

4.8 Hydrology and Water Quality

This section addresses potential changes in hydrology, water quality, groundwater, and flooding conditions that could result from implementation of the Project. This section describes the existing hydrologic setting; provides an overview of applicable federal, state, and local regulatory framework; presents an analysis of potential environmental impacts; and where appropriate, identifies suitable mitigation measures to reduce the intensity of potential impacts. Information sources used to prepare this section include documents from various local, state, and federal agencies, the General Plan, and numerous published documents and maps related to the topic.

4.8.1 Environmental Setting

Hydrology and Drainage

The Project Site is located within the Walnut Creek Watershed of the Walnut Creek Valley. The Walnut Creek Watershed drains the central region of the County flowing north and emptying into Suisin Bay. Within the Walnut Creek watershed are the Grayson, Pine, San Ramon and Las Trampas sub-watersheds, through which flow the Walnut, Pine, San Ramon, Tice and Las Trampas Creeks. The Las Trampas Creek joins the San Ramon Creek near the Project Site to form Walnut Creek. The Project Site is situated in the San Ramon Creek subwatershed. Grayson and Murderers Creeks are tributaries of Walnut Creek that originate within the Briones Hills. (General Plan Figure 2 and page 3-9.)

San Ramon Creek is the major creek drainage for the San Ramon Valley, flowing north to Walnut Creek. It generally runs east of and parallel to Interstate 680, merges with several other tributaries, including Tice Creek and becomes Walnut Creek, eventually draining into Pacheco Creek, Suisun Bay, Carquinez Strait, and the San Francisco Bay. The Walnut Creek watershed is the major drainage basin in central Contra Costa County. Las Trampas Creek begins southwest of the Project Site and winds down from the uplands in a generally northeasterly direction.

The City's system of storm drains collects and channels surface water (mostly from rainfall) into a series of pipes, trenches, culverts, detention basins, and open channels which transport and empty it into San Francisco Bay. The system is based upon the natural drainage pattern determined by topography. The area surrounding the Project Site consists of both open space and urbanized land, sloping toward the east.

Climate in the Walnut Creek Valley is considered Mediterranean, where summers are dry and warm and winters are cool and wet. Annual rainfall in this region is variable depending on the year, but averages approximately 21 inches per year with the majority of rainfall occurring between October and April. Localized flooding related to extreme storm events can occur along unprotected reaches of San Ramon Creek, especially in the valley lowlands to the northeast.

Local Hydrology

Both Las Trampas and San Ramon creeks cross the Project Site as part of subsurface drainage culvert systems. The Las Trampas Creek box culvert runs north-south along the west of South Main Street beneath Broadway Plaza and continues underground to its confluence with San Ramon Creek beneath Liberty Bell Plaza. The San Ramon Creek box culvert enters the Project Site at Newell Avenue as an open channel, and converts to a 50-foot by 25-foot subsurface box culvert at Macy's. The culvert extends through the Project Site under the existing two-level parking structure and Nordstrom before crossing Mt. Diablo Boulevard to join Las Trampas Creek and become Walnut Creek. Liberty Bell Plaza, which is part of Broadway Pointe, is at the northwest corner of South Broadway and Mt. Diablo Boulevard. Both culverts were originally constructed in the 1960s.

Groundwater

Groundwater in the Project Site and surroundings are typically found at shallow depths and contained within the alluvial sediments. Borings advanced as part of the geotechnical investigation for the site encountered groundwater at depths ranging from approximately 22 to 28 feet below ground surface (Smith Emery, 2011). The shallow groundwater most likely flows through the alluvial sediments on top of the bedrock. Groundwater resources are not generally used in this area due to availability of municipal surface water supplies. The area available for groundwater recharge depends on the amount of exposed ground area. Placement of impervious surfaces such as roads, parking lots, and structures decreases the recharge area and direct the water to surface drainage features.

Flooding

In general, the risk of flooding in urban areas is dependent on a variety of factors including the amount and intensity of rainfall, the ratio of impervious surface area to pervious surface areas, and the capacity/condition of the storm drain system. It is the function of the storm drain system to move surface runoff into gutters, storm drain inlets, channels, creeks, collection basins, and eventually to the receiving body (San Francisco Bay). Silt and debris in the storm drain system can at times impede water flow causing water to back up and flood surrounding areas. The City's Streets/Building & Equipment Maintenance Division provides street cleaning and sweeping service on a scheduled basis (and during other times, as necessary), and maintains and repairs the municipal storm water drain system, which includes catch basins, open ditches and channels, hillside valley-gutters, box culverts, and subsurface drains, within the Project Site and surroundings.

Within Walnut Creek, there are localized areas subject to potential flooding during certain large storm events (i.e., 100-year events). In general, storm flows can increase in surface watercourses due to the level of development and the addition of impervious surfaces. A number of flood control improvements have been made to Walnut Creek and its tributaries by the U.S. Army Corps of Engineers, the State of California, and the Contra Costa County Flood Control District. Some of the problem areas have been realigned and modified including diversions, concrete box

culverts, and other flow capacity improvements to accommodate storm flows that could occur in this region. The Project Site itself lies outside of any 100-year Flood Zone as designated by the Federal Emergency Management Agency (“FEMA”) (Smith-Emery, 2011).

Water Quality

During periods of wet weather, rain carries pollutants and sediments from all parts of a watershed into surface water bodies such as storm drains, streams, rivers, reservoirs, or marshes. In an urban setting, natural drainage patterns have been altered and stormwater runoffs, as well as non-storm discharges (irrigation water, accidental spills, washdown water, etc.), pick up sediments and contaminants from land surfaces, and transport these pollutants into surface and ground water. These diffuse sources of pollutants range from parking lots, bare earth at construction sites, agricultural sites and a host of many other sources. The total amount of pollutants entering aquatic systems from these diffuse, nonpoint sources is now generally considered to be greater than that from any other source, such as pipe discharges (point source).

In the Project Site and surroundings, the storm drain system is designed to prevent flooding by channeling stormwater runoff northward via channels and culverts toward eventual discharge to Suisun Bay. However, this runoff is not treated, and can potentially deliver pollutants to Suisun Bay from any impermeable surface within the area. Stormwater runoff accounts for up to 80 percent of the pollution which eventually empties into San Pablo Bay, and can contain the following pollutants: oil, grease, or antifreeze from leaking cars or trucks; paint or paint products; leaves or yard waste; pesticides, herbicides, or fertilizers from yards and gardens; solvents and household chemicals; animal wastes, litter, or sewer leakage; and construction debris such as fresh concrete, mortar, or cement.

4.8.2 Regulatory Setting

Federal

Clean Water Act (CWA)

The CWA (33 U.S.C. 1251 – 1376) established the basic structure for regulating discharges of pollutants into the waters of the U.S. and gave the U.S. EPA the authority to implement pollution control programs such as setting wastewater standards for industry. The CWA sets water quality standards for all contaminants in surface waters. The statute employs a variety of regulatory and nonregulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The U.S. Army Corps of Engineers has jurisdiction over all waters of the U.S. including, but not limited to, perennial and intermittent streams, lakes, and ponds, as well as wetlands in marshes, wet meadows, and side hill seeps. Under Section 401 of the CWA every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with state water quality standards.

The National Pollutant Discharge Elimination System (NPDES) permit program under the CWA controls water pollution by regulating point and nonpoint sources that discharge pollutants into “waters of the U.S.” California has an approved state NPDES program. The U.S. EPA has delegated authority for NPDES permitting to the California State Water Resources Control Board (SWRCB), which has nine regional boards. The San Francisco Bay RWQCB regulates water quality in the Project Site and surroundings.

Section 303(d) of the CWA requires that each state identify water bodies or segments of water bodies that are “impaired” (i.e., not meeting one or more of the water quality standards established by the state). These waters are identified in the Section 303(d) list as waters that are polluted and need further attention to support their beneficial uses. Once the water body or segment is listed, the state is required to establish Total Maximum Daily Load (TMDL) for the pollutant causing the conditions of impairment. TMDL is the maximum amount of a pollutant that a water body can receive and still meet water quality standards. Generally, TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The intent of the Section 303(d) list is to identify water bodies that require future development of a TMDL to maintain water quality.

State

Porter-Cologne Water Quality Control Act and California’s Water Boards

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides the basis for water quality regulation within California. This Act established the authority of the SWRCB and the nine RWQCBs. The SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and enforcement activities. The Project Site lies within the jurisdiction of the RWQCB, San Francisco Bay region.

The Porter-Cologne Water Quality Control Act requires the SWRCB to adopt statewide water quality control plans, the purpose for which is to establish water quality objectives for specific water bodies. In the San Francisco Bay region, the Water Quality Control Plan, known as the Basin Plan, is the RWQCB’s master policy document. The Basin Plan contains descriptions of the legal, technical, and programmatic basis of water quality regulation in the region (RWQCB, 1995). The Act also authorizes the NPDES program, which established effluent limitations and quality requirements for discharges to waters of the State. In the San Francisco Bay region, the RWQCB has included permit requirements for stormwater runoff under the NPDES program since 1991. The City of Walnut Creek as a co-permittee of Contra Costa Clean Water Program (discussed below) administers the stormwater program.

The California Department of Fish and Game (CDFG) has jurisdiction over any activity that could affect the bank or bed of any stream that has value to fish and wildlife. If any changes are proposed along a creek or waterway within its jurisdiction, a Streambed Alteration Agreement required under the Department of Fish and Game Code sections 1601 or 1603. The U.S. Army Corps of Engineers also has jurisdiction over any “fill” to “waters of the United States,” including

wetlands, under Section 404 of the Clean Water Act. The San Francisco Bay RWQCB administers the 401 Water Quality Certification of the Clean Water Act to ensure that such activities adhere to state water quality standards. The RWQCB has review authority of Section 404 permits administered by the Corps.

Regional Water Quality Control Basin Plan

The San Francisco Bay RWQCB prepared the *San Francisco Bay Basin Water Quality Control Plan* (Basin Plan) for San Francisco Bay. The Basin Plan contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the region and describes beneficial uses of major surface waters and their tributaries. For development under the Project, the RWQCB is responsible for regulating construction activities to ensure the protection of the beneficial uses of any receiving waters such as Walnut Creek and Suisun Bay.

Construction Activity Permitting

Stormwater discharges from construction activities on one acre or more are regulated by the RWQCB and are subject to the permitting requirements of the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit, 99-08-DWQ). Effective July 1, 2010, all dischargers have been required to obtain coverage under the Construction General Permit Order 2009-0009-DWQ adopted on September 2, 2009. The RWQCB established the General Construction Permit program to reduce surface water impacts from construction activities. The Project would be required to comply with the current NPDES permit requirements to control stormwater discharges from the construction site. The General Construction Permit requires the preparation and implementation of a stormwater pollution prevention plan (SWPPP) for construction activities. The SWPPP must be prepared before the construction begins, and in certain cases, before demolition begins. The SWPPP must include specifications for BMPs that would need to be implemented during project construction. BMPs are measures that are undertaken to control degradation of surface water by preventing soil erosion or the discharge of pollutants from the construction area. The SWPPP must describe measures to prevent or control runoff after construction is complete and identify procedures for inspecting and maintaining facilities or other project elements. Required elements of a SWPPP include:

1. Site description addressing the elements and characteristics specific to the site
2. Descriptions of BMPs for erosion and sediment controls;
3. BMPs for construction waste handling and disposal;
4. Implementation of approved local plans;
5. Proposed post-construction controls; and
6. Non-stormwater management.

Examples of typical construction BMPs include scheduling or limiting activities to certain times of year, installing sediment barriers such as silt fence and fiber rolls, maintaining equipment and vehicles used for construction, tracking controls such as stabilizing entrances to the construction site, and developing and implementing a spill prevention and cleanup plan. Non-stormwater

management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The California Stormwater Quality Association established BMPs for the State of California in the *California Storm Water Best Management Practice Handbook* (2003).

Dewatering Permit

Construction activities such as excavation and trenching in areas with shallow groundwater would require dewatering, which would be subject to the SWRCB construction dewatering permit requirements. Dewatering operations are regulated under State requirements for stormwater pollution prevention and control. Discharge of non-stormwater from a trench or excavation that contains sediments or other pollutants to sanitary sewer, storm drain systems, creek bed (even if dry), or receiving waters is prohibited. Discharge of uncontaminated groundwater from dewatering is a conditionally exempted discharge by the RWQCB. However, the removed water could potentially be contaminated with chemicals released from construction equipment or sediments from excavation. Therefore, disposal of dewatering discharge would require permits either from the RWQCB for discharge to surface creeks and groundwater or from local agencies for discharge to storm or sanitary sewers. The SWRCB lists non-stormwater discharge controls specifically for dewatering operations. The control measures would be implemented by the project sponsor during construction activities at the Project Site. Discharge of water resulting from dewatering operations would require an NPDES Permit, or a waiver (exemption) from the RWQCB, which would establish discharge limitations for specific chemicals (if they occur in the dewatering flows).

Municipal Storm Water Permitting

Federal regulations authorize the issuance of system-wide municipal permits by the RWQCB. The RWQCB regulates municipalities for control of stormwater runoff pollution under the NPDES. Co-permittees of the Contra Costa Clean Water Program are responsible for development and implementation of storm water management plans (SWMPs) to prevent the pollution of surface runoff. Discharge of storm water from the City is permitted through a Joint Municipal NPDES Permit issued to Contra Costa County, 19 of its incorporated cities and the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program. The permit incorporates specific requirements to limit storm water pollutant discharges associated with certain new development and significant redevelopment projects. The requirements apply to the City as the Discharger of storm water, the Contra Costa Clean Water Program as the Permit Holder, and specific new development and redevelopment projects. Therefore, Walnut Creek is part of the county-wide program implemented by the County in compliance with NPDES permit requirements.

Local

Contra Costa Clean Water Program

The Contra Costa County Clean Water Program (CCCWP) is a cooperative entity formed of Contra Costa County, the Contra Costa Flood Control & Water Conservation District and

16 incorporated cities. The Regional Water Board added Provision C.3 in 2003, and the permittees began implementing the provision in 2005. The Regional Water Board added hydrograph modification management (flow control) requirements in 2006. In October 2009, the San Francisco Bay Regional Water Board included Contra Costa municipalities in its first Municipal Regional Permit (MRP). The MRP applies to 77 municipal Bay Area permittees including Walnut Creek and supersedes the countywide stormwater NPDES permits. The RWQCB mandated that the municipalities (or co-permittees) impose new, more stringent requirements to control runoff from development projects within their jurisdiction. The RWQCB added Provision C.3 in the permit that requires the Cities and the County to implement BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable standard and establishes specific thresholds and criteria. The C.3 requirements are not only intended to reduce short-term construction-related stormwater runoff and resultant pollution but they are also intended to reduce the long-term adverse effects by requiring permanent runoff control measures as a part of development projects.

In summary, MRP Provision C.3 requires that applicable new developments and redevelopments:

- Design the site to minimize imperviousness, detain runoff, and
- Infiltrate, reuse or evapotranspirate runoff where feasible
- Cover or control sources of stormwater pollutants
- Treat runoff prior to discharge from the site
- Ensure runoff does not exceed pre-project peaks and durations
- Maintain treatment and flow-control facilities

General Plan 2025 Policies

The General Plan contains the following relevant goal, policies, and actions in Chapter 6, Safety and Noise, related to hydrology, water quality, and flooding in the Project Site and surroundings:

Built Environment

- **Goal 32:** Meet or exceed State and federal water-quality standards.
 - *Policy 32.1:* Support regional, State, and federal clean water efforts.
 - Action 32.1.1: Implement the Stormwater Management Plan.
 - Action 32.1.2: Enforce the National Pollution Discharge Elimination System (NPDES) permit regulations.
 - Action 32.1.3: Seek Regional Water Quality Control Board NPDES exemptions for low- and moderate income housing and transit village projects.
 - Action 32.1.4: Prohibit development in areas particularly susceptible to erosion and sediment loss.
 - Action 32.1.5: Prepare information-and-action handouts on water-quality best management practices and provide this information with project application packets.

- *Policy 32.2:* In redevelopment projects in the Core Area, evaluate the desirability of specific, off-site, source-control measures.
- *Policy 32.3:* Maximize infiltration of rainwater into the soil, where appropriate.
 - Action 32.3.1: Reduce the amount of impervious surfaces in new development and redevelopment. (See Safety and Noise Action 2.1.1.)
 - Action 32.3.2: Require that impervious surfaces not drain directly into storm drains. (See Safety and Noise Action 2.1.1.)
- *Policy 32.4:* Reduce the transport of urban runoff and surface pollutants offsite.
 - Action 32.4.1: Verify the effectiveness of stormwater treatment facilities.
 - Action 32.4.2: Verify, through the commercial, industrial, and illicit discharge inspection programs, that interior floor drains are connected to the sanitary sewer system.
- *Policy 32.5:* Encourage preservation of natural water bodies and drainage systems.
 - Action 32.5.1: Retain natural water bodies and leave drainage systems undisturbed while allowing construction of adjacent creek walks.
 - Action 32.5.2: Prioritize onsite impacts and their mitigations.
 - Action 32.5.3: Require participation in offsite or regional programs—including stream restoration—that provide water-quality benefits within the same watershed, wherever development and/or redevelopment projects disturb natural water bodies or drainage systems.
- *Policy 32.6:* Reduce pollutant loading in the wastewater system.
 - Action 32.6.1: Apply best-management practices to discharges to the sanitary sewer system.
 - Action 32.6.2: Establish a pesticide-reducing protocol for city parks.

Safety and Noise

- **Goal 2:** Reduce the potential for flooding in flood-prone areas.
 - *Policy 2.1:* Reduce the risk of property damage and personal injury due to flooding.
 - Action 2.1.1: Limit the amount of impervious surface in flood-prone areas.
 - Action 2.1.2: Limit runoff in flood-prone areas.

4.8.3 Impacts and Mitigation Measures

Significance Criteria

The Project would have a significant impact if it would:

1. Violate any water quality standards or waste discharge requirements;
2. 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 which would not support existing land uses or proposed uses for which permits have been granted);

3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
4. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or increasing the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
5. Create or contribute substantial runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide additional sources of polluted runoff;
6. Otherwise substantially degrade water quality;
7. 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;
8. Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
9. Expose people or structures to a substantial risk of loss, injury or death involving flooding as a result of the failure of a levee or dam;
10. Result in inundation by seiche, tsunami, or mudflow;

These criteria are applied broadly. Under CEQA, the analysis extends only to whether the Project would cause impacts on the existing environment. Hydrology impacts to future buildings, surfaces, residents and workers of the Project are not within the scope of a CEQA analysis. However, the City has directed that this EIR also evaluate such onsite issues. Accordingly, the above criteria are applied to non-CEQA issues as well. For ease of reference, both CEQA and non-CEQA issues are addressed together, which means that phrases such as “impact” and “mitigation measure” are applied to both CEQA and non-CEQA analysis. However, insofar as the non-CEQA issues are concerned, “impacts” are regulatory issues, and “mitigation measures” is used to refer to recommended conditions of approval.

Approach to Analysis

This following impact analysis focuses on potential impacts of the Project related to hydrology and water quality. The evaluation considered potential development under the Project, current conditions at the site and vicinity, and applicable regulations and guidelines.

Topics Briefly Addressed

Some of the above CEQA criteria are not considered relevant to the Project based upon the Project characteristics and geographic context. These following criteria would not result in impacts and therefore are not discussed further in this EIR:

- **Criterion 2: Depletion of Groundwater Supplies.** The underlying groundwater aquifer in the Project Site and surroundings is not used for water supply purposes. No groundwater extraction beyond minor temporary dewatering activities that may be required for construction would be facilitated by the Project. The Project Site is currently largely developed and covered in impervious surfaces. The Project may include improvements to stormwater management such as design features that would increase pervious surfaces and, as a result, groundwater recharge. Therefore, there is no adverse potential impact associated with development facilitated by the Project under either development scenario relative to the depletion of groundwater supplies.
- **Criteria 7 and 8: 100-year Flood Zone.** The Project Site is not located in a 100-year flood zone as indicated in maps compiled by FEMA. The site is already developed and would not increase flood flows. Therefore, based on project plans and site location, there would be no impact related to placement in a flood zone under either development scenario.
- **Criterion 10: Seiche Tsunami, Mudflows.** The Project Site and surroundings are located inland and is not within an area subject to seiches, tsunamis or mudflows. Therefore, there is no impact associated with these hazards for either development scenario.

Impacts by Project Scenario

For all significance criteria relating to hydrology and water quality, the impacts are the same for the Maximum Commercial Scenario and the Maximum Mixed-Use Scenario. Therefore, both scenarios are discussed under a single Impact Statement for each criterion.

Impacts

Nonconformity with Regulations and Degradation of Water Quality

The Project would not violate water quality standards, violate waste discharge requirements, or otherwise degrade water quality by increasing pollutants in stormwater runoff (Criteria 1, 5 and 6). (Less than Significant)

As mentioned above, stormwater pollution, during both construction and operational phases of the Project, can include oils, fuels, heavy metals, pesticides, and other contaminants of concern that settle on city streets and parking lots that are subsequently washed into local waterways during storm events. Pollutants also include sedimentation caused by erosion from such activities as ground clearing for construction, chemicals used for lawn and garden maintenance, and litter. New and increased levels of urban land uses can increase the level of stormwater pollution that could ultimately wash to local creeks and ultimately Suisun Bay which is already identified as an impaired water of the State. Any increased pollution that would violate water quality standards is considered a potentially significant impact.

Many of the guidelines, ordinances, and permit requirements discussed above in the Regulatory Setting would be effective in controlling pollutants in stormwater runoff. The Project Site is currently developed and any addition of design features that would reduce stormwater runoff volumes would ultimately also be effective in reducing pollutant loading to receiving waters. The Project would include treatment of stormwater runoff, which would be an improvement over

existing conditions. New development would include design standards consistent with the Contra Costa County Clean Water Program and the Storm Water Management Plan which include pollutant source control features such as use of landscaped areas for infiltration of stormwater, permeable paving, stormwater detention basins, and parking lots with bio-infiltrations systems. Incorporation of these design features would ensure that development under the Project would improve the water quality of the runoff that would be directed offsite to downstream receiving waters. During construction, development under the Project would be subject to the NPDES General Construction Permit requirements which include preparation of a Stormwater Pollution Prevention Plan (“SWPPP”) along with a Notice of Intent prior to construction. Implementation of the SWPPP would begin with the commencement of construction and continue through the completion of the project. At a minimum, the SWPPP would 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, list of provisions to eliminate or reduce discharge of materials to stormwater and BMPs for fuel and equipment storage. The Project Applicant would develop and implement a monitoring program as required under the General Construction Permit. The project sponsor would require the contractor to conduct inspections of the construction site prior to anticipated storm events and after the actual storm events. During extended storm events, inspections would be conducted after every 24-hour period. The goals of these inspections are:

- to identify areas contributing to stormwater discharge,
- to evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly installed and functioning in accordance with the General Construction Permit and
- to evaluate whether additional control practices or corrective maintenance activities are needed.

Equipment, materials and workers would be available for rapid response to spills and/or emergencies. All corrective maintenance or BMPs would be performed as soon as possible, depending upon worker safety. Upon project completion, the project sponsor would submit a Notice of Termination to the RWQCB.

Therefore, this would be a less-than-significant impact.

Mitigation: None required.

Potential to Alter Existing Drainage Patterns

The Project could potentially alter existing drainage patterns, causing downstream erosion, siltation, or flooding (Criteria 3 and 4). (Less than Significant)

In general, changes in urban development can be accompanied by decreases in natural ground cover and an increase in impervious surfaces (such as paved areas and buildings). New development, facilitated by the Project, would not occur on vacant sites and therefore would not significantly alter existing drainage patterns. Construction during development could expose soils currently covered by asphalt or structures with the potential for the effects of wind and precipitation to cause erosion and siltation.

The Project Site is already largely developed and the majority of the site is covered by impervious surfaces, such as access roads, buildings, and parking lots. Development under the Project would include design features that incorporate stormwater management guidelines as required by more recent local regulations. These design features might alter the drainage patterns. However the Project will not increase the amount of impervious surfaces, and there will potentially be a net reduction in stormwater flows offsite through the addition of pervious surfaces (e.g., sidewalk planters, planter strips, permeable pavers, porous asphalt parking lots, stormwater detention and infiltration, etc.). Because the Project will not cause an increase in stormflows, there is no significant impact.

In addition, site-specific project plans would be required to adhere to MRP C.3 provisions, which would require source controls of stormwater volumes either through detention or local infiltration. Adherence to these existing stormwater requirements would generally improve drainage facilities over existing conditions, require erosion and sedimentation control measures for construction and operation, comply with the local Storm Water Management Plan, and require design standards that would reduce the amount of stormwater going offsite to the extent practical.

As noted above, during construction, development under the Project would be subject to the NPDES General Construction Permit requirements which include preparation of a SWPPP. The SWPPP must include site specific erosion and sedimentation control practices. Incorporation of these guidelines, ordinances, and permit requirements would ensure that new development or redevelopment projects facilitated by the project would limit the amount of runoff that would be directed offsite and could even reduce volumes over existing conditions. Adherence to these requirements would also be effective in minimizing the potential for erosion or siltation to affect receiving waters. Therefore this would be a less than significant impact to downstream receiving waters.

Mitigation: None required.

Exposure of People to Flooding Risk

The Project could potentially expose people or structures to risk of flooding due to the failure of a dam (Criterion 9). (Less than Significant)

Several reservoirs are located within the Project Site and surroundings including the Lafayette Reservoir. According to maps compiled by the Association of Bay Area Governments (ABAG), the Project Site is located in an inundation area for the Lafayette Reservoir under a catastrophic failure event. Lafayette Reservoir is maintained by the East Bay Municipal Utility District (EBMUD), which has a comprehensive Dam Safety Program. Engineers monitor dams using instruments, monthly visual inspections and periodic dam safety reviews to prevent loss of life, personal injury and property damage from the failure of dams. The safety of each dam is reevaluated with advances in geotechnical, structural and earthquake engineering and also if there is evidence of seepage or ongoing ground movement. Most of these dams are under the jurisdiction of the California Division of Safety of Dams (DSOD) which imposes strict standards for the design, maintenance, and monitoring of dams under its jurisdiction. DSOD requirements for siting, engineering, construction, and monitoring of dams are continually improved as knowledge increases as to how and why dams fail. With adherence to these requirements and continued monitoring, the likelihood of a seismic event causing catastrophic failure is considered to have a very low potential for occurrence. The Project does not include any attributes that would increase or decrease the likelihood of a catastrophic failure. Therefore, the risk of flooding due to dam failure is considered less than significant.

Mitigation: None required.

Cumulative Impact

Geographic Context

The cumulative geographic context for hydrology and water quality impacts is the Walnut Creek Watershed. This area includes the City of Walnut Creek and its surrounding areas.

Cumulative Hydrology and Degradation of Water Quality

The Project, in combination with other past, present, existing, approved, pending, and reasonably foreseeable future plans and project in the vicinity, could potentially introduce additional non-point source pollutants to surface waters. (Less than Significant)

The Project would accommodate future urban development that would have the potential to alter drainage patterns and impact water quality. In addition, any increases in impervious surfaces could create higher erosion rates as well as reduce groundwater recharge. The Project and other present and future projects in the region would be required to comply with drainage and grading ordinances intended to control runoff and regulate water quality at each development site. New projects are required to demonstrate adequate capacities of stormwater volumes that would be managed by downstream conveyance facilities. New development requirements imposed by the

MRP C.3 provisions include standards that address stormwater runoff quantities (consequently reducing flooding risks) and water quality. By promoting Low Impact Development drainage improvements that facilitate onsite infiltration and treatment of stormwater runoff through bio-filtration, for example, future development would contain drainage improvements that minimize impacts to receiving waters both in terms of minimizing flooding risks and potential water quality stressors. The MRP C.3 requirements, and National Pollution Discharge Elimination System (NPDES) permitting requirements apply throughout the region. All construction work would require permits from the Regional Water Quality Control Board which requires all activities to incorporate Best Management Practices that minimize adverse effects to water quality. Final design plans would be required to include storm water management features that address stormwater quantity and quality and that would minimize the potential for adverse impacts of receiving waters. Therefore, the effect of the Project on water quality and hydrology, in combination with other past, present, and foreseeable projects would not be significant.

Mitigation: None required.

4.8.4 References

Association of Bay Area Governments (ABAG), *Dam Inundation Areas for Walnut Creek*, <http://www.abag.ca.gov/cgi-bin/pickdamx.pl>, accessed October 28, 2011.

Smith Emery San Francisco, *Geotechnical Investigation Broadway Plaza Shopping Center, Walnut Creek California*, July 15, 2011.