

G. HAZARDS AND HAZARDOUS MATERIALS

This section describes the potential for hazardous materials¹ to affect human health and the environment at the Project site. Several parcels within and adjacent to the vicinity of the Project site have been identified as locations where hazardous materials have been used, stored, and/or released. The potential for current and future workers and residents to be exposed to hazardous materials in soils, groundwater, and building materials is described below. Mitigation measures for the Project have been drafted, where necessary, to reduce potential impacts due to hazardous materials to a less-than-significant level. Abbreviations and acronyms used in this hazards sections are shown in Table IV.G-1.

1. Setting

The following section describes previous environmental investigations of soil and groundwater conditions within the Project site and the regulatory framework that governs hazardous material management and remediation.

a. Previous Environmental Investigations. Dozens of environmental investigations have been performed in the Project site vicinity. The investigations include Phase I environmental site assessments (ESAs), Phase II ESAs, and other investigations. Phase I ESAs are conducted to identify potential contamination issues at a property by inspecting the site and reviewing readily available information, including previous environmental investigations, historical land use records, and regulatory agency information. Phase II ESAs include the collection of soil and/or groundwater samples to investigate potential issues identified during the Phase I ESA process. Depending on the findings of the Phase I and Phase II investigations, other environmental investigations may follow to delineate the extent of contamination identified during previous investigations or to evaluate the effectiveness of remedial actions. Focused investigations may also be conducted when a hazardous material release is identified, such as following removal of an underground petroleum storage tank (UST).

Much of the setting information in this section is summarized from a Draft Environmental Investigation prepared in 2001 for the Project applicant by Harding ESE, Inc.² Harding ESE summarized previous environmental investigations for the area and conducted and/or updated Phase I ESAs for Project Blocks 1 through 7. A limited Phase II ESA was also performed for that investigation, which included collection of soil and groundwater samples from six locations at and adjacent to Blocks 1 and 2.

¹ The California Health and Safety Code defines a hazardous material as, "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment." (California Health and Safety Code ' 25501).

² Harding ESE, Inc., 2001, *Draft Environmental Investigation Report, Oakland Uptown Development Project*, Oakland, California.

Table 1: Abbreviations and Acronyms used in Hazards Section

ACHCS	=	Alameda County Health Care Services
BAAQMD	=	Bay Area Air Quality Management District
Cal EPA	=	California Environmental Protection Agency
DOSH	=	California Department of Occupational Safety and Health
DTSC	=	California Department of Toxic Substances Control
ESA	=	Environmental Site Assessment
HSP	=	Health and Safety Plan
mg/kg	=	milligrams per kilogram, equivalent to one part per million by weight
OSHA	=	Occupational Safety and Health Administration
PAH	=	Polynuclear aromatic hydrocarbons, a class of heavy hydrocarbon compounds often found in materials such as asphalts, fuels, oils, and greases
PCE	=	Tetrachloroethylene, a manufactured chemical that is widely used for dry cleaning of fabrics and for metal-degreasing
PEL	=	Permissible Exposure Limits, OSHA regulatory thresholds for exposure to chemicals in the workplace
RWQCB	=	San Francisco Regional Water Quality Control Board
ULR	=	City of Oakland Urban Land Redevelopment Program
US EPA	=	US Environmental Protection Agency
UST	=	Underground petroleum storage tank
µg/L	=	micrograms per liter, equivalent to one part per billion by volume

Source: Baseline Environmental, 2003.

For this analysis, the information in the Harding ESE investigation was supplemented by review of additional environmental reports to provide information regarding Blocks 8 and 9, and information obtained in investigations completed after the Harding ESE report. Reports relied on for this analysis include:

Subsurface Consultants, Inc., 2001, *Phase I Environmental Site Assessment*, 1961-1975 Telegraph Avenue, Oakland, California, June 7.

Subsurface Consultants Inc. (SCI), 2001, *Phase I Environmental Site Assessment*, 605-609 20th Street, Oakland, California, August 29.

Subsurface Consultants, Inc., 2002, *Phase I Environmental Site Assessment*, Paramount Theater Parking Garage, 2100 and 2150 Telegraph Avenue, Oakland, California, February 27.

Subsurface Consultants, Inc., 2002, Letter Report, *Groundwater Investigation*, Uptown Theatre District, Oakland, California, November 11.

URS, 2002, *2002 Third Quarter Groundwater Monitoring Report*, Former Sears Retail Center #1039, 1901-1911 Telegraph Avenue, Oakland, California, Case ID # STID 1630 for Sears Roebuck & Co, December 12.

Aqua Science Engineers, Inc., 2003, *Report of Soil and Groundwater Assessment*, ASE Job No. 3848, Feldstein Property, 1940 San Pablo Avenue, Oakland, California, February 5.

Subsurface Consultants, Inc., 2003, Letter Report, *Result of Soil Investigation*, 565, 571, and 585 20th Street, Oakland, California, February 28.

A summary of the findings of these investigations is presented in Table IV.G-2.

Most of the hazardous materials concerns identified during the Harding ESE investigation were related to historic land uses that may have used hazardous materials. These land uses included a dry cleaning establishment, several auto repair businesses, vehicle parking lots, a bus depot, a photo finishing business, and other commercial and light industrial land uses. Releases of petroleum hydrocarbons, solvents, and wastes containing heavy metals could have occurred during the periods of time these land uses were present at the Project site. If hazardous materials releases have occurred, construction workers could come into contact with contaminated soils and groundwater during Project construction.

Not all of the potential hazardous material issues at the Project site blocks have been fully investigated. Soil and groundwater analyses have largely focused on Project site Blocks 1 to 6, where initial phases of Project development have been proposed to take place. No Phase II investigations are known to have been conducted at Blocks 7, 8, or 9. Based on historical land uses, there is a chance that petroleum hydrocarbons, pesticides, polynuclear aromatic hydrocarbons (PAHs), heavy metals, and solvents could be encountered in soil and groundwater during redevelopment activities at those blocks. In addition, there are several potential hazardous materials concerns within the other Project site blocks that were identified during Phase I investigations but have not yet been evaluated, due to lack of right-of-entry agreements or other access constraints. Additional investigation will be required to determine if significant hazardous materials releases have occurred at these locations. The impact and mitigation measures subsection of this section provides recommendations for these subsequent investigations.

The Project site has also been affected by releases from underground storage tanks (USTs). USTs from a former gasoline service station were present on Block 4, and have affected groundwater quality on Block 2 and Block 4. Releases from a UST at a bus depot located on Block 7 have also been reported, although remediation at that site has been completed, and residual contamination at that site would not be expected to affect redevelopment. There may be a potential to encounter abandoned USTs during development, such as waste oil tanks from former auto repair facilities, or fuel oil tanks from former commercial and residential land uses.

A regional issue affecting several of the Project site blocks is the presence of chlorinated solvents in groundwater. The primary compound of concern is tetrachloroethylene (PCE). PCE is a manufactured chemical that is widely used for dry cleaning of fabrics and for metal-degreasing. It is also used to make other chemicals and a component of some consumer products. Based on animal experiments, exposure to elevated concentrations of PCE is suspected to cause liver and kidney cancer.³

³ Agency for Toxic Substances and Disease Registry (ATSDR). 1997. Toxicological profile for tetrachloroethylene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Table IV.G-2: Summary of Previous Environmental Investigation Findings

Blocks ^a	Current and Historic Land Uses Potentially Associated with Hazardous Materials	Summary of Findings
1 and 2	Garment Factory, Dry Cleaners, Gasoline Service Station, Auto Repair, Machine Shop, Battery Retail Sales, Parking	<p>Underground storage tanks associated with a former gasoline station near the boundary of Block 2 and Block 4 were removed in the late 1980s. Total petroleum hydrocarbons, solvents, and benzene are present in groundwater in this area. During the most recent sampling activity (Fall 2002), benzene in groundwater near the former gasoline station was identified at concentrations up to 11,500 $\mu\text{g/L}$, above the URL Program Tier 1 residential screening level of 110 $\mu\text{g/L}$ for residential land uses, and above the Tier 1 commercial/industrial screening level of 3,700 $\mu\text{g/L}$.</p> <p>A soil investigation at 565-585 Telegraph Avenue, in the northern portion of Block 1, identified one location with shallow soils containing petroleum hydrocarbons as diesel at 5,800 mg/kg, petroleum hydrocarbons as motor oil at 5,500 mg/kg, and naphthalene at 37 mg/kg. This appeared to be a limited area of contamination, as other soil samples within 25 feet contained much lower concentrations of contaminants.</p> <p>Soil and groundwater samples from the 1940 San Pablo Avenue property located at the northwest corner of Block 2 were collected and did not contain petroleum hydrocarbons, metals, or volatile organic compounds (including solvents) above health-risk based screening levels.</p> <p>Asbestos-containing materials and lead-based paint are known to be present in structures at the blocks.</p>
3 and 4	Gasoline Station, Auto Repair, Hospital, Photo Finishing, Parking	<p>Underground storage tanks associated with the gasoline station on Block 4 were removed in the late 1980s. Total petroleum hydrocarbons and solvents are present in groundwater. Additional areas of petroleum hydrocarbons, solvents, and/or metals may be present in soils from historic land uses. During the most recent sampling activity (Fall 2002), benzene in groundwater near the former gasoline station was identified at concentrations up to 11,500 $\mu\text{g/L}$, above the URL Program Tier 1 residential screening level of 110 $\mu\text{g/L}$ for residential land uses, and above the Tier 1 commercial/industrial screening level of 3,700 $\mu\text{g/L}$.</p> <p>Asbestos-containing materials and lead-based paint are known to be present in structures at the blocks.</p>
5 and 6	Machine Shop, Laboratory, Trucking Company, Parking	<p>Buildings within these blocks have been demolished. Relatively low concentrations of petroleum hydrocarbons have been detected in limited soil sampling. Additional areas of soils affected by petroleum hydrocarbons, solvents, and/or metals may be present from historic land uses in areas that were not accessible for sampling in previous investigations.</p>
7	Tire Service, Bus Depot, Power Substation, Plant Nursery, Parking	<p>No soil or groundwater investigations are known to have been performed at this block. Releases from a former underground storage tank have been reported at the site, but the case has been closed by ACHCS, indicating that no further investigation or remediation is necessary.</p> <p>Soils and/or groundwater affected by petroleum hydrocarbons, pesticides, solvents, polynuclear aromatic hydrocarbons, and/or metals could potentially be present from historic land uses.</p> <p>Based on the age of the buildings, asbestos-containing materials and lead-based paint are suspected to be present.</p>

Table IV.G-2 *continued*

Blocks ^a	Current and Historic Land Uses Potentially Associated with Hazardous Materials	Summary of Findings
8	Wood and Coal Yard, Parking	No soil or groundwater sampling is known to have been completed at this block. Historical land uses and potential contamination that may have migrated from adjacent current and former gasoline service stations are hazardous materials issues within this block.
9	Cabinet Factory, Auto Repair, Dyeing and Cleaning Facility, Parking	No soil or groundwater sampling is known to have been completed at this block. Historical land uses and potential contamination that may have migrated from adjacent current and former gasoline service stations are hazardous materials issues within this block. Based on the age of the buildings, asbestos-containing materials and lead-based paint are suspected to be present.

^a Blocks 1-7 have been grouped based on the evaluation in the Harding ESE Environmental Investigation Report. Source: Baseline Environmental, 2003. Also refer to list of references on page IV.G-2 and -3.

Shallow groundwater in the Project vicinity is not considered a likely potential drinking water source, but the public could potentially be exposed to PCE from groundwater that has evaporated and migrated through the soil into indoor and outdoor air. The City of Oakland Urban Land Redevelopment (ULR) Program has established health risk-based corrective action levels for PCE and other contaminants that are designed to provide screening criteria for cleanup of contaminated sites. The ULR program has established 200 micro grams per liter ($\mu\text{g/L}$) as a Tier 1 screening level for PCE at residential sites, and 3,300 $\mu\text{g/L}$ at commercial and industrial sites, in locations where groundwater is not a potential drinking water source. The Tier 1 screening levels are designed to be conservative, health-risk based values; sites with contaminant concentrations lower than the Tier 1 screening levels would not be expected to present a health risk to future site users, while sites with concentrations higher than the Tier 1 levels may require additional analysis and/or investigation to determine potential health risks.

Beginning in 1991, the City of Oakland has installed and sampled groundwater monitoring wells in the Project vicinity to delineate the extent of chlorinated solvents in groundwater, and to attempt to determine the source of the contamination. Wells were sampled in 1991, 1994, 1998, 2000, and 2002, and between samplings additional monitoring wells have been installed to provide additional information. Eighteen groundwater monitoring wells have been installed, and during the most recent sampling in 2002, samples were collected from fifteen of those wells.

PCE concentrations have consistently been highest near the western boundary of the Project site blocks, in wells at and near San Pablo Avenue. During the most recent sampling, the highest concentration measured was 710 $\mu\text{g/L}$ at well MW-13, located at the corner of San Pablo Avenue and William Street. Samples from two other wells also contained PCE above the Tier 1 residential screening level of 200 $\mu\text{g/L}$: MW-11, on 19th Street east of San Pablo Avenue, and MW-17, on San

Pablo Avenue near Jefferson Street.⁴ These wells are located adjacent to Project site blocks 1, 2, and 5. Additional evaluation may be necessary to determine potential health effects to future residential site users at these parcels as a result of PCE contamination. None of the samples collected from these wells have contained PCE above the commercial/industrial Tier 1 screening level of 3,300 $\mu\text{g}/\text{L}$.

Trace concentrations of cis-1,2-dichloroethene, a breakdown product of PCE, were identified in two of the samples in 2002, suggesting that some natural biodegradation of the PCE may be occurring.⁵ No evidence of vinyl chloride, a more toxic natural breakdown product that can be produced under certain conditions, has been identified at the Project area. Although the overall trend of concentrations in groundwater over time has been toward lower concentrations of PCE, two of the wells sampled in 2002 contained higher concentrations of PCE than in 2000.⁶ Additional investigation will likely be necessary to pinpoint the source of the PCE in groundwater and evaluate concentration trends and resulting potential environmental impacts.

b. Regulatory Framework. A large number of federal, State, and local laws and regulations affect the management of hazardous materials. In California, the US Environmental Protection Agency (US EPA) has granted most enforcement authority over Federal hazardous materials regulations to the California Environmental Protection Agency (Cal EPA). In turn, a local agency, Oakland Fire Services Agency (OFSA), has been granted authority by the State to enforce most regulations pertaining to hazardous materials management in the City of Oakland, such as the Hazardous Materials Business Plan Program and permitting for underground storage tanks.

A slightly different regulatory framework exists for oversight over investigation and remediation of sites affected by hazardous materials releases. Oversight can be performed by State agencies, such as the Department of Toxic Substances Control (DTSC), regional agencies, such as the San Francisco Bay Regional Water Quality Control Board (RWQCB), or local agencies such as Alameda County Health Care Services (ACHCS). Oversight of many contaminated sites in Oakland, such as those associated with leaking underground storage tanks, is performed by the Local Oversight Program of ACHCS, under an agreement with RWQCB. DTSC often acts as lead agency for more complex sites, such as those in the State Annual Work Plan program (State superfund sites). At the Project site, ACHCS has performed oversight of leaking underground storage tank cases at Project site blocks 4 and 7 (described above), while the RWQCB has been involved with oversight over groundwater contamination issues in the Project vicinity since 1999. It is expected that RWQCB will continue to be involved with investigation and remediation of hazardous materials issues in the Project area. A more detailed discussion of regulatory agencies and their respective jurisdictions is included as Appendix E of this EIR.

OFSA provides emergency response to hazardous materials incidents in Oakland. ACHCS assists in emergency response by providing a 24-hour emergency vehicle for identification and advice to first responders regarding the hazardous materials present in the event of a fire or an accidental spill.

⁴ Subsurface Consultants, Inc., 2002, Letter Report, Groundwater Investigation, Uptown Theatre District, Oakland, California, November 11.

⁵ Ibid.

⁶ Ibid.

Redevelopment agencies involved in site investigation and remediation of hazardous materials may utilize the Polanco Redevelopment Act (California Health and Safety Code, section 33459, et seq.). The Polanco Act was enacted to encourage the safe reuse of potentially contaminated properties. The Act grants redevelopment agencies substantial discretion and authority in the cleanup process. The powers granted under the Act can allow a redevelopment agency to significantly speed up the investigation and remediation process of potentially contaminated properties, and provides mechanisms for recovery of the costs incurred. Typically, the purchaser of a property would assume potential liability for historical contamination, which can act as a disincentive for redeveloping contaminated properties. Following successful assessment and remediation of a property under the provisions of the Act, developers and future land owners are not liable for future cleanup costs that may be incurred as a result of historic contamination. Liable entities could include previous landowners.

c. Lead and Asbestos in Building Materials. Lead and asbestos are potentially hazardous materials that are often present in buildings constructed prior to the 1980s. They are regulated differently than other hazardous materials issues, in that lead-based paint may be a worker health and safety issue, and asbestos containing materials are considered both a worker health and safety issue and a potential air quality issue. Accordingly the California Department of Occupational Safety and Health (DOSH), and the Bay Area Air Quality Management District (BAAQMD) regulate demolition and renovation of structures containing lead and asbestos. Demolition and renovation of buildings containing lead and asbestos can be performed safely using special techniques to contain lead particles and asbestos fibers, and personal protective equipment to protect workers. Once abated, lead-based paint and asbestos-containing materials may be hazardous wastes.

Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. Demolition or renovation of structures constructed prior to these dates has the potential to release lead particles and/or asbestos fibers to the air, where they may be inhaled by construction workers and the general public.

A survey of lead and asbestos in building materials was performed on Blocks 1 through 6 in 1999 by Consulting Associates of California.⁷ Lead and asbestos were identified on each of the blocks surveyed. Because most of the buildings on other blocks within the Project site were constructed during the same time period as those on Blocks 1 through 6, lead and asbestos are likely present within these areas. Since the survey was conducted, subsequent survey and abatement activities have taken place, and a number of buildings at the Project site have been demolished, including all structures on Blocks 5 and 6. Block 8 is a surface parking lot, with no structures that potentially contain lead or asbestos.

Lead is a suspected human carcinogen, a known teratogen (i.e., it is a known cause of birth defects), and a reproductive toxin. Federal and State regulations govern the renovation and demolition of structures where lead or materials containing lead are present. Loose and peeling lead-based paint must be abated prior to building demolition, is considered a hazardous waste, and must be disposed of accordingly. Construction worker health and safety regulations pertaining to demolition of structures with lead-based paint are promulgated by federal and State agencies.

⁷ Harding ESE, Inc. 2001, op cit.

Asbestos is a known human carcinogen. Federal, State, and local requirements also govern the removal of asbestos or suspected asbestos-containing materials and the renovation and demolition of structures where asbestos is present. These requirements are maintained by the appropriate federal and State agencies with jurisdiction over hazardous materials and the Bay Area Air Quality Management District (BAAQMD).

2. Impacts and Mitigation Measures

This section outlines hazardous materials impacts that may result from implementation of the proposed Project and recommends mitigation measures, as appropriate. Less-than-significant impacts to human health and the environment are listed first, followed by significant impacts.

a. Significance Criteria. The proposed Project could be considered to result in significant impacts relating to hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼-mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and would result in a safety hazard for people residing or working in the Project area;
- Be located within the vicinity of a private airstrip, and would result in a safety hazard for people residing or working in the Project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

b. Less-than-Significant Hazards and Hazardous Materials Impacts. The following discussion describes less-than-significant impacts that would result from the proposed Project:

(1) Routine Transport, Use, or Disposal of Hazardous Materials. Implementation of the proposed Project would result in the development of a mixed-use neighborhood. It is not anticipated that large quantities of hazardous materials would be permanently stored or used within the Project site. Small quantities of similar commercially-available hazardous materials (e.g., paint, maintenance supplies) would be routinely used within the Project site for maintenance and cleaning, and could be used by commercial entities operating within the Project site. However, these materials would not be used in sufficient strength or quantity to create a substantial risk of fire or explosion, or otherwise

pose a substantial risk to human or environmental health. Therefore, implementation of the proposed Project would not create a permanent significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials.

(2) Airport Hazards. The Project site is located approximately 5 miles north of the Metropolitan Oakland International Airport and is not within the airport's land use plan. The Project site is not located within the vicinity of a private airstrip. Therefore, implementation of the proposed Project would not increase the exposure of persons to airport-related hazards.

(3) Emergency Response and Wildland Fires. Implementation of the proposed Project would result in the development of two additional roads within the Project site that would extend from Thomas L. Berkley Way (20th Street) to 19th Street, and from 19th Street to 18th Street, adjacent to the Fox Theater. No roadways would be removed as a result of the proposed Project. The development of additional roadways within the Project site would shorten existing block lengths and enhance vehicular access to and throughout the Project site. Therefore, implementation of the Project site would improve emergency access to the Project site. The Project site is located within an urbanized portion of Oakland, and is not susceptible to wildland fires due to its flat topography and lack of significant vegetation.

c. Significant Hazards and Hazardous Materials Impacts. Implementation of the proposed Project would result in the following five significant impacts. Implementation of recommended mitigation measures would reduce these impacts to a less-than-significant level.

Impact HAZ-1: Development of the Project could expose construction workers and/or the general public to hazardous materials from contaminated soil and groundwater during construction activities. (S)

Environmental investigations have identified portions of the Project site where releases of hazardous materials have affected soils and shallow groundwater. Construction workers could be exposed to contaminants in those materials via inhalation of dust and vapor, direct dermal contact, and/or accidental ingestion. Dust from contaminated soils could also drift outside the immediate construction area and adversely affect nearby workers and residents.

Further investigation is required to evaluate issues that have not been fully addressed within the Project area due to lack of access or other constraints. A list of the Project site blocks on which further investigation is recommended is presented on Table IV.G-3.

Previously unknown contamination may also be encountered during Project development. Environmental investigations conducted at the Project site, including future investigations that may be completed after preparation of this EIR, are based on available historical land use information, such as aerial photographs, fire insurance maps, and evidence of historical hazardous material use apparent during site inspections. Because hazardous material records were not required to be maintained during much of the history of the Project site, hazardous materials that may have been used, stored, or disposed of in areas outside of the areas of concern identified during previous environmental investigations may be encountered. If significant releases of hazardous materials are discovered during environmental investigation and/or construction activities, additional investigation,

Table IV.G-3: Summary of Recommended Further Subsurface Investigations

Block	Historic Land Uses Potentially Associated With Hazardous Materials	Contaminants of Concern
3 and 4	Former Gasoline Service Station, Photo Developer	Petroleum hydrocarbons, solvents, metals
5 and 6	Former Machine Works, Trucking Company, and Sign Painting Shop	Petroleum hydrocarbons, solvents, metals
7	Power Substation, Plant Nursery, Tire Service	Petroleum hydrocarbons, solvents, polynuclear aromatic hydrocarbons, pesticides, metals
8	Wood and Coal Yard, Adjoining Gasoline Service Stations, Parking	Petroleum hydrocarbons, metals, solvents and other volatile and semi-volatile organic compounds
9	Cabinet Factory, Auto Repair, Dyeing and Cleaning Facility, Adjoining Gasoline Service Stations, Parking	Petroleum hydrocarbons, metals, solvents and other volatile and semi-volatile organic compounds

Source: Harding ESE, 2001.

remediation, and/or coordination with regulatory agencies may be required prior to redevelopment of the blocks.

Implementation of the following three-part mitigation measure would reduce this impact to a less-than-significant level. The first part of the measure would require further investigation of potential hazardous materials issues identified in previous environmental reports. The second part would require implementation of construction worker health and safety measures. The third part would require the safe management of excavated soils and groundwater in accordance with applicable laws and regulations.

Mitigation Measure HAZ-1a: Prior to issuing any grading, demolition or building permits for the proposed Project affecting Project site Blocks 3 through 9, an environmental investigation shall be conducted at the site by a qualified environmental professional. The environmental investigation shall implement appropriate sampling recommendations presented in previously conducted Phase I site assessment(s) prepared for the Project site, as summarized in Table IV.G-3, in order to adequately characterize subsurface conditions of the site. Environmental investigation workplans shall be submitted to the City of Oakland and RWQCB for review and approval. Information from the environmental investigation shall be used to develop and implement site-specific health and safety plans for construction workers and best management practices (e.g., dust control, storm water runoff control, etc.) appropriate to protect the general public.

Mitigation Measure HAZ-1b: Prior to issuing any grading, demolition, or building permit for the proposed Project, a site-specific Health and Safety Plan (HSP) shall be prepared by a qualified industrial hygienist. At a minimum, the HSP shall summarize information collected in environmental investigations for the Project site, including soil and groundwater quality data; establish soil and groundwater mitigation and control specifications for grading and construction activities, including health and safety provisions for monitoring exposure to

construction workers; provide procedures to be undertaken in the event that previously unreported contamination is discovered; incorporate construction safety measures for excavation activities; establish procedures for the safe storage and use of hazardous materials at the Project site, if necessary; provide emergency response procedures; and designate personnel responsible for implementation of the Plan. The HSP shall be designed to prevent potential exposures to construction workers above established OSHA Permissible Exposure Limits. The Plan shall be submitted to the City of Oakland for review and approval.

Mitigation Measure HAZ-1c: Prior to issuing any grading, demolition, or building permit for the proposed Project, a Soil and Groundwater Management Plan (Plan) shall be prepared. The Plan shall include procedures for managing soils and groundwater removed from the site to ensure that any excavated soils and/or dewatered groundwater with contaminants are stored, managed, and disposed of safely, in accordance with applicable regulations. The Plan will incorporate notification and dust mitigation requirements of the BAAQMD (including Title 17, CCR Section 93105). Dewatering procedures will incorporate regulatory requirements for groundwater discharge to storm or sanitary sewers, as outlined in Mitigation Measure HYD-3. The Plan shall be submitted to the City of Oakland and RWQCB for review and approval and shall be implemented throughout all phases of Project development. (LTS)

Impact HAZ-2: Development of blocks with soil and/or groundwater contamination could expose future residents and workers to potentially hazardous concentrations of contaminants. (S)

The chlorinated solvent tetrachloroethylene (PCE) has been identified in groundwater near Blocks 1, 2, and 5 at concentrations above ULR Program Tier 1 screening levels for residential land uses. Benzene has been detected in groundwater near Blocks 2 and 4 at concentrations above Tier 1 residential and commercial screening levels. Other contaminants may potentially be discovered in soils and/or groundwater at other locations within the Project site above screening levels, based on historical land uses identified in previous environmental investigations.

The presence of contaminants above Tier 1 screening levels does not necessarily mean that the Project will result in health risks to future residents and workers. The screening levels were established using very conservative assumptions. However, exceedance of the screening levels indicates that additional analysis will be necessary to properly evaluate exposures to future site users, determine the potential for health risks, and establish and implement measures to reduce these risks to a less-than-significant level.

A previous human health risk assessment (HHRA) for the Project vicinity performed in 2001 concluded that known levels of contaminants in groundwater do not pose a risk to future site users under a residential land use scenario where groundwater is not a source of drinking water.⁸ This HHRA should be updated using the most current groundwater information available and include site-specific details for construction of the proposed Project. Should there be a potential for health risks, administrative and engineering controls may be required to reduce these risks to a less-than-significant level.

⁸ Chaney, Walton, & McCall/The Ellington Group, 2001, Shallow Groundwater Monitoring Assessment; Uptown Theater District, Oakland, CA, April 1.

The following two-part mitigation measure will reduce potential health risks to future site users to a less-than significant level. The first part would eliminate potential exposures to known hazards by prohibiting use of shallow groundwater at the Project site, therefore eliminating exposures, and requiring that any on-going dewatering activities take place under the Soil and Groundwater Management Plan (implemented as Mitigation Measure HAZ-1c). The second part would require that current health risk assessment documents be updated to incorporate the most recent investigation results and site-specific details regarding Project construction.

Mitigation Measure HAZ-2a: Covenants, codes, and restrictions for the proposed Project shall strictly prohibit the use of groundwater at the Project site for drinking, irrigation, or industrial purposes. Any dewatering activities required at the Project site following construction activities shall be required to be carried out under the Soil and Groundwater Management Plan prepared for the Project (Mitigation Measure HAZ-1c).

Mitigation Measure HAZ-2b: Prior to issuing any permits for construction within the Project site, a Human Health Risk Assessment (HHRA) shall be conducted and/or updated by a qualified environmental professional. This HHRA shall employ methodology from the *City of Oakland Urban Land Redevelopment: Guidance Document*⁹ for the Oakland Risk Based Corrective Action (RBCA) program to evaluate potential health risks from petroleum hydrocarbons, metals, solvents, and other volatile organic compounds in soils and groundwater. Depending on the findings of the HHRA, recommendations may be made for administrative or engineering controls to minimize public exposure to hazardous materials, if warranted. These controls could potentially include vapor barriers for building foundations, encapsulation of the site with building foundations and paved parking surfaces to prevent exposure to soils, and implementation of an Operations and Maintenance Plan to insure prescribed controls are implemented and maintained. The controls shall ensure that any potential added health risks to future site users are reduced to a cumulative risk of less than 1×10^{-5} (a calculated risk of 1 in 100,000 persons exposed) for carcinogens and a cumulative hazard index of 1.0. The HHRA shall be submitted to the City of Oakland and RWQCB for review and approval. (LTS)

Impact HAZ-3: Improper use or transport of hazardous materials during construction activities could result in releases affecting construction workers and the general public. (S)

Specific construction activities that would occur as part of Project implementation are anticipated to involve the use and transport of hazardous materials. These materials could include contaminated soil and/or groundwater, former underground storage tanks, building demolition debris containing hazardous materials, and fuels, oils, and other chemicals typically used during the construction period. Removal, relocation, or transportation of hazardous materials could result in accidental releases or spills and associated health risks to workers, the public, and environment. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure HAZ-3: The implementation of Mitigation Measure HAZ-1b would require a Site Safety Plan/Soil and Groundwater Management Plan (Plan). The Plan will establish procedures for the safe storage and use of hazardous materials at the Project site, if

⁹ City of Oakland Urban Land Redevelopment Program, 2000, Guidance Document, Oakland RBCA Program, January 1.

necessary; provide emergency response procedures; and designate personnel responsible for implementation of the Plan. No other mitigation is required. (LTS)

Impact HAZ-4: Demolition of buildings that contain lead-based paint and asbestos-containing building materials would release airborne lead and asbestos particles, which may adversely affect construction workers and the public. (S)

Based on previous surveys and the age of the buildings at the Project site, asbestos-containing building materials and lead-based paint are likely to be encountered during Project site demolition activities. The demolition of structures containing asbestos and/or lead-based paint could expose residents and workers to asbestos fibers and lead-based paint dust. Implementation of existing abatement and worker health and safety regulations, as outlined in the mitigation measure below, would reduce those risks to a less-than-significant level.

Mitigation Measure HAZ-4: All asbestos-containing materials shall be abated by a certified asbestos abatement contractor in accordance with construction worker health and safety regulations and the regulations and notification requirements of the Bay Area Air Quality Management District (BAAQMD) (29 CFR 1926.1101; 40 CFR 61 and 152; Title 8 CCR Section 1529; BAAQMD Regulation 11, Rule 2). The removal and disposal of lead-based paint within the Project site shall be completed in accordance with federal and State construction worker health and safety regulations (29 CFR, Part 1926.62; Title 8, CCR Section 532.1; CDHS Training, Certification and Workpractices Rule). (LTS)

Impact HAZ-5: Development of the Project could result in hazardous emissions or the handling of hazardous materials, substances, or waste within ¼-mile of a proposed school. (S)

Although no schools are currently located within ¼-mile of the Project site, an arts magnet school has been proposed at the Fox Theater, located adjacent to the Project site. Development of the Project will require the handling of hazardous materials during construction (see Impact HAZ-3, above). Construction activities could also potentially involve the excavation of contaminated soils, which, in the absence of dust control, could potentially migrate and affect a nearby school site.

Section 17213 of the State Education Code requires that a prospective school site be reviewed to determine that the site is not a current or former hazardous waste disposal site, a hazardous substance release site, or the site of hazardous substance pipelines. This section also requires consultation with local hazardous materials agencies and air quality districts to ensure that no sites within ¼-mile that handle or emit hazardous substances would potentially endanger future students or workers at the prospective school site.

The Department of Toxic Substances Control's (DTSC) Schools Property Evaluation and Cleanup Division is responsible for implementing regulations to assess, investigate and remediate proposed school property sites. All proposed school sites that will receive State funding for acquisition or construction are required to go through a rigorous environmental review and cleanup process under DTSC's oversight. DTSC requires that a Preliminary Environmental Assessment (PEA) be prepared to provide basic information for determining if there has been a release of hazardous material at the site, or if there may be present at the site a naturally-occurring hazardous material that presents a risk to human health or the environment.

Mitigation Measure HAZ-5: Implementation of existing regulatory requirements for school siting, and preparation and implementation of a Site Safety Plan/Soil and Groundwater Management Plan (Mitigation Measure HAZ-1b) and lead and asbestos regulations (Mitigation Measure HAZ-4) would reduce this impact to a less-than-significant level. No additional mitigation is required. (LTS)