

I. Hydrology and Water Quality

This section describes existing storm water drainage conditions, groundwater occurrence, and water quality issues at, and in the vicinity of, the proposed development. Pertinent regulatory information is provided, and potential impacts related to water quality, drainage, and groundwater are identified. Mitigation for potential impacts is provided, as appropriate.

Setting

Climate and Topography

The project site consists of 9.7 acres of industrial and commercial property in the Fruitvale neighborhood of the City of Oakland. The ground surface in and around the project site is relatively flat and slopes gently southwest towards Highway 880. Ground elevations range from approximately 30 to 40 feet above mean sea level (msl).

The climate of Oakland is characterized as Mediterranean with cool, wet winters and dry, hot summers. Temperatures are generally moderate with a comparatively small range of temperatures between the winter low and the summer high. The region's rainy season extends from October to April, with relatively dry conditions for the remainder of the year. Average annual rainfall in the vicinity of the project site is 18 inches. Average temperatures generally range from 42 degrees Fahrenheit in winter months to 70 degrees Fahrenheit in summer months (WRCC, 2005).

Surface Water Hydrology

Regional Drainage

The project site is located in an urbanized portion of the San Antonio Creek watershed. Prior to the California gold rush, San Antonio Creek was part of an extensive network of tidal marshlands along the San Francisco Bay shoreline. In the 1850s, early dredging of the San Antonio Creek to accommodate shipping significantly altered the movement of water and sediment through the marshlands, creating new land where once there was marsh. Over the next 50 years, subsequent dredging and excavation of the channel to improve navigability and accommodate trade and commerce resulted in the transformation of San Antonio Creek into a permanent tidal canal that now separates the cities of Oakland and Alameda and extends from the San Francisco Bay east to San Leandro Bay.

San Antonio Creek is now commonly referred to as the Oakland Estuary or the Oakland Inner Harbor. Tributaries to the San Antonio Creek watershed include Glen Echo Creek, Pleasant Valley Creek, Wildwood Creek, and Indian Gulch Creek. These local creeks generally flow from northeast to southwest, originating in the Oakland foothills as natural streams, passing through developed urban areas via improved channels and the City's formal subterranean storm drain system, and eventually discharging into the San Francisco Bay via the Oakland Estuary. Also included in the San Antonio Creek Watershed is Lake Merritt, a former slough that was dammed in the late 1860s to form a tidal lagoon.

Local Drainage Patterns

The project site lies in a highly urbanized area of east Oakland that served by the City's storm drainage system. The project site is essentially flat and largely covered by impervious surfaces consisting of industrial/commercial warehouses, storage buildings, paved areas, and parking lots. There are no creeks or streams that cross the project site. Storm water runoff from the project site and vicinity originates as overland sheet flow across impervious surfaces and is collected by a curb and gutter system and delivered through drop inlets to the City's subterranean storm drains and culverts, eventually discharging to the Oakland Estuary. The Alameda County Flood Control and Water Conservation District (ACFCWCD) is responsible for the construction, operation and maintenance of major trunk lines and flood control facilities in Oakland, the Oakland Public Works Agency (PWA) is responsible for the maintenance of the local storm drainage system within Oakland's public areas and roads.

Flooding

Flooding is inundation of normally dry land as a result of rise in the level of surface waters or rapid accumulation of stormwater runoff. Flooding can also occur due to tsunamis, seiches, or failure of dams. Tsunamis are waves caused by an underwater earthquake, landslide, or volcanic eruption. A seiche is a rhythmic motion of water in a partially or completely landlocked water body caused by landslides, earthquake-induced ground accelerations, or ground offset. Oakland is not particularly prone to flooding due to tsunamis or seiches, nor does it have large rivers or open coastline that can result in devastating storm-induced flooding. Flooding from tsunamis could potentially affect low-lying areas along San Francisco Bay and the Oakland Estuary, but the mouth of the Golden Gate would dissipate the wave energy and the island of Alameda would shelter inland areas such as the project site. The likelihood of large-scale devastation in Oakland resulting from seiches appears to be minuscule (City of Oakland, 2004a). Furthermore, the project site is not located within a dam inundation area as designated by the Association of Bay Area Governments (ABAG) (ABAG, 1995).

Regional flooding hazards, as evaluated by the Federal Emergency Management Agency (FEMA), are presented in community Flood Insurance Rate Maps (FIRMs) as part of the floodplain mapping program. FEMA FIRMs designate areas where urban flooding could occur during 100-year and 500-year flood events (i.e. storms with a likelihood of occurring every 100 to 500 years). The project site is located in an area designated as Flood Hazard C (areas of minimal flooding) and is not located within a designated 100-year or 500-year flood hazard zone (FEMA, 1982).

Groundwater

The California Department of Water Resources (DWR) delineates state groundwater basins based on geologic and hydrogeologic conditions. According to the DWR, the project site is located within the East Bay Plain Subbasin of the greater Santa Clara Valley Groundwater Basin. The East Bay Subbasin has a surface area of approximately 122 square miles and trends northwest from Hayward to San Pablo Bay. The primary groundwater-bearing formation in the subbasin is

comprised of unconsolidated sediments of Quaternary age. Some portions of the subbasin have been identified as areas of major groundwater contamination associated with fuels and solvents. However, contamination in these areas is considered to be restricted to the upper 50 feet of the subsurface (DWR, 2003).

The regional direction of groundwater flow is generally southwestward toward San Francisco Bay. Shallow groundwater beneath the project site is hydraulically connected to the Bay; its flow direction is highly variable due to its perched nature within Bay Muds, and tidal fluctuation. Approximate depth to groundwater in the project site vicinity is 10 feet (Mission Geoscience, Inc., 1999).

Regulatory Framework

Several federal, state, and local agencies regulate activities that could affect hydrological and water quality features in the project area. This section describes the regulatory framework that would apply to the proposed project.

Federal Laws and Regulations

Clean Water Act (CWA)

The CWA was enacted in Congress in 1972 and amended several times since inception. It is the primary federal law regulating water quality in the U.S. and forms the basis for several state and local laws throughout the country. Its objective is to reduce or eliminate water pollution in the nation's rivers, streams, lakes, and coastal waters. The CWA prescribes the basic federal laws for regulating discharges of pollutants and sets minimum water quality standards for all surface waters in the U.S. At the federal level, the CWA is administered by the U.S. Environmental Protection Agency (EPA). At the state and regional levels, the CWA is administered and enforced by the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs).

Section 303(d) of the federal CWA requires states to identify waterbodies that do not meet water quality standards and are not supporting their beneficial uses. Each state must submit an updated list, called the 303(d) List of Impaired Waterbodies, to the US EPA by April of each even numbered year. In addition to identifying the waterbodies that are not supporting beneficial uses, the List also identifies the pollutant or stressor causing impairment, and establishes a schedule for developing a control plan to address the impairment. Two segments of the Oakland Inner Harbor are listed on the Section 303(d) List of Impaired Waterbodies. The Oakland Inner Harbor (Pacific Dry-dock Yard 1 Site) segment is listed due to chlordane, chlorpyrifos, copper, dichlorodiphenyltrichloroethane (DDT), diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, lead, mercury, mirex, Polycyclic Aromatic Hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), ppDDE, Selenium, tributyltin, and zinc. The Oakland Inner Harbor (Fruitvale Site) segment is listed due to chlordane, DDT, diazinon, dieldrin, dioxin compound, exotic species, furan compounds, mercury, PCBs, and selenium. Potential sources of

these contaminants include industrial and municipal point sources, resource extraction, atmospheric deposition, and natural sources (USEPA, 2003).

Placement of a waterbody on the 303(d) List acts as the trigger for developing a pollution control plan, called a Total Maximum Daily Load (TMDL), for each water body and associated pollutant/stressor on the list. The TMDL serves as the means to attain and maintain water quality standards for the impaired water body. During each 303(d) listing cycle the water bodies on the list are prioritized and a schedule is established for completing the TMDLs. Both segments of the Inner Oakland Harbor have been given a low priority for TMDL development and thus, a TMDL has not yet been prepared (USEPA, 2003).

State and Regional Water Quality Control Boards

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act establishes the SWRCB and the RWQCBs as the principal state agencies having primary responsibility in coordinating and controlling water quality in California. The Porter-Cologne Act establishes the responsibility of the RWQCBs for adopting, implementing, and enforcing water quality control plans (i.e. Basin Plans), which set forth the state's water quality standards (i.e. beneficial uses of surface waters and groundwaters) and the objectives or criteria necessary to protect those beneficial uses. The project site lies within the jurisdiction of the San Francisco Bay RWQCB. The SF Bay RWQCB is responsible for development, adoption, and implementation of the Basin Plan for the SF Bay region. National Pollution Discharge Elimination System (NPDES) permit requirements must be consistent with the Basin Plans.

San Francisco Bay Basin Plan

Beneficial Uses of Surface Water

The San Francisco Bay RWQCB is responsible for the development, adoption, and implementation of the San Francisco Bay Water Quality Control Plan (Basin Plan). The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the San Francisco Bay region. The Basin Plan identifies beneficial uses of surface waters and groundwater within its region, and specifies water quality objectives to maintain the continued beneficial uses of these waters.

Although the beneficial uses of the Oakland Inner Harbor have not been specified, under the "tributary rule", which provides that water quality standards for specific waterbodies apply upstream to tributaries for which no site-specific standards have been adopted, the beneficial uses of the Lower San Francisco Bay can be applied to the Oakland Inner Harbor. Thus, the beneficial uses of the Oakland Inner Harbor include: ocean, commercial, and sport fishing (COMM); estuarine habitat (EST); industrial service supply (IND); fish migration (MIGR); navigation (NAV); preservation of rare and endangered species (RARE); water contact recreation (REC-1);

noncontact water recreation (REC-2); shell fish harvesting (SHELL); and wildlife habitat (WILD) (RWQCB, 1995).

Beneficial uses of the East Bay Plain Groundwater Subbasin include municipal and domestic water supply (MUN); industrial process water supply (PROC); industrial service water supply (IND); and agricultural water supply (AGR) (RWQCB, 1995).

National Pollutant Discharge Elimination System (NPDES) Program

In 1987, amendments to the CWA added section 402(p), which established a framework for regulating non point source (NPS) storm water discharges under the National Pollutant Discharge Elimination System (NPDES). In California, the NPDES General Construction Activities Stormwater Program is administered by the California RWQCBs. Phase I of the NPDES program regulates storm water discharges from major industrial facilities, large and medium-sized municipal separate storm sewer systems (those serving more than 100,000 persons), and construction sites that disturb five or more acres of land. Pursuant to the NPDES Phase II Final Rule in December 1999, discharges of storm water associated with construction activities that result in the disturbance of equal to or greater than one acre of land must apply for coverage under the statewide General Construction Activities Stormwater Permit (General Permit). Construction activity includes, but is not limited to clearing, grading, demolition, excavation, construction of new structures, and reconstruction of existing facilities involving removal and replacement that results in soil disturbance.

Regarding NPDES municipal stormwater requirements, as a member of the Alameda Countywide Clean Water Program, the City of Oakland is co-permittee of the ACCWP's NPDES Municipal Stormwater Permit (see discussion below). With respect to the NPDES General Construction Activities Permit, the project applicant is required to submit a Notice of Intent (NOI) with the State Water Resource Control Board's (SWRCB) Division of Water Quality. The NOI includes general information on the types of construction activities that will occur on the site. The applicant will also be required to submit a site-specific plan called the Stormwater Pollution Prevention Plan (SWPPP) for construction activities. The SWPPP will include a description of Best Management Practices (BMPs) to minimize the discharge of pollutants from the site during construction. It is the responsibility of the property owner to obtain coverage under the permit prior to site construction.

Alameda County Regulations

Alameda Countywide Clean Water Program (ACCWP)

The ACCWP is a group of 17 participating agencies within Alameda County, including City of Oakland, that cooperatively comply with RWQCB requirements to prevent stormwater pollution and protect and restore creek and wetland habitat. The ACCWP maintains compliance with the NPDES permit requirements by requiring: local agencies to address storm water quality during development review; the utilization of water quality BMPs during project construction; and the reduction of long-term water quality impacts using site design and source control measures.

In 2001, the ACCWP prepared the *Stormwater Quality Management Plan (SQMP)*, which is valid through June 2008 (ACCWP, 2001). The SQMP describes the ACCWP's approach to reducing stormwater pollution. In conjunction with the stormwater discharge permit issued by the RWQCB (discussed below), the SQMP is designed to enable the ACCWP member agencies to meet CWA requirements. The SQMP provides a framework for protection and restoration of creeks and watersheds in Alameda County in part through effective and efficient implementation of appropriate control measures for pollutants. The SQMP addresses the following major program areas: regulatory compliance, focused watershed management, public information/participation, municipal maintenance activities, new development and construction controls, illicit discharge controls, industrial and commercial discharge controls, monitoring and special studies, control of specific pollutants of concern, and performance standards (ACCWP, 2001).

The NPDES C.3 Provisions, effective as of August 15, 2006, include new requirements for development and redevelopment projects. C.3 Provisions require that projects that create or replace 10,000 square feet or more of impervious surface incorporate the following stormwater controls:

- Post-construction storm water treatment control measures (e.g. vegetated swales, pervious pavement, detention basins) designed to treat a specified flow rate proportional to changes between pre- and post-project impervious surfaces;
- Source control features such as enclosed trash areas and designated wash areas designed to keep pollution away from stormwater;
- Site design features to increase pervious surface areas by utilizing landscaped areas in between impervious areas as a storm drainage treatment feature; and
- In cases where changes in the amount and timing of runoff would increase stormwater discharge rates an/or duration and increase the potential for other adverse impacts to beneficial uses, the C.3 Provisions also require preparation of a hydrograph modification management plan that includes measures to control the quantity and duration of runoff.

As specified in ACCWP's NPDES permit (Order R2-2003-0021), the proposed project falls under the "significant redevelopment projects" category of Group 1 Projects. A significant redevelopment project is defined as a project on a previously developed site that results in addition or replacement of total of 43,560 square feet (one acre) or more of impervious surface. The permit requires that in the case of a significant redevelopment project that would result in an increase of, or replacement of, more than 50 percent of the impervious surface of a previously existing development, and the existing development was not subject to stormwater treatment measures, the entire project be included in the treatment measure design. (ACCWP, 2001).

City of Oakland

City of Oakland Stormwater Ordinance

The City's stormwater protection ordinance is contained in Chapter 13.16 of the Oakland Municipal Code. The ordinance prohibits activities that would result in the discharge of pollutants to Oakland's waterways or damaging of the creeks, creek functions, or habitat. The ordinance aims to reduce pollutants in stormwater by regulating grading, excavation, and filling activities. The ordinance requires that all construction projects develop a site map, grading plan, and drainage plan prior to approval. The City of Oakland's stormwater ordinance was revised in 1997 to provide stronger provisions to safeguard creeks. The ordinance, now called the "Creek Protection, Stormwater Management, and Discharge Control Ordinance" includes permitting guidelines for development and construction projects taking place on creekside property. No creeks or waterbodies are located within or adjacent to the project site. Thus, the proposed project is not subject to the requirements of the ordinance pertaining to creekside property.

City of Oakland Grading Ordinance

The Grading Ordinance requires a permit for grading activities on private or public property for projects that exceed certain criteria, such as amount of proposed excavation, area of lane disturbance, degree of site slope, depth of excavation, etc. During construction, the proposed project is expected to result in a land disturbance greater than one acre result in a volume of excavation and/or fill of 50 cubic yards or greater. Thus, the project applicant would be required to obtain a grading permit from the City of Oakland Director of Planning and Building prior to earthwork.

Impacts and Mitigation Measures

Significance Criteria

A hydrology or water quality impact would be considered significant if it would meet any of the following criteria:

Water Quality

1. The project would have a significant hydrology or water quality impact if it would:
2. Violate any water quality standards or waste discharge requirements;
3. Result in substantial erosion or siltation onsite or offsite that would affect the quality of receiving waters;
4. Create or contribute substantial runoff that would be an additional source of polluted runoff;
5. Otherwise substantially degrade water quality;

6. Substantially alter the existing drainage pattern of the site or area (including through the alteration of the course or by increasing the rate or amount of flow of a creek, river, or stream) in a manner that would result in substantial erosion, siltation, or flooding, both on or off the site; or
7. Fundamentally conflict with elements of the City of Oakland creek protection ordinance (Oakland Municipal Code Chapter 13.16). Although there are no quantitative criteria to assess impacts, factors to be considered in determining significance include whether there is substantial degradation of water quality through (a) discharging a substantial amount of pollutants into a creek; (b) significantly modifying the natural flow of the water or the creek's capacity; (c) depositing substantial amounts of new material into a creek or causing substantial bank erosion or instability; or (d) substantially endangering public or private property or threatening public health or safety.

Groundwater Resources

The project would have a significant hydrology or water quality impact if it would:

1. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or proposed uses for which permits have been granted).

Flooding

The project would have a significant hydrology or water quality impact if it would:

1. Result in substantial flooding onsite or offsite;
2. Create or contribute substantial runoff that would exceed the capacity of existing or planned stormwater drainage systems;
3. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, that would impede or redirect flood flows;
4. Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
5. Expose people or structures to a substantial risk of loss, injury, or death involving flooding; or
6. Result in inundation by seiche, tsunami, or mudflow.

Approach to the Analysis

This impact analysis focused on potential effects on water quality and drainage patterns associated with implementation of the proposed project. The evaluation was made in light of project plans, current conditions at the project site, applicable regulations and guidelines, and previous environmental site assessments.

Water Quality Impacts

Impact HYD-1: Construction-related erosion during project development could result in adverse impacts to the water quality of the Oakland Inner Harbor and San Francisco Bay (Potentially Significant).

Earthwork activities that would occur as part of construction activities on the 9.7-acre project site include the demolition of the existing structures and pavement, the stripping of surface vegetation, partial excavation of site soils, and possibly the placement of imported engineered soils on the project site. During construction, existing impervious surfaces and established ground cover that serve to stabilize site soils would be removed from the project site, potentially resulting in increased erosion from the project site and increased sediment load in receiving waterbodies, such as the Oakland Estuary and San Francisco Bay.

Construction activities can also result in the accidental release of hazardous waste products such as adhesives, solvents, paints, and drilling and petroleum lubricants that, if not managed appropriately, can adhere to soil particles, become mobilized by rain or runoff, and degrade water quality. Hazardous waste products used during construction could also infiltrate into groundwater and degrade the quality of potential groundwater drinking sources.

To reduced the potentially significant water quality impacts associated with construction related activities for the project, the project would be required to comply wit the following City's standard conditions of approval regarding grading, drainage, erosion and sedimentation control, and NPDES Permit requirements:

Standard Condition HYD-1: *Construction Stormwater Pollution Prevention Plan (SWPPP)* - The project applicant must obtain coverage under the General Construction Activity Storm Water Permit (General Construction Permit) issued by the State Water Resources Control Board (SWRCB). The project applicant must file a notice of intent (NOI) with the SWRCB. The project applicant will be required to prepare a stormwater pollution prevention plan (SWPPP). At a minimum, the SWPPP shall include a description of construction materials, practices, and equipment storage and maintenance; a list of pollutants likely to contact stormwater; site-specific erosion and sedimentation control practices; a list of provisions to eliminate or reduce discharge of materials to stormwater; Best Management Practices (BMPs), and an inspection and monitoring program. Prior to the issuance of any construction-related permits, the project applicant shall submit a copy of the SWPPP and evidence of approval of the SWPPP by the SWRCB to the Building Services Division. Implementation of the SWPPP shall start with the commencement of construction and continue though the completion of the project. After construction is completed, the project applicant shall submit a notice of termination to the SWRCB.

•

Level of Significance after Implementation of Standard Condition: Less than Significant.

Construction Impacts on Groundwater Resources

Impact HYD-2: Project excavation activities would not deplete groundwater supplies nor substantially interfere with groundwater recharge or cause contaminated groundwater discharge to contaminate surface water. (Potentially Significant)

The majority of the project site is currently covered in impervious surfaces. Pre- and post-project impervious surface areas on the project site are anticipated to be similar, if not less, than current conditions and thus, would not result in a decrease in groundwater recharge. Water supplies for the proposed project would be provided by the East Bay Municipal Utilities District (EBMUD). The proposed project would not deplete local groundwater supplies. There are no groundwater supply wells at the project site. Thus, no impacts to groundwater levels or recharge would result.

Excavation and construction of structures with subsurface foundations or open trenches, such as building foundations or pipelines, can often intercept shallow groundwater and require dewatering (removal of groundwater by pumping) to lower groundwater levels and drying the area for construction. Depending on the nature of construction activities and given the shallow subsurface water levels, groundwater could flow into excavations that extend below the groundwater table. Groundwater is located at approximately 10 feet below ground surface in the project area. Depths of excavation would vary with individual project components and localized site conditions. The SWPPP for construction would include measures to prevent contamination of groundwater that could occur from chemicals associated with construction (e.g., fuels, solvents, etc.)

In the event subsurface groundwater is encountered, common practices employed to facilitate construction include either dewatering the excavation or shoring the sides of the excavation to reduce groundwater inflow. If dewatering methods are used, groundwater would be pumped out of the excavation to the surface and then discharged, typically to either the storm drain or sanitary sewer. Water extracted during dewatering could contain chemical contaminants (either from pre-existing sources or from equipment), or could become sediment-laden from construction activities. If dewatering is required, the project sponsor would comply with the groundwater discharge requirements and regulations of the City and the RWQCB to prevent any discharge of contaminated dewatered groundwater into the sanitary sewer or storm drain system and that would contaminate Oakland Estuary and/or San Francisco Bay. Groundwater generated during permanent dewatering would be discharged to the sanitary sewer or storm drain system with authorization of and required permits from EBMUD, or the City of Oakland Public Works Department and RWQCB. The following standard condition would further ensure that the proper discharge permits are obtained:

Standard Condition HYD-2: The City of Oakland shall require the Project Sponsor to obtain a discharge permit from EBMUD or the City of Oakland Public Works Agency and RWQCB prior to discharge of groundwater or stormwater generated from dewatering.

Level of Significance after Implementation of Standard Condition: Less than Significant.

Post-Construction Water Quality

Impact HYD-3: Implementation of the proposed project could result in development and uses that contribute to Non-Point Source (NPS) pollution levels in the Oakland Estuary and San Francisco Bay. (Potentially Significant)

Non-point source (NPS) pollutants are washed by rainwater from rooftops, landscape areas, and streets and parking areas into the drainage network. Pollutant concentrations in site runoff are dependent on a number of factors including: (1) land use conditions; (2) site drainage conditions; (3) intensity and duration of rainfall; (4) the climatic conditions preceding the rainfall event; and (5) implementation of water quality BMPs. Due to the variability of urban runoff characteristics, it is difficult to estimate pollutant loads for NPS pollutants. However, pollutants from the proposed project would be consistent with residential areas, commercial areas, landscape areas, and parking lots. Elevated levels of oil and grease, petroleum hydrocarbons, metals, and nutrients in site runoff are likely. Without proper mitigation, development of the project site could contribute to NPS pollutants in the Oakland Inner Harbor and San Francisco Bay and adversely affect water quality.

As discussed above, under the new NPDES C.3 Provisions, the proposed project would be required to consider site design features that reduce impervious areas and utilize landscape areas in between impervious areas as a storm drainage treatment feature; install source control features such as enclosed trash areas and covered car wash areas; and implement permanent treatment control features such as bio-retention areas, vegetation swales, and/or infiltration trenches. Also, if deemed appropriate by the City of Oakland Public Works Department, the project applicant may be required to utilize to retain, detain, or infiltrate runoff to match pre-project flows and durations.

According to the *C.3 Storm Water Quality Control Analysis* report prepared for the project by Luk and Associates, approximately 99 percent of the project site is currently covered with impervious surface, and the project proposes landscaping and other pervious surface area that would reduce the total impervious surface on the project site to approximately 84 percent (Luk and Associates, 2007)

The project sponsor will be required to comply with the following standard conditions of approval which is consistent with the C.3 provisions of the NPDES permit and would reduced the potentially significant impact that could result regarding NPS pollutants:

Standard Condition HYD-3a: *Post-Construction Stormwater Pollution Management Plan (SWPMP)*- The applicant shall comply with the requirements of Provision C.3 of the National Pollutant Discharge Elimination System (NPDES) permit issued to the Alameda Countywide Clean Water Program. The applicant shall submit with

the application for a building permit (or other construction-related permit) a completed Stormwater Supplemental Form for the Building Services Division. The project drawings submitted for the building permit (or other construction-related permit) shall contain a stormwater pollution management plan, for review and approval by the City, to limit the discharge of pollutants in stormwater after construction of the project to the maximum extent practicable. The post-construction stormwater pollution management plan shall include and identify the following:

- **All proposed impervious surface on the site;**
- **Anticipated directional flows of on-site stormwater runoff;**
- **Site design measures to reduce the amount of impervious surface area and directly connected impervious surfaces;**
- **Source control measures to limit the potential for stormwater pollution; and**
- **Stormwater treatment measures to remove pollutants from stormwater runoff.**

The following additional information shall be submitted with the post-construction stormwater pollution management plan:

- **Detailed hydraulic sizing calculations for each stormwater treatment measure proposed; and**
- **Pollutant removal information demonstrating that any proposed manufactured/mechanical (i.e., non-landscape-based) stormwater treatment measure, when not used in combination with a landscape-based treatment measure, is capable of removing the range of pollutants typically removed by landscape-based treatment measures.**

All proposed stormwater treatment measures shall incorporate appropriate planting materials for stormwater treatment (for landscape-based treatment measures) and shall be designed with considerations for vector/mosquito control. Proposed planting materials for all proposed landscape-based stormwater treatment measures shall be included on the landscape and irrigation plan for the project. The applicant is not required to include on-site stormwater treatment measures in the post-construction stormwater pollution management plan if he or she secures approval from Planning and Zoning of a proposal that demonstrates compliance with the requirements of the City's Alternative Compliance Program.

Prior to final permit inspection

The applicant shall implement the approved stormwater pollution management plan.

Standard Condition HYD-3b: *Maintenance Agreement for Stormwater Treatment Measures* - Prior to final zoning inspection, the applicant shall enter into the “Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement,” in accordance with Provision C.3.e of the NPDES permit, which provides, in part, for the following:

- **The applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures being incorporated into the project until the responsibility is legally transferred to another entity; and**
- **Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Quality Control Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary. The agreement shall be recorded at the County Recorder’s Office at the applicant’s expense.**

Level of Significance after Implementation of Standard Conditions: Less than Significant.

Post-Construction Runoff

Impact HYD-4: Implementation of the proposed project could alter drainage patterns on the project site, potentially having adverse effects on the volume and/or timing of peak runoff in the municipal storm drain system. (Potentially Significant)

Surface water runoff volumes and rates generated from undeveloped, unpaved areas can increase significantly when the site is paved, the impervious surface area increased, and the capability of surface water infiltration is reduced or eliminated. However, the majority of the project site is currently overlain by impervious surfaces associated with existing buildings, paved areas, and parking lots. Therefore, the proposed project is not anticipated to substantially impervious surface area nor result in associated increases in surface water runoff rates.

Although a drainage plan has not been prepared for the project site, the project drainage plan would be required to comply with C.3 Provisions, as applicable, and the City of Oakland Storm Drainage Design Guidelines. The impact associated with changes in post-construction runoff would be considered potentially significant, and implementation and compliance with **Standard Conditions HYD-3a and HYD-3b** (see above) would further reduce the potential effects of the project.

Significance After Implementation of Standard Conditions: Less than Significant.

Flooding

Impact HYD-5: The project would not result in flooding due to its proximity to a 100-year flood hazard area, or expose people or structures to other substantial risk related to flooding, seiche, tsunami, or mudflow. (Less than Significant)

The project site is located in an area designated as Flood Hazard Area C (areas of minimal flooding) and is not within the 100-year or 500-year floodplain (FEMA, 1982). The likelihood of flooding in the project area from tsunamis, seiches, or mudflows is negligible in inland areas such as the project site. In addition, the likelihood of large-scale devastation in Oakland resulting from seiches appears to be minuscule (City of Oakland, 2004a). Therefore, the project would not expose people or structures to the risk of loss due to flooding.

Mitigation: None Required.

Cumulative Impacts

Cumulative Impacts on Hydrology and Water Quality Conditions

Impact HYD-6: The increased construction activity and new development resulting from the project, in conjunction with other foreseeable development in the city, would not result in cumulatively considerable impacts on hydrology and water quality conditions. (Less than Significant)

Assuming concurrent implementation of the project with other reasonably foreseeable future projects in the vicinity, adverse cumulative effects on hydrology and water quality could include construction impacts related to increases in stormwater runoff and pollutant loading to the Oakland Estuary and San Francisco Bay. The project and other future projects in the city would be required to comply with drainage and grading ordinances intended to control runoff and regulate water quality at each development site. Furthermore, the city is generally built out with very few and relatively small undeveloped parcels that would convert from pervious to impervious surfaces. New projects would be required to demonstrate that stormwater volumes could be managed by downstream conveyance facilities and would not induce flooding. New development projects in Oakland would also be required to comply with City of Oakland uniformly-applied conditions of approval and ordinances regarding water quality, creek protection, and ACCWP NPDES permitting requirements. Therefore, the effect of the project on water quality and hydrology, in combination with other foreseeable projects, would be less than significant.

Mitigation: None Required.

References – Hydrology and Water Quality

- City of Oakland, 2003, The Guide to Oakland's Creek Ordinance, available at <http://www.oaklandpw.com/creeks/guide.htm#when>
- City of Oakland, Community and Economic Development Agency, City of Oakland General Plan, Safety Element, 2004a.
- City of Oakland, Regulations, 2004b, available at http://www.oaklandnet.com/government/info/city_regs.html
- City of Oakland, Oakland Municipal Code, Title 15, Buildings and Construction, Chapter 15.04 Oakland Amendments to the California Model Building Codes, 2004c, available at <http://bpc.iserver.net/codes/oakland/>
- Department of Water Resources (DWR), 2003. California's Groundwater Bulletin 118, Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin. Updated 2003.
- Federal Emergency Management Agency (FEMA), 1982. *Flood Insurance Rate Map (FIRM) for the City of Oakland, California, Alameda County. Community Panel 065048-0025B*. September 31, 1982.
- Luk and Associates, Fruitvale Gateway (Gateway Community) C.3 Storm Water Quality Control Analysis, April 19, 2007.
- Regional Water Quality Control Board (RWQCB), San Francisco Bay Region, San Francisco Bay Basin Water Quality Control Plan (Basin Plan), June 1995.
- Storm Water Quality Task Force, California Storm Water Best Management Practice Handbooks, January 2003, available at <http://www.cabmphandbooks.com/Documents/Construction/Construction.pdf>. United States Environmental Protection Agency (USEPA), 2003. *2002 CWA Section 303(d) List of Water Quality Limited Segments, North Coast RWQCB*, Approved July 2003.
- Western Regional Climate Center (WRCC), 2005. *Period of Record Monthly Climate Summary for Oakland WSO AP, California (046335)*. Period of Record 7/1/1948 to 12/31/2005. Available online: <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6335>, Accessed November 2, 2006.

