Section 3.8
Hazards and Hazardous Materials

3.8.1 Introduction

This section addresses the potential impacts of hazards and hazardous materials related to the proposed Project and alternatives, and discusses potential impacts from proposed Project-related releases of hazardous materials to the environment. This section also describes impacts on public health and safety that could result from the proposed Project. These potential impacts include fires, explosions, and releases of hazardous materials associated with construction and operation of the proposed facilities. This section also addresses potential effects of the release of hazardous materials associated with tsunami-induced flooding and other seismic events. The potential risks of inundation associated with tsunami-related flooding are discussed in Section 3.5, Geology).

Potential health and safety impacts associated with encountering contaminated soil and groundwater during construction are discussed in Section 3.7 (Groundwater and Soils).

3.8.2 Environmental Setting

3.8.2.1 Hazardous Materials

Hazardous materials are the raw materials for a product or process that may be classified as toxic, flammable, corrosive, or reactive. Classes of hazardous materials that may be transported at the Port include:

+ Corrosive materials — solids, liquids, or gases that can damage living material or cause fire.
+ Explosive materials — any compound that is classified by the National Fire Protection Association (NFPA) as A, B, or C explosives.
+ Oxidizing materials — any element or compound that yields oxygen or reacts when subjected to water, heat, or fire conditions.
+ Toxic materials — gases, liquids, or solids that may create a hazard to life or health by ingestion, inhalation, or absorption through the skin.

+ Unstable materials — those materials that react from heat, shock, friction, and contamination, and are capable of violent decomposition or autoreaction, but which are not designed primarily as an explosive.

+ Radioactive materials — those materials that undergo spontaneous emission of radiation from decaying atomic nuclei.

+ Water-reactive materials — those materials that react violently or dangerously upon exposure to water or moisture.

Hazardous materials that are transported in containers are stored in individual containers specifically manufactured for storing and transporting the material. In addition, shipping companies prepare, package, and label hazardous materials shipments in accordance with federal requirements (49 CFR 170-179) to facilitate surface transport of the containers. All hazardous materials in containers are required to be properly manifested. Hazardous material manifests for inbound containerized hazardous materials are reviewed and approved by the Port Security and the City Fire Department before they can be unloaded.

There are five hazardous liquid bulk facilities in the West Basin area, only two of which have storage capabilities (Table 3.8-1). There are no liquid bulk facilities located at Berths 97-109, which comprise the site of the proposed Project. However, the facilities listed are within approximately 1,000 feet of the proposed site and could pose a hazard to persons present at the proposed site. This could especially be the case under Alternative 7 (Non-Shipping Alternative) when large numbers of persons could occupy the site during the daytime.

Table 3.8-1. Liquid Bulk Facilities in the West Basin Area

Facility	Approximate Storage Volume (Barrels)	Number of Tanks
GATX Berths 118-121	523,000	18
BP North America Berths 118-121	None	None
Petrolane Berth 120	None	None
Western Fuel Oil Berths 120-121	None	None
ConocoPhillips Berths 148-151	817,000	26

The Los Angeles Harbor Department (LAHD) estimates that the Port, as a whole, handles a maximum of 10,000 containers per year that contain hazardous materials (LAHD, 2004). This is the approximate capacity of two container ships. Based on the annual Portwide container volume of 7.4 million TEUs for fiscal year 2004, which is equivalent to approximately 4 million containers, hazardous materials in containers represents approximately 0.25 percent of the total containers handled in the Port.

Containers containing hazardous materials are transported from the terminal via truck and while in the port, they are only handled by authorized workers. The Transportation Worker Identification Credential (TWIC) program is a Transportation Security Administration (TSA) and USCG initiative to provide a tamper-resistant biometric credential to: maritime workers who require unescorted access to secure areas of port facilities and vessels regulated under the Maritime Transportation Security Act, or MTSA; and all USCG-credentialed merchant mariners. It is estimated that for the Port, 750,000 individuals will require TWICs and enrollment and issuance will take place over an 18-month period. To obtain a TWIC, an individual must provide biographic and biometric information such as fingerprints, sit for a digital photograph, and successfully pass a security threat assessment conducted by TSA. The TWIC program will minimize the potential for unauthorized handling of containers that contain hazardous materials.

No deaths have resulted from releases of hazardous materials at the Port and no injuries associated with accidental releases of hazardous materials have been reported at hazardous liquid bulk storage facilities in the West Basin area (pers. comm., Curry, 2004; Hawkes, 2007).

The California Office of Emergency Services (OES) maintains the Response Information Management System (RIMS) database that includes detailed information on all reported hazardous material spills in California. All spills that occur in the Port, both hazardous and nonhazardous, are reported to the OES and entered into the RIMS database. This database includes spills that may not result in a risk to the public, but could be considered to be an environmental hazard. Information in the RIMS database were evaluated for the period 1997 to 2004 to evaluate the types and number of spills that have occurred at the Ports of Los Angeles and Long Beach that would be associated with container terminals. Table 3.8-2 presents a summary of accidental spills from container terminals that have occurred in the port complex.

During the period 1997-2004, there were 40 hazardous material spills directly associated with container terminals in the Ports of Los Angeles and Long Beach. This equates to approximately five spills per year for the entire port complex. During this period, the total throughput of the container terminals was 76,874,841 TEU. Therefore, the probability of a spill involving a hazardous material at the container terminals can be estimated at 5.2×10^{-7} per TEU (40 spills divided by 76,874,841 TEU). This spill probability is a conservative estimate since it includes materials that would not be considered a risk to public safety (e.g., perfume spills), but would still be considered an environmental hazard. It should be noted that, during the period 1997-2004, there were no reported impacts (injuries, fatalities, or evacuations) to the general public. The potential consequences were limited to port workers (for example, in a 1997 incident involving spillage of an unknown dry substance, 2 workers received injuries that were treated at the scene, and 20 workers were evaluated as a precaution).

3.8.2.2 Public Emergency Services

Emergency response/fire protection for the Port is provided by the Los Angeles City Fire Department (LAFD); security is provided by the Port Police office. Two large fireboats and three small fireboats are strategically placed in the Harbor. There are also fire stations equipped with fire trucks located in the Port and nearby in the communities of Wilmington and San Pedro. Public services are discussed in detail in Section 3.13.

Table 3.8-2. Container-Related Spills at Ports of Los Angeles and Long Beach 1997-2004

Spill Control Number	Substance	Spill Size	Port	Injuries	Fatalities	Evacuations
97-0684	Unknown dry substance	Unknown	POLB	2	0	0
97-1644	Phenetidine	Unknown	POLB	0	0	0
97-2220	Perfume	Unknown	POLB	0	0	0
97-2360	Ethanolamine	10 gallons	POLA	0	0	0
97-2782	Arsenic Trioxide	0.5 pounds	POLB	0	0	0
97-3158	Flammable liquid	Unknown	POLB	0	0	0
97-4369	Toluene Disocyaete	1 quart	POLA	0	0	0
98-4030	Nitric Acid	Unknown	POLB	0	0	0
98-4243	Isopropanol	55 gallons	POLB	0	0	0
99-3076	Alkyl Benzine	2 gallons	POLB	0	0	0
99-4630	Hypochlorite Solution	Unknown	POLB	0	0	0
00-1186	Xylenol	5 gallons	POLB	0	0	0
00-1232	Petroleum Distillates	1 gallon	POLB	0	0	0
00-2078	Chromium 6 Oxide	5 pounds	POLA	0	0	0
01-1433	Dodecylbenzene Sulfonic Acid Detergent	330 gallons	POLB	0	0	0
01-3682	Hydroperoxide	15 gallons	POLA	0	0	0
01-3943	Isopropanol	5 gallons	POLA	0	0	0
01-5462	Organic Peroxide	1 gallon	POLA	0	0	0
01-6533	Lead Acid Batteries	5 gallons	POLA	0	0	0
01-6902	Motor oil	3 gallons	POLB	0	0	0
02-0219	Calcium Hypochlorite	2 ounces	POLB	0	0	0
02-0822	Unknown material	Unknown	POLA	0	0	0
02-2033	Aerosol Cans	Unknown	POLA	0	0	0
02-3248	Perfume and Sulfamic Acid	Unknown	POLB	0	0	0
03-0278	Hexachlorocyclopentadiene	2 gallons	POLA	0	0	20
03-1653	Hydro Phosphorous Acid	1 gallon	POLA	0	0	0
03-0568	Organo Phosphorus Pesticide	3 gallons	POLA	0	0	0
03-0563	Organo Phosphorus Pesticide	1 gallon	POLA	0	0	0
03-0133	Sulfuric acid	Unknown	POLA	0	0	0
03-2554	Unknown Corrosive	1 gallon	POLB	0	0	0
03-3307	Unknown Oil	Unknown	POLB	0	0	0
03-4110	Unknown Oil	Unknown	POLA	0	0	0
04-1458	Alkyl benzyne	2,475 gallons	POLB	0	0	0
04-1431	Alkylene Carbonate	1 gallon	POLA	0	0	0
04-0085	Calcium Hypochlorite	Unknown	POLA	0	0	0
04-2525	Cutting Oil	Unknown	POLB	0	0	0
04-1135	Flammable Material	Unknown	POLB	0	0	0
04-2810	Hydrazine Hydrate, 34% solution	1 gallon	POLA	0	0	0
04-5008	Methane Sulfonic Acid	Unknown	POLA	0	0	0
04-1409	Unknown flammable	1 gallon	POLB	0	0	0
Total				**2**	**0**	**20**

3.8.2.3 Port of Los Angeles Risk Management Plan

The Risk Management Plan (RMP), an element of the Port Master Plan (PMP), was adopted in 1983, per California Coastal Commission (CCC) requirements. The purpose of the RMP is to provide siting criteria relative to vulnerable resources and the handling and storage of potentially hazardous cargo such as crude oil, petroleum products, and chemicals. The RMP provides guidance for future development of the Port designed to minimize or eliminate the hazards to vulnerable resources from accidental releases. Proposed Project consistency with this Plan would be limited, as the plan pertains primarily to marine terminals that accept crude oil, petroleum products, and chemicals, rather than container terminals.

3.8.2.4 Homeland Security

3.8.2.4.1 Terrorism Risk

Prior to the events of September 11, 2001, the prospect of a terrorist attack on a U.S. port facility or a commercial vessel in a U.S. port would have been considered highly speculative under CEQA and not analyzed. The climate of the world today has added an additional unknown factor for consideration (i.e., terrorism). There are limited data available to indicate the likelihood of a terrorist attack aimed at the Port or the proposed Project; therefore, the probability component of the analysis described above contains a considerable amount of uncertainty. Nonetheless, this fact does not invalidate the analysis presented herein. A terrorist action could be the cause of events described in this section such as hazardous materials release and/or explosion. The potential impact of those events would remain as described herein.

3.8.2.4.2 Application of Risk Principles

Terrorism risk can be generally defined by the combined factors of threat, vulnerability, and consequence. In this context, terrorism risk represents the expected consequences of terrorist actions taking into account the likelihood that these actions will be attempted, and the likelihood that they will be successful. Of the three elements of risk, the threat of a terrorist action cannot be directly affected by activities in the port. The vulnerability of the port and of individual cargo terminals can be reduced by implementing security measures. The expected consequences of a terrorist action can also be affected by certain measures, such as emergency response preparations.

3.8.2.4.3 Terrorism Risk Associated with Port Cargo Facilities

The cargo facilities in the port are the locations where cargo moving through the international supply chain is transferred between vessels and land transportation (either over the road tractor-trailers or railroad). Because this function is critical to the international supply chain and, therefore, to the U.S. economy, it is possible that these facilities could be targeted for terrorist actions. These terminals are generally not seen as iconic themselves. During operational periods people on these terminals are generally limited to terminal staff members, longshore workers, and truck drivers. There is no public access to these terminals.

Port facilities could be subject to terrorist actions from the land or the water, and there could be attempts to disrupt cargo operations through various types of actions.

3.8.2.4.4 Terrorism Risk Associated With Commercial Vessels

Commercial vessels in the Port could be subject to terrorist action while at berth or during transit. These vessels could be subject to several types of actions, including an attack from the land, from the surface of the water, or from beneath the surface of the water. During their transit in the Port, these large vessels are highly restricted in their maneuverability.

There have been very few examples of terrorist actions attempted against large commercial vessels since September 11, 2001. On October 6, 2002, a terrorist attack was attempted against the French-flagged crude oil tanker *Limburg*. At the time the *Limburg* was carrying 397,000 barrels of crude oil from Iran to Malaysia. The ship was attacked off the coast of Yemen by a small boat laden with explosives. The *Limburg* caught fire and approximately 90,000 barrels of crude oil leaked into the Gulf of Aden. The *Limburg* did not sink. She was salvaged, repaired, and returned to service under the new name *Maritime Jewel*.

Unlike vessels carrying hazardous or highly flammable materials, such as bulk liquid carriers, an attack on a container ship would likely be economic in nature and designed to disrupt port operations. Container ships are not attractive targets in terms of loss of life or producing large fires and explosions. However, a catastrophic attack on a vessel in Port waters could block key channels and disrupt commerce, thus resulting in potential economic losses.

3.8.2.4.5 Terrorism Risk Associated With Containerized Cargo

Intermodal cargo containers could be used to transport a harmful device into the port. This could include a weapon of mass destruction, or a conventional explosive device. The likelihood of such an attack would be based on the desire to cause harm to the port. The probability of an attack would have no relationship to Project-related throughput. The potential environmental effects of such an action, if it resulted in release of hazardous material, would be akin to the accidental release of hazardous materials that are addressed herein.

Containerized cargo represents a substantial segment of maritime commerce and is the focus of much of the attention regarding seaport security. Containers are used to transport a wide variety of goods. A large container ship can carry more than 3,000 containers, of which several hundred might be offloaded at a given port.

An intermodal container is similar to a semi-truck trailer without an attached chassis or wheels. Standard container sizes are 8 by 8 by 20 feet or 8 by 8 by 40 feet. Once offloaded from ships, they are transferred to rail cars, or tractor-trailers. Over-the-road weight regulations generally limit the cargo load of a 40-foot container to approximately 45,000 pounds.

Additionally, the use of cargo containers to smuggle weapons of mass destruction (WMDs) through the Port and intended to harm another location, such as a highly populated and/or economically important region, is another possible use of a container by a terrorist organization. However, the likelihood of such an event would not be related to Project-related throughput, but rather would be based on the terrorists' desired outcome. Cargo containers represent only one of many potential methods to smuggle WMDs, and with current security initiatives may be less desirable than other established smuggling routes (e.g., land-based ports of entry, cross border tunnels, illegal vessel transportation).

3.8.2.5 Security Measures at the Port of Los Angeles

Numerous security measures have been implemented in the Port in the wake of the terrorist attacks of September 11, 2001. Federal, state, and local agencies, as well as private industry, have implemented and coordinated many security operations and physical security enhancements. The result is a layered approach to Port security that includes the security program of the LAHD and the Berth 97-109 terminal.

3.8.2.5.1 Security Regulations

The Maritime Transportation Security Act (MTSA) of 2003 resulted in maritime security regulations in Title 33 CFR Parts 101-106. These regulations apply to cargo terminals in the Port including the Berth 97-109 terminal. Title 33 Part 105 requires that cargo terminals meet minimum security standards for physical security, access control, cargo handling security, and interaction with berthed vessels. These regulations require that terminal operators submit a Facility Security Plan (FSP) to the Coast Guard Captain of the Port for review and approval prior to conducting cargo operations. The requirements for submission of the security plans became effective on December 31, 2003. Operational compliance was required by July 1, 2004.

The International Ship and Port Facility Security (ISPS) Code was adopted by the International Maritime Organization (IMO) in 2003. This code requires both ships and ports to conduct vulnerability assessments and to develop security plans with the purpose of: preventing and suppressing terrorism against ships; improving security aboard ships and ashore; and reducing risk to passengers, crew, and port personnel on board ships and in port areas, for vessels and cargo. The ISPS Code applies to all cargo vessels 300 gross tons or larger and ports servicing those regulated vessels and is very similar to the MTSA regulations.

The USCG is responsible for enforcement of the MTSA and ISPS Code regulations discussed above. Due to the parallel nature of the MTSA and ISPS requirements, compliance with the MTSA is tantamount to compliance with the ISPS. If either the terminal or a vessel berthed at the terminal is found to be not in compliance with these security regulations, the USCG may not permit cargo operations, and the terminal and/or vessel operators may be subject to fines. In accordance with its responsibilities for land-based security under Title 33 CFR Part 105, the USCG may impose additional control measures related to security.

In July 2005, the Port Tariff was modified to require that all Port terminals subject to MTSA regulations to fully comply with these regulations, and to provide the Port with a copy of their approved FSP.

3.8.2.5.2 Terminal Security Measures

The Berth 97-109 terminal is subject to USCG maritime security regulations discussed in Section 3.8.2.5.1. The Berth 97-109 FSP was approved by the USCG in 2004 and includes the following:

+ Designating a Facility Security Officer (FSO) with a general knowledge of current security threats and patterns, risk assessment methodology, and with the responsibility for implementing and periodically updating the FSP and Assessment and performing an annual audit for the life of the Project;

+ Conducting a FSA to identify site vulnerabilities, possible security threats, consequences of an attack, and facility protective measures;

+ Responding to transportation security incidents; notifying and coordinating with local, state, and federal authorities, preventing unauthorized access; implementing measures and equipment to prevent or deter dangerous substances and devices; and conducting training and evacuation;

+ Implementing scalable security measures to provide increasing levels of security at increasing Maritime Security (MARSEC) levels for facility access control, restricted areas, cargo handling, vessel stores and bunkers, and monitoring;

+ Conducting security exercises at least once each calendar year and drills at least every 3 months; and

+ Mandatory reporting of all security breaches and incidents.

Security training is conducted for the FSO of the Terminal operator and associated security personnel for the employees of the Terminal operator. This consists of awareness training and basic security guard training; there are annual refresher courses. Labor is trained by the Pacific Maritime Association.

3.8.2.5.3 Vessel Security Measures

All cargo vessels 300 gross tons or larger that are flagged by IMO signatory nations adhere to the ISPS Code standards discussed in Section 3.8.2.5.1. These requirements include:

+ Ships must develop security plans that address monitoring and controlling access; monitoring the activities of people, cargo, and stores; and ensuring the security and availability of communications;

+ Ships must have a Ship Security Officer (SSO);

+ Ships must be provided with a ship security alert system. These systems transmit ship-to-shore security alerts to a competent authority designated by the Flag State Administration, which may communicate the company name, identify the ship, establish its location, and indicate that the ship security is under threat or has been compromised. For the west coast, this signal is received by the Coast Guard Pacific Area Command Center in Alameda, California.

+ International port facilities that ships visit must have a security plan, including focused security for areas having direct contact with ships; and

+ Ships may have certain equipment onboard to help maintain or enhance the physical security of the ship, including:

  - Monitoring and controlling access;
  - Monitoring the activities of people and cargo;
  - Ensuring the security and availability of communications; and
  - Completing a Declaration of Security signed by the FSO and SSO, which ensures that areas of security overlapping between the ship and facility are adequately addressed.

Vessels flagged by nations that are not IMO signatory are subject to special USCG vessel security boarding prior to entering port.

3.8.2.5.4 Security Credentialing

The TWIC program is a TSA and USCG initiative that will include issuance of a tamper-resistant biometric credential to maritime workers requiring unescorted access to secure areas of port facilities and vessels regulated under the MTSA. The TWIC program will minimize the potential for unauthorized handling of containers that contain hazardous materials and provide additional shoreside security at the terminal. In order to obtain a TWIC, an individual must successfully pass a security threat assessment conducted by TSA. This assessment will include a criminal history check and a citizenship or immigration status check of all applicants. The Port is currently involved in initial implementation of the TWIC program including a series of field tests at selected Port terminals.

3.8.2.5.5 Cargo Security Measures

U.S. Customs and Border Protection (CBP) is the federal agency with responsibility for the security of cargo being shipped into the United States. CBP is the lead agency for screening and scanning cargo that is shipped through the Port. Neither the Berth 97-109 terminal nor the LAHD have responsibilities related to security scanning or screening of cargo entering the port. However, the Port Police may inspect cargo if there is probable cause on a case-by-case basis.

CBP conducts several initiatives related to security of the supply chain. Through the Container Security Initiative (CSI) program, CBP inspectors pre-screen U.S.-bound marine containers at foreign ports prior to loading aboard vessels bound for U.S. ports. The Customs Trade Partnership Against Terrorism offers importers expedited processing of their cargo if they comply with CBP measures for securing their entire supply chain. Details of CBP cargo security programs can be found at the CBP internet website http://cbp.gov/.

3.8.2.5.6 Port of Los Angeles Security Initiatives

LAHD (the Port) is not subject to the international or federal security regulations discussed in Section 3.8.2.5.1. However, all container terminal tenants at the Port are subject to these regulations. The Port has a number of security initiatives underway. These initiatives include significant expansion of the Los Angeles Port Police that will result in additional police vehicles on the streets and police boats on the water. The initiatives in this area include:

+ Expanding Port Police enhancement of its communications capabilities
+ Establishing a 24-hour two-vessel presence
+ Establishing a vehicle and cargo inspection team
+ Establishing a Port Police substation in Wilmington
+ Enhancing recruiting and retention of Port Police personnel
+ Expanding Port Police communications capabilities to include addition of dedicated tactical frequencies
+ Enhancing security at Port-owned facilities

In the area of homeland security, the Port will continue to embrace technology, while focusing its efforts on those areas of particular interest to the Port. Current Port homeland security initiatives include:

+ Upgrading security at the World Cruise Center
+ Expanding the waterside camera system in the Port
+ Establish restricted areas for noncommercial vehicles and vessels
+ Installing additional shore-side cameras at critical locations
+ Working with TSA to implement the TWIC program
+ Promoting increased scanning at overseas ports
+ Updating long range security plans for the Port
+ Developing a security awareness training program
+ Enhancing outreach to constituents

3.8.3 Applicable Regulations

3.8.3.1 List of Regulations

Regulations applicable to the proposed Project or alternative are designed to regulate hazardous materials and hazardous wastes. These regulations also are designed to limit the risk of upset during the use, transport, handling, storage, and disposal of hazardous materials. The proposed Project will be subject to numerous federal, state, and local laws and regulations including, but not limited to, those described below.

3.8.3.1.1 Resource Conservation and Recovery Act of 1976 (42 U.S.C. Section 6901-6987)

The goal of RCRA, a federal statute passed in 1976, is the protection of human health and the environment, the reduction of waste, the conservation of energy and natural resources, and the elimination of the generation of hazardous waste as expeditiously as possible. The Hazardous and Solid Waste Amendments of 1984 significantly expanded the scope of RCRA by adding new corrective action requirements, land disposal restrictions, and technical requirements. The corresponding regulations in 40 CFR 260-299 provide the general framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, and dispose of hazardous waste.

3.8.3.1.2 DOT Hazardous Materials Regulations (Title 49 CFR Parts 100-185)

The Department of Transportation (DOT) Hazardous Materials Regulations cover all aspects of hazardous materials packaging, handling, and transportation. Parts 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications) and 180 (Packaging Maintenance) would all apply to the proposed Project activities.

3.8.3.1.3 The Hazardous Materials Transportation Act (HMTA), 49 CFR 171, Subchapter C

The DOT, FHWA, and the Federal Railroad Administration regulate transportation of hazardous materials at the federal level. The HMTA requires that carriers report accidental releases of hazardous materials to DOT at the earliest practical moment. Other incidents that must be reported include deaths, injuries requiring hospitalization, and property damage exceeding $50,000.

3.8.3.1.4 United States Coast Guard (USCG) Title 33

The USCG, through Title 33 (Navigation and Navigable Waters) and Title 46 (Shipping) of the CFR, is the federal agency responsible for vessel inspection, marine terminal operations safety, coordination of federal responses to marine emergencies, enforcement of marine pollution statutes, marine safety (such as navigation aids), and operation of the National Response Center for spill response, and is the lead agency for offshore spill response. The USCG implemented a revised vessel boarding program in 1994 designed to identify and eliminate substandard ships from U.S. waters. The program pursues this goal by systematically targeting the relative risk of vessels and increasing the boarding frequency on high risk (potentially substandard) vessels. The relative risk of each vessel is determined through the use of a matrix that factors the flag of the vessel, owner, operator, classification society, vessel particulars, and violation history. Vessels are assigned a boarding priority from I to IV, with priority I vessels being the potentially highest risk. The USCG is also responsible for reviewing marine terminal Operations Manuals and issuing Letters of Adequacy upon approval.

3.8.3.1.5 Hazardous Waste Control Law (California Health and Safety Code, Chapter 6.5)

This statute is the basic hazardous waste law for California. The Hazardous Waste Control implements the federal RCRA cradle-to-grave waste management system in California. California hazardous waste regulations can be found in Title 22, Division 4.5, Environmental Health Standards for the Management of Hazardous Wastes. The program is administered by the DTSC.

3.8.3.1.6 Emergency Planning and Community Right-To-Know Act (42 U.S.C. 11001 et seq.)

Also known as Title III of the Superfund Amendments and Reauthorization Act (SARA), Emergency Planning and Community Right-to-Know Act (EPCRA) was enacted by Congress as the national legislation on community safety. This law was designated to help local communities protect public health, safety, and the environment from chemical hazards. To implement EPCRA, Congress required each state to appoint a State Emergency Response Commission (SERC). The SERCs were required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee (LEPC) for each district. EPCRA provides requirements for emergency release notification, chemical inventory reporting, and toxic release inventories for facilities that handle chemicals.

3.8.3.1.7 Hazardous Material Release Response Plans and Inventory Law (California Health and Safety Code, Chapter 6.95)

This state right-to-know law requires businesses to develop a Hazardous Material Management Plan or a business plan for hazardous materials emergencies if they handle more than 500 pounds, 55 gallons, or 200 cubic feet of hazardous materials. In addition, the business plan includes an inventory of all hazardous materials stored or handled at the facility above these thresholds. This law is designed to reduce the occurrence and severity of hazardous materials releases. The Hazardous Materials Management Plan or business plan must be submitted to the Certified Unified Program Agency (CUPA), which is, in this case, the Los Angeles City Fire Department (LAFD). The state has integrated the federal EPCRA reporting requirements into this law; and, once a facility is in compliance with the local administering agency requirements, submittals to other agencies are not required.

3.8.3.1.8 Los Angeles Municipal Code (Fire Protection – Chapter 5, Section 57, Divisions 4 and 5)

These portions of the municipal fire code regulate the construction of buildings and other structures used to store flammable hazardous materials, and the storage of these same materials. These sections ensure that the business is properly equipped and operates in a safe manner and in accordance with all applicable laws and regulations. These permits are issued by the LAFD.

3.8.3.1.9 Los Angeles Municipal Code (Public Property – Chapter 6, Article 4)

This portion of the municipal code regulates the discharge of materials into the sanitary sewer and storm drains. It requires the construction of spill-containment structures to prevent the entry of forbidden materials, such as hazardous materials, into sanitary sewers and storm drains.

3.8.3.2 Other Requirements

California regulates the management of hazardous wastes through Health and Safety Code Section 25100 et seq., and through the California CCR, Title 22, and Division 4.5, Environmental Health Standards for the Management of Hazardous Wastes, as well as CCR Title 26, Toxics.

The Safety Element of the City of Los Angeles General Plan addresses the issue of protection of its people from unreasonable risks associated with natural disasters (e.g., fires, floods, and earthquakes). The Safety Element provides a contextual framework for understanding the relationship between hazard mitigation, response to a natural disaster, and initial recovery from a natural disaster.

The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. Compliance with other federal, state, and local laws and regulations (e.g., driver training and licensing and Caltrans packaging requirements) govern transport of cargo on the street and highway system and during rail transport. The shippers package the hazardous materials in the containers and provide labeling in compliance with Caltrans requirements.

Numerous facilities handle, store, or transport hazardous materials in the Port. Activities that involve hazardous liquid bulk cargoes (e.g., fuels) at the Port are governed by the Port of Los Angeles Risk Management Plan (RMP) (LAHD, 1983). This plan provides for a methodology for assessing and considering risk during the siting process for facilities that handle substantial amounts of dangerous cargo, such as liquid bulk facilities.

Hazardous materials inside cargo containers fall under the primary jurisdiction of the federal Department of Homeland Security and USCG (33 CFR 126) while the containers are at sea, in Port waters, and at waterfront facilities. Under the jurisdiction of the Department of Homeland Security, the USCG maintains an Office of Operating and Environmental Standards Division, which develops national regulations and policies on marine environmental protection. This division coordinates with appropriate federal, state, and international organizations to minimize conflicting environmental requirements. The USCG also maintains a Hazardous Materials Standards Division (HMSD), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. This includes transportation of bulk liquid chemicals and liquefied gases, hazardous bulk solids, and packaged hazardous cargoes, as well as hazardous materials used as ship stores and hazardous materials used for shipboard fumigation of cargo.

Vessel Traffic Service (VTS) is a Public/Private partnership vessel traffic service for the Ports of Los Angeles and Long Beach. VTS is jointly operated and managed by the Marine Exchange of Southern California (a nonprofit corporation) and the Coast Guard COTP. VTS is a cooperative effort of the State of California, USCG, Marine Exchange of Southern California, Ports of Los Angeles and Long Beach, and is under the authority of California Government Code, Section 8670.21, Harbors and Navigation Code, Sections 445-449.5 and the Port tariffs of Los Angeles and Long Beach.

Terminal cargo operations involving hazardous materials are governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). Regulated hazardous materials in the Port may include maritime-use compounds such as chlorinated solvents, petroleum products, compressed gases, paints, cleaners, and pesticides.

3.8.4 Impacts and Mitigation Measures

3.8.4.1 Methodology

Risk Probability and Criticality

CEQA guidelines require identifying any adverse change in any of the physical conditions in the area affected by the proposed Project or alternative, including a change in the probability of spills or releases. For incidents that may affect environmental and public safety, a risk matrix is commonly used to evaluate the expected frequencies of scenarios versus the severity of potential consequences to determine the level of significance (see Table 3.8-3). The potential for significant safety impacts increases proportionally to the frequency of occurrence and potential consequences of an event. Frequency is typically classified into six categories (frequent, periodical, occasional, possible, improbable, and extraordinary) based on a predefined expected level of occurrence. The severity of consequence is also classified into five categories

(negligible, minor, major, severe, and disastrous) based on the potential environmental and safety impact on the public.

Table 3.8-3. Risk Matrix

Consequences	Probability: Extraordinary- >1,000,000 years	Improbable >10,000 <1,000,000 years	Possible >100 <10,000 years	Occasional >10 and <100 years	Periodic >1 and <10 years	Frequent (>1/year)
Catastrophic (> 100 severe injuries or >357,142 bbl)	4	3	2	1	1	1
Severe (up to 100 severe injuries or 2,380–357,142 bbls)	4	3	3	2	2	2
Moderate (up to 10 severe injuries or 238–2,380 bbl)	4	4	3	3	3	3
Slight (a few minor injuries or 10-238 bbl)	4	4	4	4	4	4
Negligible (no minor injuries or <10 bbls)	4	4	4	4	4	4

Note: Incidents that fall in the dark shaded area of the risk matrix (with cell entries of 1 and 2) would be classified as significant in the absence of mitigation, while the lighter shaded areas (with cell entries of 3) would be significant in the absence of engineering and/or administrative controls. Unshaded areas (with cell entries of 4) would be considered less than significant. bbl = barrel that is 42 gallons.

Sources: LACFD, 1991; Santa Barbara County, 1995; Aspen Environmental Group, 1996.

Table 3.8-3 specifies values in each category of consequence and frequency classification typically used in the industry. Incidents that fall in the shaded area of the risk matrix would be classified as significant, unless for the lighter shaded areas there are engineering and/or administrative controls in place. The risk matrix approach follows the Los Angeles County Fire Department (LACFD) risk management guidelines that were originally developed for the California Risk Management and Prevention Program (RMPP) and also include the criticality classifications presented in Table 3.8-4. The RMPP used the combination of accident frequency and consequences to define the significance of a potential accident in terms of impacts to public safety (i.e., potential injuries and/or fatalities). Santa Barbara County (1995) added additional criteria to address the significance of oil spills and environmental hazards, which for the proposed Project would include fuel spills from container ships. The potential significance of impacts to public safety and the environment are evaluated using the risk matrix approach.

The extent of environmental damage is evaluated in the relevant issue areas (e.g., biological resources and water quality).

Table 3.8-4. Criticality and Frequency Classifications

Criticality Classification		
Classification	Description of Public Safety Hazard	Environmental Hazard – Oil Spill Size
Negligible	No significant risk to the public, with no injuries	Less than 10 bbls (420 gal)
Slight	At most a few minor injuries	10–238 bbl (420–10,000 gal)
Moderate	Up to 10 severe injuries	238–2,380 bbl (10,000–100,000 gal)
Severe	Up to 100 severe injuries or up to 10 fatalities	2,380–357,142 bbls (100,000–15,000,000 gal)
Catastrophic	More than 100 severe injuries or more than 10 fatalities	Greater than 357,142 bbl (15,000,000 gal)
Frequency Classification		
Classification	Frequency per year	Description of the Event
Extraordinary	< once in 1,000,000 years	Has never occurred but could occur.
Improbable	between once in 10,000 and once in 1,000,000 years	Occurred on a worldwide basis, but only a few times. Not expected to occur.
Possible	Between once in a 100 and once in 10,000 years	Is not expected to occur during the project lifetime.
Occasional	Between once in a 10 and once in 100 years	Would probably occur during the Project lifetime.
Periodic	Between once per year and once in 10 years	Would occur about once a decade.
Frequent	Greater than once in a year	Would occur once in a year on average.

Sources: Santa Barbara County, 1995; Aspen Environmental Group, 1996.

The risk criticality matrix shown in Table 3.8-4 combines accidental probability with the severity of consequences to identify the risk criticality. Four categories of risk have been defined by the LACFD as:

1. Critical. Mitigate within 6 months with administrative or engineering controls (to reduce the Risk Code to 3 or less).
2. Undesirable. Mitigate within 1 year with administrative or engineering controls (to reduce the Risk Code to 3 or less).
3. Acceptable. Verify need for engineering controls, or that administrative controls are in place for hazard.
4. Acceptable. No mitigating action required for the identified hazard.

The risk criticality matrix was originally developed for use in evaluating the probability and significance of a release of acutely hazardous materials (AHM) under the requirements of Section 25532(g) of the Health and Safety Code, and has been modified over the years to include other environmental and public safety hazards.

Risk of Upset Due to Terrorism

Analysis of risk of upset is based primarily on potential frequencies of occurrence for various events and upset conditions as established by historical data. The climate of the world today has added an additional unknown factor for consideration; i.e., terrorism. There are limited data available to indicate the likelihood of a terrorist attack aimed at the Port or the proposed Project or alternative and, therefore, the probability component of the analysis described above contains a considerable amount of uncertainty. Nonetheless, this fact does not invalidate the analysis contained herein. Terrorism can be viewed as a potential trigger that could initiate events described in this section such as hazardous materials release and/or explosion. The potential impact of those events, once triggered by whatever means, would remain as described herein. The Berth 97-109 terminal operator would also be required to develop a Terminal Security Plan for the Terminal, which would be approved by the USCG and the California State Lands Commission (CSLC) prior to implementation of the proposed Project or alternative. Ships calling at the Port would need to provide a 96-hour advance notice. They would be screened by the USCG and CBP. The USCG would have options of denying entry of vessels to the Port if any security situation arises.

Hazards Associated with Truck Transportation

Proposed Project/alternative-related increases in truck trips could result in an increase in vehicular accidents, injuries, and fatalities. Therefore, potential impact of increased truck traffic on regional injury and fatality rates have been evaluated.

The Federal Motor Carrier Safety Administration (FMCSA), within DOT, operates and maintains the Motor Carrier Management Information System (MCMIS). MCMIS contains information on the safety fitness of commercial motor carriers and hazardous material shippers subject to the FMCSA Regulations and the 49 CFR Hazardous Materials Regulations. As part of these requirements, reportable accident rates are generated for various types of carriers, including carriers of hazardous materials. More than 500,000 motor carriers are included in the database, of which approximately 40,000 carry hazardous materials. A DOT-reportable accident is an accident that produces either a fatality, a hospitalization, or requires the vehicle be towed.

The Hazardous Materials Information System (HMIS) is another system of databases managed by the Office of Hazardous Materials Safety within DOT. The database maintains information on transportation-related hazardous material incidents.

According to an FMCSA detailed analysis (FMCSA, 2001), the estimated nonhazardous materials truck accident rate is more than twice the hazardous materials truck accident rate. The nonhazardous materials truck accident rate was estimated to be 0.73 accidents per million vehicle miles and the average hazardous materials truck accident rate was estimated to be 0.32 accidents per million vehicle miles.

Based on the National Highway Traffic Safety Administration (NHTSA) (DOT, 2003), of the estimated 457,000 truck crashes in 2000 (causing fatalities, injuries, or property damage), an estimated 1 percent produced fatalities and 22 percent produced injuries. The Fatality Analysis Reporting System (FARS) and the Trucks Involved in Fatal

Accidents (TIFA) survey were the sources of data for this analysis, which primarily examined fatalities associated with vehicle impact and trauma.

3.8.4.1.1 CEQA Baseline

Section 15125 of the CEQA Guidelines requires EIRs to include a description of the physical environmental conditions in the vicinity of a project that exist at the time of the NOP. These environmental conditions would normally constitute the baseline physical conditions by which the CEQA lead agency determines whether an impact is significant. For purposes of this Recirculated Draft EIS/EIR, the CEQA baseline for determining the significance of potential Project impacts is the environmental setting prior to March 2001, pursuant to the ASJ described in Chapter 1, Section 1.4.3. The CEQA baseline for this proposed Project includes 45,135 TEUs per year that occurred on the Project site in the year prior to March 2001.

The CEQA baseline represents the setting at a fixed point in time and differs from the No Project Alternative (discussed in Section 2.5) in that the No Project Alternative addresses what is likely to happen at the site over time, starting from the existing conditions. The No Project Alternative allows for growth at the Project site that could be expected to occur without additional approvals.

3.8.4.1.2 NEPA Baseline

For purposes of this Recirculated Draft EIS/EIR, the evaluation of significance under NEPA is defined by comparing the proposed Project or other alternative to the NEPA baseline. To ensure a full analysis of the impacts associated with Phases I through III, the NEPA baseline does not include the dredging required for the Berth 100 wharf, the existing bridge across the Southwest Slip, or the 1.3 acres of fill constructed as part of Phase I (i.e., the project site conditions are considered without the in-water Phase I activities and structures) The NEPA baseline condition for determining significance of impacts includes the full range of construction and operational activities the applicant could implement and is likely to implement absent permits from the USACE. The NEPA baseline begins in the year prior to 2001 but is not fixed in time. The NEPA baseline includes construction and operation of backlands container operations on up to 117 acres, but does not include wharves, dredging, and improvements that would require federal permits. The NEPA baseline assumes 117 acres of upland development, which is greater than the container backlands under the 2001 baseline conditions. In addition, under the NEPA baseline, the terminal would store or manage up to 632,500 TEUs. No annual ship calls are included in the NEPA baseline and the four existing A-frame cranes and bridge built as part of Phase I are not included in baseline.

Unlike the CEQA baseline, which is defined by conditions at a point in time, the NEPA baseline is not bound by statute to a flat- or no-growth scenario. Therefore, the USACE may project increases in operations over the life of a project to properly describe the NEPA baseline condition. Normally, any ultimate permit decision would focus on direct impacts of the proposed Project or alternative to the aquatic environment, as well as indirect and cumulative impacts in the uplands determined to be within the scope of federal control and responsibility. Significance of the proposed Project or alternative is defined by comparing the proposed Project or alternative to the NEPA baseline (i.e., the increment). The NEPA baseline conditions are described in Section 2.6.2.

The NEPA baseline also differs from the No Project Alternative, where the Port would take no further action to construct and develop additional backlands (other than the

72 acres that are currently developed). Under the No Project Alternative, no construction would occur other than the Phase I construction. However, the abandonment of the existing bridge and removal of the four A-frame cranes built as part of Phase 1 would occur. Forecasted increases in cargo throughput would still occur as greater operational efficiencies are made.

3.8.4.2 Thresholds of Significance

Criteria for determining the significance of impacts related to risk of upset are based on the *City of Los Angeles CEQA Thresholds Guide* (City of Los Angeles, 2006) and federal and state standards, regulations, and guidelines. The proposed Project or alternative would have a significant impact on risk of upset if it would:

RISK-1 Substantially increase the probable frequency and severity of consequences to people or property as a result of a potential accidental release or explosion of a hazardous substance as defined in Tables 3.8-2 and 3.8-3.

RISK-2 Substantially increase the probable frequency and severity of consequences to people from exposure to health hazards as defined in Tables 3.8-2 and 3.8-3.

RISK-3 Substantially interfere with an existing emergency response or evacuation plan, thereby increasing risk of injury or death as defined in Tables 3.8-2 and 3.8-3.

RISK-4 Not comply with applicable regulations and policies governing hazardous materials and activities at the Port.

RISK-5 Project-related terminal modifications would result in an increased probability of an accidental spill as a result of a tsunami-induced flooding or other seismic event.

RISK-6 Project-related terminal modifications would result in a measurable increase in the probability of a terrorist attack, which would result in adverse consequences to the proposed Project site and nearby areas.

3.8.4.3 Impacts and Mitigation

3.8.4.3.1 Proposed Project

3.8.4.3.1.1 Construction Impacts

Impact RISK-1a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance.

The existing 1,200-foot wharf at Berth 100 was completed as part of Phase I construction and involved the placement of 88,000 cubic yards (yd^3) of rock; 14,000 yd^3 of clean backfill material; and a 652 separate 24-inch-diameter octagonal concrete wharf piles. This section of wharf was completed in 2003 and officially began operation on June 21, 2004, in accordance with the terms of the ASJ. Phase II and Phase III in-water construction activities would include the wharf extensions.

Of the 1,300 feet of proposed new wharf, 925 feet would be constructed at Berth 102 on a previously approved dike built as part of the approved Channel Deepening Project. The

new wharf at Berth 102 would extend northward from the existing Berth 100 wharf. New wharf would also be constructed to extend Berth 100 an additional 375 feet southward. Only the Berth 100 southern wharf extension (375 feet) would require new rock dike (116,000 yd^3) and fill (24,000 yd^3). Under the proposed Project, a total of 10 new A-frame cranes would be installed on the wharves at Berths 100 and 102.

The proposed Project at full buildout (2030) would allow for the operation of approximately 142 acres of backlands. Phase I construction added backland acreage to the baseline backlands (then used as container overflow from the Yang Ming Terminal) for a combined total 72 acres for Phase I. Phase II construction would develop 45 acres created by the Channel Deepening Project prior to 2001. Phase III construction would develop an additional 25 acres of backlands on existing adjacent land, which would include demolition of the existing Catalina Express Terminal facilities and their conversion to backlands. Catalina Terminal operations would be relocated to the south of the Vincent Thomas Bridge at Berth 95. Passenger loading of the Catalina Express would use floating docks located between Lane Victory and the bridge. Existing parking facilities at Berth 95 would be used. Operations at the Catalina Terminal would be temporarily housed in trailers or the Pavilion Building.

Development of the backlands would include construction of several office and maintenance buildings, gate and entrance facilities, chassis racks, a compressed air system, lighting, fire hydrants, and other infrastructure and equipment necessary to ensure the safe and efficient movement of cargo. These additional backlands improvements would require construction activities such as grading, drainage, paving, striping, lighting, fencing, and the addition of utility facilities and equipment. The proposed Project includes traffic control modifications and reconfiguration of roadway geometrics at the existing shared entrance to the Berth 97-109 and Berth 121-131 terminals along John S. Gibson Boulevard to improve the flow of truck traffic.

Two bridges would be constructed across the Southwest Slip as part of the proposed Project to facilitate additional cargo movement between the Berth 97-109 Container Terminal and the Berth 121-131 terminal.

Best management practices (BMPs) and Los Angeles Municipal Code regulations (Chapter 5, Section 57, Division 4 and 5; Chapter 6, Article 4) would govern construction and demolition activities. Federal and state regulations that govern the storage of hazardous materials in containers (i.e., the types of materials and the size of packages containing hazardous materials) and the separation of containers holding hazardous materials, would limit the potential adverse impacts of contamination to a relatively small area. In addition, standard BMPs would be used during construction and demolition activities to minimize runoff of contaminants and clean-up any spills, in compliance with the State General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order 99-08-DWQ) and Project-specific Storm Water Pollution Prevention Plan (SWPPP) (see Section 3.14, Water Quality, Sediments, and Oceanography for more information).

CEQA Impact Determination

Implementation of construction and demolition standards, including BMPs, would minimize the potential for an accidental release of petroleum products and/or hazardous materials and/or explosion during construction/demolition activities at Berths 97-109. Standards include, in addition to prevention measures, procedures designed to: effectively and efficaciously clean up spills and immediately implement

remedial actions; and procedures for the handling and disposal of materials such as asbestos that would be encountered during demolition activities. It is unlikely that construction and demolition activities would involve the use of substantial quantities of hazardous materials and the most likely source of these materials would be from vehicles at the site. Thus, the most likely spills or releases of hazardous materials during construction would involve petroleum products such as diesel fuel, gasoline, oils, and lubricants. Because construction/demolition-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, such spills are typically short-term and localized. This is attributable to the fact that the volume in any single source vehicle is generally less than 50 gallons and fuel trucks that might be present at the site are limited to 10,000 gallons or less. Thus, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." Therefore, under CEQA, construction and demolition would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on criterion **RISK-1**, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

The proposed Project would include construction of new wharves, dikes, and backland areas, which would result in increased susceptibility to hazardous materials spills during construction. Implementation of construction standards, including BMPs, would minimize the potential for an accidental release of hazardous materials and/or explosion during in-water and upland construction activities at Berths 97-109. Because construction/demolition-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short term and localized, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." Therefore, under NEPA, construction and demolition would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on risk criterion **RISK-1**, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-2a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards.

Construction and demolition activities would be conducted using BMPs and in accordance with the Los Angeles Municipal Code (Chapter 5, Section 57, Division 4 and 5; Chapter 6, Article 4). Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to a Release Response Plan (RRP) and a Hazardous Materials Inventory (HMI). Implementation of increased inventory accountability and spill prevention controls associated with this Release Response Plan and Hazardous Materials Inventory, such as limiting the types of materials stored and size of packages containing hazardous materials, would limit both the frequency and severity of potential releases of hazardous materials, thus minimizing potential health hazards and/or contamination of soil or water during construction/demolition activities. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Impacts from contamination of soil or water during construction/demolition activities would apply to not only construction personnel, but to people and property occupying operational portions of the Project area because the Berth 97-109 terminal would be operating during ongoing construction activities.

CEQA Impact Determination

Several standard policies regulate the storage of hazardous materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to affect members of the public and limit the adverse impacts of contamination to a relatively small area. Because construction/demolition-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." Therefore, under CEQA, construction/demolition activities at Berths 97-109 would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards. Based on risk criterion **RISK-2**, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

The proposed Project would include construction of wharves, dikes, and backland areas, which would result in increased susceptibility to hazardous materials spills during construction. Several standard policies regulate the storage of hazardous

materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to affect members of the public and limit the potential adverse impacts of contamination to a relatively small area. Therefore, under NEPA, construction/demolition activities at Berths 97-109 would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards. Based on risk criterion **RISK-2**, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-3a: Construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death.

Emergency response and evacuation planning is the responsibility of the Los Angeles Police Department (LAPD), LAFD, Port Police, and United States Coast Guard (USCG). Construction and demolition activities would be subject to emergency response and evacuation systems implemented by LAFD. During construction/demolition activities, the LAFD would require that adequate vehicular access to the proposed Project area be provided and maintained. Prior to commencement of construction/demolition activities, all plans would be reviewed by the LAFD to ensure adequate access is maintained throughout construction/demolition.

CEQA Impact Determination

Proposed Project contractors would be required to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under CEQA, construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death. Based on risk criterion **RISK-3**, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Proposed Project contractors would be required to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under NEPA, construction/demolition activities would

not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death. Based on risk criterion **RISK-3** impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-4a: The proposed Project would comply with applicable regulations and policies guiding development in the Port.

As described in Section 3.8.3.1, List of Regulations, the proposed Project is subject to numerous regulations for development and operation of the proposed facilities. For example, construction and demolition would be completed in accordance with RCRA, HSWA, CERCLA, CCR Title 22 and Title 26, and the California Hazardous Waste Control Law, which would govern proper containment, spill control, and disposal of hazardous waste generated during demolition and construction activities. Implementation of increased inventory accountability, spill prevention controls, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Potential releases of hazardous substances during demolition and/or construction would be addressed through the federal Emergency Planning and Right-to-Know Act, which is administered in California by the SERC, and the Hazardous Material Release Response Plans and Inventory Law. In addition, demolition and construction would be completed in accordance with the Los Angeles Municipal Fire Code, which regulates the construction of buildings and other structures used to store flammable hazardous materials, and the Los Angeles Municipal Public Property Code, which regulates the discharge of materials into the sanitary sewer and storm drain. The latter requires the construction of spill-containment structures to prevent the entry of forbidden materials, such as hazardous materials, into sanitary sewers and storm drains. LAHD maintains compliance with these federal, state, and local laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. LAHD has implemented various plans and programs to ensure compliance with these regulations. These regulations must be adhered to during design and construction of the proposed Project. Implementation of increased spill prevention controls, spill release notification requirements, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Construction/demolition activities would be conducted using BMPs in accordance with City guidelines, as detailed in the Development Best Management Practices Handbook (City of Los Angeles, 2002). Applicable BMPs include, but are not limited to, vehicle and equipment fueling and maintenance; material delivery, storage, and use; spill prevention and control; solid and hazardous waste management; and contaminated soil management. Proposed Project plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Implementation of increased spill prevention controls associated with these BMPs would limit both the frequency and severity of potential releases of hazardous materials.

CEQA Impact Determination

Because proposed Project construction/demolition would be completed using standard BMPs and in accordance with LAHD plans and programs, LAFD regulations, and applicable hazardous waste laws and regulations, impacts relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under CEQA under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Because proposed Project construction would be completed using standard BMPs and in accordance with LAHD plans and programs, LAFD regulations, and all applicable hazardous waste laws and regulations, impacts under NEPA relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-5a: Tsunami-induced flooding and seismic events would result in fuel releases from demolition/construction equipment or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a major or great earthquake or a large tsunami to affect the Port. Either event could likely lead to a fuel spill from demolition and/or construction equipment, as well as from containers of petroleum products and hazardous substances used during the demolition/construction period. Unfinished structures are especially vulnerable to damage from earthquakes and tsunamis during the construction period.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as Mean Lower-Low Water level (MLLW). For purposes of this discussion, all proposed Project structures and land surfaces are expressed as height above (or below) MLLW. The mean sea level (msl) in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and

flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the proposed Project site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel could occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during construction of the proposed Project and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

The analysis presented above assumes the coincidence of two unlikely events: the occurrence of the single highest tide predicted over the next 40 years; and the theoretical maximum wave action from a tsunami. Such an assumption represents an extremely conservative, worst-case scenario: one that is not required under CEQA or NEPA.

CEQA Impact Determination

Impacts due to major or great earthquakes and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of the proposed Project. However, because the proposed Project site elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of the proposed Project, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low. While there would be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami or other seismic risk would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami, impacts would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Impacts due to major or great earthquakes and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of the proposed Project. However, because the proposed Project site elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of the proposed Project, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts would be less than significant under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-6a: A potential terrorist attack would result in adverse consequences to areas near the proposed Project site during the construction period.

Risk of Terrorist Actions during Construction

The probability of a terrorist attack on the proposed Project facilities is not likely to appreciably change during construction compared to baseline conditions. It is possible that the increase in construction vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal. The Berth 97-109 terminal would be operational during the construction period; therefore, the risks associated with terrorism discussed in Section 3.8.2.4 will apply to the terminal during this period. Such risks are addressed in Section 3.8.4.3.1.2 immediately below.

Consequences of Terrorist Attack

During construction, a terrorist action could block key road access points and waterways and result in economic disruption. Potential environmental damage could include fuel spills and the release of hazardous materials into the marine environment, with associated degradation of water quality and damage to marine biological resources. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality.

CEQA Impact Determination

Access to the terminal site during construction could occur by land, water, and/or air. However, existing Port security measures would counter any potential increase in unauthorized access to the terminal site through the use of vehicles or vessels. The potential for a terrorist attack that would result in adverse consequences to areas near the proposed Project site during the construction period is considered improbable and the consequences could be moderate. This combination would result in a Risk Code of 4, which is "acceptable," and impacts would be less than significant under criterion **RISK-6**.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

NEPA Impact Determination

Impacts under NEPA would be less than significant as defined in the CEQA determination above.

Mitigation Measures

As terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

3.8.4.3.1.2 Operational Impacts

Impact RISK-1b: Berth 97-109 terminal operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.

As of 2001 (CEQA baseline), the Berth 97-109 terminal handled approximately 45,135 TEUs per year. With buildout of the proposed Project, operations would rise to approximately 1,551,000 TEUs per year when functioning at maximum capacity (in 2030). This would equate to a more than a thirty-fourfold increase in throughput capacity over CEQA baseline conditions.

Terminal operations would be subject to safety regulations that govern the shipping, transport, storage and handling of hazardous materials, which would limit the severity and frequency of potential releases of hazardous materials resulting in increased exposure of people to health hazards (i.e., Port RMP, USCG and LAFD regulations and requirements, and DOT regulations). For example, as discussed in Section 3.8.3.1, List of Regulations, and summarized below, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. In addition, the DOT Hazardous Materials Regulations (Title 49 CFR Parts 100-185) regulate almost all aspects of terminal operations. Parts 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications) and 180 (Packaging Maintenance) would all apply to the proposed Project activities.

Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). Implementation of increased hazardous materials inventory control and spill prevention controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Terminal maintenance activities would involve the use of hazardous materials such as petroleum products, solvents, paints, and cleaners. Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to an RRP and HMI. Implementation of increased inventory accountability and spill prevention controls associated with this RRP and HMI would limit both the frequency and severity of potential releases of hazardous materials. Based on the limited volumes that could potentially spill, quantities of hazardous materials used

at Berths 97-109 that are below the thresholds of Chapter 6.95 would not likely result in a substantial release into the environment.

CEQA Impact Determination

Because projected terminal operations at Berths 97-109 would accommodate approximately a thirty-fourfold increase in containerized cargo compared to the CEQA baseline, the potential for an accidental release or explosion of hazardous materials would also be expected to increase proportionally.

During the period 1997-2004 there were 40 hazardous material spills directly associated with container terminals in the Ports of Los Angeles and Long Beach. This equates to approximately five spills per year for the entire Port complex. During this period, the total throughput of the container terminals at both Ports was 76,874,841 TEU. Therefore, the probability of a spill at a container terminal can be estimated at 5.2×10^{-7} per TEU (40 spills divided by 76,874,841 TEU). This spill probability conservatively represents the baseline hazardous material spill probability since it includes materials that would not be considered a risk to public safety (e.g., perfume spills), but would still be considered an environmental hazard. The probability of spills associated with future operations would be based on the spill probability per TEU times the increase in TEUs under the proposed Project.

It should be noted, with respect to hazardous material spills, that during this period there were no reported impacts to the public (injuries, fatalities and evacuations), with potential consequences limited to port workers (two worker injuries that were treated at the scene and 20 workers evaluated as a precaution).

Based on the accident history at the Port of containers containing hazardous materials, which includes 40 incidents over an 8-year period in the entire Port complex (Ports of Los Angeles and Long Beach), the frequency of Project-related spills can be estimated as shown in Table 3.8-5.

Table 3.8-5. Proposed Project: Existing and Projected Cargo Throughput Volumes at Berths 97-109 and the Port

Operations	Overall Throughput (TEUs)	Increase in TEUs (multiples [X])	Potential Spills (per year)
Port-Wide (2005)	7,484,624	NA	3.9
CEQA Project Baseline (2001)	45,135	NA	0.02
Project (2030)	1,551,000	33.3 X	0.8

Note:
TEU = twenty-foot equivalent unit

Based on the projected increase in TEUs, the frequency of potential Project-related spills would increase from 0.02 to 0.8 spills per year. This spill frequency would be classified as "periodic" (between once per year and once in 10 years). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials

spills that were reported during the 1997-2004 period. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health impacts. Therefore, under CEQA, proposed Project operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of a potential accidental release or explosion of a hazardous substance. CEQA impacts would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

The proposed Project would include the construction of new wharves, dikes, and backlands, which in turn would result in an increase in TEUs, in comparison to the NEPA baseline. Berth 97-109 terminal operations under the NEPA baseline would accommodate approximately 632,500 TEUs per year when optimized and functioning at maximum capacity (in 2030). The proposed Project would result in a net increase of 918,500 TEUs per year compared to the NEPA baseline. An overall increase in TEUs would result in proportionally greater hazardous materials containers subject to accidental release or explosion as shown in Table 3.8-6.

Table 3.8-6. Proposed Project: Existing and Projected Cargo Throughput Volumes at Berths 97-109

Operations	TEUs	Increase in TEUs over CEQA Baseline (%)	Potential Spills (per year)
Port Baseline (2005)	7,484,624	NA	3.9
NEPA Baseline (2030)	632,500	NA	0.3
Project (2030)	1,551,000	145%	0.8

Note:
TEU = twenty-foot equivalent unit

Based on the projected increase in TEUs, the frequency of potential Project-related spills would increase from 0.3 to 0.8 spills per year. This spill frequency would be classified as "periodic" (between once per year and once in 10 years). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above,

would minimize the potentials for adverse public health impacts. Therefore, under NEPA, proposed Project operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of a potential accidental release or explosion of a hazardous substance. NEPA impacts would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-2b: Proposed Project operations would substantially increase the probable frequency and severity of consequences to people or property from exposure to health hazards.

The proposed Project would include siting facilities that would potentially handle hazardous materials and increase other hazards to the public. These hazards would include the similar containerized hazardous materials that were handled at the Project site under the 2001 baseline conditions, but the volume of hazardous materials under the proposed Project would increase proportionally with the increase in TEU throughput (relative to baseline conditions). Likewise, the increased throughput volume would increase the chance of a fire or explosion at the terminal, as well as hazards associated with container transportation. The handling and storing of increased quantities of hazardous materials would increase the probability of a local accident involving a release, spill, fire or explosion, which is proportional to the size of the terminal and its throughput as addressed in **Impact RISK-1b**.

Because projected terminal operations at Berths 97-109 would accommodate approximately a thirty-fourfold increase in containerized cargo compared to the CEQA Baseline, the potential for increased truck transportation-related accidents would also occur. Potential Project-related increases in truck trips could result in an increase in vehicular accidents, injuries, and fatalities. Therefore, potential impacts of increased truck traffic on regional injury and fatality rates are evaluated.

According to an FMCSA detailed analysis (FMCSA, 2001), the estimated nonhazardous materials truck accident rate is more than twice the hazardous materials truck accident rate. The nonhazardous materials truck accident rate was estimated to be 0.73 accidents per million vehicle miles and the average hazardous materials truck accident rate was estimated to be 0.32 accidents per million vehicle miles. The hazardous materials truck accident rate is not directly applicable to the proposed Project container trucks since such trucks are generally limited to bulk hazardous material carriers. Therefore, to conduct a conservative analysis, the higher accident rate associated with nonhazardous materials trucks was used.

Based on the NHTSA (DOT, 2003), of the estimated 457,000 truck crashes in 2000 (causing fatalities, injuries, or property damage), an estimated 1 percent produced fatalities and 22 percent produced injuries. The FARS and the TIFA survey were the sources of data for this analysis, which primarily examined fatalities associated with vehicle impact and trauma.

Based on these statistics and the projected truck trips for the existing facilities and proposed Project, the potential rate of truck accidents, injuries and fatalities can be estimated and evaluated.

CEQA Impact Determination

Potential Project-related truck accident rates can be estimated based on national average accident rates and the average number of miles per cargo truck trip. Based on the air pollutant emission inventory of the Port, it was determined that the average truck trip was approximately 49 miles (Starcrest Consulting Group, 2003). Given the annual number of truck trips, the average distance of each trip, and the published accident, injury and fatality rates, probabilities were estimated as shown in Table 3.8-7.

Table 3.8-7. Proposed Project: Existing and Projected Truck Trips at Berths 97-109

Operations	Annual Truck Trips	Increase over CEQA Baseline (%)	Accident Rate (per year)	Injury Probability (per year)	Fatality Probability (per year)
CEQA Baseline (2001)	0	NA	0.0	0.0	0.0
Project (2030)	1,508,004	NA	53.9	11.8	0.5

Because the occurrence of truck accidents associated with Berths 97-109 occur at a frequency greater than one per year, truck accidents are considered a "frequent" event. Because the possibility exists for injury and/or fatality to occur during one of these frequent accidents, as noted in Table 3.8-7, the consequence of such accidents is classified as "severe," resulting in a Risk Code of 2. An impact with a Risk Code of 2 is classed as significant and requires additional engineering or administrative controls to mitigate the potentially significant adverse impacts.

The Port is currently developing a port-wide transportation master plan (TMP) for roadways in and around its facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. The results will be a TMP providing ideas on what to expect and how to prepare for future traffic volumes. Some of the transportation improvements already under consideration include I-110/SR-47/Harbor Boulevard interchange improvements, Navy Way connector (grade separation) to westbound Seaside Avenue, south Wilmington grade separations, and additional traffic capacity analysis for the Vincent Thomas Bridge. In addition, the Port is working on several strategies to increase rail transport, which will reduce reliance on trucks. These projects would serve to reduce the frequency of truck accidents.

The Port also is currently phasing out older trucks as part of its Clean Truck Program, and the TWIC program will help identify and exclude truck drivers that lack the proper licensing and training. The phasing out of older trucks would reduce the probability of accidents that occur as a result of mechanical failure by approximately 10 percent (ADL, 1990). Proper driver training, or more specifically, the reduction in the number of drivers that do not meet minimum training specifications, would further reduce potential accidents by approximately 30 percent. The potential number of injuries would be reduced to approximately 7.4, which would reduce the consequence classification to "moderate" and a Risk Code to 3 or less. Therefore,

proposed Project operations would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards and potential impacts under CEQA would be considered less than significant**.**

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

The proposed Project would result the construction of wharves, dikes, and backland areas, which would result in an increase in TEUs and truck trips, in comparison to the NEPA baseline as described under the NEPA Impact Determination for **Impact RISK 1b**. Given the annual number of truck trips, the average distance of each trip, and the published accident, injury, and fatality rates, probabilities were estimated as shown in Table 3.8-8.

Table 3.8-8. Proposed Project: Existing and Projected Truck Trips at Berths 97-109

Operations	Annual Truck Trips	Increase over NEPA Baseline (%)	Accident Rate (per year)	Injury Probability (per year)	Fatality Probability (per year)
NEPA Baseline (2030)	0	NA	0.0	0.0	0.0
Project (2030)	1,508,004	NA	53.9	11.8	0.5

Because the occurrence of truck accidents associated with Berths 97-109 occur at a frequency greater than one per year, truck accidents are considered a "frequent" event. Because the possibility exists for injury and/or fatality to occur during one of these frequent accidents as noted in Table 3.8-8, the consequence of such accidents is classified as "severe," resulting in a Risk Code of 2. An impact with a Risk Code of 2 is classed as significant and requires additional engineering or administrative controls to mitigate the potentially significant adverse impacts.

The Port is currently developing a port-wide TMP for roadways in and around its facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. The results will be a TMP providing ideas on what to expect and how to prepare for future traffic volumes. Some of the transportation improvements already under consideration include I-110/SR-47/ Harbor Boulevard interchange improvements, Navy Way connector (grade separation) to westbound Seaside Avenue, south Wilmington grade separations, and additional traffic capacity analysis for the Vincent Thomas Bridge. In addition, the Port is working on several strategies to increase rail transport, which will reduce reliance on trucks. These projects would serve to reduce the frequency of truck accidents.

The Port also is currently phasing out older trucks as part of its Clean Truck Program, and the TWIC program will help identify and exclude truck drivers that lack the proper licensing and training. The phasing out of older trucks would reduce the probability of accidents that occur as a result of mechanical failure by approximately

10 percent (ADL, 1990). Proper driver training, or more specifically, the reduction in the number of drivers that do not meet minimum training specifications, would further reduce potential accidents by approximately 30 percent. The potential number of injuries would be reduced to approximately 7.4, which would reduce the consequence classification to "moderate" and a Risk Code to 3 or less. Therefore, proposed Project operations would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards and potential impacts under NEPA would be considered less than significant

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under NEPA.

Impact RISK-3b: Proposed Project operations would not substantially interfere with any existing emergency response plans or emergency evacuation plans.

The proposed Project would optimize terminal operations by increasing backland capacity and constructing new wharves and dikes to accommodate modern container terminal ships, and implementing transportation infrastructure improvements. The Berth 97-109 terminal would operate as a container terminal similar to other terminals in the West Basin; therefore, proposed terminal operations would not interfere with any existing contingency plans, since the current activities are consistent with the contingency plans and the proposed Project would not add any additional activities that would be inconsistent with these plans. In addition, existing oil spill contingency and emergency response plans for the proposed Project site would be revised to incorporate proposed facility and operation changes. Because existing management plans are commonly revised to incorporate terminal operation changes, conflicts with existing contingency and emergency response plans are not anticipated.

Berth 97-109 facilities personnel, including dock laborers and equipment operators, would be trained in emergency response and evacuation procedures. The proposed Project site would be secured, with access allowed only to authorized personnel. The LAFD and Port Police would be able to provide adequate emergency response services to the proposed Project site. Additionally, proposed Project operations would also be subject to emergency response and evacuation systems implemented by the LAFD, which would review all plans to ensure that adequate access in the proposed Project vicinity is maintained. All proposed Project contractors would be required to adhere to plan requirements.

CEQA Impact Determination

The proposed Project would operate as a container terminal and operations would be subject to emergency response and evacuation systems implemented by the LAFD. Thus, proposed Project operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

The proposed Project would operate as a container terminal and operations would be subject to emergency response and evacuation systems implemented by the LAFD. Thus, proposed Project operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under NEPA.

Impact RISK-4b: The proposed Project would comply with applicable regulations and policies guiding development in the Port.

The proposed Project is subject to numerous regulations for operation of the proposed facilities. LAHD has implemented various plans and programs to ensure compliance with these regulations, which must be adhered to during operation of the proposed Project. For example, as discussed in Section 3.8.3.1, List of Regulations, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. Among other requirements, the proposed Project would conform to the USCG requirement to provide a segregated cargo area for containerized hazardous materials. Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). In addition, any facility constructed in the proposed Project area, identified as either a hazardous cargo facility or a vulnerable resource, would be required to conform to the RMP, which includes packaging constraints and the provision of a separate storage area for hazardous cargo.

LAHD maintains compliance with these state and federal laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. Most notably, the Port RMP implements development guidelines in an effort to minimize the danger of accidents to vulnerable resources. This would be achieved mainly through physical separation as well as through facility design features, fire protection, and other risk management methods. There are two primary categories of

vulnerable resources, people, and facilities. People are further divided into subgroups. The first subgroup is comprised of residences, recreational users, and visitors. Within the Port setting, residences and recreational users are considered vulnerable resources. The second subgroup is comprised of workers in high density (i.e., generally more than 10 people per acre, per employer).

Facilities that are vulnerable resources include Critical Regional Activities/Facilities and High Value Facilities. Critical Regional Activities/Facilities are facilities in the Port that are important to the local or regional economy, the national defense, or some major aspect of commerce. These facilities typically have a large quantity of unique equipment, a very large working population, and are critical to both the economy and to national defense. Such facilities in the Port have been generally defined in the Port RMP as the former Todd Shipyard, Fish Harbor, Badger Avenue Bridge, and Vincent Thomas Bridge.

High Value Facilities are nonhazardous facilities, in and near the Ports, which have very high economic value. These facilities include both facility improvements and cargo in-place, such as container storage areas. However, the determination of a vulnerable resource is made by the Port and LAFD on a case-by-case basis. Although the Port generally considers container terminals to be High Value Facilities, these types of facilities have never been considered vulnerable resources in risk analyses completed by the Port and LAFD (pers. comm., Knott, 2007). Because container terminals are not considered vulnerable resources, the proposed Project would not conflict with the RMP.

Proposed Project plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Buildings will be equipped with fire protection equipment as required by the Los Angeles Municipal Fire Code. Access to all buildings and adequacy of road and fire lanes will be reviewed by the LAFD to ensure that adequate access and firefighting features are provided. Proposed Project plans would include an internal circulation system, code-required features, and other firefighting design elements, as approved by the LAFD.

Operation of the proposed Project would be required to comply with all existing hazardous waste laws and regulations, including the federal RCRA and CERCLA, and CCR Title 22 and Title 26. The proposed Project would comply with these laws and regulations, which would ensure that potential hazardous materials handling would occur in an acceptable manner.

CEQA Impact Determination

Operations at the proposed Project site would not conflict with RMP guidelines. Proposed Project plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, and operation of the proposed Project would be required to comply with all existing applicable hazardous waste laws and regulations. Therefore, under CEQA, proposed Project operations would comply with applicable regulations and policies guiding development in the Port. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Operations at the proposed Project site would not conflict with RMP guidelines. Proposed Project plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, and operation of the proposed Project would be required to comply with all existing applicable hazardous waste laws and regulations. Therefore, under NEPA, proposed Project operations would comply with applicable regulations and policies guiding development in the Port. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-5b: Tsunami-induced flooding and seismic events would result in fuel releases from ships or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a large tsunami to affect the Port. A large tsunami would likely lead to a fuel spill if a moored vessel is present. Although crude oil tankers would not moor at Berths 97-109, each ship contains large quantities of fuel oil (up to 5,000 barrels). While in transit, the hazards posed to tankers are insignificant, and in most cases, imperceptible. However, while docked, a tsunami striking the Port could cause significant ship movement and even a hull breach if the ship is pushed against the wharf.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all proposed Project structures and land surfaces are expressed as height above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the proposed Project site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case

wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during operation of the proposed Project and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

Containers of hazardous substances on ships or on berths could similarly be damaged as a result of a large tsunami. Such damage would result in releases of both hazardous and nonhazardous cargo to the environment, adversely affecting persons and/or the marine waters. However, containers carrying hazardous cargo would not necessarily release their contents in the event of a large tsunami. The DOT regulations (49 CFR Parts 172 through 180) covering hazardous material packaging and transportation would minimize potential release volumes since packages must meet minimum integrity specifications and size limitations.

The owner or operators of tanker vessels are required to have an approved Tank Vessel Response Plan on board and a qualified individual in the U.S. with full authority to implement removal actions in the event of an oil spill incident, and to contract with the spill response organizations to carry out cleanup activities in case of a spill. The existing oil spill response capabilities in the Port are sufficient to isolate spills with containment booms and recover the maximum possible spill from an oil tanker.

Various studies have shown that double-hull tank vessels have lower probability of releases when tanker vessels are involved in accidents. Because of these studies, the USCG issued regulations addressing double-hull requirements for tanker vessels. The

regulations establish a timeline for eliminating single-hull vessels from operating in the navigable waters or the Exclusive Economic Zone (EEZ) of the U.S. after January 1, 2010 and double-bottom or double-sided vessels by January 1, 2015. Only vessels equipped with a double hull, or with an approved double containment system will be allowed to operate after those times. It is unlikely that single-hull vessels will use the proposed Project terminal facilities given the current proposed Project schedule and the planned phase-out of these vessels.

CEQA Impact Determination

Designing new facilities based on existing building codes may not prevent substantial damage to structures from coastal flooding as a result of tsunamis or seiches. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of the proposed Project. However, because the proposed Project site elevation is located within 10 to 15 feet above MLLW, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of the proposed Project, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low since all fuel storage containers at the Project site would be quite small in comparison to the significance criteria volumes. While there will be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami or other seismic risk would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami, impacts under CEQA would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Designing new facilities based on existing building codes may not prevent substantial damage to structures from coastal flooding as a result of tsunamis or seiches. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of the proposed Project. However, because the proposed Project site elevation is located within 10 to 15 feet above MLLW, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of the proposed Project, but could occur (see Section 3.5, Geology for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The

potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low since all fuel storage containers at the Project site would be quite small in comparison to the significance criteria volumes. While there will be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under NEPA would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be considered less than significant.

Impact RISK-6b: A potential terrorist attack would result in adverse consequences to areas near the proposed Project site during the operations period.

Risk of Terrorist Actions Associated with Project Operations

The probability of a terrorist attack on the proposed Project facilities is not likely to appreciably change over current conditions. It is possible that the increase in vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal.

Consequences of Terrorist Attack

The risks associated with terrorism discussed in Section 3.8.2.4 during construction would apply to the terminal during operations. The potential consequences of a terrorist action on a container terminal would be mainly environmental and economic. A terrorist action involving a container vessel while at berth may result in a fuel and/or commodity spill and its associated environmental damage. Within the Port, a terrorist action could block key waterways and result in economic disruption. Potential environmental damage would include fuel and/or commodity spills into the marine environment, with associated degradation of water quality and damage to marine biological resources. Container ships typically carry up to 5,000 barrels of fuel oil but would not be full when arriving at the port. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality. Such potential impacts to the environment are addressed in specific resource sections including air quality (Section 3.2), biology (Section 3.3), and water quality (Section 3.14).

The consequences associated with the smuggling of WMDs would be substantial in terms of impacts to the environment and public health and safety. However, the consequences of a WMD attack would not be affected by the Project. Furthermore, the likelihood of such an event would not be impacted by Project-related infrastructure or throughput

increases, but would depend on the terrorist's desired outcome and the ability of safeguards, unaffected by the Project, to thwart it. Cargo containers represent only one of many potential methods to smuggle WMD, and with current security initiatives (see Section 3.8.2.5) may be less plausible than other established smuggling routes (e.g., land-based ports of entry, cross-border tunnels, and illegal vessel transportation).

CEQA Impact Determination

Potential public safety consequences of a terrorist attack on the Berth 97-109 terminal for the proposed Project are considered negligible since, in the event of a successful attack, the potential for a small number of offsite injuries are possible mainly due to fire, which in turn would be a result of large amounts of fuel spilled into Port waters. Potential thermal radiation and explosion overpressure levels would be limited to the immediate vicinity of the attack and would not overlap existing, planned, or permitted vulnerable resources including bulk oil and petroleum facilities located in the West Basin. However, the potential for limited public exposure along Port waterways is possible.

Any increase in the volume of container vessels visiting the proposed Project site would not change the probability or consequences of a terrorist attack on the Berth 97-109 terminal since the terminal is already considered a potential economic target, as well as a potential mode to smuggle a weapon into the United States. In addition, the measures outlined in Section 3.8.2.5 would serve to reduce the potential for a successful terrorist attack on the Berth 97-109 facility compared to Project baseline conditions (under which many of these measures had not been implemented). These measures have since improved both terminal and cargo security and have resulted in enhanced cargo screening. Therefore, potential impacts under CEQA associated with a potential terrorist attack on the Berth 97-109 facility are considered less than significant.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

NEPA Impact Determination

Potential impacts under NEPA would be that same as under CEQA and are considered less than significant.

Mitigation Measures

As terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

No residual impacts would occur.

3.8.4.3.2 Alternatives

3.8.4.3.2.1 Alternative 1 – No Project Alternative

Alternative 1, the No Project Alternative, would utilize the terminal site constructed as part of Phase I for container storage. Because of this, the Phase I construction activities are included under Alternative 1, although the in-water Phase I elements would not be used.

Under Alternative 1, no ships would dock at Berths 97-109. The 1.3 acres of fill, the wharf at Berth 100, and the bridge over the Southwest Slip would be abandoned in place. In addition, the four existing A-frame cranes would be dismantled and removed. The backlands area of the Project site would remain at 72 acres and would be used for supplemental storage of cargo containers (up to 457,100 TEUs) associated with the existing adjacent Yang Ming Container Terminal at Berths 121-131.

3.8.4.3.2.1.1 Construction Impacts

CEQA Impact Determination

During the period when facilities and infrastructure were developed (2001-2005), no incidents occurred that: exposed people to the accidental release of hazardous materials, caused contamination of soil or water, involved an accidental release from a fire or explosion, interfered with existing emergency response and evacuation plans, or involved a terrorist attack. Therefore, construction impacts under CEQA for **RISK-1a, RISK-2a, RISK-3a, RISK-4a, RISK-5a,** and **RISK-6a** would be less than significant**.**

Mitigation Measures

No mitigation is required.

Residual Impacts

No residual impacts would occur.

NEPA Impact Determination

The impacts of the No Project Alternative under CEQA are not required to be analyzed under NEPA. NEPA requires the analysis of a No Federal Action Alternative (see Alternative 2 below).

Mitigation Measures

Because there would be no federal action, no mitigation would be required.

Residual Impacts

No residual impacts would occur.

3.8.4.3.2.1.2 Operational Impacts

Impact RISK-1b: Berth 97-109 terminal operations would not increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.

Under Alternative 1, the Berth 97-109 terminal site would accommodate a maximum of 457,100 TEUs per year when optimized and functioning at maximum capacity (in 2025). This compares to 45,135 TEUs under baseline conditions (in 2001). Terminal operations would be subject to safety regulations that govern the storage and handling of hazardous materials, which would limit the severity and frequency of potential releases of hazardous materials resulting in increased exposure of people to health hazards (i.e., Port RMP, USCG and LAFD regulations and requirements, and DOT regulations). For example, as discussed in Section 3.8.3.1, List of Regulations, and summarized below, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. In addition, the DOT Hazardous Materials Regulations (Title 49 CFR Parts 100-185) regulate almost all aspects of terminal operations. Parts 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications), and 180 (Packaging Maintenance) would all apply to the alternative Project activities.

Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). Implementation of increased hazardous materials inventory control and spill prevention controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Terminal maintenance activities would involve the use of hazardous materials such as petroleum products, solvents, paints, and cleaners. Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to an RRP and HMI. Implementation of increased inventory accountability and spill prevention controls associated with this RRP and HMI would limit both the frequency and severity of potential releases of hazardous materials. Based on the limited volumes that could potentially spill, quantities of hazardous materials used at Berths 97-109 that are below the thresholds of Chapter 6.95 would not likely result in a substantial release into the environment.

CEQA Impact Determination

Because projected terminal operations at Berths 97-109 would accommodate approximately a 10-fold increase in containerized cargo compared to the CEQA baseline, the potential for an accidental release or explosion of hazardous materials would also be expected to increase proportionally.

During the period 1997-2004, there were 40 hazardous material spills directly associated with container terminals in the Ports of Los Angeles and Long Beach. This equates to approximately five spills per year for the entire port complex. During this period, the total throughput of the container terminals was 76,874,841 TEU. Therefore, the probability of a spill at a container terminal can be estimated at 5.2×10^{-7} per TEU (40 spills divided by 76,874,841 TEU). This spill probability conservatively represents the baseline hazardous material spill probability since it includes materials that would not be considered a risk to public safety (e.g., perfume spills) but nevertheless would be considered an environmental hazard. The probability of spills associated with future operations would be based on the spill probability per TEU times the increment in TEUs under the alternative project.

It should be noted that during this period there were no reported impacts to the public (injuries, fatalities, and evacuations), with potential consequences limited to port workers (two worker injuries that were treated at the scene and 20 workers evaluated as a precaution).

Based on the accident history at the Port of containers containing hazardous materials, which includes 40 incidents over an 8-year period in the entire Port complex (Ports of Los Angeles and Long Beach), the frequency of Project-related spills can be estimated as shown in Table 3.8-9.

Table 3.8-9. Alternative 1: Existing and Projected Berth 97-109 Capacity (TEUs)

Operations	TEUs	Increase in TEUs over CEQA Baseline (times or multiples)	Potential Spills (per year)
Port-Wide (2005)	7,484,624	NA	3.9
CEQA Baseline (2001)	45,135	NA	0.02
Alternative 1 (2030)	457,100	10.1 times	0.24

Note:
TEU = twenty-foot equivalent unit

Based on the projected increase in TEUs occupying the terminal site, the frequency of potential Alternative 1-related spills would increase from 0.02 to 0.24 spills per year. This spill frequency would be classified as "periodic" (between once per year and once in 10 years). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health impacts. Therefore, under CEQA, Alternative 1 operations would not substantially increase the probable frequency and severity of consequences to people

or property as a result of an accidental release or explosion of a hazardous substance. Impacts under CEQA would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

The impacts of the No Project Alternative under CEQA are not required to be analyzed under NEPA. NEPA requires the analysis of a No Federal Action Alternative (see Alternative 2 below).

Mitigation Measures

Because there would be no federal action, no mitigation would be required.

Residual Impacts

No residual impacts would occur.

Impact RISK-2b: Alternative 1 operations would not substantially increase the probable frequency and severity of consequences to people or property from exposure to health hazards.

Under this alternative, Berth 97-109 terminal operations would accommodate a maximum of 457,100 TEUs per year when optimized and functioning at maximum capacity (in 2025). This compares to 45,135 TEUs under baseline conditions (in 2001). The increased volume would increase the chance of a fire or explosion at the terminal. The handling and storing of increased quantities of hazardous materials would increase the probability of a local accident involving a release, spill, fire, or explosion, which is proportional to the size of the terminal and TEUs at the site as addressed in **Impact RISK-1b**.

Under Alternative 1, the Berth 97-109 terminal site accommodates the storage and management of containers entering and leaving via the adjacent Yang Ming Terminal. Were the containers not occupying the Berth 97-109 terminal site, they would be located at the Yang Ming Terminal. Thus, truck trips accounted for by the movement of these containers are not part of Alternative 1.

CEQA Impact Determination

In the absence of truck trips associated with containers stored and managed at the Berth 97-109 terminal site attributable to Alternative 1, no impacts would occur.

Mitigation Measure

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

The impacts of the No Project Alternative under CEQA are not required to be analyzed under NEPA. NEPA requires the analysis of a No Federal Action Alternative (see Alternative 2 below).

Mitigation Measures

Because there would be no federal action, no mitigation would be required.

Residual Impacts

No residual impacts would occur.

Impact RISK-3b: Alternative 1 operations would not substantially interfere with any existing emergency response plans or emergency evacuation plans.

Under Alternative 1, the Berth 97-109 terminal would operate as a container backlands area in support of Berth 121-131 operations. Therefore, proposed backland operations would not interfere with any existing contingency plans, since the current activities are consistent with the contingency plans and the alternative project would not add any additional activities that would be inconsistent with these plans.

Berth 97-109 facilities personnel, including laborers and equipment operators, would be trained in emergency response and evacuation procedures. The Project site would be secured, with access allowed only to authorized personnel. The LAFD and Port Police would be able to provide adequate emergency response services to the Project site. Additionally, Alternative 1 operations would be subject to emergency response and evacuation systems implemented by the LAFD, which would review all plans to ensure that adequate access in the Project vicinity is maintained. All contractors would be required to adhere to plan requirements.

CEQA Impact Determination

Because the terminal would continue to be operated as a container terminal, Alternative 1 operations would continue to be subject to emergency response and evacuation systems implemented by the LAFD. Alternative 1 operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

No residual impacts would occur.

NEPA Impact Determination

The impacts of the No Project Alternative under CEQA are not required to be analyzed under NEPA. NEPA requires the analysis of a No Federal Action Alternative (see Alternative 2 below).

Mitigation Measures

No mitigation would be required.

Residual Impacts

No residual impacts would occur.

Impact RISK-4b: Alternative 1 operations would comply with applicable regulations and policies guiding development in the Port.

Alternative 1 operations would be subject to numerous regulations. LAHD has implemented various plans and programs to ensure compliance with these regulations, which must be adhered to during Alternative 1 operations. For example, as discussed in Section 3.8.3.1, List of Regulations, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. Among other requirements, Alternative 1 operations would conform to the USCG requirement to provide a segregated cargo area for containerized hazardous materials. Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System, prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). Any facilities identified as either a hazardous cargo facility or a vulnerable resource would be required to conform to the RMP, which includes packaging constraints and the provision of a separate storage area for hazardous cargo.

LAHD maintains compliance with these state and federal laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. Most notably, the Port RMP implements development guidelines in an effort to minimize the danger of accidents to vulnerable resources. This would be achieved mainly through physical separation as well as through facility design features, fire protection, and other risk management methods. There are two primary categories of vulnerable resources, people, and facilities. People are further divided into subgroups. The first subgroup is comprised of residences, recreational users, and visitors. Within the Port setting, residences and recreational users are considered vulnerable resources. The second subgroup is comprised of workers in high density (i.e., generally more than 10 people per acre, per employer).

Facilities that are vulnerable resources include Critical Regional Activities/Facilities and High Value Facilities. Critical Regional Activities/Facilities are facilities in the Port that are important to the local or regional economy, the national defense, or some major aspect of commerce. These facilities typically have a large quantity of unique equipment, a very large working population, and are critical to both the economy and to national defense. Such facilities in the Port have been generally defined in the Port RMP as the former Todd Shipyard, Fish Harbor, Badger Avenue Bridge, and Vincent Thomas Bridge.

High Value Facilities are nonhazardous facilities, in and near the Ports, which have very high economic value. These facilities include both facility improvements and cargo in-place, such as container storage areas. However, the determination of a vulnerable

resource is made by the Port and LAFD on a case-by-case basis. Although the Port generally considers container terminals to be High Value Facilities, these types of facilities have never been considered vulnerable resources in risk analyses completed by the Port and LAFD (pers. comm., Knott, 2007). Because container terminals are not considered vulnerable resources, this alternative would not conflict with the RMP.

Plans and specifications of existing facilities have been reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Buildings have been equipped with fire protection equipment as required by the Los Angeles Municipal Fire Code. Access to all buildings and adequacy of road and fire lanes have been reviewed by the LAFD to ensure that adequate access and firefighting features are provided.

Operation of Alternative 1 would be required to comply with all existing hazardous waste laws and regulations, including the federal RCRA and CERCLA, and CCR Title 22 and Title 26. Alternative 1 operations would comply with these laws and regulations, which would ensure that potential hazardous materials handling would occur in an acceptable manner.

CEQA Impact Determination

Alternative 1 operations would not conflict with RMP guidelines or the Los Angeles Municipal Fire Code and would be required to comply with all applicable existing hazardous waste laws and regulations. Therefore, under CEQA, Alternative 1 operations would comply with applicable regulations and policies guiding development in the Port. Impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

The impacts of the No Project Alternative under CEQA are not required to be analyzed under NEPA. NEPA requires the analysis of a No Federal Action Alternative (see Alternative 2 below).

Mitigation Measures

No mitigation would be required.

Residual Impacts

No residual impacts would occur.

Impact RISK-5b: Tsunami-induced flooding and seismic events would result in fuel releases from ships or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a large tsunami to impact the Port. A large tsunami would likely lead to a fuel spill if a moored vessel is present. Although crude oil tankers would not moor at Berths 97-109, each ship contains large quantities of

fuel oil. While in transit, the hazards posed to tankers are insignificant, and in most cases, imperceptible. However, while docked, a tsunami striking the Port could cause significant ship movement and even a hull breach if the ship is pushed against the wharf.

Under this alternative, Berths 97-109 terminal operations would handle a maximum throughput of 457,100 TEUs per year when optimized and functioning at maximum capacity (in 2025). This alternative would result in 1,093,900 fewer TEUs per year compared to the proposed Project. Thus, the number of ship calls and the overall health risk to persons and/or the environment would be reduced compared to the proposed Project.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all alternative Project structures and land surfaces are expressed as height above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the alternative Project site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the alternative Project site. Because the alternative Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic scenario based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the alternative Project site. Because the alternative Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is

very low during construction of the alternative Project and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

Containers of hazardous substances on ships or on berths could similarly be damaged as a result of a large tsunami. Such damage would result in releases of both hazardous and nonhazardous cargo to the environment, adversely affecting persons and/or the marine waters. However, containers carrying hazardous cargo would not necessarily release their contents in the event of a large tsunami. The DOT regulations (49 CFR Parts 172-180) covering hazardous material packaging and transportation would minimize potential release volumes since packages must meet minimum integrity specifications and size limitations.

The owner or operators of tanker vessels are required to have an approved Tank Vessel Response Plan on board and a qualified individual in the U.S. with full authority to implement removal actions in the event of an oil spill incident, and to contract with the spill response organizations to carry out cleanup activities in case of a spill. The existing oil spill response capabilities in the Port are sufficient to isolate spills with containment booms and recover the maximum possible spill from an oil tanker.

Various studies have shown that double-hull tank vessels have lower probability of releases when tanker vessels are involved in accidents. Because of these studies, the USCG issued regulations addressing double-hull requirements for tanker vessels. The regulations establish a timeline for eliminating single-hull vessels from operating in the navigable waters or the EEZ of the U.S. after January 1, 2010, and double-bottom or double-sided vessels by January 1, 2015. Only vessels equipped with a double hull, or with an approved double containment system will be allowed to operate after those times.

CEQA Impact Determination

Designing new facilities based on existing building codes (as was done for the facilities constructed between 2001 and 2005) may not prevent substantial damage to structures from coastal flooding as a result of tsunamis and seiches. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by Alternative 1 operations. However, because the Project site elevation is located within 10 to 15 feet above MLLW, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 1, but could occur (see

Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low since all fuel storage containers at the Project site would be quite small in comparison to the significance criteria volumes. While there will be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under CEQA would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

The impacts of the No Project Alternative under CEQA are not required to be analyzed under NEPA. NEPA requires the analysis of a No Federal Action Alternative (see Alternative 2 below).

Mitigation Measures

No mitigation would be required.

Residual Impacts

No residual impacts would occur.

Impact RISK-6b: A potential terrorist attack would result in adverse consequences to areas near the Alternative 1 site during the operations period.

Risk of Terrorist Actions Associated with Operations

The probability of a terrorist attack on the Alternative 1 facilities is not likely to appreciably change over current conditions. It is possible that the increase (over baseline) in vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal.

Consequences of Terrorist Attack

The risks associated with terrorism discussed in Section 3.8.2.4 would apply to the terminal during operations. The potential consequences of a terrorist action on a container terminal would be mainly environmental and economic. A terrorist action involving a container vessel while at berth may result in a fuel spill and/or commodity and its associated environmental damage. Within the Port, a terrorist action could block

key waterways and result in economic disruption. Potential environmental damage would include fuel and/or commodity spills into the marine environment, with associated degradation of water quality and damage to marine biological resources. Container ships typically carry up to 5,000 barrels of fuel oil but would not be full when arriving at the port. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality. Such potential impacts to the environment are addressed in specific resource sections including air quality (Section 3.2), biology (Section 3.3), and water quality (Section 3.14).

The consequences associated with the smuggling of WMDs would be substantial in terms of impacts to the environment and public health and safety. However, the consequences of a WMD attack would not be affected by the alternative. Furthermore, the likelihood of such an event would not be affected by alternative-related infrastructure or throughput increases, but would depend on the terrorist's desired outcome and the ability of safeguards, unaffected by the alternative, to thwart it. Cargo containers represent only one of many potential methods to smuggle WMDs, and with current security initiatives (see Section 3.8.2.5) may be less plausible than other established smuggling routes (e.g., land-based ports of entry, cross-border tunnels, and illegal vessel transportation).

CEQA Impact Determination

Potential public safety consequences of a terrorist attack on the Berth 97-109 terminal for the alternative Project are considered negligible since, in the event of a successful attack, the potential for a small number of offsite injuries are possible mainly due to fire, which in turn would be a result of fuel spilled into Port waters. Potential thermal radiation and explosion overpressure levels would be limited to the immediate vicinity of the attack and would not overlap existing, planned, or permitted vulnerable resources including bulk oil and petroleum facilities located in the West Basin. However, the potential for limited public exposure along Port waterways is possible.

An increase in the volume of container vessels visiting the terminal would not change the probability or consequences of a terrorist attack on the Berth 97-109 terminal since the terminal is already considered a potential economic target, as well as a potential mode to smuggle a weapon into the United States. In addition, the measures outlined in Section 3.8.2.5 would serve to reduce the potential for a successful terrorist attack on the Berth 97-109 facility compared to Project baseline conditions (under which many of these measures had not yet been implemented). These measures have since improved both terminal and cargo security, and have resulted in enhanced cargo screening. Therefore, potential impacts under CEQA associated with a potential terrorist attack on the Berth 97-109 facility are considered less than significant.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

NEPA Impact Determination

The impacts of the No Project Alternative under CEQA are not required to be analyzed under NEPA. NEPA requires the analysis of a No Federal Action Alternative (see Alternative 2 below).

Mitigation Measures

Mitigation measures are not required.

Residual Impacts

No residual impacts would occur.

3.8.4.3.2.2 Alternative 2 – No Federal Action Alternative

Alternative 2, No Federal Action Alternative, would utilize the terminal site constructed as part of Phase I for container storage and would increase the backland area to 117 acres. Because of this, the Phase I construction activities are included under Alternative 2 although the in-water Phase I elements would not be used (Phase I dike, fill, and the wharf would be abandoned). Alternative 2 would include the operation of 117 acres of backlands area for supplemental storage of containers from the existing Berth 121-131 container terminal.

Under Alternative 2, no ships would dock at Berths 97-109. The 1.3 acres of fill, the wharf at Berth 100, and the bridge over the Southwest Slip would be abandoned in place. In addition, the four existing A-frame cranes would be dismantled and removed. The backlands area of the Project site would remain at 72 acres and would be used for the supplemental storage of cargo containers (up to 632,500 TEUs) associated with the existing adjacent container terminal at Berths 121-131. Alternative 2 would involve the expansion of landside operations as the area of backlands would increase from 72 acres in 2005 to 117 acres by 2015 and beyond.

3.8.4.3.2.2.1 Construction Impacts

Impact RISK-1a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance.

Alternative 2 at full buildout (2030) would allow for the operation of approximately 117 acres of backlands. Phase I construction during 2002 and 2003 added 58.5 acres to the previously used 13.5-acre backlands (used as container overflow from the existing Yang Ming Terminal) for a combined total 72 acres for Phase I. During this period, no accidental release or explosion of a hazardous substance occurred.

Further development of the backlands (from 72 to 117 acres) under Alternative 2 would require construction activities such as grading, drainage, paving, striping, lighting, and fencing. Federal and state regulations that govern the storage of hazardous materials in containers (i.e., the types of materials and the size of packages containing hazardous materials) and the separation of containers holding hazardous materials, would limit the potential adverse impacts of contamination to a relatively small area. In addition, standard BMPs would be used during construction and demolition activities to minimize runoff of contaminants and clean-up procedures, in compliance with the State General Permit for Storm Water Discharges Associated with Construction Activity (Water

Quality Order 99-08-DWQ) and Project-specific SWPPP (see Section 3.14, Water Quality, Sediments, and Oceanography, for more information).

CEQA Impact Determination

Implementation of construction standards, including BMPs, would minimize the potential for an accidental release of petroleum products and/or hazardous materials and/or explosion during construction activities at Berths 97-109. Standards include, in addition to prevention measures, procedures designed to: effectively and efficaciously clean up spills and immediately implement remedial actions; and procedures for the handling and disposal of materials such as asbestos that would be encountered during demolition activities. It is unlikely that construction and demolition activities would involve the use of substantial quantities of hazardous materials and the most likely source of these materials would be from vehicles at the site. Thus, the most likely spills or releases of hazardous materials during construction would involve petroleum products such as diesel fuel, gasoline, oils, and lubricants. Because construction/demolition-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, such spills are typically short-term and localized. This is attributable to the fact that the volume in any single source vehicle is generally less than 50 gallons and fuel trucks that might be present at the site are limited to 10,000 gallons or less. Thus, the potential consequence of such accidents is classified as "slight" resulting in a Risk Code of 4, which is "acceptable." Therefore, under CEQA, construction would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on criterion **RISK-1**, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

The development that occurred under Phase I of the proposed Project is applied to Alternative 2. In addition, backland development under Alternative 2 would be the same as under the NEPA baseline. As discussed above under the CEQA Impact Determination, construction would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Therefore, significant impacts under NEPA would not occur.

Mitigation Measures

Mitigation measures are not required.

Residual Impacts

Residual impacts would be less than significant.

Impact RISK-2a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards.

Construction activities would be conducted using BMPs and in accordance with the Los Angeles Municipal Code (Chapter 5, Section 57, Division 4 and 5; Chapter 6, Article 4). Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to a Release Response Plan (RRP) and a Hazardous Materials Inventory (HMI). Implementation of increased inventory accountability and spill prevention controls associated with this Release Response Plan and Hazardous Materials Inventory, such as limiting the types of materials stored and size of packages containing hazardous materials, would limit both the frequency and severity of potential releases of hazardous materials, thus minimizing potential health hazards and/or contamination of soil or water during construction activities. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Impacts from contamination of soil or water during construction activities would apply to not only construction personnel, but to people and property occupying operational portions of the terminal site because Berth 97-109 terminal would be operating during ongoing construction activities.

CEQA Impact Determination

Several standard policies regulate the storage of hazardous materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to affect members of the public and limit the adverse impacts of contamination to a relatively small area. Because construction-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, the potential consequence of such accidents is classified as "slight" resulting in a Risk Code of 4, which is "acceptable." Therefore, under CEQA, construction activities at Berths 97-109 would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards. In addition, construction activities that occurred between 2001 and 2005 did not increase the probable frequency and severity of consequences to people from exposure to health hazards. Based on risk criterion **RISK-2**, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

The development that occurred under Phase I of the proposed Project is applied to Alternative 2. As discussed above under the CEQA Impact Determination, construction activities that occurred between 2001 and 2005 did not increase the probable frequency and severity of consequences to people from exposure to health hazards. In addition, backland development under Alternative 2 would be the same as under the NEPA baseline. Therefore, significant impacts under NEPA would not occur because there would be no substantive change in environmental conditions between Alternative 2 and the NEPA baseline.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact RISK-3a: Construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death.

Emergency response and evacuation planning is the responsibility of the Los Angeles Police Department (LAPD), LAFD, Port Police, and United States Coast Guard (USCG). Construction and demolition activities would be subject to emergency response and evacuation systems implemented by LAFD. During construction activities, the LAFD would require that adequate vehicular access to the proposed Project area be provided and maintained. Prior to commencement of construction activities, all plans would be reviewed by the LAFD to ensure adequate access is maintained throughout construction/demolition.

CEQA Impact Determination

Under Alternative 2, contractors were be required (during construction activities that occurred in 2002-2003) and would be during future activities to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under CEQA, construction activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death. Based on risk criterion **RISK-3**, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

The development that occurred under Phase I of the proposed Project is applied to Alternative 2. In addition, backland development under Alternative 2 would be the same as under the NEPA baseline. As discussed above, construction activities would not substantially interfere with an existing emergency response or evacuation plan or

increase the risk of injury or death. Therefore, significant impacts under NEPA would not occur.

Mitigation Measures

Mitigation measures are not required.

Residual Impacts

Residual impacts would be less than significant.

Impact RISK-4a: Alternative 2 would comply with applicable regulations and policies guiding development in the Port.

As described in Section 3.8.3.1, List of Regulations, Alternative 2 is subject to numerous regulations for development and operation of the proposed facilities. For example, construction and demolition would be completed in accordance with RCRA, HSWA, CERCLA, CCR Title 22 and Title 26, and the California Hazardous Waste Control Law, which would govern proper containment, spill control, and disposal of hazardous waste generated during construction activities. Implementation of increased inventory accountability, spill prevention controls, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Potential releases of hazardous substances during construction would be addressed through the federal Emergency Planning and Right-to-Know Act, which is administered in California by the SERC, and the Hazardous Material Release Response Plans and Inventory Law. In addition, construction would be completed in accordance with the Los Angeles Municipal Fire Code, which regulates the construction of buildings and other structures used to store flammable hazardous materials, and the Los Angeles Municipal Public Property Code, which regulates the discharge of materials into the sanitary sewer and storm drain. The latter requires the construction of spill-containment structures to prevent the entry of forbidden materials, such as hazardous materials, into sanitary sewers and storm drains. LAHD maintains compliance with these federal, state, and local laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. LAHD has implemented various plans and programs to ensure compliance with these regulations. These regulations must be adhered to during design and construction. Implementation of increased spill prevention controls, spill release notification requirements, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Construction activities would be conducted using BMPs in accordance with City guidelines, as detailed in the *Development Best Management Practices Handbook* (City of Los Angeles, 2002). Applicable BMPs include, but are not limited to, vehicle and equipment fueling and maintenance; material delivery, storage, and use; spill prevention and control; solid and hazardous waste management; and contaminated soil management. Plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Implementation of increased spill prevention controls associated with these BMPs would limit both the frequency and severity of potential releases of hazardous materials.

CEQA Impact Determination

Because past construction under Alternative 2 included standard BMPs, as would future construction, and because construction occurs in accordance with LAHD plans and programs, LAFD regulations, and all applicable hazardous waste laws and regulations, impacts relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under CEQA under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

The development that occurred under Phase I of the proposed Project is applied to Alternative 2. In addition, backland development under Alternative 2 would be the same as under the NEPA baseline. As discussed above, construction would occur in compliance with applicable regulations and policies guiding development in the Port. Therefore, significant impacts under NEPA would not occur.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact RISK-5a: Tsunami-induced flooding and seismic events would result in fuel releases from demolition/construction equipment or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a major or great earthquake or a large tsunami to affect the Port. Either event could likely lead to a fuel spill from construction equipment, as well as from containers of petroleum products and hazardous substances used during the construction period.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as Mean Lower-Low Water level (MLLW). For purposes of this discussion, all proposed Project structures and land surfaces are expressed as height above (or below) MLLW. The mean sea level (msl) in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and

flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the proposed Project site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the Alternative 2 site. Because Alternative 2 site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the Alternative 2 site. Because the Alternative 2 site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel could occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during construction activities of Alternative 2 and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

The analysis presented above assumes the coincidence of two unlikely events: the occurrence of the single highest tide predicted over the next 40 years; and the theoretical maximum wave action from a tsunami. Such an assumption represents an extremely conservative, worst-case scenario: one that is not required under CEQA or NEPA.

CEQA Impact Determination

Impacts due to major or great earthquake and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 2. However, because the Alternative 2 site is located within 10 to 15 feet above MLLW, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of the proposed Project, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low. While there would be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami or other seismic risk would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami, impacts would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**. No tsunami or other seismic risk, and associated release of fuel and/or hazardous materials, occurred during prior construction activities between 2001 and 2005.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

The development that occurred under Phase I of the proposed Project is applied to Alternative 2. In addition, backland development under Alternative 2 would be the same as under the NEPA baseline. As discussed above, the tsunami or other seismic risk under Alternative 2 would be of low probability and acceptable. Therefore, significant impacts under NEPA would not occur.

Mitigation Measures

No mitigation measures are required.

Residual Impacts

Residual impacts would be less than significant.

Impact RISK-6a: A potential terrorist attack would result in adverse consequences to areas near the proposed Project site during the construction period.

Risk of Terrorist Actions during Construction

The probability of a terrorist attack on the Alternative 2 facilities is not likely to appreciably change during construction compared to baseline conditions since existing

Port security measures would counter any potential increase in unauthorized access to the terminal. The Berth 97-109 terminal would be operational during the construction period; therefore, the risks associated with terrorism discussed in Section 3.8.2.4 will apply to the terminal during this period.

Consequences of Terrorist Attack

During construction activities, a terrorist action could block key road access points and result in economic disruption. Potential environmental damage could include fuel spills and the release of hazardous materials into the marine environment, with associated degradation of water quality and damage to marine biological resources. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality.

CEQA Impact Determination

Access to the terminal site during construction could occur by land and/or water. However, existing Port security measures would counter any potential increase in unauthorized access to the terminal site through the use of vehicles or vessels. The potential for a terrorist attack that would result in adverse consequences to areas near the terminal site during the construction period is considered improbable and the consequences could be moderate. This combination would result in a Risk Code of 4, which is "acceptable," and impacts would be less than significant under criterion **RISK-6**. No terrorist attack took place during prior construction activity between 2001 and 2005.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

The development that occurred under Phase I of the proposed Project is applied to Alternative 2. In addition, backland development under Alternative 2 would be the same as under the NEPA baseline. As discussed above, construction of the terminal under Alternative 2 would result in a Risk Code of 4, which is "acceptable." Therefore, significant impacts under NEPA would not occur.

Mitigation Measures

No mitigation measures are required.

Residual Impacts

Residual impacts would be less than significant.

3.8.4.3.2.2.2 Operational Impacts

Impact RISK-1b: Berth 97-109 terminal operations would not increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.

Under Alternative 2, Berth 97-109 terminal operations would accommodate the storage and management of a maximum of 632,500 TEUs per year when optimized and functioning at maximum capacity (in 2025).

Terminal operations would be subject to safety regulations that govern the storage and handling of hazardous materials, which would limit the severity and frequency of potential releases of hazardous materials resulting in increased exposure of people to health hazards (i.e., Port RMP, USCG, and LAFD regulations and requirements, and DOT regulations). For example, as discussed in Section 3.8.3.1, List of Regulations, and summarized below, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. In addition, the DOT Hazardous Materials Regulations (Title 49 CFR Parts 100-185) regulate almost all aspects of terminal operations. Parts 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications), and 180 (Packaging Maintenance) would all apply to the alternative Project activities.

Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). Implementation of increased hazardous materials inventory control and spill prevention controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Terminal maintenance activities would involve the use of hazardous materials such as petroleum products, solvents, paints, and cleaners. Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to an RRP and HMI. Implementation of increased inventory accountability and spill prevention controls associated with this RRP and HMI would limit both the frequency and severity of potential releases of hazardous materials. Based on the limited volumes that could potentially spill, quantities of hazardous materials used at Berths 97-109 that are below the thresholds of Chapter 6.95 would not likely result in a substantial release into the environment.

CEQA Impact Determination

Because projected terminal operations at Berths 97-109 would accommodate approximately a 14-fold increase in containerized cargo compared to the CEQA baseline, the potential for an accidental release or explosion of hazardous materials would also be expected to increase proportionally.

During the period 1997-2004 there were 40 hazardous material spills directly associated with container terminals in the Ports of Los Angeles and Long Beach. This equates to approximately five spills per year for the entire port complex. During this period, the total throughput of the container terminals was 76,874,841 TEU. Therefore, the probability of a spill at a container terminal can be estimated at 5.2×10^{-7} per TEU (40 spills divided by 76,874,841 TEU). This spill probability conservatively represents the baseline hazardous material spill probability since it include materials that would not be considered a risk to public safety (e.g., perfume spills), but would still be considered an environmental hazard. The probability of spills associated with future operations would be based on the spill probability per TEU times the increase in TEUs under Alternative 2.

It should be noted that during this period there were no reported impacts to the public (injuries, fatalities and evacuations), with potential consequences limited to port workers (two worker injuries that were treated at the scene and 20 workers evaluated as a precaution).

Based on the accident history at the Port of containers containing hazardous materials, which includes 40 incidents over an 8-year period in the entire Port complex (Ports of Los Angeles and Long Beach), the frequency of Project-related spills can be estimated as shown in Table 3.8-10.

Table 3.8-10. Alternative 2: Existing and Projected Berths 97-109 Site Capacity (TEUs)

Operations	TEUs	Increase in TEUs over CEQA Baseline (times or multiples)	Potential Spills (per year)
Port Baseline (2005)	7,484,624	NA	3.9
CEQA Project Baseline (2001)	45,135	NA	0.02
Alternative 2 (2030)	632,500	14.0 times	0.33

Note:
TEU = twenty-foot equivalent unit

Based on the projected increase in TEUs, the frequency of potential Alternative 2-related spills would increase from 0.02 to 0.33 spills per year. This spill frequency would be classified as "periodic" (between once per year and once in 10 years). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health impacts. Therefore, under CEQA, Alternative 2 operations would not substantially increase the probable

frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Impacts under CEQA would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Backland development and operations under Alternative 2 would be the same as backland operations under the NEPA baseline. Therefore, potential impacts under NEPA would not occur because there would be no net change in environmental conditions between Alternative 2 and the NEPA baseline.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact RISK-2b: Alternative 2 operations would not substantially increase the probable frequency and severity of consequences to people or property from exposure to health hazards.

Under Alternative 2, Berth 97-109 terminal operations would accommodate a maximum of 632,500 TEUs per year when optimized and functioning at maximum capacity (in 2025). This compares to 45,135 TEUs under baseline conditions (in 2001). The increased volume would increase the chance of a fire or explosion at the terminal. The handling and storing of increased quantities of hazardous materials would increase the probability of a local accident involving a release, spill, fire or explosion, which is proportional to the size of the terminal and TEUs at the site as addressed in **Impact RISK-1b**.

Under Alternative 2, the Berth 97-109 terminal site accommodates the storage and management of containers entering and leaving via the adjacent Yang Ming Terminal. Were the containers not occupying the Berth 97-109 terminal site, they would be located at the Yang Ming Terminal. Thus, truck trips accounted for by the movement of these containers are not part of Alternative 2.

CEQA Impact Determination

In the absence of truck trips associated with containers stored and managed at the Berth 97-109 terminal site attributable to Alternative 1, no impacts would occur.

Mitigation Measure

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Backland development and operations under Alternative 2 would be the same as under the NEPA baseline. Therefore, potential impacts under NEPA would not occur because there would be no net change in environmental conditions between Alternative 2 and the NEPA baseline.

Mitigation Measures

No mitigation is required.

Residual Impacts

No residual impacts would occur.

Impact RISK-3b: Alternative 2 operations would not substantially interfere with any existing emergency response plans or emergency evacuation plans.

Under Alternative 2, the Berth 97-109 terminal would operate as a container backlands; therefore, proposed terminal operations would not interfere with any existing contingency plans, since the current activities are consistent with the contingency plans and the alternative Project would not add any additional activities that would be inconsistent with these plans. Berth 97-109 facilities personnel, including laborers and equipment operators, would be trained in emergency response and evacuation procedures. The terminal site would be secured, with access allowed only to authorized personnel. The LAFD and Port Police would be able to provide adequate emergency response services to the terminal site. Additionally, Alternative 2 operations would be subject to emergency response and evacuation systems implemented by the LAFD, which would review all plans to ensure that adequate access in the vicinity of the terminal site is maintained. All contractors would be required to adhere to plan requirements.

CEQA Impact Determination

Because the terminal would continue to be operated as a container terminal, Alternative 2 operations would continue to be subject to emergency response and evacuation systems implemented by the LAFD. Alternative 2 operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Backland development and operations under Alternative 2 would be the same as under the NEPA baseline. Therefore, potential impacts under NEPA would not occur because there would be no net change in environmental conditions between Alternative 2 and the NEPA baseline.

Mitigation Measures

No mitigation is required.

Residual Impacts

No residual impacts would occur.

Impact RISK-4b: Alternative 2 operations would comply with applicable regulations and policies guiding development in the Port.

Alternative 2 operations would be subject to numerous regulations. LAHD has implemented various plans and programs to ensure compliance with these regulations, which must be adhered to during Alternative 2 operations. For example, as discussed in Section 3.8.3.1, List of Regulations, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials.

Among other requirements, Alternative 2 operations would conform to the USCG requirement to provide a segregated cargo area for containerized hazardous materials. Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System, prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). Any facilities identified as either a hazardous cargo facility or a vulnerable resource would be required to conform to the RMP, which includes packaging constraints and the provision of a separate storage area for hazardous cargo.

LAHD maintains compliance with these state and federal laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. Most notably, the Port RMP implements development guidelines in an effort to minimize the danger of accidents to vulnerable resources. This would be achieved mainly through physical separation as well as through facility design features, fire protection, and other risk management methods. There are two primary categories of vulnerable resources, people, and facilities. People are further divided into subgroups. The first subgroup is comprised of residences, recreational users, and visitors. Within the Port setting, residences and recreational users are considered vulnerable resources. The second subgroup is comprised of workers in high density (i.e., generally more than 10 people per acre, per employer).

Facilities that are vulnerable resources include Critical Regional Activities/Facilities and High Value Facilities. Critical Regional Activities/Facilities are facilities in the Port that are important to the local or regional economy, the national defense, or some major aspect of commerce. These facilities typically have a large quantity of unique equipment, a very large working population, and are critical to both the economy and to national defense. Such facilities in the Port have been generally defined in the Port RMP as the former Todd Shipyard, Fish Harbor, Badger Avenue Bridge, and Vincent Thomas Bridge.

High Value Facilities are nonhazardous facilities, in and near the Ports, which have very high economic value. These facilities include both facility improvements and cargo in-place, such as container storage areas. However, the determination of a vulnerable

resource is made by the Port and LAFD on a case-by-case basis. Although the Port generally considers container terminals to be High Value Facilities, these types of facilities have never been considered vulnerable resources in risk analyses completed by the Port and LAFD (pers. comm., Knott, 2007). Because container terminals are not considered vulnerable resources, this alternative would not conflict with the RMP.

Plans and specifications of existing facilities have been reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Buildings have been equipped with fire protection equipment as required by the Los Angeles Municipal Fire Code. Access to all buildings and adequacy of road and fire lanes have been reviewed by the LAFD to ensure that adequate access and firefighting features are provided.

Operation of Alternative 2 would be required to comply with all existing hazardous waste laws and regulations, including the federal RCRA and CERCLA, and CCR Title 22 and Title 26. Alternative 2 operations would comply with these laws and regulations, which would ensure that potential hazardous materials handling would occur in an acceptable manner.

CEQA Impact Determination

Alternative 2 operations would not conflict with RMP guidelines or the Los Angeles Municipal Fire Code and would be required to comply with all applicable existing hazardous waste laws and regulations. Therefore, under CEQA, Alternative 2 operations would comply with applicable regulations and policies guiding development in the Port. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Backland development and operations under Alternative 2 would be the same as under the NEPA baseline. Therefore, potential impacts under NEPA would not occur because there would be no net change in environmental conditions between Alternative 2 and the NEPA baseline.

Mitigation Measures

No mitigation is required.

Residual Impacts

No residual impacts would occur.

Impact RISK-5b: Tsunami-induced flooding and seismic events would result in fuel releases from ships or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a large tsunami to impact the Port. A large tsunami would likely lead to a fuel spill if a moored vessel is present. Although

crude oil tankers would not moor at Berths 97-109, each ship contains large quantities of fuel oil. While in transit, the hazards posed to tankers are insignificant, and in most cases, imperceptible. However, while docked, a tsunami striking the Port could cause significant ship movement and even a hull breach if the ship is pushed against the wharf.

Under this alternative, Berth 97-109 terminal operations would handle a maximum throughput of 632,500 TEUs per year when optimized and functioning at maximum capacity (in 2025). This alternative would result in 918,500 fewer TEUs per year compared to the proposed Project. Thus, the number of ship calls and the overall health risk to persons and/or the environment would be reduced compared to the proposed Project.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all alternative Project structures and land surfaces are expressed as height above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the alternative Project site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the alternative Project site. Because the alternative Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk scenario based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the alternative Project site. Because the alternative Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 0.6 (about 7 inches) feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is

very low during construction of the alternative Project and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

Containers of hazardous substances on ships or on berths could similarly be damaged as a result of a large tsunami. Such damage would result in releases of both hazardous and nonhazardous cargo to the environment, adversely affecting persons and/or the marine waters. However, containers carrying hazardous cargo would not necessarily release their contents in the event of a large tsunami. The DOT regulations (49 CFR Parts 172 through 180) covering hazardous material packaging and transportation would minimize potential release volumes since packages must meet minimum integrity specifications and size limitations.

The owner or operators of tanker vessels are required to have an approved Tank Vessel Response Plan on board and a qualified individual in the U.S. with full authority to implement removal actions in the event of an oil spill incident, and to contract with the spill response organizations to carry out cleanup activities in case of a spill. The existing oil spill response capabilities in the Port are sufficient to isolate spills with containment booms and recover the maximum possible spill from an oil tanker.

Various studies have shown that double-hull tank vessels have lower probability of releases when tanker vessels are involved in accidents. Because of these studies, the USCG issued regulations addressing double-hull requirements for tanker vessels. The regulations establish a timeline for eliminating single-hull vessels from operating in the navigable waters or the EEZ of the U.S. after January 1, 2010, and double-bottom or double-sided vessels by January 1, 2015. Only vessels equipped with a double hull, or with an approved double containment system will be allowed to operate after those times.

CEQA Impact Determination

Because projected terminal operations at Berths 97-109 would accommodate approximately 918,500 fewer TEUs per year compared to the proposed Project, the number of hazardous materials containers and ship calls subject to accidental release or explosion of hazardous materials would also be expected to decrease. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by Alternative 2 operations. However, because the Project site elevation is located within 10 to 15 feet above MLLW, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a

major tsunami is not expected during the life of Alternative 2, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low since all fuel storage containers at the Project site would be quite small in comparison to the significance criteria volumes. While there will be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami or other seismic risk would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami, impacts would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Backland development and operations under Alternative 2 would be the same as under the NEPA baseline. Therefore, potential impacts under NEPA would not occur because there would be no net change in environmental conditions between Alternative 2 and the NEPA baseline.

Mitigation Measures

No mitigation is required.

Residual Impacts

No residual impacts would occur.

Impact RISK-6b: A potential terrorist attack would result in adverse consequences to areas near the Alternative 2 site during the operations period.

Risk of Terrorist Actions Associated with Operations

The probability of a terrorist attack on the alternative Project facilities is not likely to appreciably change over the existing baseline. It is possible that the increase in vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal.

Consequences of Terrorist Attack

The risks associated with terrorism discussed in Section 3.8.2.4 during construction would apply to the terminal during operations. The potential consequences of a terrorist action on a container terminal would be mainly environmental and economic. A terrorist action involving a container vessel while at berth may result in a fuel spill and/or

commodity and its associated environmental damage. Within the Port, a terrorist action could block key waterways and result in economic disruption. Potential environmental damage would include fuel and/or commodity spills into the marine environment, with associated degradation of water quality and damage to marine biological resources. Container ships typically carry up to 5,000 barrels of fuel oil but would not be full when arriving at the port. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality. Such potential impacts to the environment are addressed in specific resource sections including air quality (Section 3.2), biology (Section 3.3), and water quality (Section 3.14).

The consequences associated with the smuggling of WMDs would be substantial in terms of impacts to the environment and public health and safety. However, the consequences of a WMD attack would not be affected by the alternative. Furthermore, the likelihood of such an event would not be affected by alternative-related infrastructure or throughput increases, but would depend on the terrorist's desired outcome and the ability of safeguards, unaffected by the alternative, to thwart it. Cargo containers represent only one of many potential methods to smuggle WMDs, and with current security initiatives (see Section 3.8.2.5) may be less plausible than other established smuggling routes (e.g., land-based ports of entry, cross-border tunnels, and illegal vessel transportation).

CEQA Impact Determination

Potential public safety consequences of a terrorist attack on the Berth 97-109 terminal for the alternative Project are considered negligible since, in the event of a successful attack, the potential for a small number of offsite injuries are possible mainly due to fire, which in turn would be a result of fuel spilled into Port waters. Potential thermal radiation and explosion overpressure levels would be limited to the immediate vicinity of the attack and would not overlap any existing, planned, or permitted vulnerable resources including bulk oil and petroleum facilities located in the West basin. However, the potential for limited public exposure along Port waterways is possible.

An increase in the volume of container vessels visiting the terminal would not change the probability or consequences of a terrorist attack on the Berth 97-109 terminal because the terminal is already considered a potential economic target, as well as a potential mode to smuggle a weapon into the United States. In addition, the measures outlined in Section 3.8.2.5 would serve to reduce the potential for a successful terrorist attack on the Berth 97-109 facility compared to Project baseline conditions (under which many of these measures had not yet been implemented). These measures have since improved both terminal and cargo security, and have resulted in enhanced cargo screening. Therefore, potential impacts under CEQA associated with a potential terrorist attack on the Berth 97-109 facility are considered less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Backland development and operations under Alternative 2 would be the same as under the NEPA baseline. Therefore, potential impacts under NEPA would not occur because there would be no net change in environmental conditions between Alternative 2 and the NEPA baseline.

Mitigation Measures

No mitigation is required.

Residual Impacts

No residual impacts would occur.

3.8.4.3.2.3 Alternative 3 – Reduced Fill: No New Wharf Construction at Berth 102

Alternative 3 would include all Phase I improvements and the 375-foot southern extension of Berth 100 and installation of one additional A-frame crane during Phase III of construction and would, thus, involve in-water construction activities. It would not include the wharf extension at Berth 102. Alternative 3 would also require the temporary relocation of the Catalina Express Terminal and utilization of 142 acres of backlands.

3.8.4.3.2.3.1 Construction Impacts

Impact RISK-1a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.

Construction activities from the Reduced Fill alternative (Alternative 3) would include creation of additional backlands bringing the total to 142 acres, construction of a 375-foot wharf extension at Berth 100, and the addition of one additional A-frame crane. Construction equipment could spill oil, gas, or fluids during normal usage or during refueling, resulting in potential health and safety impacts to not only construction personnel, but to people and property occupying operational portions of the Project area, as the Berth 97-109 terminal would be operating during Phase III construction activities. BMPs and Los Angeles Municipal Code regulations (Chapter 5, Section 57, Divisions 4 and 5; Chapter 6, Article 4) would govern Phase III construction activities. Federal and state regulations that govern the storage of hazardous materials in containers (i.e., the types of materials and the size of packages containing hazardous materials) and the separation of containers holding hazardous materials, would limit the potential adverse impacts of contamination to a relatively small area. In addition, standard BMPs would be used during construction and demolition activities to minimize runoff of contaminants, in compliance with the State General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order 99-08-DWQ) and Project-specific SWPPP (see Section 3.14, Water Quality, Sediments, and Oceanography, for more information).

CEQA Impact Determination

Implementation of construction and demolition standards, including BMPs, would minimize the potential for an accidental release of petroleum products and/or hazardous materials and/or explosion during construction/demolition activities at Berths 97-109. Because construction/demolition-related spills are not uncommon,

the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, mainly due to the fact that the volume in any single vehicle is generally less than 50 gallons and fuel trucks are limited to 10,000 gallons or less, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." Therefore, under CEQA, construction and demolition activities associated with Alternative 3 would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on criterion **RISK-1**, impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Under Alternative 3, in-water and upland construction impacts would be similar to, but slightly less than those described for the proposed Project**,** because the Berth 102 wharf extension would not occur under this alternative. Alternative 3 would include construction of new wharves, dikes, and backland areas, which would result in increased susceptibility to hazardous materials spills during construction. Implementation of construction standards, including BMPs, would minimize the potential for an accidental release of hazardous materials and/or explosion during in-water and upland construction activities at Berths 97-109. Because construction- and demolition-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." Therefore, under NEPA, construction and demolition activities associated with Alternative 3 would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on risk criterion **RISK-1**, impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-2a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards.

Risk of upset impacts during construction would remain basically the same, but slightly reduced compared to those described for the proposed Project. Under this alternative, the proposed extension to Berth 102 would not be constructed. Consequently, the potential for construction equipment to spill oil, gas, or fluids during normal usage or during

refueling would be reduced. Therefore, this alternative would reduce the potential for an accidental release of hazardous materials and/or contamination of soil or water and would reduce the potential for an accidental release from a fire or explosion during construction activities.

Construction and demolition activities would be conducted using BMPs and in accordance with the Los Angeles Municipal Code (Chapter 5, Section 57, Divisions 4 and 5; Chapter 6, Article 4). Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to an RRP and HMI. Implementation of increased inventory accountability and spill prevention controls associated with this RRP and HMI, such as limiting the types of materials stored and size of packages containing hazardous materials, would limit both the frequency and severity of potential releases of hazardous materials, thus minimizing potential health hazards and/or contamination of soil or water during construction/demolition activities. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Impacts from contamination of soul or water during construction/demolition activities would apply to not only construction personnel, but to people and property occupying operational portions of the Project area, as Berth 97-109 terminal would be operating during construction activities.

CEQA Impact Determination

Several standard policies regulate the storage of hazardous materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to impact members of the public and limit the adverse impacts of contamination to a relatively small area. Because construction/demolition-related spills are not uncommon, the probability of a spill occurring is classified as “frequent” (more than once a year). However, because such spills are typically short-term and localized, the potential consequence of such accidents is classified as “slight,” resulting in a Risk Code of 4, which is “acceptable.” Therefore, under CEQA, construction/demolition activities at Berths 97-109 would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards. Based on risk criterion **RISK-2**, impacts under CEQA from Alternative 3 would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Under Alternative 3, in-water and upland construction impacts would be similar to, but slightly less than those described for the proposed Project. Reduced impacts include reduced potential for accidental releases or explosion of petroleum products or

a hazardous substance and reduced potential for exposure of personnel to health hazards.

Alternative 3 would include construction of new wharves, dikes, and backland areas, which would result in increased susceptibility to hazardous materials spills during construction. Several standard policies regulate the storage of hazardous materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to affect members of the public and limit the potential adverse impacts of contamination to a relatively small area. Therefore, under NEPA, construction/ demolition activities at Berths 97-109 would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards. Impacts under NEPA from Alternative 3 would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-3a: Construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death.

Emergency response and evacuation planning is the responsibility of the LAPD, LAFD, Port Police, and USCG. Construction and demolition activities would be subject to emergency response and evacuation systems implemented by LAFD. During construction/demolition activities, the LAFD would require that adequate vehicular access to the site be provided and maintained. Prior to commencement of construction/demolition activities, all plans would be reviewed by the LAFD to ensure adequate access is maintained throughout construction/demolition.

CEQA Impact Determination

Alternative 3 contractors would be required to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under CEQA, construction/demolition activities associated with Alternative 3 would not substantially interfere with an existing emergency response or evacuation plan or increase risk of injury or death. Based on risk criterion **RISK-3**, impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Alternative 3 contractors would be required to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under NEPA, construction/demolition activities associated with Alternative 3 would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death. Based on risk criterion **RISK-3**, impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-4a: Alternative 3 construction/demolition would comply with applicable regulations and policies guiding development in the Port.

As described in Section 3.8.3.1, List of Regulations, Alternative 3 would be subject to numerous regulations for development and operation of the proposed facilities. For example, construction and demolition would be completed in accordance with RCRA, HSWA, CERCLA, CCR Title 22 and Title 26, and the California Hazardous Waste Control Law, which would govern proper containment, spill control, and disposal of hazardous waste generated during demolition and construction activities. Implementation of increased inventory accountability, spill prevention controls, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Potential releases of hazardous substances during demolition and/or construction would be addressed through the federal Emergency Planning and Right-to-Know Act, which is administered in California by the SERC, and the Hazardous Material Release Response Plans and Inventory Law. In addition, demolition and construction would be completed in accordance with the Los Angeles Municipal Fire Code, which regulates the construction of buildings and other structures used to store flammable hazardous materials, and the Los Angeles Municipal Public Property Code, which regulates the discharge of materials into the sanitary sewer and storm drain. The latter requires the construction of spill-containment structures to prevent the entry of forbidden materials, such as hazardous materials, into sanitary sewers and storm drains. LAHD maintains compliance with these federal, state, and local laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. LAHD has implemented various plans and programs to ensure compliance with these regulations. These regulations must be adhered to during design and construction of Alternative 3. Implementation of increased spill prevention controls, spill release notification requirements, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Construction/demolition activities would be conducted using BMPs in accordance with City guidelines, as detailed in the Development Best Management Practices Handbook (City of Los Angeles, 2002). Applicable BMPs include, but are not limited to, vehicle and equipment fueling and maintenance; material delivery, storage, and use; spill

prevention and control; solid and hazardous waste management; and contaminated soil management. Alternative 3 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Implementation of increased spill prevention controls associated with these BMPs would limit both the frequency and severity of potential releases of hazardous materials.

CEQA Impact Determination

Because Alternative 3 construction/demolition would be completed using standard BMPs and in accordance with LAHD plans and programs, LAFD regulations, and all applicable hazardous waste laws and regulations, impacts relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under CEQA under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

Because Alternative 3 construction would be completed using standard BMPs and in accordance with LAHD plans and programs, LAFD regulations, and all applicable hazardous waste laws and regulations, impacts under NEPA relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-5a: Tsunami-induced flooding and seismic events would result in fuel releases from demolition/construction equipment or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a major or great earthquake or large tsunami to affect the Port. Either event could likely lead to a fuel spill from demolition and/or construction equipment, as well as from containers of petroleum products and hazardous substances used during the demolition/construction period. Unfinished structures are especially vulnerable to damage from earthquakes and tsunamis during the construction period.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all Alternative 3 structures and land surfaces are expressed as height above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal

Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the Alternative 3 site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the Alternative 3 site. Because the Alternative 3 site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the Alternative 3 site. Because the Alternative 3 site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during construction of Alternative 3 and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

CEQA Impact Determination

Impacts due to major or great earthquakes and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 3. However, because the Alternative 3 site elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 3, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low. While there will be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under CEQA associated with Alternative 3 would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Impacts due to major or great earthquakes and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 3. However, because the Project site elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 3, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under NEPA associated with Alternative 3 would be less than significant under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-6a: A potential terrorist attack would result in adverse consequences to areas near the Alternative 3 site during the construction period.

Risk of Terrorist Actions during Construction

The probability of a terrorist attack on Alternative 3 facilities is not likely to appreciably change during construction compared to baseline conditions. It is possible that the increase in construction vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal. The Berth 97-109 terminal would be operational during the construction period; therefore, risks associated with terrorism during operations will also apply to the terminal during this period.

Consequences of Terrorist Attack during Construction

During construction, a terrorist action could block key road access points and waterways and result in economic disruption. Potential environmental damage would include fuel and/or commodity spills into the marine environment, with associated degradation of water quality and damage to marine biological resources. Container ships typically carry up to 5,000 barrels of fuel oil but would not be full when arriving at the port. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality.

CEQA Impact Determination

Access to the terminal site during construction could occur by land, water, and/or air. However, existing Port security measures would counter any potential increase in unauthorized access to the terminal site through the use of vehicles or vessels. The potential for a terrorist attack that would result in adverse consequences to areas near the proposed terminal site during the construction period is considered improbable and the consequences could be moderate. This combination would result in a Risk Code of 4 that is "acceptable," and impacts would be less than significant under criterion **RISK-6**.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

NEPA Impact Determination

Impacts under NEPA would be less than significant as defined in the CEQA determination for Alternative 3 above.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

3.8.4.3.2.3.2 Operational Impacts

Impact RISK-1b: Berth 97-109 terminal operations would not increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.

As of 2001 (CEQA baseline), Berth 97-109 terminal handled approximately 45,135 TEUs per year. Berth 97-109 terminal operations under Alternative 3 could handle approximately 936,000 TEUs per year when optimized and functioning at maximum capacity (in 2025). Throughput of 936,000 TEUs per year in association with Alternative 3, when functioning at maximum capacity, would equate to just over a 20-fold increase in throughput capacity compared to the CEQA baseline.

Terminal operations would be subject to safety regulations that govern the shipping, transport, storage and handling of hazardous materials, which would limit the severity and frequency of potential releases of hazardous materials resulting in increased exposure of people to health hazards (i.e., Port RMP, USCG and LAFD regulations and requirements, and DOT regulations). For example, as discussed in Section 3.8.3.1, List of Regulations, and summarized below, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. In addition, the DOT Hazardous Materials Regulations (Title 49 CFR Parts 100-185) regulate almost all aspects of terminal operations. Parts 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications) and 180 (Packaging Maintenance) would all apply to Alternative 3 activities.

Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). Implementation of increased hazardous materials inventory control and spill prevention controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Terminal maintenance activities would involve the use of hazardous materials such as petroleum products, solvents, paints, and cleaners. Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to as RRP and HMI. Implementation of increased inventory accountability and spill prevention controls associated with this RRP and HMI would limit both the frequency and severity of potential releases of hazardous materials. Based on the limited volumes that could potentially spill, quantities of hazardous materials used at Berths 97-109 that are below the thresholds of Chapter 6.95 would not likely result in a substantial release into the environment.

CEQA Impact Determination

Because projected terminal operations under Alternative 3 would accommodate approximately a 20-fold increase in containerized cargo compared to the CEQA baseline, the potential for an accidental release or explosion of hazardous materials would also be expected to increase proportionally.

During the period 1997-2004 there were 40 hazardous material spills directly associated with container terminals in the Ports of Los Angeles and Long Beach. This equates to approximately five spills per year for the entire port complex. During this period, the total throughput of the container terminals was 76,874,841 TEU. Therefore, the probability of a spill at a container terminal can be estimated at 5.2×10^{-7} per TEU (40 spills divided by 76,874,841 TEU). This spill probability conservatively represents the baseline hazardous material spill probability since it include materials that would not be considered a risk to public safety (e.g., perfume spills), but would still be considered an environmental hazard. The probability of spills associated with future operations would be based on the spill probability per TEU times the increase in TEUs under Alternative 3.

It should be noted, with respect to hazardous material spills, that during this period there were no reported impacts to the public (injuries, fatalities and evacuations), with potential consequences limited to port workers (two worker injuries that were treated at the scene and 20 workers evaluated as a precaution).

Based on the accident history at the Port of containers containing hazardous materials, which includes 40 incidents over an 8-year period in the entire Port complex (Ports of Los Angeles and Long Beach), the frequency of Project-related spills can be estimated as shown in Table 3.8-11.

Table 3.8-11. Alternative 3: Existing and Projected Cargo Throughput Volumes at Berths 97-109

Operations	Overall Throughput (TEUs)	Increase in TEUs over CEQA Baseline (times or multiples)	Potential Spills (per year)
Port-Wide (2005)	7,484,624	NA	3.9
CEQA Project Baseline (2001)	45,135	NA	0.02
Alternative 3 (2030)	936,000	20.7 times	0.49

Note:
TEU = twenty-foot equivalent unit

Based on the projected increase in TEUs, the frequency of potential spills related to Alternative 2 would increase from 0.02 to 0.49 spills per year, or about 1 spill per year. This spill frequency would be classified as "periodic" (between once a year and once in 10 years). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health

impacts. Therefore, under CEQA, Alternative 3 operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Impacts under CEQA would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Because Alternative 3 would result in greater container throughput compared to the NEPA baseline, operational impacts would correspondingly be greater. An overall increase in TEUs would result in proportionally greater hazardous materials containers subject to accidental release or explosion as illustrated in Table 3.8-12.

Table 3.8-12. Alternative 3: Existing and Projected Cargo Throughput Volumes at Berths 97-109

Operations	Overall Throughput (TEUs)	Increase in TEUs (%)	Potential Spills (per year)
Port Baseline (2005)	7,484,624	NA	3.9
NEPA Project Baseline (2030)	632,500	NA	0.33
Alternative 3 (2030)	936,000	48%	0.49

Note:
TEU = twenty-foot equivalent unit

Based on the projected increase in TEUs, the frequency of Alternative 3-related spills would increase from 0.33 to 0.49 spills per year, or remain about one spill per year. This spill frequency would be classified as "frequent" (more than once a year). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health impacts. Therefore, under NEPA, Alternative 3 operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of a potential accidental release or explosion of a hazardous substance. Impacts under NEPA would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-2b: Alternative 3 operations would not substantially increase the probable frequency and severity of consequences to people or property from exposure to health hazards.

Alternative 3 would include siting facilities that would potentially handle hazardous materials and increase other hazards to the public. The handling and storing of increased quantities of hazardous materials (in containers) would increase the probability of a local accident involving a release, spill, fire or explosion, which is proportional to the size of the terminal and its throughput as was addressed in **Impact RISK 1b**.

Because projected terminal operations at Berths 97-109 would accommodate over a 20-fold increase in containerized cargo compared to the CEQA baseline, the potential for increased truck transportation-related accidents would also occur. Potential alternative-related increases in truck trips could result in an increase in vehicular accidents, injuries, and fatalities. Therefore, the potential impact of increased truck traffic on regional injury and fatality rates are evaluated.

According to an FMCSA detailed analysis (FMCSA, 2001), the estimated nonhazardous materials truck accident rate is more than twice the hazardous materials truck accident rate. The nonhazardous materials truck accident rate was estimated to be 0.73 accidents per million vehicle miles and the average hazardous materials truck accident rate was estimated to be 0.32 accidents per million vehicle miles. The hazardous materials truck accident rate is not directly applicable to the alternative Project container trucks since they are generally limited to bulk hazardous material carriers. Therefore, for this analysis, the higher accident rate associated with nonhazardous materials trucks was used.

Based on the NHTSA (DOT, 2003), of the estimated 457,000 truck crashes in 2000 (causing fatalities, injuries, or property damage), an estimated 1 percent produced fatalities and 22 percent produced injuries. The FARS and the TIFA survey were the sources of data for this analysis, which primarily examined fatalities associated with vehicle impact and trauma.

Based on these statistics and the projected truck trips for the existing facilities and Alternative 3, the potential rate of truck accidents, injuries, and fatalities can be estimated and evaluated.

CEQA Impact Determination

Potential alternative-related truck accident rates can be estimated based on national average accident rates and the average number of miles per cargo truck trip. Based on the air pollutant emission inventory of the Port, it was determined that the average truck trip was approximately 49 miles (Starcrest Consulting Group, 2003). Given the annual number of truck trips, the average distance of each trip, and the published accident, injury and fatality rates, probabilities were estimated as shown in Table 3.8-13.

Table 3.8-13. Alternative 3: Existing and Projected Truck Trips at Berths 97-109

Operations	Annual Truck Trips	Increase over CEQA Baseline (%)	Accident Rate (per year)	Injury Probability (per year)	Fatality Probability (per year)
CEQA Baseline (2001)	0	NA	0.0	0.0	0.0
Alternative 3 (2030)	946,819	NA	33.8	7.4	0.3

Because the occurrence of truck accidents associated with Berths 97-109 occur at a frequency greater than one per year, truck accidents are considered a "frequent" event. Because the possibility exists for injury and/or fatality to occur during one of these frequent accidents as noted in Table 3.8-13, the consequence of such accidents is classified as "severe," resulting in a Risk Code of 2. An impact with a Risk Code of 2 is classed as significant and requires additional engineering or administrative controls to mitigate the potentially significant adverse impacts.

The Port is currently developing a Port-wide TMP for roadways in and around its facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. The results will be a TMP providing ideas on what to expect and how to prepare for future traffic volumes. Some of the transportation improvements already under consideration include: I-110/SR-47/ Harbor Boulevard interchange improvements; Navy Way connector (grade separation) to westbound Seaside Avenue; south Wilmington grade separations; and additional traffic capacity analysis for the Vincent Thomas Bridge. In addition, the Port is working on several strategies to increase rail transport, which will reduce reliance on trucks. These projects would serve to reduce the frequency of truck accidents.

The Port is also currently phasing out older trucks as part of its Clean Truck Program, and the TWIC program will help identify and exclude truck drivers that lack the proper licensing and training. The phasing out of older trucks would reduce the probability of accidents that occur as a result of mechanical failure by approximately 10 percent (ADL, 1990). Proper driver training, or more specifically, the reduction in the number of drivers that do not meet minimum training specifications, would further reduce potential accidents by approximately 30 percent. The potential number of injuries would be reduced to approximately 4.7, which would reduce the consequence classification to "moderate" and a Risk Code to 3 or less. Therefore, Alternative 3 operations would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards, and potential impacts under CEQA would be considered less than significant**.**

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

Alternative 3 would result in construction of new wharves, dikes, and backland areas, which would result in an increase in TEUs and truck trips, in comparison to the NEPA baseline, as described under the NEPA Impact Determination for **Impact RISK 1b**. Given the annual number of truck trips, the average distance of each trip, and the published accident, injury and fatality rates, probabilities were estimated as shown in Table 3.8-14.

Table 3.8-14. Alternative 3: Existing and Projected Truck Trips at Berths 97-109

Operations	Annual Truck Trips	Increase over NEPA Baseline (%)	Accident Rate (per year)	Injury Probability (per year)	Fatality Probability (per year)
NEPA Baseline (2030)	0	NA	0.0	0.0	0.0
Alternative 3 (2030)	946,819	NA	33.8	7.4	0.3

Because the occurrence of truck accidents associated with Berths 97-109 occur at a frequency greater than one per year, truck accidents are considered a "frequent" event. Because the possibility exists for injury and/or fatality to occur during one of these frequent accidents as noted in Table 3.8-14, the consequence of such accidents is classified as "severe," resulting in a Risk Code of 2. An impact with a Risk Code of 2 is classed as significant and requires additional engineering or administrative controls to mitigate the potentially significant adverse impacts.

The Port is currently developing a port-wide TMP for roadways in and around its facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. The results will be a TMP providing ideas on what to expect and how to prepare for future traffic volumes. Some of the transportation improvements already under consideration include: I-110/SR-47/ Harbor Boulevard interchange improvements; Navy Way connector (grade separation) to westbound Seaside Avenue; south Wilmington grade separations; and additional traffic capacity analysis for the Vincent Thomas Bridge. In addition, the Port is working on several strategies to increase rail transport, which will reduce reliance on trucks. These projects would serve to reduce the frequency of truck accidents.

The Port is currently phasing out older trucks as part of its Clean Truck Program, and the TWIC program will help identify and exclude truck drivers that lack the proper licensing and training. The phasing out of older trucks would reduce the probability of accidents that occur as a result of mechanical failure by approximately 10 percent (ADL, 1990). The proper driver training, or more specifically, the reduction in the number of drivers that do not meet minimum training specifications, would further reduce potential accidents by approximately 30 percent. The potential number of injuries would be reduced to approximately 4.7, which would reduce the consequence classification to "moderate" and a Risk Code to 3 or less. Therefore, Alternative 3 operations would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards and potential impacts under NEPA would be considered less than significant

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under NEPA.

Impact RISK-3b: Alternative 3 operations would not substantially interfere with any existing emergency response plans or emergency evacuation plans.

Alternative 3 would optimize terminal operations by increasing backland capacity and constructing new wharves and dikes to accommodate modern container terminal ships. The Berth 97-109 terminal would operate as a container terminal similar to other terminal facilities in the West Basin; therefore, proposed terminal operations would not interfere with any existing contingency plans, since the current activities are consistent with the contingency plans and the alternative Project would not add any additional activities that would be inconsistent with these plans. In addition, existing oil spill contingency and emergency response plans for the site would be revised to incorporate proposed facility and operation changes. Because existing management plans are commonly revised to incorporate terminal operation changes, conflicts with existing contingency and emergency response plans are not anticipated.

Berth 97-109 facilities personnel, including dock laborers and equipment operators, would be trained in emergency response and evacuation procedures. The site would be secured, with access allowed only to authorized personnel. The LAFD and Port Police would be able to provide adequate emergency response services to the site. Additionally, Alternative 3 operations would also be subject to emergency response and evacuation systems implemented by the LAFD, which would review all plans to ensure that adequate access in the Project vicinity is maintained. All Alternative 3 contractors would be required to adhere to plan requirements.

CEQA Impact Determination

Alternative 3 would operate as a container terminal similar to other terminal operations in the West Basin area, and Alternative 3 operations would be subject to emergency response and evacuation systems implemented by the LAFD. Thus, Alternative 3 operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

Alternative 3 would operate as a container terminal and Alternative 3 operations would be subject to emergency response and evacuation systems implemented by the LAFD. Thus, Alternative 3 operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under NEPA.

Impact RISK-4b: Alternative 3 operations would comply with applicable regulations and policies guiding development in the Port.

Alternative 3 operations would be subject to numerous regulations for operation of the proposed facilities. LAHD has implemented various plans and programs to ensure compliance with these regulations, which must be adhered to during operation of this alternative. For example, as discussed in Section 3.8.3.1, List of Regulations, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials.

Among other requirements, Alternative 3 operations would conform to the USCG requirement to provide a segregated cargo area for containerized hazardous materials. Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). In addition, any facility constructed at the site, identified as either a hazardous cargo facility or a vulnerable resource, would be required to conform to the RMP, which includes packaging constraints and the provision of a separate storage area for hazardous cargo.

LAHD maintains compliance with these state and federal laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. Most notably, the Port RMP implements development guidelines in an effort to minimize the danger of accidents to vulnerable resources. This would be achieved mainly through physical separation as well as through facility design features, fire protection, and other risk management methods. There are two primary categories of vulnerable resources, people, and facilities. People are further divided into subgroups. The first subgroup is comprised of residences, recreational users, and visitors. Within the Port setting, residences and recreational users are considered vulnerable resources. The second subgroup is comprised of workers in high density (i.e., generally more than 10 people per acre, per employer).

Facilities that are vulnerable resources include Critical Regional Activities/Facilities and High Value Facilities. Critical Regional Activities/Facilities are facilities in the Port that are important to the local or regional economy, the national defense, or some major aspect of commerce. These facilities typically have a large quantity of unique equipment, a very large working population, and are critical to both the economy and to national defense. Such facilities in the Port have been generally defined in the Port RMP as the former Todd Shipyard, Fish Harbor, Badger Avenue Bridge, and Vincent Thomas Bridge.

High Value Facilities are nonhazardous facilities, in and near the Ports, which have very high economic value. These facilities include both facility improvements and cargo in-place, such as container storage areas. However, the determination of a vulnerable resource is made by the Port and LAFD on a case-by-case basis. Although the Port generally considers container terminals to be High Value Facilities, these types of facilities have never been considered vulnerable resources in risk analyses completed by the Port and LAFD (pers. comm., Knott, 2007). Because container terminals are not considered vulnerable resources, this Alternative would not conflict with the RMP.

Alternative 3 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Buildings will be equipped with fire protection equipment as required by the Los Angeles Municipal Fire Code. Access to all buildings and adequacy of road and fire lanes will be reviewed by the LAFD to ensure that adequate access and firefighting features are provided. Plans would include an internal circulation system, code-required features, and other firefighting design elements, as approved by the LAFD.

Operation of Alternative 3 would be required to comply with all existing hazardous waste laws and regulations, including the federal RCRA and CERCLA, and CCR Title 22 and Title 26. Alternative 3 operations would comply with these laws and regulations, which would ensure that potential hazardous materials handling would occur in an acceptable manner.

CEQA Impact Determination

Alternative 3 operations would not conflict with RMP guidelines. Alternative 3 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, and operation of Alternative 3 would be required to comply with all applicable existing hazardous waste laws and regulations. Therefore, under CEQA, Alternative 3 operations would comply with applicable regulations and policies guiding development in the Port. Impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Alternative 3 operations would not conflict with RMP guidelines. Alternative 3 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, and operation of Alternative 3 would be required to comply with all applicable existing hazardous waste laws and regulations. Therefore, under NEPA, Alternative 3 operations would comply with applicable regulations and policies guiding development in the Port. Impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-5b: Tsunami-induced flooding and seismic events would result in fuel releases from ships or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a large tsunami to impact the Port. A large tsunami would likely lead to a fuel spill if a moored vessel is present. Although crude oil tankers would not moor at Berths 97-109, each ship contains large quantities of fuel oil. While in transit, the hazards posed to tankers are insignificant, and in most cases, imperceptible. However, while docked, a tsunami striking the Port could cause significant ship movement and even a hull breach if the ship is pushed against the wharf.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all proposed Project structures and land surfaces are expressed as height above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the proposed Project site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during operation of the proposed Project and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

Containers of hazardous substances on ships or on berths could similarly be damaged as a result of a large tsunami. Such damage would result in releases of both hazardous and nonhazardous cargo to the environment, adversely affecting persons and/or the marine waters. However, containers carrying hazardous cargo would not necessarily release their contents in the event of a large tsunami. The DOT regulations (49 CFR Parts 172-180) covering hazardous material packaging and transportation would minimize potential release volumes since packages must meet minimum integrity specifications and size limitations.

The owner or operators of tanker vessels are required to have an approved Tank Vessel Response Plan on board and a qualified individual in the U.S. with full authority to implement removal actions in the event of an oil spill incident, and to contract with the spill response organizations to carry out cleanup activities in case of a spill. The existing oil spill response capabilities in the Port are sufficient to isolate spills with containment booms and recover the maximum possible spill from an oil tanker.

Various studies have shown that double-hull tank vessels have lower probability of releases when tanker vessels are involved in accidents. Because of these studies, the USCG issued regulations addressing double-hull requirements for tanker vessels. The regulations establish a timeline for eliminating single-hull vessels from operating in the navigable waters or the EEZ of the U.S. after January 1, 2010, and double-bottom or double-sided vessels by January 1, 2015. Only vessels equipped with a double hull, or with an approved double containment system will be allowed to operate after those times. It is unlikely that single-hull vessels will use the Alternative 3 terminal facilities given the current schedule and the planned phase-out of these vessels.

CEQA Impact Determination

Designing new facilities based on existing building codes may not prevent substantial damage to structures from coastal flooding as a result of tsunamis or seiches. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 3. However, because the Alternative 3 elevation is located in 10 to 15 feet above

MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 3, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low. While there will be fuel containing equipment present during construction, most equipment is equipped with watertight tanks, with the main problem being the infiltration of water into the tank and fuel combustion chambers. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered minor. In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under CEQA associated with Alternative 3 would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Designing new facilities based on existing building codes may not prevent substantial damage to structures from coastal flooding as a result of tsunamis or seiches. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 3. However, because Alternative 3 elevations are located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 3, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under NEPA associated with Alternative 3 would be less than significant under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-6b: A potential terrorist attack would result in adverse consequences to areas near the Alternative 3 site during the operations period.

Risk of Terrorist Actions Associated with Operations

The probability of a terrorist attack on the alternative Project facilities is not likely to appreciably change over current conditions. It is possible that the increase in vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal.

Consequences of Terrorist Attack

The risks associated with terrorism discussed in Section 3.8.2.4 would apply to the terminal during operations. The potential consequences of a terrorist action on a container terminal would be mainly environmental and economic. A terrorist action involving a container vessel while at berth may result in a fuel and/or commodity spill and its associated environmental damage. Within the Port, a terrorist action could block key waterways and result in economic disruption. Potential environmental damage would include fuel and/or commodity spills into the marine environment, with associated degradation of water quality and damage to marine biological resources. Container ships typically carry up to 5,000 barrels of fuel oil but would not be full when arriving at the port. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality. Such potential impacts to the environment are addressed in specific resource sections including air quality (Section 3.2), biology (Section 3.3), and water quality (Section 3.14).

The consequences associated with the smuggling of WMDs would be substantial in terms of impacts to the environment and public health and safety. However, the consequences of a WMD attack would not be affected by the alternative. Furthermore, the likelihood of such an event would not be affected by alternative-related infrastructure or throughput increases, but would depend on the terrorist's desired outcome and the ability of safeguards, unaffected by the alternative, to thwart it. Cargo containers represent only one of many potential methods to smuggle WMDs, and with current security initiatives (see Section 3.8.2.5) may be less plausible than other established smuggling routes (e.g., land-based ports of entry, cross border tunnels, and illegal vessel transportation).

CEQA Impact Determination

Potential public safety consequences of a terrorist attack on the Berth 97-109 terminal for the alternative Project are considered negligible since, in the event of a successful attack, the potential for a small number of offsite injuries are possible mainly due to fire, which in turn would be a result of fuel spilled into Port waters. Potential thermal radiation and explosion overpressure levels would be limited to the immediate vicinity of the attack and would not overlap existing, planned, or permitted vulnerable resources including bulk oil and petroleum facilities located in the West Basin. However, the potential for limited public exposure along Port waterways is possible.

Any increase in the volume of container vessels visiting the Alternative 3 terminal would not change the probability or consequences of a terrorist attack on the

Berth 97-109 terminal since the terminal is already considered a potential economic target, as well as a potential mode to smuggle a weapon into the United States. In addition, the measures outlined in Section 3.8.2.5 would serve to reduce the potential for a successful terrorist attack on the Berth 97-109 facility compared to Project baseline conditions (under which many of these measures had not yet been implemented). These measures have since improved both terminal and cargo security, and have resulted in enhanced cargo screening. Therefore, potential impacts under CEQA associated with a potential terrorist attack on the Berth 97-109 facility are considered less than significant.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

NEPA Impact Determination

Potential impacts under NEPA would be that same as under CEQA and are considered less than significant.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant

3.8.4.3.2.4 Alternative 4 – Reduced Fill: No South Wharf Extension at Berth 100

As part of Phase I construction, 1,200 feet of wharf at Berth 100 was constructed in 2002–2003 and placed in operation in June of 2004. Under Alternative 4, a 925-foot-long wharf extension would be added to Berth 102 during Phase II of construction. The 375-foot southern extension of the wharf at Berth 100 would not be constructed under this alternative. The construction of the 925-foot wharf extension would involve in-water activities. Alternative 4 would not require the temporary relocation of the Catalina Express Terminal and would use 130 acres of backlands.

3.8.4.3.2.4.1 Construction Impacts

Impact RISK-1a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.

Construction activities from the Reduced Fill alternative (Alternative 4) would include creation of additional backlands bringing the total to 130 acres and construction of a 925-foot wharf extension at Berth 102. Construction equipment could spill oil, gas, or fluids during normal usage or during refueling, resulting in potential health and safety impacts to not only construction personnel, but to people and property occupying operational portions of the Project area, as the Berth 97-109 terminal would be operating during Phase III construction activities. BMPs and Los Angeles Municipal Code regulations (Chapter 5, Section 57, Division 4 and 5; Chapter 6, Article 4) would govern

Phase III construction activities. Federal and state regulations that govern the storage of hazardous materials in containers (i.e., the types of materials and the size of packages containing hazardous materials) and the separation of containers holding hazardous materials, would limit the potential adverse impacts of contamination to a relatively small area. In addition, standard BMPs would be used during construction and demolition activities to minimize runoff of contaminants, in compliance with the State General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order 99-08-DWQ) and Project-specific SWPPP (see Section 3.14, Water Quality, Sediments, and Oceanography, for more information).

CEQA Impact Determination

Implementation of construction standards, including BMPs, would minimize the potential for an accidental release of petroleum products and/or hazardous materials and/or explosion during construction activities at Berths 97-109. Because construction-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, mainly due to the fact that the volume in any single vehicle is generally less than 50 gallons and fuel trucks are limited to 10,000 gallons or less, the potential consequence of such accidents is classified as "slight" resulting in a Risk Code of 4, which is "acceptable." Therefore, under CEQA, construction activities associated with Alternative 4 would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on criterion **RISK-1**, impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Under Alternative 4 in-water construction impacts would be similar to, but slightly less than those described for the proposed Project**,** because the Berth 100 wharf extension would not occur under this alternative. Alternative 4 would include construction of new wharves, dikes, and backland areas, which would result in increased susceptibility to hazardous materials spills during construction. Implementation of construction standards, including BMPs, would minimize the potential for an accidental release of hazardous materials and/or explosion during in-water and upland construction activities at Berths 97-109. Because construction-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, the potential consequence of such accidents is classified as "slight" resulting in a Risk Code of 4, which is "acceptable." Therefore, under NEPA, construction activities associated with Alternative 4 would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on risk criterion **RISK-1**, impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-2a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards.

Risk of upset impacts during construction would remain basically the same, but slightly reduced compared to those described for the proposed Project. Under this alternative, the proposed extension to Berth 102 would be constructed. Consequently, the potential for construction equipment to spill oil, gas, or fluids during normal usage or during refueling would be reduced. Therefore, this alternative would reduce the potential for an accidental release of hazardous materials and/or contamination of soil or water and would reduce the potential for an accidental release from a fire or explosion during construction activities.

Construction activities would be conducted using BMPs and in accordance with the Los Angeles Municipal Code (Chapter 5, Section 57, Division 4 and 5; Chapter 6, Article 4). Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to an RRP and HMI. Implementation of increased inventory accountability and spill prevention controls associated with this RRP and HMI, such as limiting the types of materials stored and size of packages containing hazardous materials, would limit both the frequency and severity of potential releases of hazardous materials, thus minimizing potential health hazards and/or contamination of soil or water during construction activities. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Impacts from contamination of soul or water during construction activities would apply to not only construction personnel, but to people and property occupying operational portions of the Project area, as Berth 97-109 terminal would be operating during construction activities.

CEQA Impact Determination

Several standard policies regulate the storage of hazardous materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to affect members of the public and limit the adverse impacts of contamination to a relatively small area. Because construction-related spills are not uncommon, the probability of a spill occurring is classified as “frequent” (more than once a year). However, because such spills are typically short term and localized, the potential consequence of such accidents is classified as “slight” resulting in a Risk Code of 4, which is “acceptable.” Therefore, under CEQA, construction activities at Berths 97-109 would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards. Based on risk criterion **RISK-2**, impacts under CEQA from Alternative 4 would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Under Alternative 4, in-water and upland construction impacts would be similar to, but slightly less than those described for the proposed Project. Reduced impacts include reduced potential for accidental releases or explosion of petroleum products or a hazardous substance and reduced potential for exposure of personnel to health hazards.

Alternative 4 would include construction of new wharves, dikes, and backland areas, which would result in increased susceptibility to hazardous materials spills during construction. Several standard policies regulate the storage of hazardous materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to affect members of the public and limit the potential adverse impacts of contamination to a relatively small area. Therefore, under NEPA, construction activities at Berths 97-109 would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards. Impacts under NEPA from Alternative 4 would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-3a: Construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death.

Emergency response and evacuation planning is the responsibility of the LAPD, LAFD, Port Police, and USCG. Construction activities would be subject to emergency response and evacuation systems implemented by LAFD. During construction activities, the LAFD would require that adequate vehicular access to the site be provided and maintained. Prior to commencement of construction activities, all plans would be reviewed by the LAFD to ensure adequate access is maintained throughout construction/demolition.

CEQA Impact Determination

Alternative 4 contractors would be required to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under CEQA, construction activities associated with

Alternative 4 would not substantially interfere with an existing emergency response or evacuation plan or increase risk of injury or death. Based on risk criterion **RISK-3**, impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Alternative 4 contractors would be required to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under NEPA, construction activities associated with Alternative 4 would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death. Based on risk criterion **RISK-3**, impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-4a: Alternative 4 construction/demolition would comply with applicable regulations and policies guiding development in the Port.

As described in Section 3.8.3.1, List of Regulations, Alternative 4 would be subject to numerous regulations for development and operation of the proposed facilities. For example, construction and demolition would be completed in accordance with RCRA, HSWA, CERCLA, CCR Title 22 and Title 26, and the California Hazardous Waste Control Law, which would govern proper containment, spill control, and disposal of hazardous waste generated during demolition and construction activities. Implementation of increased inventory accountability, spill prevention controls, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Potential releases of hazardous substances during demolition and/or construction would be addressed through the federal Emergency Planning and Right-to-Know Act, which is administered in California by the SERC, and the Hazardous Material Release Response Plans and Inventory Law. In addition, demolition and construction would be completed in accordance with the Los Angeles Municipal Fire Code, which regulates the construction of buildings and other structures used to store flammable hazardous materials, and the Los Angeles Municipal Public Property Code, which regulates the discharge of materials into the sanitary sewer and storm drain. The latter requires the construction of spill-containment structures to prevent the entry of forbidden materials, such as hazardous materials, into sanitary sewers and storm drains. LAHD maintains compliance with these federal, state, and local laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. LAHD has implemented various plans and programs to ensure compliance

with these regulations. These regulations must be adhered to during design and construction of Alternative 4. Implementation of increased spill prevention controls, spill release notification requirements, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Construction/demolition activities would be conducted using BMPs in accordance with City guidelines, as detailed in the Development Best Management Practices Handbook (City of Los Angeles, 2002). Applicable BMPs include, but are not limited to, vehicle and equipment fueling and maintenance; material delivery, storage, and use; spill prevention and control; solid and hazardous waste management; and contaminated soil management. Alternative 4 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Implementation of increased spill prevention controls associated with these BMPs would limit both the frequency and severity of potential releases of hazardous materials.

CEQA Impact Determination

Because Alternative 4 construction would be completed using standard BMPs and in accordance with LAHD plans and programs, LAFD regulations, and all hazardous waste laws and regulations, impacts relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under CEQA under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

Because Alternative 4 construction would be completed using standard BMPs and in accordance with LAHD plans and programs, LAFD regulations, and all hazardous waste laws and regulations, impacts under NEPA relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-5a: Tsunami-induced flooding and seismic events would result in fuel releases from demolition/construction equipment or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a major or great earthquake or large tsunami to affect the Port. Either event would likely lead to a fuel spill from demolition

and/or construction equipment, as well as from containers of petroleum products and hazardous substances used during the demolition/construction period. Unfinished structures are especially vulnerable to damage from earthquakes and tsunamis during the construction period.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all Alternative 4 structures and land surfaces are expressed as height above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the Alternative 2 site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the Alternative 4 site. Because the Alternative 4 site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the Alternative 4 site. Because the Alternative 4 site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during construction of Alternative 4 and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude

6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

CEQA Impact Determination

Impacts due to major or great earthquakes and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 4. However, because the Alternative 4 site elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 4, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low. While there will be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under CEQA associated with Alternative 4 would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Impacts due to major or great earthquakes and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 4. However, because the Project site elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 4, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as

"improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under NEPA associated with Alternative 4 would be less than significant under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-6a: A potential terrorist attack would result in adverse consequences to areas near the Alternative 4 site during the construction period.

Risk of Terrorist Actions during Construction

The probability of a terrorist attack on Alternative 4 facilities is not likely to appreciably change during construction compared to baseline conditions. It is possible that the increase in construction vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal. The Berth 97-109 terminal would be operational during the construction period; therefore, risks associated with terrorism during operations will also apply to the terminal during the construction period.

Consequences of Terrorist Attack during Construction

During construction, a terrorist action could block key road access points and waterways and result in economic disruption. Potential environmental damage would include fuel and/or commodity spills into the marine environment, with associated degradation of water quality and damage to marine biological resources. Container ships typically carry up to 5,000 barrels of fuel oil but would not be full when arriving at the port. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality.

CEQA Impact Determination

Access to the terminal site during construction could occur by land, water, and/or air. However, existing Port security measures would counter any potential increase in unauthorized access to the terminal site through the use of vehicles or vessels. The potential for a terrorist attack that would result in adverse consequences to areas near the proposed terminal site during the construction period is considered improbable and the consequences could be moderate. This combination would result in a Risk Code of 4 that is "acceptable," and impacts would be less than significant under criterion **RISK-6**.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

NEPA Impact Determination

Impacts under NEPA would be less than significant as defined in the CEQA determination for Alternative 4 above.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

3.8.4.3.2.4.2 Operational Impacts

Impact RISK-1b: Berth 97-109 terminal operations would not increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.

As of 2001 (CEQA baseline), the Berth 97-109 terminal handled approximately 45,135 TEUs per year. Berth 97-109 terminal operations under Alternative 4 could handle approximately 1,392,000 TEUs per year when optimized and functioning at maximum capacity (in 2025).

Throughput of 1,392,000 TEUs per year in association with Alternative 4, when functioning at maximum capacity, would equate to just over a 30-fold increase in throughput capacity over CEQA baseline. Terminal operations would be subject to safety regulations that govern the shipping, transport, storage and handling of hazardous materials, which would limit the severity and frequency of potential releases of hazardous materials resulting in increased exposure of people to health hazards (i.e., Port RMP, USCG, and LAFD regulations and requirements, and DOT regulations). For example, as discussed in Section 3.8.3.1, List of Regulations, and summarized below, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. In addition, the DOT Hazardous Materials Regulations (Title 49 CFR Parts 100-185) regulate almost all aspects of terminal operations. Parts 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications), and 180 (Packaging Maintenance) would all apply to Alternative 4 activities.

Terminal maintenance activities would involve the use of hazardous materials such as petroleum products, solvents, paints, and cleaners. Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to as RRP and HMI. Implementation of increased inventory accountability and spill prevention controls associated with this RRP and HMI would limit both the frequency and severity of potential releases of hazardous materials. Based on the limited volumes that could potentially spill, quantities of hazardous materials used at Berths 97-109 that are below the thresholds of Chapter 6.95 would not likely result in a substantial release into the environment.

Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). Implementation of increased hazardous materials inventory control and spill prevention controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

CEQA Impact Determination

Because projected terminal operations under Alternative 4 would accommodate approximately a 30-fold increase in containerized cargo compared to the CEQA baseline, the potential for an accidental release or explosion of hazardous materials would also be expected to increase proportionally. During the period 1997-2004 there were 40 hazardous material spills directly associated with container terminals in the Ports of Los Angeles and Long Beach. This equates to approximately five spills per year for the entire port complex. During this period, the total throughput of the container terminals was 76,874,841 TEU. Therefore, the probability of a spill at a container terminal can be estimated at 5.2×10^{-7} per TEU (40 spills divided by 76,874,841 TEU). This spill probability conservatively represents the baseline hazardous material spill probability since it include materials that would not be considered a risk to public safety (e.g., perfume spills), but would still be considered an environmental hazard. The probability of spills associated with future operations would be based on the spill probability per TEU times the increase in TEUs under Alternative 4.

It should be noted, with respect to hazardous material spills, that during this period there were no reported impacts to the public (injuries, fatalities and evacuations), with potential consequences limited to port workers (two worker injuries that were treated at the scene and 20 workers evaluated as a precaution).

Based on the accident history at the Port of containers containing hazardous materials, which includes 40 incidents over an 8-year period in the entire port complex (Ports of Los Angeles and Long Beach), the frequency of Project-related spills can be estimated as shown in Table 3.8-15.

Table 3.8-15. Alternative 4: Existing and Projected Cargo Throughput Volumes at Berths 97-109

Operations	Overall Throughput (TEUs)	Increase in TEUs over CEQA Baseline (times or multiples)	Potential Spills (per year)
Port Baseline (2005)	7,484,624	NA	3.9
CEQA Project Baseline (2001)	45,135	NA	0.02
Alternative 4 (2030)	1,392,000	30.8 times	0.72

Note:
TEU = twenty-foot equivalent unit

Based on the projected increase in TEUs, the frequency of potential Alternative 4-related spills would increase from 0.02 to 0.72 spills per year, or about one spill per year. This spill frequency would be classified as "periodic" (between once per year and once in 10 years). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health impacts. Therefore, under CEQA, Alternative 4 operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Impacts under CEQA would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Because Alternative 4 would result in greater container throughput compared to the NEPA baseline, operational impacts would correspondingly be greater. An overall increase in TEUs would result in proportionally greater hazardous materials containers subject to accidental release or explosion as shown in Table 3.8-16.

Table 3.8-16. Alternative 4: Existing and Projected Cargo Throughput Volumes at Berths 97-109

Operations	Overall Throughput (TEUs)	Increase in TEUs over NEPA Baseline (percent)	Potential Spills (per year)
Port Baseline (2005)	7,484,624	NA	3.9
NEPA Project Baseline (2030)	632,500	NA	0.33
Alternative 4 (2030)	1,392,000	120%	0.72

Note:
TEU = twenty-foot equivalent unit

Based on the projected increase in TEUs, the frequency of Alternative 4-related spills would increase from 0.33 to 0.73 spills per year, or remain about one spill per year. This spill frequency would be classified as "frequent" (more than once a year). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health impacts. Therefore, under NEPA, Alternative 4 operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of a potential accidental release or explosion of a hazardous substance. Impacts under NEPA would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-2b: Alternative 4 operations would not substantially increase the probable frequency and severity of consequences to people or property from exposure to health hazards.

Alternative 4 would include siting facilities that would potentially handle hazardous materials and increase other hazards to the public. The handling and storing of increased quantities of hazardous materials would increase the probability of a local accident involving a release, spill, fire or explosion, which is proportional to the size of the terminal and its throughput as was addressed in Impact Risk 1b.

Because projected terminal operations at Berths 97-109 would accommodate approximately a 30-fold increase in containerized cargo compared to the CEQA baseline, the potential for increased truck transportation-related accidents would also occur. Potential alternative-related increases in truck trips could result in an increase in vehicular accidents, injuries, and fatalities. Therefore, the potential impact of increased truck traffic on regional injury and fatality rates have been evaluated.

According to an FMCSA detailed analysis (FMCSA, 2001), the estimated nonhazardous materials truck accident rate is more than twice the hazardous materials truck accident rate. The nonhazardous materials truck accident rate was estimated to be 0.73 accidents per million vehicle miles and the average hazardous materials truck accident rate was estimated to be 0.32 accidents per million vehicle miles. The hazardous materials truck accident rate is not directly applicable to the alternative Project container trucks since they are generally limited to bulk hazardous materials carriers. Therefore, for this analysis, the higher accident rate associated with nonhazardous materials trucks was used.

Based on the NHTSA (DOT, 2003), of the estimated 457,000 truck crashes in 2000 (causing fatalities, injuries, or property damage), an estimated 1 percent produced fatalities and 22 percent produced injuries. The FARS and the TIFA survey were the sources of data for this analysis, which primarily examined fatalities associated with vehicle impact and trauma.

Based on these statistics and the projected truck trips for the existing facilities and Alternative 4, the potential rate of truck accidents, injuries, and fatalities can be estimated and evaluated.

CEQA Impact Determination

Potential alternative-related truck accident rates can be estimated based on national average accident rates and the average number of miles per cargo truck trip. Based on the air pollutant emission inventory of the Port, it was determined that the average truck trip was approximately 49 miles (Starcrest Consulting Group, 2003). Given the annual number of truck trips, the average distance of each trip, and the published accident, injury and fatality rates, probabilities were estimated as shown in Table 3.8-17.

Table 3.8-17. Alternative 4: Existing and Projected Truck Trips at Berths 97-109

Operations	Annual Truck Trips	Increase over CEQA Baseline (%)	Accident Rate (per year)	Injury Probability (per year)	Fatality Probability (per year)
CEQA Baseline (2001)	0	NA	0.0	0.0	0.0
Alternative 4 (2030)	1,218,722	NA	43.6	9.6	0.4

Because the occurrence of truck accidents associated with Berths 97-109 occur at a frequency greater than one per year, truck accidents are considered a “frequent” event. Because the possibility exists for injury and/or fatality to occur during one of these frequent accidents as noted in Table 3.8-17, the consequence of such accidents is classified as “severe,” resulting in a Risk Code of 2. An impact with a Risk Code of 2 is classed as significant and requires additional engineering or administrative controls to mitigate the potentially significant adverse impacts.

The Port is currently developing a port-wide TMP for roadways in and around its facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. The results will be a TMP providing ideas on what to expect and how to prepare for future traffic volumes. Some of the transportation improvements already under consideration include: I-110/SR-47/ Harbor Boulevard interchange improvements; Navy Way connector (grade separation) to westbound Seaside Avenue; south Wilmington grade separations; and additional traffic capacity analysis for the Vincent Thomas Bridge. In addition, the Port is working on several strategies to increase rail transport, which will reduce reliance on trucks. These projects would serve to reduce the frequency of truck accidents.

The Port also is currently phasing out older trucks as part of its Clean Truck Program, and the TWIC program will help identify and exclude truck drivers that lack the proper licensing and training. The phasing out of older trucks would reduce the probability of accidents that occur as a result of mechanical failure by approximately 10 percent (ADL, 1990). In addition, proper driver training, or more specifically, the reduction in the number of drivers that do not meet minimum training specifications, would further reduce potential accidents by approximately 30 percent. The potential number of injuries would be reduced to approximately 6.0, which would reduce the consequence classification to "moderate" and a Risk Code to 3 or less. Therefore, Alternative 4 operations would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards and potential impacts under CEQA would be considered less than significant

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA

NEPA Impact Determination

Alternative 4 would result in construction of new wharves, dikes, and backland areas, which would result in an increase in TEUs and truck trips, in comparison to the NEPA baseline, as described under the NEPA Impact Determination for **Impact RISK 1b**. Given the annual number of truck trips, the average distance of each trip, and the published accident, injury and fatality rates, probabilities were estimated as shown in Table 3.8-18.

Table 3.8-18. Alternative 4: Existing and Projected Truck Trips at Berths 97-109

Operations	Annual Truck Trips	Increase over NEPA Baseline (%)	Accident Rate (per year)	Injury Probability (per year)	Fatality Probability (per year)
NEPA Baseline (2030)	0	NA	0.0	0.0	0.0
Alternative 4 (2030)	1,218,722	NA	43.6	9.6	0.5

Because the occurrence of truck accidents associated with Berths 97-109 occur at a frequency greater than one per year, truck accidents are considered a "frequent" event.

Because the possibility exists for injury and/or fatality to occur during one of these frequent accidents as noted in Table 3.8-18, the consequence of such accidents is classified as "severe," resulting in a Risk Code of 2. An impact with a Risk Code of 2 is classed as significant and requires additional engineering or administrative controls to mitigate the potentially significant adverse impacts.

The Port is currently developing a port-wide TMP for roadways in and around its facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. The results will be a TMP providing ideas on what to expect and how to prepare for future traffic volumes. Some of the transportation improvements already under consideration include: I-110/SR-47/ Harbor Boulevard interchange improvements; Navy Way connector (grade separation) to westbound Seaside Avenue; south Wilmington grade separations; and additional traffic capacity analysis for the Vincent Thomas Bridge. In addition, the Port is working on several strategies to increase rail transport, which will reduce reliance on trucks. These projects would serve to reduce the frequency of truck accidents.

The Port also is currently phasing out older trucks as part of its Clean Truck Program, and the TWIC program will help identify and exclude truck drivers that lack the proper licensing and training. The phasing out of older trucks would reduce the probability of accidents that occur as a result of mechanical failure by approximately 10 percent (ADL, 1990). Proper driver training, or more specifically, the reduction in the number of drivers that do not meet minimum training specifications, would further reduce potential accidents by approximately 30 percent. The potential number of injuries would be reduced to approximately 6.0, which would reduce the consequence classification to "moderate" and a Risk Code to 3 or less. Therefore, Alternative 4 operations would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards and potential impacts under NEPA would be considered less than significant

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

Impact RISK-3b: Alternative 4 operations would not substantially interfere with any existing emergency response plans or emergency evacuation plans.

Alternative 4 would optimize terminal operations by increasing backland capacity and constructing new wharves and dikes to accommodate modern container terminal ships. The Berth 97-109 terminal would continue to operate as a container terminal; therefore, proposed terminal operations would not interfere with any existing contingency plans, since the current activities are consistent with the contingency plans and the alternative Project would not add any additional activities that would be inconsistent with these plans. In addition, existing oil spill contingency and emergency response plans for the site would be revised to incorporate proposed facility and operation changes. Because existing management plans are commonly revised to incorporate terminal operation changes, conflicts with existing contingency and emergency response plans are not anticipated.

Berth 97-109 facilities personnel, including dock laborers and equipment operators, would be trained in emergency response and evacuation procedures. The site would be secured, with access allowed only to authorized personnel. The LAFD and Port Police would be able to provide adequate emergency response services to the site. Additionally, Alternative 4 operations would also be subject to emergency response and evacuation systems implemented by the LAFD, which would review all plans to ensure that adequate access in the Project vicinity is maintained. All Alternative 4 contractors would be required to adhere to plan requirements.

CEQA Impact Determination

Alternative 4 operations would be operated as a container terminal similar to other terminal facilities in the West Basin, and would be subject to emergency response and evacuation systems implemented by the LAFD. Thus, Alternative 4 operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

Alternative 4 operations would continue to be operated as a container terminal and operations would be subject to emergency response and evacuation systems implemented by the LAFD. Thus, Alternative 4 operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under NEPA.

Impact RISK-4b: Alternative 4 operations would comply with applicable regulations and policies guiding development in the Port.

Alternative 4 operations would be subject to numerous regulations for operation of the proposed facilities. LAHD has implemented various plans and programs to ensure compliance with these regulations, which must be adhered to during operation of this alternative. For example, as discussed in Section 3.8.3.1, List of Regulations, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials.

Among other requirements, Alternative 4 operations would conform to the USCG requirement to provide a segregated cargo area for containerized hazardous materials. Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). In addition, any facility constructed at the site, identified as either a hazardous cargo facility or a vulnerable resource, would be required to conform to the RMP, which includes packaging constraints and the provision of a separate storage area for hazardous cargo.

LAHD maintains compliance with these state and federal laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. Most notably, the Port RMP implements development guidelines in an effort to minimize the danger of accidents to vulnerable resources. This would be achieved mainly through physical separation as well as through facility design features, fire protection, and other risk management methods. There are two primary categories of vulnerable resources, people, and facilities. People are further divided into subgroups. The first subgroup is comprised of residences, recreational users, and visitors. Within the Port setting, residences and recreational users are considered vulnerable resources. The second subgroup is comprised of workers in high density (i.e., generally more than 10 people per acre, per employer).

Facilities that are vulnerable resources include Critical Regional Activities/Facilities and High Value Facilities. Critical Regional Activities/Facilities are facilities in the Port that are important to the local or regional economy, the national defense, or some major aspect of commerce. These facilities typically have a large quantity of unique equipment, a very large working population, and are critical to both the economy and to national defense. Such facilities in the Port have been generally defined in the Port RMP as the former Todd Shipyard, Fish Harbor, Badger Avenue Bridge, and Vincent Thomas Bridge.

High Value Facilities are nonhazardous facilities, in and near the Ports, which have very high economic value. These facilities include both facility improvements and cargo in-place, such as container storage areas. However, the determination of a vulnerable resource is made by the Port and LAFD on a case-by-case basis. Although the Port generally considers container terminals to be High Value Facilities, these types of facilities have never been considered vulnerable resources in risk analyses completed by the Port and LAFD (pers. comm., Knott, 2007). Because container terminals are not considered vulnerable resources, this Alternative would not conflict with the RMP.

Alternative 4 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Buildings will be equipped with fire protection equipment as required by the Los Angeles Municipal Fire Code. Access to all buildings and adequacy of road and fire lanes will be reviewed by the LAFD to ensure that adequate access and firefighting features are provided. Plans would include an internal circulation system, code-required features, and other firefighting design elements, as approved by the LAFD.

Operation of Alternative 4 would be required to comply with all existing hazardous waste laws and regulations, including the federal RCRA and CERCLA, and CCR Title 22 and Title 26. Alternative 4 operations would comply with these laws and regulations, which

would ensure that potential hazardous materials handling would occur in an acceptable manner.

CEQA Impact Determination

Alternative 4 operations would not conflict with RMP guidelines. Alternative 4 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, and operation of Alternative 4 would be required to comply with all applicable existing hazardous waste laws and regulations. Therefore, under CEQA, Alternative 4 operations would comply with applicable regulations and policies guiding development in the Port. Impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Alternative 4 operations would not conflict with RMP guidelines. Alternative 4 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, and operation of Alternative 4 would be required to comply with all applicable existing hazardous waste laws and regulations. Therefore, under NEPA, Alternative 4 operations would comply with applicable regulations and policies guiding development in the Port. Impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-5b: Tsunami-induced flooding and seismic events would result in fuel releases from ships or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a large tsunami to affect the Port. A large tsunami would likely lead to a fuel spill if a moored vessel is present. Although crude oil tankers would not moor at Berths 97-109, each ship contains large quantities of fuel oil. While in transit, the hazards posed to tankers are insignificant, and in most cases, imperceptible. However, while docked, a tsunami striking the Port could cause significant ship movement and even a hull breach if the ship is pushed against the wharf.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all proposed Project structures and land surfaces are expressed as height above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005).

This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the proposed Project site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during operation of the proposed Project and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

Containers of hazardous substances on ships or on berths could similarly be damaged as a result of a large tsunami. Such damage would result in releases of both hazardous and nonhazardous cargo to the environment, adversely affecting persons and/or the marine waters. However, containers carrying hazardous cargo would not necessarily release their contents in the event of a large tsunami. The DOT regulations (49 CFR Parts 172-180) covering hazardous material packaging and transportation would minimize potential release volumes since packages must meet minimum integrity specifications and size limitations.

The owner or operators of tanker vessels are required to have an approved Tank Vessel Response Plan on board and a qualified individual in the U.S. with full authority to implement removal actions in the event of an oil spill incident, and to contract with the spill response organizations to carry out cleanup activities in case of a spill. The existing oil spill response capabilities in the Port are sufficient to isolate spills with containment booms and recover the maximum possible spill from an oil tanker.

Various studies have shown that double-hull tank vessels have lower probability of releases when tanker vessels are involved in accidents. Because of these studies, the USCG issued regulations addressing double-hull requirements for tanker vessels. The regulations establish a timeline for eliminating single-hull vessels from operating in the navigable waters or the EEZ of the United States after January 1, 2010, and double-bottom or double-sided vessels by January 1, 2015. Only vessels equipped with a double hull, or with an approved double containment system will be allowed to operate after those times. It is unlikely that single-hull vessels will use the Alternative 4 terminal facilities given the current schedule and the planned phase-out of these vessels.

CEQA Impact Determination

Designing new facilities based on existing building codes may not prevent substantial damage to structures from coastal flooding as a result of tsunamis or seiches. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 4. However, because the Alternative 4 elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 4, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as “improbable” (less than once every 10,000 years). The potential consequence of such an event is classified as “moderate,” resulting in a Risk Code of 4, which is “acceptable.” The volume of spilled fuel is also expected to be relatively low. While there will be fuel containing equipment present during construction, most equipment is equipped with watertight tanks, with the main problem being the infiltration of water into the tank and fuel combustion chambers. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered minor. In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under CEQA associated with Alternative 4 would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 4. However, because Alternative 4 elevations are located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 4, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under NEPA associated with Alternative 4 would be less than significant under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-6b: A potential terrorist attack would result in adverse consequences to areas near the Alternative 4 site during the operations period.

Risk of Terrorist Actions Associated with Operations

The probability of a terrorist attack on the alternative Project facilities is not likely to appreciably change over current conditions. It is possible that the increase in vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal.

Consequences of Terrorist Attack

The risks associated with terrorism discussed in Section 3.8.2.4 would apply to the terminal during operations. The potential consequences of a terrorist action on a container terminal would be mainly environmental and economic. A terrorist action involving a container vessel while at berth may result in a fuel and/or commodity spill and its associated environmental damage. Within the Port, a terrorist action could block key waterways and result in economic disruption. Potential environmental damage would include fuel and/or commodity spills into the marine environment, with associated

degradation of water quality and damage to marine biological resources. Container ships typically carry up to 5,000 barrels of fuel oil but would not be full when arriving at the port. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality. Such potential impacts to the environment are addressed in specific resource sections including air quality (Section 3.2), biology (Section 3.3), and water quality (Section 3.14).

The consequences associated with the smuggling of WMDs would be substantial in terms of impacts to the environment and public health and safety. However, the consequences of a WMD attack would not be affected by the alternative. Furthermore, the likelihood of such an event would not be affected by alternative-related infrastructure or throughput increases, but would depend on the terrorist's desired outcome and the ability of safeguards, unaffected by the alternative, to thwart it. Cargo containers represent only one of many potential methods to smuggle WMDs, and with current security initiatives (see Section 3.8.2.5) may be less plausible than other established smuggling routes (e.g., land-based ports of entry, cross-border tunnels, and illegal vessel transportation).

CEQA Impact Determination

Potential public safety consequences of a terrorist attack on the Berths 97-109 Terminal for the alternative Project are considered negligible since, in the event of a successful attack, the potential for a small number of offsite injuries are possible mainly due to fire, which in turn would be a result of fuel spilled into Port waters. Potential thermal radiation and explosion overpressure levels would be limited to the immediate vicinity of the attack and would not overlap any existing, planned, or permitted vulnerable resources including bulk oil and petroleum facilities located in the West Basin. However, the potential for limited public exposure along Port waterways is possible.

The risk of a terrorist attack is considered part of the baseline for the Project alternative. Terrorism risk associated with container terminals currently exists, and is not influenced by changes in container traffic volume. Currently, the Berth 97-109 terminal handles approximately 0.6 percent of the cargo volume of the Port. With the implementation of the alternative, the relative importance of the alternative will increase to 18.6 the current cargo volume of the Port. Overall, growth at the Berth 97-109 terminal would not increase disproportionately compared to the growth of the Port and of container terminals nationally. Therefore, the relative importance of the terminal as a terrorist target would not change.

Any increase in the volume of container vessels visiting the Alternative 4 terminal would not change the probability or consequences of a terrorist attack on the Berth 97-109 terminal since the terminal is already considered a potential economic target, as well as a potential mode to smuggle a weapon into the United States. In addition, the measures outlined in Section 3.8.2.5 would serve to reduce the potential for a successful terrorist attack on the Berth 97-109 facility compared to Project baseline conditions (under which many of these measures had not yet been implemented). These measures have since improved both terminal and cargo security, and have resulted in enhanced cargo screening. Therefore, potential impacts associated with a potential terrorist attack on the Berth 97-109 facility are considered less than significant.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

NEPA Impact Determination

Potential impacts under NEPA would be the same as under CEQA and are considered less than significant.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

3.8.4.3.2.5 Alternative 5 – Reduced Construction and Operation: Phase I Construction Only

Under Alternative 5, the terminal (as completed in 2003 and allowed for under the ASJ) would operate at levels similar to current levels. There would be 72 acres of backlands, four operational A-frame cranes, and a single road bridge spanning the Southwest Slip. No additional facilities would be constructed.

3.8.4.3.2.5.1 Construction Impacts

CEQA Impact Determination

During the period when facilities and infrastructure were developed (2001-2005), no incidents occurred that: exposed people to the accidental release of hazardous materials; caused contamination of soil or water; involved an accidental release from a fire or explosion interfered with existing emergency response and evacuation plans; or involved a terrorist attack. Therefore, construction impacts under CEQA for **RISK-1a, RISK-2a, RISK-3a, RISK-4a, RISK-5a,** and **RISK-6a** would be less than significant**.**

NEPA Impact Determination

Construction impacts under NEPA for **RISK-1a, RISK-2a, RISK-3a, RISK-4a, RISK-5a,** and **RISK-6a** would be less than significant, as is the case under CEQA.

3.8.4.3.2.5.2 Operational Impacts

Impact RISK-1b: Berth 97-109 terminal operations would not increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.

Existing terminal facilities include 1,200 linear feet of wharf, four A-frame cranes, and 72 acres of backlands. As of 2001 (CEQA baseline), the Berth 97-109 terminal handled approximately 45,135 TEUs per year. Berth 97-109 terminal operations under

Alternative 5 could handle approximately 630,000 TEUs per year when optimized and functioning at maximum capacity (in 2025).

Terminal operations would be subject to safety regulations that govern the shipping, transport, storage and handling of hazardous materials, which would limit the severity and frequency of potential releases of hazardous materials resulting in increased exposure of people to health hazards (i.e., Port RMP, USCG and LAFD regulations and requirements, and DOT regulations). For example, as discussed in Section 3.8.3.1, List of Regulations, and summarized below, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. In addition, the DOT Hazardous Materials Regulations (Title 49 CFR Parts 100-185) regulate almost all aspects of terminal operations. Parts 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications), and 180 (Packaging Maintenance) would all apply to the alternative Project activities.

Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). Implementation of increased hazardous materials inventory control and spill prevention controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Terminal maintenance activities would involve the use of hazardous materials such as petroleum products, solvents, paints, and cleaners. Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to as RRP and HMI. Implementation of increased inventory accountability and spill prevention controls associated with this RRP and HMI would limit both the frequency and severity of potential releases of hazardous materials. Based on the limited volumes that could potentially spill, quantities of hazardous materials used at Berths 97-109 that are below the thresholds of Chapter 6.95 would not likely result in a substantial release into the environment.

CEQA Impact Determination

Because projected terminal operations under Alternative 5 would accommodate approximately a 14-fold increase in containerized cargo compared to the CEQA baseline, the potential for an accidental release or explosion of hazardous materials would also be expected to increase proportionally. During the period 1997-2004 there were 40 hazardous material spills directly associated with container terminals in the Ports of Los Angeles and Long Beach. This equates to approximately five spills per year for the entire port complex. During this period, the total throughput of the container terminals was 76,874,841 TEU. Therefore, the probability of a spill at a container terminal can be estimated at 5.2×10^{-7} per TEU (40 spills divided by 76,874,841 TEU). This spill probability conservatively represents the baseline hazardous material spill probability since it includes materials that would not be considered a risk to public safety (e.g., perfume spills), but would still be considered

an environmental hazard. The probability of spills associated with future operations would be based on the spill probability per TEU times the increase in TEUs under the alternative Project.

It should, with respect to hazardous material spills, be noted that during this period there were no reported impacts to the public (injuries, fatalities, and evacuations), with potential consequences limited to port workers (two worker injuries that were treated at the scene and 20 workers evaluated as a precaution).

Based on the accident history at the Port of containers containing hazardous materials, which includes 40 incidents over an 8-year period in the entire port complex (Ports of Los Angeles and Long Beach), the frequency of Project-related spills can be estimated as shown in Table 3.8-19.

Table 3.8-19. Alternative 5: Existing and Projected Cargo Throughput Volumes at Berths 97-109

Operations	Overall Throughput (TEUs)	Increase in TEUs over CEQA Baseline (times or multiples)	Potential Spills (per year)
Port Baseline (2005)	7,484,624	NA	3.9
CEQA Project Baseline (2001)	45,135	NA	0.02
Alternative 5 (2030)	630,000	13.9 times	0.33

Note:
TEU = twenty-foot equivalent unit

Based on the projected increase in TEUs, the frequency of spills potentially related to Alternative 5 would increase from 0.02 to 0.33 spills per year, or less than one spill per year. This spill frequency would be classified as "periodic" (between once per year and once in 10 years). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the consequence of such accidents is classified as "slight," resulting in a Risk Code of 4 that is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health impacts. Therefore, under CEQA, Alternative 5 operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Impacts under CEQA would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Alternative 5 would result in a similar container throughput to that of the NEPA baseline and operational impacts would correspondingly be virtually identical as shown in Table 3.8-20.

Table 3.8-20. Alternative 5: Existing and Projected Cargo Throughput Volumes at Berths 97-109

Operations	Overall Throughput (TEUs)	Increase in TEUs over NEPA Baseline (percent)	Potential Spills (per year)
Port Baseline (2005)	7,484,624	NA	3.9
NEPA Project Baseline (2030)	632,500	NA	0.33
Alternative 5 (2030)	630,000	-0.4%	0.33

Note:
TEU = twenty-foot equivalent unit

This spill frequency would be classified as "periodic" (between once per year and once in 10 years). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health impacts. Therefore, under NEPA, Alternative 5 operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of a potential accidental release or explosion of a hazardous substance. Impacts under NEPA would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-2b: Alternative 5 operations would not substantially increase the probable frequency and severity of consequences to people or property from exposure to health hazards.

Alternative 5 includes the siting of facilities that potentially handle hazardous materials and increase other hazards to the public. The handling and storing of hazardous materials would increase the probability of a local accident involving a release, spill, fire or explosion, which is proportional to the size of the terminal and its throughput as was addressed in **Impact RISK 1b**.

Because projected terminal operations at Berths 97-109 would accommodate approximately a 14-fold increase in containerized cargo compared to the CEQA baseline, the potential for increased truck transportation-related accidents would also occur. Potential alternative-related increases in truck trips could result in an increase in vehicular accidents, injuries, and fatalities. Therefore, the potential impact of increased truck traffic on regional injury and fatality rates is evaluated.

According to an FMCSA detailed analysis (FMCSA, 2001), the estimated nonhazardous materials truck accident rate is more than twice the hazardous materials truck accident rate. The nonhazardous materials truck accident rate was estimated to be 0.73 accidents per million vehicle miles and the average hazardous materials truck accident rate was estimated to be 0.32 accidents per million vehicle miles. The hazardous materials truck accident rate is not directly applicable to the alternative Project container trucks since they are generally limited to bulk hazardous materials carriers. Therefore, for this analysis, the higher accident rate associated with nonhazardous materials trucks was used.

Based on the NHTSA (DOT, 2003), of the estimated 457,000 truck crashes in 2000 (causing fatalities, injuries, or property damage), an estimated 1 percent produced fatalities and 22 percent produced injuries. The FARS and the TIFA survey were the sources of data for this analysis, which primarily examined fatalities associated with vehicle impact and trauma.

Based on these statistics and the projected truck trips for the existing facilities and Alternative 5, the potential rate of truck accidents, injuries, and fatalities can be estimated and evaluated.

CEQA Impact Determination

Potential alternative-related truck accident rates can be estimated based on national average accident rates and the average number of miles per cargo truck trip. Based on the air pollutant emission inventory of the Port, it was determined that the average truck trip was approximately 49 miles (Starcrest Consulting Group, 2003). Given the annual number of truck trips, the average distance of each trip, and the published accident, injury and fatality rates, the following probabilities were estimated as shown in Table 3.8-21.

Table 3.8-21. Alternative 5: Existing and Projected Truck Trips at Berths 97-109

Operations	Annual Truck Trips	Increase over CEQA Baseline (%)	Accident Rate (per year)	Injury Probability (per year)	Fatality Probability (per year)
CEQA Baseline (2001)	0	NA	0.0	0.0	0.0
Alternative 5 (2030)	551,577	NA	19.7	4.3	0.2

Because the occurrence of truck accidents associated with Berths 97-109 occur at a frequency greater than one per year, truck accidents are considered a “frequent” event. Because the possibility exists for injury and/or fatality to occur during one of these frequent accidents as noted in Table 3.8-21, the consequence of such accidents is classified as “severe,” resulting in a Risk Code of 2. An impact with a Risk Code of 2 is classed as significant and requires additional engineering or administrative controls to mitigate the potentially significant adverse impacts.

The Port is currently developing a port-wide TMP for roadways in and around its facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. The results will be a TMP providing ideas on what to expect and how to prepare for future traffic volumes. Some of the transportation improvements already under consideration include: I-110/SR-47/ Harbor Boulevard interchange improvements; Navy Way connector (grade separation) to westbound Seaside Avenue; south Wilmington grade separations; and additional traffic capacity analysis for the Vincent Thomas Bridge. In addition, the Port is working on several strategies to increase rail transport, which will reduce reliance on trucks. These projects would serve to reduce the frequency of truck accidents.

The Port also is currently phasing out older trucks as part of its Clean Truck Program, and the TWIC program will help identify and exclude truck drivers that lack the proper licensing and training. The phasing out of older trucks would reduce the probability of accidents that occur as a result of mechanical failure by approximately 10 percent (ADL, 1990). Proper driver training, or more specifically, the reduction in the number of drivers that do not meet minimum training specifications, would further reduce potential accidents by approximately 30 percent. The potential number of injuries would be reduced to approximately 2.7, which would reduce the consequence classification to "moderate" and a Risk Code to 3 or less. Therefore, Alternative 5 operations would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards and potential impacts under CEQA would be considered less than significant

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

Alternative 5 would result in construction of new wharves, dikes, and backland areas, which would result in an increase in TEUs and truck trips, in comparison to the NEPA baseline, as described under the NEPA Impact Determination for **Impact RISK 1b**. Given the annual number of truck trips, the average distance of each trip, and the published accident, injury and fatality rates, the following probabilities were estimated as shown in Table 3.8-22

Table 3.8-22. Alternative 5: Existing and Projected Truck Trips at Berths 97-109

Operations	Annual Truck Trips	Increase over NEPA Baseline (%)	Accident Rate (per year)	Injury Probability (per year)	Fatality Probability (per year)
NEPA Baseline (2030)	0	NA	0.0	0.0	0.0
Alternative 5 (2030)	551,577	NA	19.7	4.3	0.2

Because the occurrence of truck accidents associated with Berths 97-109 occur at a frequency greater than one per year, truck accidents are considered a "frequent" event.

Because the possibility exists for injury and/or fatality to occur during one of these frequent accidents as noted in Table 3.8-22, the consequence of such accidents is classified as "severe," resulting in a Risk Code of 2. An impact with a Risk Code of 2 is classed as significant and requires additional engineering or administrative controls to mitigate the potentially significant adverse impacts.

The Port is currently developing a port-wide TMP for roadways in and around its facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. The results will be a TMP providing ideas on what to expect and how to prepare for future traffic volumes. Some of the transportation improvements already under consideration include: I-110/SR-47/ Harbor Boulevard interchange improvements; Navy Way connector (grade separation) to westbound Seaside Avenue; south Wilmington grade separations; and additional traffic capacity analysis for the Vincent Thomas Bridge. In addition, the Port is working on several strategies to increase rail transport, which will reduce reliance on trucks. These projects would serve to reduce the frequency of truck accidents.

The Port is currently phasing out older trucks as part of its Clean Truck Program, and the TWIC program will help identify and exclude truck drivers that lack the proper licensing and training. The phasing out of older trucks would reduce the probability of accidents that occur as a result of mechanical failure by approximately 10 percent (ADL, 1990). Proper driver training, or more specifically, the reduction in the number of drivers that do not meet minimum training specifications, would further reduce potential accidents by approximately 30 percent. The potential number of injuries would be reduced to approximately 2.7, which would reduce the consequence classification to "moderate" and a Risk Code to 3 or less. Therefore, Alternative 5 operations would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards and potential impacts under NEPA would be considered less than significant

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under NEPA.

Impact RISK-3b: Alternative 5 operations would not substantially interfere with any existing emergency response plans or emergency evacuation plans.

Alternative 5 would optimize terminal operations by increasing backland capacity and constructing new wharves and dikes to accommodate modern container terminal ships. The Berth 97-109 terminal would operate as a container terminal similar to other terminals in the West Basin; therefore, proposed terminal operations would not interfere with any existing contingency plans, since the current activities are consistent with the contingency plans and the alternative Project would not add any additional activities that would be inconsistent with these plans. In addition, existing oil spill contingency and emergency response plans for the site would be revised to incorporate proposed facility and operation changes. Because existing management plans are commonly revised to incorporate terminal operation changes, conflicts with existing contingency and emergency response plans are not anticipated.

Berth 97-109 facilities personnel, including dock laborers and equipment operators, would be trained in emergency response and evacuation procedures. The site would be secured, with access allowed only to authorized personnel. The LAFD and Port Police would be able to provide adequate emergency response services to the site. Additionally, Alternative 5 operations would also be subject to emergency response and evacuation systems implemented by the LAFD, which would review all plans to ensure that adequate access in the Project vicinity is maintained. All Alternative 5 contractors would be required to adhere to plan requirements.

CEQA Impact Determination

Alternative 5 would be operated as a container terminal and operations would be subject to emergency response and evacuation systems implemented by the LAFD. Thus, Alternative 5 operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

Alternative 5 would continue to be operated as a container terminal and operations would be subject to emergency response and evacuation systems implemented by the LAFD. Thus, Alternative 5 operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under NEPA.

Impact RISK-4b: Alternative 5 operations would comply with applicable regulations and policies guiding development in the Port.

Alternative 5 operations would be subject to numerous regulations for operation of the proposed facilities. LAHD has implemented various plans and programs to ensure compliance with these regulations, which must be adhered to during operation of this alternative. For example, as discussed in Section 3.8.3.1, List of Regulations, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials.

Among other requirements, Alternative 5 operations would conform to the USCG requirement to provide a segregated cargo area for containerized hazardous materials. Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). In addition, any facility constructed at the site, identified as either a hazardous cargo facility or a vulnerable resource, would be required to conform to the RMP, which includes packaging constraints and the provision of a separate storage area for hazardous cargo.

LAHD maintains compliance with these state and federal laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. Most notably, the Port RMP implements development guidelines in an effort to minimize the danger of accidents to vulnerable resources. This would be achieved mainly through physical separation as well as through facility design features, fire protection, and other risk management methods. There are two primary categories of vulnerable resources, people, and facilities. People are further divided into subgroups. The first subgroup is comprised of residences, recreational users, and visitors. Within the Port setting, residences and recreational users are considered vulnerable resources. The second subgroup is comprised of workers in high density (i.e., generally more than 10 people per acre, per employer).

Facilities that are vulnerable resources include Critical Regional Activities/Facilities and High Value Facilities. Critical Regional Activities/Facilities are facilities in the Port that are important to the local or regional economy, the national defense, or some major aspect of commerce. These facilities typically have a large quantity of unique equipment, a very large working population, and are critical to both the economy and to national defense. Such facilities in the Port have been generally defined in the Port RMP as the former Todd Shipyard, Fish Harbor, Badger Avenue Bridge, and Vincent Thomas Bridge.

High Value Facilities are nonhazardous facilities, in and near the Ports, which have very high economic value. These facilities include both facility improvements and cargo in-place, such as container storage areas. However, the determination of a vulnerable resource is made by the Port and LAFD on a case-by-case basis. Although the Port generally considers container terminals to be High Value Facilities, these types of facilities have never been considered vulnerable resources in risk analyses completed by the Port and LAFD (pers. comm., Knott, 2007). Because container terminals are not considered vulnerable resources, this Alternative would not conflict with the RMP.

Alternative 5 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Buildings will be equipped with fire protection equipment as required by the Los Angeles Municipal Fire Code. Access to all buildings and adequacy of road and fire lanes will be reviewed by the LAFD to ensure that adequate access and firefighting features are provided. Plans would include an internal circulation system, code-required features, and other firefighting design elements, as approved by the LAFD.

Operation of Alternative 5 would be required to comply with all existing hazardous waste laws and regulations, including the federal RCRA and CERCLA, and CCR Title 22 and Title 26. Alternative 5 operations would comply with these laws and regulations, which

would ensure that potential hazardous materials handling would occur in an acceptable manner.

CEQA Impact Determination

Alternative 5 operations would not conflict with RMP guidelines. Alternative 5 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, and operation of Alternative 5 would be required to comply with all applicable existing hazardous waste laws and regulations. Therefore, under CEQA, Alternative 5 operations would comply with applicable regulations and policies guiding development in the Port. Impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts under NEPA would be less than significant.

NEPA Impact Determination

Alternative 5 would not conflict with RMP guidelines. Alternative 5 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, and operation of Alternative 5 would be required to comply with all applicable existing hazardous waste laws and regulations. Therefore, under NEPA, Alternative 5 operations would comply with applicable regulations and policies guiding development in the Port. Impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-5b: Tsunami-induced flooding and seismic events would result in fuel releases from ships or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a large tsunami to affect the Port. A large tsunami would likely lead to a fuel spill if a moored vessel is present. Although crude oil tankers would not moor at Berths 97-109, each ship contains large quantities of fuel oil. While in transit, the hazards posed to tankers are insignificant, and in most cases, imperceptible. However, while docked, a tsunami striking the Port could cause significant ship movement and even a hull breach if the ship is pushed against the wharf.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all proposed Project structures and land surfaces are expressed as height

above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the proposed Project site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during operation of the proposed Project and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

Containers of hazardous substances on ships or on berths could similarly be damaged as a result of a large tsunami. Such damage would result in releases of both hazardous and nonhazardous cargo to the environment, adversely affecting persons and/or the marine waters. However, containers carrying hazardous cargo would not necessarily release their contents in the event of a large tsunami. The DOT regulations (49 CFR Parts 172-180) covering hazardous material packaging and transportation would minimize potential release volumes since packages must meet minimum integrity specifications and size limitations.

The owner or operators of tanker vessels are required to have an approved Tank Vessel Response Plan on board and a qualified individual in the U.S. with full authority to implement removal actions in the event of an oil spill incident, and to contract with the spill response organizations to carry out cleanup activities in case of a spill. The existing oil spill response capabilities in the Port are sufficient to isolate spills with containment booms and recover the maximum possible spill from an oil tanker.

Various studies have shown that double-hull tank vessels have lower probability of releases when tanker vessels are involved in accidents. Because of these studies, the USCG issued regulations addressing double-hull requirements for tanker vessels. The regulations establish a timeline for eliminating single-hull vessels from operating in the navigable waters or the EEZ of the U.S. after January 1, 2010 and double-bottom or double-sided vessels by January 1, 2015. Only vessels equipped with a double hull, or with an approved double containment system will be allowed to operate after those times. It is unlikely that single-hull vessels will use the Alternative 2 terminal facilities given the current schedule and the planned phase-out of these vessels.

CEQA Impact Determination

Designing new facilities based on existing design codes may not prevent substantial damage to structures from coastal flooding as a result of tsunamis or seiches. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 5. However, because the Alternative 5 elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 5, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as “improbable” (less than once every 10,000 years). The potential consequence of such an event is classified as “moderate,” resulting in a Risk Code of 4, which is “acceptable.” The volume of spilled fuel is also expected to be relatively low. While there will be fuel containing equipment present during construction, most equipment is equipped with watertight tanks, with the main problem being the infiltration of water into the tank and fuel combustion chambers. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered minor. In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under CEQA associated with Alternative 5 would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Designing new facilities based on existing design codes may not prevent substantial damage to structures from coastal flooding as a result of tsunamis or seiches. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 5. However, because Alternative 5 elevations are located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 5, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under NEPA associated with Alternative 5 would be less than significant under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-6b: A potential terrorist attack would result in adverse consequences to areas near the Alternative 5 site during the operations period.

Risk of Terrorist Actions Associated with Operations

The probability of a terrorist attack on the alternative Project facilities is not likely to appreciably change over current conditions. It is possible that the increase in vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal.

Consequences of Terrorist Attack

The risks associated with terrorism discussed in Section 3.8.2.4 would apply to the terminal during operations. The potential consequences of a terrorist action on a container terminal would be mainly environmental and economic. A terrorist action involving a container vessel while at berth may result in a fuel and/or commodity spill and its associated environmental damage. Within the Port, a terrorist action could block

key waterways and result in economic disruption. Potential environmental damage would include fuel and/or commodity spills into the marine environment, with associated degradation of water quality and damage to marine biological resources. Container ships typically carry up to 5,000 barrels of fuel oil but would not be full when arriving at the port. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality. Such potential impacts to the environment are addressed in specific resource sections including air quality (Section 3.2), biology (Section 3.3), and water quality (Section 3.14).

The consequences associated with the smuggling of WMDs would be substantial in terms of impacts to the environment and public health and safety. However, the consequences of a WMD attack would not be affected by the alternative. Furthermore, the likelihood of such an event would not be affected by alternative-related infrastructure or throughput increases, but would depend on the terrorist's desired outcome and the ability of safeguards, unaffected by the alternative, to thwart it. Cargo containers represent only one of many potential methods to smuggle WMDs, and with current security initiatives (see Section 3.8.2.5) may be less plausible than other established smuggling routes (e.g., land-based ports of entry, cross border tunnels, and illegal vessel transportation).

CEQA Impact Determination

Potential public safety consequences of a terrorist attack on the Berth 97-109 terminal for the alternative Project are considered negligible since, in the event of a successful attack, the potential for a small number of offsite injuries are possible mainly due to fire, which in turn would be a result of fuel spilled into Port waters. Potential thermal radiation and explosion overpressure levels would be limited to the immediate vicinity of the attack and would not overlap any existing, planned, or permitted vulnerable resources including bulk oil and petroleum facilities located in the West Basin. However, the potential for limited public exposure along Port waterways is possible.

Any increase in the volume of container vessels visiting the Alternative 5 terminal would not change the probability or consequences of a terrorist attack on the Berth 97-109 terminal since the terminal is already considered a potential economic target, as well as a potential mode to smuggle a weapon into the United States. In addition, the measures outlined in Section 3.8.2.5 would serve to reduce the potential for a successful terrorist attack on the Berth 97-109 facility compared to Project baseline conditions (under which many of these measures had not yet been implemented). These measures have since improved both terminal and cargo security, and have resulted in enhanced cargo screening. Therefore, potential impacts associated with a potential terrorist attack on the Berth 97-109 facility are considered less than significant.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

NEPA Impact Determination

Potential impacts under NEPA would be that same as under CEQA and are considered less than significant.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

3.8.4.3.2.6 Alternative 6 – Omni Terminal

Alternative 6 would entail physical land improvements and wharf construction similar to those of the proposed Project. However, under this alternative, backlands would be constructed to match the needs of an omni terminal rather than a container terminal. Like the proposed Project, construction of Alternative 6 would involve construction of 2,500 linear feet of wharf improvements, the operation of approximately 142 acres of backlands, and the placement of 2.5 acres of fill into waters of the United States. With build-out of Alternative 6, throughput would be approximately 525,000 TEUs per year when functioning at maximum capacity (containers and automobiles). In addition, the omni terminal would handle over 5 million tons of break-bulk commodities annually. The analysis of hazards presented here uses a methodology to predict probability of spills based on TEU throughput.

3.8.4.3.2.7 Construction Impacts

Impact RISK-1a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance.

Construction equipment could spill oil, gas, or fluids during normal usage or during refueling, resulting in potential health and safety impacts to not only construction personnel, but to people and property occupying operational portions of the terminal area. (BMPs and Los Angeles Municipal Code regulations (Chapter 5, Section 57, Divisions 4 and 5; Chapter 6, Article 4) would govern construction and demolition activities. Federal and state regulations that govern the storage of hazardous materials in containers (i.e., the types of materials and the size of packages containing hazardous materials) and the separation of containers holding hazardous materials, would limit the potential adverse impacts of contamination to a relatively small area. In addition, standard BMPs would be used during construction and demolition activities to minimize runoff of contaminants, in compliance with the State General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order 99-08-DWQ) and Project-specific SWPPP (see Section 3.14, Water Quality, Sediments, and Oceanography, for more information).

CEQA Impact Determination

Implementation of construction and demolition standards, including BMPs, would minimize the potential for an accidental release of petroleum products and/or hazardous materials and/or explosion during construction/demolition activities at

Berths 97-109. Because construction/demolition-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, mainly due to the fact that the volume in any single vehicle is generally less than 50 gallons and fuel trucks are limited to 10,000 gallons or less, the potential consequence of such accidents is classified as "slight" resulting in a Risk Code of 4, which is "acceptable." Therefore, under CEQA, construction and demolition would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on criterion **RISK-1**, impacts under CEQA of Alternative 6 would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Under Alternative 6, in-water and upland construction impacts would be similar to those described for the proposed Project. Alternative 6 would include construction of new wharves, dikes, and backland areas, which would result in increased susceptibility to hazardous materials spills during construction. Implementation of construction standards, including BMPs, would minimize the potential for an accidental release of hazardous materials and/or explosion during in-water and upland construction activities at Berths 97-109. Because construction- and demolition-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." Therefore, under NEPA, construction and demolition would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on risk criterion **RISK-1**, impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-2a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards.

Construction and demolition activities would be conducted using BMPs and in accordance with the Los Angeles Municipal Code (Chapter 5, Section 57, Division 4 and 5; Chapter 6, Article 4). Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to a Release Response Plan (RRP) and a Hazardous Materials Inventory (HMI).

Implementation of increased inventory accountability and spill prevention controls associated with this Release Response Plan and Hazardous Materials Inventory, such as limiting the types of materials stored and size of packages containing hazardous materials, would limit both the frequency and severity of potential releases of hazardous materials, thus minimizing potential health hazards and/or contamination of soil or water during construction/demolition activities. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Impacts from contamination of soil or water during construction/demolition activities would apply to not only construction personnel, but to people and property occupying operational portions of the Project area, as Berth 97-109 terminal would be operating during ongoing construction activities.

CEQA Impact Determination

Several standard policies regulate the storage of hazardous materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to affect members of the public and limit the adverse impacts of contamination to a relatively small area. Because construction/demolition-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." Therefore, under CEQA, construction/demolition activities at Berths 97-109 would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards. Based on risk criterion **RISK-2**, impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Alternative 6 would include construction of new wharves, dikes, and backland areas, which would result in increased susceptibility to hazardous materials spills during construction. Several standard policies regulate the storage of hazardous materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to affect members of the public and limit the potential adverse impacts of contamination to a relatively small area. Therefore, under NEPA, construction activities at Berths 97-109 would not substantially increase the probable frequency and severity of consequences to

people from exposure to health hazards. Based on risk criterion **RISK-2**, impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-3a: Construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death.

Emergency response and evacuation planning is the responsibility of the Los Angeles Police Department (LAPD), LAFD, Port Police, and United States Coast Guard (USCG). Construction and demolition activities would be subject to emergency response and evacuation systems implemented by LAFD. During construction/demolition activities, the LAFD would require that adequate vehicular access to the proposed Project area be provided and maintained. Prior to commencement of construction/demolition activities, all plans would be reviewed by the LAFD to ensure adequate access is maintained throughout construction/demolition.

CEQA Impact Determination

Project contractors would be required to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under CEQA, construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death. Based on risk criterion **RISK-3**, impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Project contractors would be required to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under NEPA, construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death. Based on risk criterion **RISK-3**, impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-4a: Alternative 6 would comply with applicable regulations and policies guiding development in the Port.

As described in Section 3.8.3.1, List of Regulations, Alternative 6 is subject to numerous regulations for development and operation of the proposed facilities. For example, construction and demolition would be completed in accordance with RCRA, HSWA, CERCLA, CCR Title 22 and Title 26, and the California Hazardous Waste Control Law, which would govern proper containment, spill control, and disposal of hazardous waste generated during demolition and construction activities. Implementation of increased inventory accountability, spill prevention controls, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Potential releases of hazardous substances during demolition and/or construction would be addressed through the federal Emergency Planning and Right-to-Know Act, which is administered in California by the SERC, and the Hazardous Material Release Response Plans and Inventory Law. In addition, demolition and construction would be completed in accordance with the Los Angeles Municipal Fire Code, which regulates the construction of buildings and other structures used to store flammable hazardous materials, and the Los Angeles Municipal Public Property Code, which regulates the discharge of materials into the sanitary sewer and storm drain. The latter requires the construction of spill-containment structures to prevent the entry of forbidden materials, such as hazardous materials, into sanitary sewers and storm drains. LAHD maintains compliance with these federal, state, and local laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. LAHD has implemented various plans and programs to ensure compliance with these regulations. These regulations must be adhered to during design and construction of the proposed Project. Implementation of increased spill prevention controls, spill release notification requirements, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Construction/demolition activities would be conducted using BMPs in accordance with City guidelines, as detailed in the Development Best Management Practices Handbook (City of Los Angeles, 2002). Applicable BMPs include, but are not limited to, vehicle and equipment fueling and maintenance; material delivery, storage, and use; spill prevention and control; solid and hazardous waste management; and contaminated soil management. Proposed Project plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Implementation of increased spill prevention controls associated with these BMPs would limit both the frequency and severity of potential releases of hazardous materials.

CEQA Impact Determination

Because Alternative 6 construction would be completed using standard BMPs and in accordance with LAHD plans and programs, LAFD regulations, and all hazardous waste laws and regulations, impacts relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under CEQA under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Because construction of Alternative 6 would be completed using standard BMPs and in accordance with LAHD plans and programs, LAFD regulations, and all hazardous waste laws and regulations, impacts under NEPA relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-5a: Tsunami-induced flooding and seismic events would result in fuel releases from demolition/construction equipment or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a major or great earthquake or large tsunami to affect the Port. Either event would likely lead to a fuel spill from demolition and/or construction equipment, as well as from containers of petroleum products and hazardous substances used during the demolition/construction period. Unfinished structures are especially vulnerable to damage from earthquakes and tsunamis during the construction period.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all proposed Project structures and land surfaces are expressed as height above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the proposed Project site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the Alternative 6 site. Because the Alternative 6 site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case

wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the Alternative 6 site. Because the Alternative 6 site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during construction of Alternative 6 and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

CEQA Impact Determination

Impacts due to major or great earthquakes and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of the proposed Project. However, because Alternative 6 site elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 6, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as “improbable” (less than once every 10,000 years). The potential consequence of such an event is classified as “moderate,” resulting in a Risk Code of 4, which is “acceptable.” The volume of spilled fuel is also expected to be relatively low. While there would be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers

and very little fuel spilled. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under CEQA would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Impacts due to major or great earthquakes and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of the proposed Project. However, because the Alternative 6 site elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 6, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, impacts under NEPA would be less than significant under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-6a: A potential terrorist attack would result in adverse consequences to areas near the Alternative 6 site during the construction period.

Risk of Terrorist Actions during Construction

The probability of a terrorist attack on the proposed Project facilities is not likely to appreciably change during construction compared to baseline conditions. It is possible that the increase in construction vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal. The Berth 97-109 terminal would be operational during the construction period; therefore, risks associated with terrorism during operations will also apply to the terminal during the construction period.

Consequences of Terrorist Attack

During construction, a terrorist action could block key road access points and waterways and result in economic disruption. Potential environmental damage would include fuel and/or commodity spills into the marine environment, with associated degradation of water quality and damage to marine biological resources. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality.

CEQA Impact Determination

Access to the terminal site during construction could occur by land, water, and/or air. However, existing Port security measures would counter any potential increase in unauthorized access to the terminal site through the use of vehicles or vessels. The potential for a terrorist attack that would result in adverse consequences to areas near the proposed terminal site during the construction period is considered improbable and the consequences could be moderate. This combination would result in a Risk Code of 4, which is "acceptable," and impacts would be less than significant under criterion **RISK-6**.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

NEPA Impact Determination

Impacts under NEPA would be less than significant as defined in the CEQA determination above.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

3.8.4.3.2.8 Operational Impacts

Impact RISK-1b: Alternative 6 operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.

As of 2001 (CEQA baseline), the Berth 97-109 terminal handled approximately 45,135 TEUs per year. With build-out of Alternative 6, operations would rise to approximately 525,000 TEUs per year when functioning at maximum capacity (containers and automobiles). This would equate to an almost 12-fold increase in throughput capacity over CEQA baseline conditions. In addition, the omni terminal would handle over 5 million tons of break-bulk commodities annually.

Terminal operations would be subject to safety regulations that govern the shipping, transport, storage and handling of hazardous materials, which would limit the severity and frequency of potential releases of hazardous materials resulting in increased exposure of people to health hazards (i.e., Port RMP, USCG, and LAFD regulations and requirements, and DOT regulations). For example, as discussed in Section 3.8.3.1, List of Regulations, and summarized below, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. In addition, the DOT Hazardous Materials Regulations (Title 49 CFR Parts 100-185) regulate almost all aspects of terminal operations. Parts 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications) and 180 (Packaging Maintenance) would all apply to Alternative 6 activities.

Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). Implementation of increased hazardous materials inventory control and spill prevention controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Terminal maintenance activities would involve the use of hazardous materials such as petroleum products, solvents, paints, and cleaners. Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to an RRP and HMI. Implementation of increased inventory accountability and spill prevention controls associated with this RRP and HMI would limit both the frequency and severity of potential releases of hazardous materials. Based on the limited volumes that could potentially spill, quantities of hazardous materials used at Berths 97-109 that are below the thresholds of Chapter 6.95 would not likely result in a substantial release into the environment.

CEQA Impact Determination

Because projected terminal operations at Berths 97-109 would accommodate approximately a 12-fold increase in containerized cargo compared to the CEQA baseline, the potential for an accidental release or explosion of hazardous materials would also be expected to increase proportionally.

During the period 1997-2004, there were 40 hazardous material spills directly associated with container terminals in the Ports of Los Angeles and Long Beach. This equates to approximately five spills per year for the entire port complex. During this period, the total throughput of the container terminals at both Ports was 76,874,841 TEU. Therefore, the probability of a spill at a container terminal can be estimated at 5.2×10^{-7} per TEU (40 spills divided by 76,874,841 TEU). This spill probability conservatively represents the baseline hazardous material spill probability since it includes materials that would not be considered a risk to public safety (e.g., perfume spills), but would still be considered an environmental hazard. The

probability of spills associated with future operations would be based on the spill probability per TEU times the increase in TEUs under Alternative 6.

It should be noted, with respect to hazardous material spills, that during this period there were no reported impacts to the public (injuries, fatalities, and evacuations), with potential consequences limited to port workers (two worker injuries that were treated at the scene and 20 workers evaluated as a precaution).

Based on the accident history at the Port of containers containing hazardous materials, which includes 40 incidents over an 8-year period in the entire port complex (Ports of Los Angeles and Long Beach), the frequency of Project-related spills can be estimated as shown in Table 3.8-23.

Table 3.8-23. Alternative 6: Existing and Projected Cargo Throughput Volumes at Berths 97-109 and the Port

Operations	Overall Throughput (TEUs)	Increase in TEUs over CEQA Baseline (times or multiples)	Potential Spills (per year)
Port Baseline (2005)	7,484,624	NA	3.9
CEQA Project Baseline (2001)	45,135	NA	0.02
Alternative 6 (2030)*	525,000	11.6 times	0.27

Note:
TEU = twenty-foot equivalent unit

*Although Alternative 6 would include the transport of break-bulk commodities and automobiles in addition to containers, the bulk items and automobiles are not generally categorized as hazardous material and, therefore, are not expected to result in substantive hazardous materials spills.

Based on the projected increase in TEUs, the frequency of potential Project-related spills would increase from 0.02 to 0.27 spills per year. This spill frequency would be classified as "periodic" (between once per year and once in 10 years). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Although Alternative 6 would include the transport of break-bulk commodities and automobiles in addition to containers, the bulk items and automobiles are not generally categorized as hazardous material and, therefore, are not expected to result in substantive hazardous materials spills. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health impacts. Therefore, under CEQA, Alternative 6 operations would not substantially increase the probable frequency and severity of consequences to people or property as a result of a potential accidental release or explosion of a hazardous substance. Impacts under CEQA would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Alternative 6 would result in the construction of new wharves, dikes, and backland areas. However, this would not lead to an increase in the TEU throughput because of the nature of the terminal. The container throughput would be lower than under the NEPA baseline. Berth 97-109 terminal operations under the NEPA baseline would handle approximately 632,500 TEUs per year when optimized and functioning at maximum capacity (in 2045). Under Alternative 6, there would be a decrease of 107,500 TEUs per year compared to the NEPA baseline. An overall decrease in TEUs would result in proportionally smaller hazardous materials containers subject to accidental release or explosion as shown in Table 3.8-24.

Table 3.8-24. Alternative 6: Existing and Projected Cargo Throughput Volumes at Berths 97-109

Operations	Overall Throughput (TEUs)	Increase in TEUs over NEPA Baseline (%)	Potential Spills (per year)
Port Baseline (2005)	7,484,624	NA	3.9
NEPA Baseline (2030)	632,500	NA	0.3
Alternative 6 (2030)*	525,000	-17%	0.27

Note:
TEU = twenty-foot equivalent unit
*Although Alternative 6 would include the transport of break-bulk commodities and automobiles in addition to containers, the bulk items and automobiles are not generally categorized as hazardous material and, therefore, are not expected to result in substantive hazardous materials spills.

Based on the projected decrease in TEUs, the frequency of potential Project-related spills would decrease from 0.3 to 0.27 spills per year. This spill frequency would be classified as "periodic" (between once per year and once in 10 years). Because, based on history, a slight possibility exists for injury and or property damage to occur during one of these frequent accidents, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." It should be noted that there were no impacts to the public from any of the hazardous materials spills that were reported during the 1997-2004 period. Although Alternative 6 would include the transport of break-bulk commodities and automobiles in addition to containers, the bulk items and automobiles are not generally categorized as hazardous material and, therefore, are not expected to result in substantive hazardous materials spills. Compliance with applicable federal, state, and local laws and regulations governing the transport of hazardous materials and emergency response to hazardous material spills, as described above, would minimize the potentials for adverse public health impacts. Therefore, under NEPA, Alternative 6 operations would not

substantially increase the probable frequency and severity of consequences to people or property as a result of a potential accidental release or explosion of a hazardous substance. Impacts under NEPA would be less than significant under criterion **RISK-1**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-2b: Alternative 6 operations would not substantially increase the probable frequency and severity of consequences to people or property from exposure to health hazards.

Alternative 6 would include siting facilities that would potentially handle hazardous materials and increase other hazards to the public. These hazards would include the same hazardous materials that were handled at the site under the baseline conditions, but the volume of hazardous materials would increase (relative to CEQA baseline conditions) proportionally with the increase in TEUs. Likewise, the increased throughput volume would increase the chance of a fire or explosion at the terminal, as well as hazards associated with container transportation. The handling and storing of hazardous materials would increase the probability of a local accident involving a release, spill, fire, or explosion, which is proportional to the size of the terminal and its throughput as was addressed in **Impact RISK-1b**.

Because projected terminal operations at Berths 97-109 would accommodate approximately a 12-fold increase in containerized cargo compared to the CEQA baseline, the potential for increased truck transportation-related accidents would also occur. Potential Alternative 6-related increases in truck trips could result in an increase in vehicular accidents, injuries, and fatalities. Therefore, the potential impact of increased truck traffic on regional injury and fatality rates have been evaluated.

According to an FMCSA detailed analysis (FMCSA, 2001), the estimated nonhazardous materials truck accident rate is more than twice the hazardous materials truck accident rate. The nonhazardous materials truck accident rate was estimated to be 0.73 accidents per million vehicle miles and the average hazardous materials truck accident rate was estimated to be 0.32 accidents per million vehicle miles. The hazardous materials truck accident rate is not directly applicable to the Alternative 6 container trucks since such trucks are generally limited to bulk hazardous materials carriers. Therefore, to conduct a conservative analysis, the higher accident rate associated with nonhazardous materials trucks was used.

Based on the NHTSA (DOT, 2003), of the estimated 457,000 truck crashes in 2000 (causing fatalities, injuries, or property damage), an estimated 1 percent produced fatalities and 22 percent produced injuries. The FARS and the TIFA survey were the sources of data for this analysis, which primarily examined fatalities associated with vehicle impact and trauma.

Based on these statistics and the projected truck trips for the existing facilities and Alternative 6, the potential rate of truck accidents, injuries, and fatalities can be estimated and evaluated.

CEQA Impact Determination

Potential Project-related truck accident rates can be estimated based on national average accident rates and the average number of miles per cargo truck trip. Based on the air pollutant emission inventory at the Port, it was determined that the average truck trip was approximately 49 miles (Starcrest Consulting Group, 2003). Given the annual number of truck trips, the average distance of each trip, and the published accident, injury and fatality rates, the following probabilities were estimated as shown in Table 3.8-25.

Table 3.8-25. Alternative 6: Existing and Projected Truck Trips at Berths 97-109

Operations	Annual Truck Trips	Increase over CEQA Baseline (%)	Accident Rate (per year)	Injury Probability (per year)	Fatality Probability (per year)
CEQA Baseline (2001)	0	NA	0.0	0.0	0.0
Alternative 6 (2030)	1,453,382	NA	51.9	11.4	0.5

Because the occurrence of truck accidents associated with Berth 97-109 occur at a frequency greater than one per year, truck accidents are considered a "frequent" event. Because the possibility exists for injury and/or fatality to occur during one of these frequent accidents as noted in Table 3.8-25, the consequence of such accidents is classified as "severe," resulting in a Risk Code of 2. An impact with a Risk Code of 2 is classed as significant and requires additional engineering or administrative controls to mitigate the potentially significant adverse impacts.

The Port is currently developing a port-wide TMP for roadways in and around its facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. The results will be a TMP providing ideas on what to expect and how to prepare for future traffic volumes. Some of the transportation improvements already under consideration include: I-110/SR-47/ Harbor Boulevard interchange improvements; Navy Way connector (grade separation) to westbound Seaside Avenue; south Wilmington grade separations; and additional traffic capacity analysis for the Vincent Thomas Bridge. In addition, the Port is working on several strategies to increase rail transport, which will reduce reliance on trucks. These projects would serve to reduce the frequency of truck accidents.

In addition, the Port is currently phasing out older trucks as part of its Clean Truck Program, and the TWIC program will help identify and exclude truck drivers that lack the proper licensing and training. The phasing out of older trucks would reduce the probability of accidents that occur as a result of mechanical failure by approximately 10 percent (ADL, 1990). Proper driver training, or more specifically, the reduction in the number of drivers that do not meet minimum training specifications, would further reduce potential accidents by approximately 30 percent. The potential number of injuries would be reduced to approximately 7.2, which would reduce the consequence classification to "moderate" and a Risk Code to 3 or less. Therefore, Alternative 6 operations would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards and potential impacts under CEQA would be considered less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

Alternative 6 would result in the construction of new wharves, dikes, and backland areas, which would result in an increase in TEUs and truck trips, in comparison to the NEPA baseline, as described under the NEPA Impact Determination for **Impact RISK 1b**. Given the annual number of truck trips, the average distance of each trip, and the published accident, injury, and fatality rates, probabilities were estimated as shown in Table 3.8-26.

Table 3.8-26. Alternative 6: Existing and Projected Truck Trips at Berths 97-109

Operations	Annual Truck Trips	Increase over NEPA Baseline (%)	Accident Rate (per year)	Injury Probability (per year)	Fatality Probability (per year)
NEPA Baseline (2030)	0	NA	0.0	0.0	0.0
Alternative 6 (2030)	1,453,382	NA	51.9	11.4	0.5

Because the occurrence of truck accidents associated with Berths 97-109 occur at a frequency greater than one per year, truck accidents are considered a "frequent" event. Because the possibility exists for injury and/or fatality to occur during one of these frequent accidents as noted in Table 3.8-26, the consequence of such accidents is classified as "severe," resulting in a Risk Code of 2. An impact with a Risk Code of 2 is classed as significant and requires additional engineering or administrative controls to mitigate the potentially significant adverse impacts.

The Port is currently developing a port-wide TMP for roadways in and around its facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. The results will be a TMP providing ideas on what to expect and how to prepare for future traffic volumes. Some of the transportation improvements already under consideration include: I-110/SR-47/ Harbor Boulevard interchange improvements; Navy Way connector (grade separation) to westbound Seaside Avenue; south Wilmington grade separations; and additional traffic capacity analysis for the Vincent Thomas Bridge. In addition, the Port is working on several strategies to increase rail transport, which will reduce reliance on trucks. These projects would serve to reduce the frequency of truck accidents.

The Port also is currently phasing out older trucks as part of its Clean Truck Program, and the TWIC program will help identify and exclude truck drivers that lack the proper licensing and training. The phasing out of older trucks would reduce the probability of accidents that occur as a result of mechanical failure by approximately 10 percent (ADL, 1990). Proper driver training, or more specifically, the reduction in the number of drivers that do not meet minimum training specifications, would further reduce potential accidents by approximately 30 percent. The potential number of injuries would be reduced to approximately 7.2, which would reduce the

consequence classification to "moderate" and a Risk Code to 3 or less. Therefore, Alternative 6 operations would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards and potential impacts under NEPA would be considered less than significant

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

Impact RISK-3b: Alternative 6 operations would not substantially interfere with any existing emergency response plans or emergency evacuation plans.

Alternative 6 would optimize terminal operations by increasing backland capacity, constructing new wharves and dikes to accommodate modern omni terminal ships, and implementing transportation infrastructure improvements. The Berth 97-109 terminal would operate as an omni terminal and proposed terminal operations would not interfere with any existing contingency plans, since the current activities are consistent with the contingency plans and Alternative 6 would not add any additional activities that would be inconsistent with these plans. In addition, existing oil spill contingency and emergency response plans for the proposed Project site would be revised to incorporate proposed facility and operation changes. Because existing management plans are commonly revised to incorporate terminal operation changes, conflicts with existing contingency and emergency response plans are not anticipated.

Berths 97-109 facilities personnel, including dock laborers and equipment operators, would be trained in emergency response and evacuation procedures. The Alternative 6 site would be secured, with access allowed only to authorized personnel. The LAFD and Port Police would be able to provide adequate emergency response services to the proposed Project site. Additionally, Alternative 6 operations would also be subject to emergency response and evacuation systems implemented by the LAFD, which would review all plans to ensure that adequate access in the Project vicinity is maintained. All Project contractors would be required to adhere to plan requirements.

CEQA Impact Determination

Alternative 6 would have operational characteristics of a container terminal and a terminal that handles bulk goods and materials. Alternative 6 operations would be subject to emergency response and evacuation systems implemented by the LAFD. Thus, Alternative 6 operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under CEQA.

NEPA Impact Determination

Alternative 6 would continue to have operational characteristics of a container terminal and a terminal that handles bulk goods and materials. Alternative 6 operations would be subject to emergency response and evacuation systems implemented by the LAFD. Thus, Alternative 6 operations would not interfere with any existing emergency response or emergency evacuation plans or increase the risk of injury or death. Therefore, impacts would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant under NEPA.

Impact RISK-4b: Alternative 6 would comply with applicable regulations and policies guiding development in the Port.

Alternative 6 is subject to numerous regulations for operation of the proposed facilities. LAHD has implemented various plans and programs to ensure compliance with these regulations, which must be adhered to during operation of Alternative 6. For example, as discussed in Section 3.8.3.1, List of Regulations, the USCG maintains a HMSD, under the jurisdiction of the federal Department of Homeland Security (33 CFR 126), which develops standards and industry guidance to promote the safety of life and protection of property and the environment during marine transportation of hazardous materials. Among other requirements, Alternative 6 would conform to the USCG requirement to provide a segregated cargo area for containerized hazardous materials. Terminal cargo operations involving hazardous materials are also governed by the LAFD in accordance with regulations of state and federal departments of transportation (49 CFR 176). The transport of hazardous materials in containers on the street and highway system is regulated by Caltrans procedures and the Standardized Emergency Management System prescribed under Section 8607 of the California Government Code. These safety regulations strictly govern the storage of hazardous materials in containers (i.e., types of materials and size of packages containing hazardous materials). In addition, any facility constructed in the Project area, identified as either a hazardous cargo facility or a vulnerable resource, would be required to conform to the RMP, which includes packaging constraints and the provision of a separate storage area for hazardous cargo.

LAHD maintains compliance with these state and federal laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. Most notably, the Port RMP implements development guidelines in an effort to minimize the danger of accidents to vulnerable resources. This would be achieved mainly through physical separation as well as through facility design features, fire protection, and other risk management methods. There are two primary categories of vulnerable resources, people, and facilities. People are further divided into subgroups. The first subgroup is comprised of residences, recreational users, and visitors. Within the Port setting, residences and recreational users are considered vulnerable resources. The second subgroup is comprised of workers in high density (i.e., generally more than 10 people per acre, per employer).

Facilities that are vulnerable resources include Critical Regional Activities/Facilities and High Value Facilities. Critical Regional Activities/Facilities are facilities in the Port that are important to the local or regional economy, the national defense, or some major aspect of commerce. These facilities typically have a large quantity of unique equipment, a very large working population, and are critical to both the economy and to national defense. Such facilities in the Port have been generally defined in the Port RMP as the former Todd Shipyard, Fish Harbor, Badger Avenue Bridge, and Vincent Thomas Bridge.

High Value Facilities are nonhazardous facilities, in and near the Ports, which have very high economic value. These facilities include both facility improvements and cargo in-place, such as container storage areas. However, the determination of a vulnerable resource is made by the Port and LAFD on a case-by-case basis. Although the Port generally considers container terminals to be High Value Facilities, these types of facilities have never been considered vulnerable resources in risk analyses completed by the Port and LAFD (pers. comm., Knott, 2007). Because omni terminals are not considered vulnerable resources, the proposed Project would not conflict with the RMP.

Alternative 6 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Buildings will be equipped with fire protection equipment as required by the Los Angeles Municipal Fire Code. Access to all buildings and adequacy of road and fire lanes will be reviewed by the LAFD to ensure that adequate access and firefighting features are provided. Alternative 6 plans would include an internal circulation system, code-required features, and other firefighting design elements, as approved by the LAFD.

Operation of Alternative 6 would be required to comply with all existing hazardous waste laws and regulations, including the federal RCRA and CERCLA, and CCR Title 22 and Title 26. Alternative 6 would comply with these laws and regulations, which would ensure that potential hazardous materials handling would occur in an acceptable manner.

CEQA Impact Determination

Alternative 6 operations would not conflict with RMP guidelines. Alternative 6 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, and operation of Alternative 6 would be required to comply with all applicable existing hazardous waste laws and regulations. Therefore, under CEQA, Alternative 6 operations would comply with applicable regulations and policies guiding development in the Port. Impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Alternative 6 operations would not conflict with RMP guidelines. Alternative 6 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, and operation of Alternative 6 would be required to comply with all applicable existing hazardous waste laws and regulations. Therefore, under NEPA, Alternative 6 operations would comply with applicable regulations and

policies guiding development in the Port. Impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

Impact RISK-5b: Tsunami-induced flooding and seismic events would result in fuel releases from ships or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a large tsunami to affect the Port. A large tsunami would likely lead to a fuel spill if a moored vessel is present. Although crude oil tankers would not moor at Berths 97-109, each ship contains large quantities of fuel oil (up to 5,000 barrels). While in transit, the hazards posed to tankers are insignificant, and in most cases, imperceptible. However, while docked, a tsunami striking the Port could cause significant ship movement and even a hull breach if the ship is pushed against the wharf.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all proposed Project structures and land surfaces are expressed as height above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl, rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the proposed Project site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the proposed Project site. Because the proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the proposed Project site. Because the

proposed Project site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during operation of the proposed Project and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

Containers of hazardous substances on ships or on berths could similarly be damaged as a result of a large tsunami. Such damage would result in releases of both hazardous and nonhazardous cargo to the environment, adversely affecting persons and/or the marine waters. However, containers carrying hazardous cargo would not necessarily release their contents in the event of a large tsunami. The DOT regulations (49 CFR Parts 172-180) covering hazardous material packaging and transportation would minimize potential release volumes since packages must meet minimum integrity specifications and size limitations.

The owner or operators of tanker vessels are required to have an approved Tank Vessel Response Plan on board and a qualified individual in the U.S. with full authority to implement removal actions in the event of an oil spill incident, and to contract with the spill response organizations to carry out cleanup activities in case of a spill. The existing oil spill response capabilities in the Port are sufficient to isolate spills with containment booms and recover the maximum possible spill from an oil tanker.

Various studies have shown that double-hull tank vessels have lower probability of releases when tanker vessels are involved in accidents. Because of these studies, the USCG issued regulations addressing double-hull requirements for tanker vessels. The regulations establish a timeline for eliminating single-hull vessels from operating in the navigable waters or the EEZ of the U.S. after January 1, 2010 and double-bottom or double-sided vessels by January 1, 2015. Only vessels equipped with a double hull, or with an approved double containment system will be allowed to operate after those times. It is unlikely that single-hull vessels will use the proposed Project terminal facilities given the current proposed Project schedule and the planned phase-out of these vessels.

CEQA Impact Determination

Designing new facilities based on existing building codes may not prevent substantial damage to structures from coastal flooding as a result of tsunamis or seiches. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 6. However, because the Alternative 6 site elevation is located in 10 to 15 feet above MLLW, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of the proposed Project, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low since all fuel storage containers at the Project site would be quite small in comparison to the significance criteria volumes. While there will be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami, impacts under CEQA would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Designing new facilities based on existing building codes may not prevent substantial damage to structures from coastal flooding as a result of tsunamis or seiches. Impacts due to seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 6. However, because the proposed Project site elevation is located within 10 to 15 feet above MLLW, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 6, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low since all fuel storage containers at the Project site would be quite small in comparison to the significance criteria volumes. While there will be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the

event of a tsunami would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami, impacts under NEPA would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be considered less than significant.

Impact RISK-6b: A potential terrorist attack would result in adverse consequences to areas near the Alternative 6 site during the operations period.

Risk of Terrorist Actions Associated with Project Operations

The probability of a terrorist attack on the proposed Project facilities is not likely to appreciably change over current conditions. It is possible that the increase in vessel traffic in the vicinity of the Berth 97-109 terminal could lead to a greater opportunity of a successful terrorist attack; however, existing Port security measures would counter this potential increase in unauthorized access to the terminal.

Consequences of Terrorist Attack

The risks associated with terrorism discussed in Section 3.8.2.4 would apply to the terminal during operations. The potential consequences of a terrorist action on a container terminal would be mainly environmental and economic. A terrorist action involving a container vessel while at berth may result in a fuel and/or commodity spill and its associated environmental damage. Within the Port, a terrorist action could block key waterways and result in economic disruption. Potential environmental damage would include fuel and/or commodity spills into the marine environment, with associated degradation of water quality and damage to marine biological resources. Container ships typically carry up to 5,000 barrels of fuel oil but would not be full when arriving at the port. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality. Such potential impacts to the environment area addressed in specific resource sections including air quality (Section 3.2), biology (Section 3.3), and water quality (Section 3.14).

The consequences associated with the smuggling of WMDs would be substantial in terms of impacts to the environment and public health and safety. However, the consequences of a WMD attack would not be affected by the Project. Furthermore, the likelihood of such an event would not be affected by Project-related infrastructure or throughput increases, but would depend on the terrorist's desired outcome and the ability of safeguards, unaffected by the Project, to thwart it. Cargo containers represent only one of many potential methods to smuggle WMDs, and with current security initiatives (see Section 3.8.2.5) may be less plausible than other established smuggling routes (e.g., land-based ports of entry, cross-border tunnels, and illegal vessel transportation).

CEQA Impact Determination

Potential public safety consequences of a terrorist attack on the Berth 97-109 terminal for Alternative 6 are considered negligible since, in the event of a successful attack, the potential for a small number of offsite injuries are possible mainly due to fire, which in turn would be a result of large amounts of fuel spilled into Port waters. Potential thermal radiation and explosion overpressure levels would be limited to the immediate vicinity of the attack and would not overlap any existing, planned, or permitted vulnerable resources including bulk oil and petroleum facilities located in the West Basin. However, the potential for limited public exposure along Port waterways is possible.

Any increase in the volume of container vessels visiting the Alternative 6 terminal would not change the probability or consequences of a terrorist attack on the Berth 97-109 terminal because the terminal is already considered a potential economic target, as well as a potential mode to smuggle a weapon into the United States. In addition, the measures outlined in Section 3.8.2.5 would serve to reduce the potential for a successful terrorist attack on the Berth 97-109 facility compared to Project baseline conditions (under which many of these measures had not been implemented). These measures have since improved both terminal and cargo security, and have resulted in enhanced cargo screening. Therefore, potential impacts associated with a potential terrorist attack on the Berth 97-109 facility are considered less than significant.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

NEPA Impact Determination

Potential impacts under NEPA would be that same as under CEQA and are considered less than significant.

Mitigation Measures

Because terrorism impacts are less than significant, no mitigation is required.

Residual Impacts

With no mitigation required, residual impacts would be less than significant.

3.8.4.3.2.9 Alternative 7 – Nonshipping Use

Alternative 7 would utilize the terminal site constructed as part of Phase I for commercial and industrial uses, and would increase the backland area to 117 acres. Because of this, the Phase I construction activities are included under Alternative 7 although the in-water Phase I elements would not be used. Phase I dike, fill, and the wharf would be abandoned.

Alternative 7 would convert the proposed site into a Regional Center, composed of retail, office park, and light industrial uses. Construction of a public dock(s) and related improvements would occur to support small watercraft, but new wharves would not be

constructed. The Catalina Express Terminal would not be relocated. Implementation of Alternative 7 would include in-water construction activities.

3.8.4.3.2.9.1 Construction Impacts

Impact RISK-1a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.

Construction equipment could spill oil, gas, or fluids during normal usage or during refueling, resulting in potential health and safety impacts to construction personnel. BMPs and Los Angeles Municipal Code regulations (Chapter 5, Section 57, Divisions 4 and 5; Chapter 6, Article 4) would govern construction and demolition activities. Federal and state regulations that govern the storage of hazardous materials in containers (i.e., the types of materials and the size of packages containing hazardous materials) and the separation of containers holding hazardous materials, would limit the potential adverse impacts of contamination to a relatively small area. In addition, standard BMPs would be used during construction and demolition activities to minimize runoff of contaminants, in compliance with the State General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order 99-08-DWQ) and Project-specific SWPPP (see Section 3.14, Water Quality, Sediments, and Oceanography, for more information).

CEQA Impact Determination

Implementation of construction and demolition standards, including BMPs, would minimize the potential for an accidental release of petroleum products and/or hazardous materials and/or explosion during construction/demolition activities at Berths 97-109. Because construction/demolition-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, mainly due to the fact that the volume in any single vehicle is generally less than 50 gallons and fuel trucks are limited to 10,000 gallons or less, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." Therefore, under CEQA, Alternative 7 construction and demolition activities would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on criterion **RISK-1**, impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

With no mitigation required, the residual impacts would be less than significant.

NEPA Impact Determination

Alternative 7 would include Phase I construction, as well as construction of public docks and related improvements, which would result in increased susceptibility to hazardous materials spills during construction. Implementation of construction standards, including BMPs, would minimize the potential for an accidental release of

hazardous materials and/or explosion during in-water construction activities at Berths 97-109. Because construction-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." Therefore, under NEPA, in-water construction would not substantially increase the probable frequency and severity of consequences to people or property as a result of an accidental release or explosion of a hazardous substance. Based on risk criterion **RISK-1**, impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than impact.

Impact RISK-2a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards.

Construction and demolition activities would be conducted using BMPs and in accordance with the Los Angeles Municipal Code (Chapter 5, Section 57, Divisions 4 and 5; Chapter 6, Article 4). Quantities of hazardous materials that exceed the thresholds provided in Chapter 6.95 of the California Health and Safety Code would be subject to an RRP and HMI. Implementation of increased inventory accountability and spill prevention controls associated with this RRP and HMI, such as limiting the types of materials stored and size of packages containing hazardous materials, would limit both the frequency and severity of potential releases of hazardous materials, thus minimizing potential health hazards and/or contamination of soil or water during construction/ demolition activities. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Impacts from contamination of soil or water during construction/demolition activities would apply mainly to construction personnel.

CEQA Impact Determination

Several standard policies regulate the storage of hazardous materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to affect members of the public and limit the adverse impacts of contamination to a relatively small area. Because construction/demolition-related spills are not uncommon, the probability of a spill occurring is classified as "frequent" (more than once a year). However, because such spills are typically short-term and localized, the potential consequence of such accidents is classified as "slight," resulting in a Risk Code of 4, which is "acceptable." Therefore, under CEQA, Alternative 7 construction/demolition activities at Berths 97-109 would not substantially increase the probable frequency

and severity of consequences to people from exposure to health hazards. Based on risk criterion **RISK-2**, impacts under CEQA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Phase I construction is applied to Alternative 7. In addition, Alternative 7 would include construction of new commercial, retail, and light industrial buildings and public dock areas, which would result in increased susceptibility to hazardous materials spills during construction. Several standard policies regulate the storage of hazardous materials including the types of materials, size of packages containing hazardous materials, and the separation of containers containing hazardous materials. These measures reduce the frequency and consequences of spills by requiring proper packaging for the material being shipped, limits on package size, and thus potential spill size, as well as proper response measures for the materials being handled. Implementation of these preventative measures would minimize the potential for spills to affect members of the public and limit the potential adverse impacts of contamination to a relatively small area. Therefore, under NEPA, construction activities at Berths 97-109 would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards. Based on risk criterion **RISK-2**, impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact RISK-3a: Construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death.

Emergency response and evacuation planning is the responsibility of the LAPD, LAFD, Port Police, and USCG. Construction and demolition activities would be subject to emergency response and evacuation systems implemented by LAFD. During construction/demolition activities, the LAFD would require that adequate vehicular access to the site be provided and maintained. Prior to commencement of construction/demolition activities, all plans would be reviewed by the LAFD to ensure adequate access is maintained throughout construction/demolition.

CEQA Impact Determination

Alternative 7 contractors would be required to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under CEQA construction/demolition activities associated with Alternative 7 would not substantially interfere with an existing emergency

response or evacuation plan or increase risk of injury or death. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Project contractors would be required to adhere to all LAFD emergency response and evacuation regulations, ensuring compliance with existing emergency response plans. Therefore, under NEPA, construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan or increase the risk of injury or death. Based on risk criterion **RISK-3**, impacts under NEPA would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact RISK-4a: Alternative 7 construction/demolition would comply with applicable regulations and policies guiding development in the Port.

As described in Section 3.8.3.1, List of Regulations, the Alternative 7 would be subject to numerous regulations for development and operation of the proposed facilities. For example, construction and demolition would be completed in accordance with RCRA, HSWA, CERCLA, CCR Title 22 and Title 26, and the California Hazardous Waste Control Law, which would govern proper containment, spill control, and disposal of hazardous waste generated during demolition and construction activities. Implementation of increased inventory accountability, spill prevention controls, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Potential releases of hazardous substances during demolition and/or construction would be addressed through the federal Emergency Planning and Right-to-Know Act, which is administered in California by the SERC, and the Hazardous Material Release Response Plans and Inventory Law. In addition, demolition and construction would be completed in accordance with the Los Angeles Municipal Fire Code, which regulates the construction of buildings and other structures used to store flammable hazardous materials, and the Los Angeles Municipal Public Property Code, which regulates the discharge of materials into the sanitary sewer and storm drain. The latter requires the construction of spill-containment structures to prevent the entry of forbidden materials, such as hazardous materials, into sanitary sewers and storm drains. LAHD maintains compliance with these federal, state, and local laws through a variety of methods, including internal compliance reviews, preparation of regulatory plans, and agency oversight. LAHD has implemented various plans and programs to ensure compliance with these regulations. These regulations must be adhered to during design and

construction of Alternative 7. Implementation of increased spill prevention controls, spill release notification requirements, and waste disposal controls associated with these regulations would limit both the frequency and severity of potential releases of hazardous materials.

Construction/demolition activities would be conducted using BMPs in accordance with City guidelines, as detailed in the Development Best Management Practices Handbook (City of Los Angeles, 2002). Applicable BMPs include, but are not limited to, vehicle and equipment fueling and maintenance; material delivery, storage, and use; spill prevention and control; solid and hazardous waste management; and contaminated soil management. Alternative 7 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Implementation of increased spill prevention controls associated with these BMPs would limit both the frequency and severity of potential releases of hazardous materials.

CEQA Impact Determination

Because Alternative 7 construction/demolition would be completed using standard BMPs and in accordance with LAHD plans and programs, LAFD regulations, and all applicable hazardous waste laws and regulations, impacts relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under CEQA under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Because Alternative 7 construction/demolition would be completed using standard BMPs and in accordance with LAHD plans and programs, LAFD regulations, and all applicable hazardous waste laws and regulations, impacts relating to compliance with applicable regulations and policies guiding development in the Port would be less than significant under NEPA under criterion **RISK-4**.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact RISK-5a: Tsunami-induced flooding and seismic events would result in fuel releases from demolition/construction equipment or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.

As discussed in Section 3.5, there is the potential for a major or great earthquake or large tsunami to affect the Port. Either event would likely lead to a fuel spill from demolition and/or construction equipment, as well as from containers of petroleum products and hazardous substances used during the demolition/construction period. Unfinished

structures are especially vulnerable to damage from earthquakes and tsunamis during the construction period.

The Port is subject to diurnal tides, meaning two high tides and two low tides during a 24-hour day. The average of the lowest water level during low tide periods each day is typically set as a benchmark of 0 feet and is defined as MLLW. For purposes of this discussion, all Alternative 5 structures and land surfaces are expressed as height above (or below) MLLW. The msl in the Port is +2.8 feet above MLLW (NOAA, 2005). This height reflects the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (19 years) and, therefore, reflects the mean of both high and low tides in the Port. The recently developed Port Complex model described in Section 3.5.2 predicts tsunami wave heights with respect to msl rather than MLLW and, therefore, can be considered a reasonable average condition under which a tsunami might occur. The Port msl of +2.8 feet must be considered in comparing projected tsunami run-up (i.e., amount of wharf overtopping and flooding) to proposed wharf height and topographic elevations, which are measured with respect to MLLW.

A reasonably foreseeable scenario for generation of a tsunami or seiche in the San Pedro Bay Ports include the recently developed Port Complex model, which predicts tsunami wave heights of 1.3 to 5.3 feet above msl at the Alternative 7 site, under both earthquake and landslide scenarios. Incorporating the Port msl of +2.8 feet, the model predicts tsunami wave heights of 4.1 to 8.1 feet above MLLW at the Alternative 7 site. Because the Alternative 7 site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding would not occur.

While the analysis above considers the greatest reasonably foreseeable seismic risk based on a maximum seismic event, with respect to msl, a theoretical maximum worst-case wave action from a tsunami would result if the single highest tide predicted over the next 40 years at the San Pedro Bay Ports coincided with the seismic event. The single highest tide predicted over the next 40 years is 7.3 feet above MLLW. This condition is expected to occur less than 1 percent of the time over this 40-year period. If that very rare condition were to coincide with a maximum tsunami event, the model predicts tsunami wave heights of 8.6 to 12.6 feet above MLLW at the Alternative 7 site. Because the Alternative 7 site elevation ranges from 10 to 15 feet above MLLW, localized tsunami-induced flooding up to 2.6 feet is possible. To determine the extent of potential impacts due to tsunami-induced flooding, Port structural engineers have determined that Port reinforced concrete or steel structures designed to meet California earthquake protocols incorporated into MOTEMS would be expected to survive complete inundation in the event of a tsunami (pers. comm., Yin, 2006). However, substantial infrastructure damage and/or injury to personnel would occur as a result of complete site inundation.

As previously discussed, there is a potential for tsunami-induced flooding under the theoretical maximum worst-case scenario. However, the likelihood of a large tsunami is very low during construction of Alternative 7 and the overall probability of this worst-case scenario is less than 1 in a 100,000-year period.

The most likely worst-case tsunami scenario was based partially on a magnitude 7.6 earthquake on the offshore Santa Catalina fault. The recurrence interval for a magnitude 7.5 earthquake along an offshore fault in the Southern California Continental Borderland is about 10,000 years. Similarly, the recurrence interval of a magnitude 7.0 earthquake is about 5,000 years and the recurrence interval of a magnitude 6.0 earthquake is about 500 years. However, there is no certainty that any of these earthquake events would result in a tsunami, since only about 10 percent of earthquakes worldwide result in a tsunami. In addition, available evidence indicates that tsunamigenic landslides would be extremely infrequent and occur less often than large earthquakes. This suggests recurrence intervals for such landslide events would be longer than the 10,000-year recurrence interval estimated for a magnitude 7.5 earthquake (Moffatt and Nichol, 2007). As noted above, the probability of the worst-case combination of a large tsunami and extremely high tides would be less than once in a 100,000-year period.

CEQA Impact Determination

Impacts due to major or great earthquakes and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 7. However, because the Alternative 7 site elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 7, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low. While there will be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, Alternative 7 impacts under CEQA would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Impacts due to major or great earthquakes and seismically induced tsunamis and seiches are typical for the entire California coastline and would not be increased by construction of Alternative 7. However, because the Alternative 7 site elevation is located within 10 to 15 feet above MLLW and projects in the construction phase are especially vulnerable to tsunami damage due to the presence of unfinished structures, there is a substantial risk of coastal flooding due to tsunamis and seiches, which in

turn, could result in accidental spills of petroleum products or hazardous substances. Because a major tsunami is not expected during the life of Alternative 7, but could occur (see Section 3.5, Geology, for additional information on the probability of a major tsunami), the probability of a major tsunami occurring is classified as "improbable" (less than once every 10,000 years). The potential consequence of such an event is classified as "moderate," resulting in a Risk Code of 4, which is "acceptable." The volume of spilled fuel is also expected to be relatively low. While there will be fuel-containing equipment present during construction, most equipment is equipped with watertight tanks, with the most likely scenario being the infiltration of water into the tank and fuel combustion chambers and very little fuel spilled. Thus, the volume spilled in the event of a tsunami would be less than 10,000 gallons, which is considered "slight." In light of such a low probability and acceptable risk of a large tsunami or other seismic risk, Alternative 7 impacts under NEPA would be less than significant as they pertain to hazardous materials spills under criterion **RISK-5**.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact RISK-6a: A potential terrorist attack would result in adverse consequences to areas near the Alternative 7 site during the construction period.

Risk of Terrorist Actions during Construction

The probability of a terrorist attack on the Alternative 7 facilities is not likely to appreciably change during construction compared to baseline conditions.

Consequences of Terrorist Attack

During construction, a terrorist action could block key road access points and result in economic disruption. Potential environmental damage would include fuel spills into the marine environment, with associated degradation of water quality and damage to marine biological resources. These impacts would be limited to the area surrounding the point of attack and would be contained by the relevant oil spill response contractor. A potential fire associated with a terrorist attack could result in short-term impacts to local air quality.

CEQA Impact Determination

Existing Port security measures would counter any potential increase in unauthorized vehicular access to the terminal. The potential for a terrorist attack that would result in adverse consequences to areas near the proposed site during the construction period is considered improbable and the consequences could be moderate. This combination would result in a Risk Code of 4, which is "acceptable" and impacts would be less than significant under criterion **RISK-6.**

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

NEPA Impact Determination

Potential impacts under NEPA would be the same as under CEQA and are considered less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

3.8.4.3.2.9.2 Operational Impacts

Under Alternative 7, the Project site would not operate as a marine terminal of any type, but rather a Regional Center combining mainly office, retail, and light industrial uses. Operation of a regional center would not include uses or tenants that would use or store substantial quantities of hazardous substances. Operation of such public oriented retail, commercial, and industrial areas would be required to comply with all applicable health and safety codes that address hazards avoidance and hazardous materials management. As such, potential risks associated with **Impact RISKS 1b, 2b, 3b, 5b**, and **6b** during everyday operations are considered less than significant from a CEQA and NEPA perspective.

Impact RISK-4b: Alternative 7 would comply with applicable regulations and policies guiding development in the Port.

Alternative 7 plans and specifications will be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Buildings will be equipped with fire protection equipment as required by the Los Angeles Municipal Fire Code. Access to all buildings and adequacy of road and fire lanes will be reviewed by the LAFD to ensure that adequate access and firefighting features are provided. Alternative 7 plans would include an internal circulation system, code-required features, and other firefighting design elements, as approved by the LAFD.

Operation of Alternative 7 would be required to comply with all existing hazardous waste laws and regulations, including the federal RCRA and CERCLA, and CCR Title 22 and Title 26. Alternative 7 would comply with these laws and regulations, which would ensure that potential hazardous materials handling would occur in an acceptable manner.

The West Basin is identified by the Port as an area of restricted access. Public recreational boaters can only access the West Basin with a permit granted by the Port.

CEQA Impact Determination

Project plans under Alternative 7 would be reviewed by the LAFD for conformance to the Los Angeles Municipal Fire Code, as a standard practice. Buildings would be equipped with fire protection equipment as required by the Los Angeles Municipal Fire Code. Access to all buildings and adequacy of road and fire lanes will be reviewed by the LAFD to ensure that adequate access and firefighting features are provided. Alternative 7 would be constructed in accordance with policies and guidelines governing Port construction.

However, the Port RMP, which provides guidelines for the siting or relocation of facilities that handle dangerous cargo, was specifically intended to minimize potential risks to vulnerable resources, which include high densities of workers, recreational users, and visitors. This alternative could be determined by the Port and LAFD to be a vulnerable resource (this determination is made on an individual case-by-case basis). Although this alterative is not a facility that handles dangerous cargo, the intent of the RMP is to avoid overlapping hazard zones of dangerous cargo facilities with vulnerable resources. Because existing liquid bulk facilities are located directly across the Southwest Slip from the proposed site and because ships carrying liquefied natural or petroleum gases can moor at the Berth 120 wharf (reducing the distance between flammable materials and the Alternative 7 site), the Port has preliminarily determined that the hazard footprint for the Berth 118-120 facilities (but not the Berth 148 facilities) would partially overlap with the Alternative 7 site (Cham, 2004). Because the uses or users under Alternative 7 could be determined to be vulnerable resources, Alternative 7 is likely to conflict with the intent of the Port RMP, which is considered to be a potentially significant impact.

The vulnerability of the site as a regional center is also based on substantial numbers of daily workers, recreational users, and visitors who could be exposed to the risk of release or explosion due to proximity to the Kinder Morgan/GATX bulk and the Western Fuel Oil facility just across the Southwest slip and the ConocoPhillips facility across the West Basin. Consequently, Alternative 7 could result in significant impacts because it has the potential to expose a substantial number of people to increased health hazard risks.

Mitigation Measures

Alternative 7 would require the implementation of **MM HAZ-1.**

HAZ-1: The Los Angeles Harbor Department will perform a Risk Analysis of the Berth 118-120 facilities that would consider the location of the Regional Center. Based on the results of the risk analysis, recommendations to ensure an acceptable level of public safety would be implemented. These include, but are not limited to, alternative building configurations and buffer zones that will be incorporated into the design of this alternative to reduce potential impacts to users of the Regional Center to an acceptable level.

Residual Impacts

Impacts after the implementation of **MM HAZ-1** (reduces potential risks to the Regional Center as a vulnerable resource) would not be significant.

NEPA Impact Determination

Alternative 7 would include development on the same site acreage as the NEPA baseline. Design, construction, and operation of Alternative 7 would comply with existing fire and building codes and hazardous waste laws and regulations, including the federal RCRA, CERCLA, and CCR Title 22 and Title 26. Compliance with these laws and regulations would ensure that potential hazardous materials management would occur in an acceptable manner. However, because existing liquid bulk facilities are across the Southwest Slip and because ships carrying liquefied natural or petroleum gases can moor at the Berth 120 wharf (reducing the distance between flammable materials and the Alternative 7 site), the Port has preliminarily determined that the hazard footprint for the Berth 118-120 facilities (but not the Berth 148 facilities) would partially overlap with the Alternative 7 site (Cham, 2004). Because the uses or users under Alternative 7 could be determined to be vulnerable resources, Alternative 7 is likely to conflict with the intent of the Port RMP, which is considered to be a potentially significant impact.

The vulnerability of the site as a Regional Center is also based on substantial numbers of daily workers, recreational users, and visitors who could be exposed to the risk of release or explosion due to proximity to the Kinder Morgan/GATX bulk and the Western Fuel Oil facility just across the Southwest slip and the ConocoPhillips facility across the West Basin. Consequently, Alternative 7 would result in significant impacts because it has the potential to expose a substantial number of people to increased health hazard risks.

Mitigation Measures

Alternative 7 would require the implementation of **MM HAZ-1**, as described above.

Residual Impacts

Impacts after the implementation of **MM HAZ-1** (reduces potential risks to the Regional Center as a vulnerable resource) would not be significant.

3.8.4.3.3 Summary of Impact Determinations

Table 3.8-27 presents a summary of the CEQA and NEPA impact determinations of the proposed Project and its alternatives related to Hazards and Hazardous Materials, as described in the detailed discussion in Sections 3.8.4.3.1 and 3.8.4.3.2. This table is meant to allow easy comparison between the potential impacts of the Project and its alternatives with respect to this resource. Identified potential impacts may be based on federal, state, or City of Los Angeles significance criteria, Port criteria, and the scientific judgment of the report preparers.

For each type of potential impact, the table describes the impact, notes the CEQA and NEPA impact determinations, describes any applicable mitigation measures, and notes the residual impacts (i.e., the impact remaining after mitigation). All impacts, whether significant or not, are included in this table. Note that impact the description for each of the alternatives is the same as for the proposed Project, unless otherwise noted.

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Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials				
Proposed Project	**RISK-1a: C**onstruction/demolition activities would not substantially increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2a: Construction/demolition activities would not substantially increase the probable frequency and severity of consequences to people from exposure to health hazards.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-3a: Construction/demolition activities would not substantially interfere with an existing emergency response or evacuation plan, thereby increasing risk of injury or death.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4a: The proposed Project would comply with applicable regulations and policies guiding development within the Port.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-5a: Tsunami-induced flooding and seismic events would result in fuel releases from demolition/construction equipment or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-6a: A potential terrorist attack would result in adverse consequences to areas near the proposed Project site during the construction period.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

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Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Proposed Project (continued)	**RISK-1b:** Berth 97-109 terminal operations would not increase the probable frequency and severity of consequences to people or property as a result of accidental release or explosion of a hazardous substance.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2b: Proposed Project operations would not substantially increase the probable frequency and severity of consequences to people or property from exposure to health hazards.	CEQA: Less than Significant impact NEPA: Less than Significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-3b: Proposed Project operations would not substantially interfere with any existing emergency response plans or emergency evacuation plans.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4b: The proposed Project would comply with applicable regulations and policies guiding development within the Port.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-5b: Tsunami-induced flooding and seismic events would result in fuel releases from ships or hazardous substances releases from containers, which in turn would result in risks to persons and/or the environment.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-6b: A potential terrorist attack would result in adverse consequences to areas near the proposed Project site during the operations period.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 1 – No Project Alternative	**RISK-1a**	CEQA: Less than significant impact NEPA: Not Applicable	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Not Applicable
	RISK-2a	CEQA: Less than significant impact NEPA: Not Applicable	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Not Applicable
	RISK-3a	CEQA: Less than significant impact NEPA: Not Applicable	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Not Applicable
	RISK-4a	CEQA: Less than significant impact NEPA: Not Applicable	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Not Applicable
	RISK-5a	CEQA: Less than significant impact NEPA: Not Applicable	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Not Applicable
	RISK-6a	CEQA: No impact NEPA: Not applicable	Mitigation not required Mitigation not required	CEQA: No impact NEPA: Not applicable
	RISK-1b	CEQA: Less than significant impact NEPA: Not applicable	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Not applicable
	RISK-2b	CEQA: No impact NEPA: Not applicable	Mitigation not required Mitigation not required	CEQA: No impact NEPA: Not applicable
	RISK-3b	CEQA: Less than significant impact NEPA: Not applicable	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Not applicable

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 1 (continued)	**RISK-4b**	CEQA: Less than significant impact NEPA: Not applicable	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Not applicable
	RISK-5b	CEQA: Less than significant impact NEPA: Not applicable	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Not applicable
	RISK-6b	CEQA: Less than significant impact NEPA: Not applicable	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Not applicable
Alternative 2 – No Federal Action Alternative	**RISK-1a**	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-3a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 2 (continued)	**RISK-5a**	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-6a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-1b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2b	CEQA: No impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: No impact NEPA: No impact
	RISK-3b	CEQA: Less than significant impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact
	RISK-4b	CEQA: Less than significant impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact
	RISK-5b	CEQA: Less than significant impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact
	RISK-6b	CEQA: Less than significant impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 3 – Reduced Fill Alternative, No Berth 102 Wharf	**RISK-1a**	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-3a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-5a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-6a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 3 (continued)	**RISK-1b**	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2b	CEQA: Less than Significant impact NEPA: Less than Significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-3b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-5b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-6b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 4 – Reduced Fill Alternative, No Berth 100 South	**RISK-1a**	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-3a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-5a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-6a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 4 (continued)	**RISK-1b**	CEQA: Less than significant impact	Mitigation not required	CEQA: Less than significant impact
		NEPA: Less than significant impact	Mitigation not required	NEPA: Less than significant impact
	RISK-2b	CEQA: Less than significant impact	Mitigation not required	CEQA: Less than significant impact
		NEPA: Less than significant impact	Mitigation not required	NEPA: Less than significant impact
	RISK-3b	CEQA: Less than significant impact	Mitigation not required	CEQA: Less than significant impact
		NEPA: Less than significant impact	Mitigation not required	NEPA: Less than significant impact
	RISK-4b	CEQA: Less than significant impact	Mitigation not required	CEQA: Less than significant impact
		NEPA: Less than significant impact	Mitigation not required	NEPA: Less than significant impact
	RISK-5b	CEQA: Less than significant impact	Mitigation not required	CEQA: Less than significant impact
		NEPA: Less than significant impact	Mitigation not required	NEPA: Less than significant impact
	RISK-6b	CEQA: Less than significant impact	Mitigation not required	CEQA: Less than significant impact
		NEPA: Less than significant impact	Mitigation not required	NEPA: Less than significant impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 5 – Reduced Construction and Operation Alternative: Phase I Construction Only	No in-water construction impacts would occur in association with the Alternative 5. Therefore, there would be no impacts under CEQA and NEPA for **RISK-1a, RISK-2a, RISK-3a, RISK-4a**, **RISK-5a,** and **RISK-6a.**	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-1b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-3b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-5b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 5 (continued)	**RISK-6b**	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
Alternative 6 Omni Cargo Terminal Alternative	**RISK-1a**	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-3a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-5a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-6a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 6 (continued)	**RISK-1b**	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-3b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-5b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-6b	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 7 – Non-Shipping Alternative	**RISK-1a**	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-2a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-3a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-5a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-6a	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.8-27. Summary Matrix of Potential Impacts and Mitigation Measures for Hazards and Hazardous Materials Associated with the Proposed Project and Alternatives (continued)

Alternative	Environmental Impacts*	Impact Determination	Mitigation Measures	Impacts after Mitigation
3.8 Hazards and Hazardous Materials (continued)				
Alternative 7 (continued)	Operation of such public oriented retail, commercial, and industrial areas would be required to comply with all applicable health and safety codes that address hazards avoidance and hazardous materials management. As such, potential risks associated with **Impact RISKS 1b, 2b, 3b, 5b**, and **6b** during everyday operations are considered less than significant from both a CEQA and NEPA perspective.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	RISK-4b	CEQA: Significant impact NEPA: Significant impact	**MM HAZ-1** **MM HAZ-1**	CEQA: Less than significant impact NEPA: Less than significant impact

Note:

*Unless otherwise noted, all impact descriptions for each of the Alternatives are the same as those described for the Proposed Project.

3.8.4.4 Mitigation Monitoring

Mitigation measure HAZ-1 applies to Alternative 7.

Impact RISK-4b: Alternative 7 would comply with applicable regulations and policies guiding development in the Port.	
Mitigation Measure	**HAZ-1:** The Los Angeles Harbor Department will perform a Risk Analysis of the Berth 118-120 facilities that would consider the location of the Regional Center. Based on the results of the risk analysis, recommendations to ensure an acceptable level of public safety would be implemented. These include, but are not limited to, alternative building configurations and buffer zones that will be incorporated into the design of this alternative to reduce potential impacts to users of the Regional Center to an acceptable level.
Timing	Prior to commencing design of the Regional Center.
Methodology	Port staff will perform the risk assessment and make recommendations that shall be complied with during design to ensure potential risks to vulnerable resources are within acceptable levels.
Responsible Parties	Port of Los Angeles
Residual Impacts	Not Significant after mitigation

3.8.5 Significant Unavoidable Impacts

There are no significant unavoidable impacts associated with hazards and hazardous materials.