastes from the proposed project would be less than significant.

Potential Future Expansion

If expansion of the proposed desalination plant and related facilities is pursued in the future, compliance with existing local, state, and federal regulations would ensure that the potential environmental impacts associated with routine use or disposal of hazardous materials, and disposal of residual solid wastes from the project, would be less than significant.

Mitigation Measures

None required.

HAZARDOUS MATERIALS IMPACTS NEAR SCHOOLS

Impact 5.11-3: The construction or operation of the proposed project could involve the handling of hazardous materials or waste within ¼ mile of an existing or proposed school.

Significance before mitigation: Potentially significant

Mitigation Measures: See Mitigation Measures 5.11-1a through 5.11-1d above

Significance after mitigation: Less than significant

Proposed Project

The nearest schools to the proposed plant sites include the Flutterby Preschool and Global College of Natural Science, which are located immediately adjacent to Plant Site A-1 on Natural Bridges Drive, and are within ¼ mile of all three plant sites. Pacific Collegiate School, which is located at 255 Swift Street, contains the intake pump station site for SI-16, and is within ¼ mile of the proposed raw water and brine pipelines along Delaware and Swift streets.

Project Construction

As discussed above under Impact 5.11-1a, the presence of a known hazardous materials release site at the Harmony Building (former Lipton building) to the east of Plant Site A-1 and south of Plant Site A-3, and the likelihood of elevated arsenic levels within the rail corridor along the northern boundary of these sites, could result in the handling of contaminated soils and/or groundwater (if present) during construction, within ¼ mile of the Flutterby Preschool and Global College of Natural Science.

Similarly, potential handling of contaminated soils and/or groundwater (if present) during construction of the brine and raw water pipelines in the vicinity of 411 Swift Street (a known hazardous materials release site) would be within ¼ mile of Pacific Collegiate School, which is located at 255 Swift Street. Implementation of Mitigation Measures 5.11-1a through 5.11-1d would reduce the potential significance of handling contaminated soil and/or groundwater during construction to less than significant levels.

As discussed under Impact 5.5-4 in **Section 5.5, Air Quality and Climate**, sensitive receptors, such as schools, in proximity to the project construction sites would have limited exposure to Toxic Air Contaminant (TAC) emissions during construction, and the impact would be less than significant.

Project Operation

As discussed under Impact 5.11-2 above, operation of the desalination plant would involve the transport, use, storage, generation, and disposal of hazardous materials, because a number of

chemicals would be required for treatment, disinfection, and cleaning at the desalination plant, which would be within ¼ mile of the Flutterby Preschool and Global College of Natural Science. As discussed above, compliance with existing local, state, and federal regulations would ensure that potential environmental impacts associated with the transport, use, storage, and disposal of hazardous materials during project operations would be less than significant.

Although the intake pump station for SI-16 is on the grounds of Pacific Collegiate School, operation of the intake pump station would not generate, store, or dispose of significant quantities of hazardous materials, as discussed under Impact 5.11-2, above.

As discussed under Impact 5.5-4 in **Section 5.5**, operational emissions of TACs would be limited to monthly testing at the plant site of the emergency generators and worker and delivery vehicle emissions. Therefore, emissions of TACs from the operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations.

Potential Future Expansion

If potential future project expansion is pursued, no additional impacts to nearby schools would be expected to occur, given the continued requirement to comply with all applicable federal, state, and local laws and regulations. Mitigation Measures 5.11-1a and 5.11-1c would apply to any additional ground disturbing activities during construction, which would reduce the potential significance of handling contaminated soil and/or groundwater during construction to less than significant levels.

Mitigation Measures

See Mitigation Measures 5.11-1a through 5.11-1d above.