

## 3.9 - Hydrology and Water Quality

### 3.9.1 - Introduction

This section describes the existing hydrology and water quality setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Contra Costa County General Plan and memos provided by the Contra Costa County Public Works Department. During the Environmental Impact Report (EIR) scoping period, no comments were received related to the project's potential hydrologic impacts.

### 3.9.2 - Environmental Setting

#### Surface Hydrology

##### *Walnut Creek Watershed*

The Contra Costa Clean Water Program (CCCWP) designates watersheds in Contra Costa County. According to the CCCWP, the Walnut Creek Watershed is composed of the following subwatersheds: Grayson-Murderers, Concord, Pine-Galindo, San Ramon, and Las Trampas. The overarching Walnut Creek Watershed and its tributaries encompass 93,556 acres in Central Contra Costa County. All tributaries within the Walnut Creek Watershed eventually drain into Suisun Bay and ultimately the Pacific Ocean.<sup>1</sup>

##### *Project Site*

The project site is located within the Grayson-Murderer's Creek Subwatershed within the overarching Walnut Creek Watershed. The project site does not contain any creeks or bodies of water. The closest creek to the project site is Walnut Creek located approximately 1,500 feet to the east. The project site generally slopes 1 percent to the northwest.<sup>2</sup>

#### Surface Water Quality

##### *Contra Costa County*

Surface water quality in Contra Costa County is monitored by the San Francisco Bay Regional Water Quality Control Board (RWQCB) and Contra Costa County. The San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan) outlines the beneficial water uses that the State Water Board will protect, and the water quality objectives and strategies for achieving these objectives.

##### *Project Site*

The project site is located in Contra Costa County and would be subject to regulations imposed by the San Francisco Bay RWQCB and Contra Costa County.

<sup>1</sup> Contra Costa Clean Water Program (CCCWP)

<sup>2</sup> BKF. Preliminary Stormwater Control Plan, page 2. October 9, 2018.

## Groundwater Basin Hydrology

### ***Contra Costa County Area***

The CCWD 2015 Urban Water Management Plan (UWMP) identified the Ygnacio, Clayton, Pittsburg Plain, and Tracy groundwater basins as the primary groundwater basins within its service area. The CCWD does not manage groundwater nor does it use groundwater to meet water demand.

The Ygnacio Valley Groundwater Basin is located in northern Contra Costa County along the south shore of Suisun Bay. The basin surface area is approximately 15,900 acres bounded by Suisun Bay to the North, Interstate 680 to the west, by the Concord Fault to the east, and by the City of Walnut Creek to the south.<sup>3</sup> The Ygnacio Valley Groundwater Basin underlies the City of Pleasant Hill and City of Walnut Creek.

The Ygnacio Valley Basin occupies a structural depression between the Berkeley Hills and the Diablo Range. Thick alluvial deposits that cover a faulted and folded complex of consolidated Cretaceous and Tertiary rocks underlie the basin. The water-bearing units in the basin are Quaternary alluvium and alluvial valley fill deposits. Aquifers in the basin area are hydrologically connected to the Sacramento River.<sup>4</sup>

### ***Project Site***

The project site does not contain active groundwater wells and is located within the boundaries of the Ygnacio Valley Groundwater Basin.

## Groundwater Water Quality

### ***Contra Costa County Area***

According to California Department of Water Resources Bulletin 118: Ygnacio Valley Groundwater Basin, no published groundwater quality data is available for the Basin.<sup>5</sup>

### ***Project Site***

The project site is located within the Ygnacio Valley Groundwater Basin under the jurisdiction of the San Francisco Bay RWQCB.

## Stormwater Runoff

### ***Contra Costa County***

The San Francisco Bay RWQCB administers the National Pollution Discharge Elimination System (NPDES) stormwater permitting program and regulates stormwater in the San Francisco Bay region. Contra Costa County is a permittee under the Phase II NPDES Municipal Stormwater Permit. Contra Costa County implements the County-specific components of the CCCWP.

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<sup>3</sup> Contra Costa County. 2016 California Groundwater Bulletin 118. Website: [https://www.contracosta.ca.gov/DocumentCenter/View/34130/CDWR-2004\\_Ygnacio-Valley-Bulletin-118](https://www.contracosta.ca.gov/DocumentCenter/View/34130/CDWR-2004_Ygnacio-Valley-Bulletin-118). Accessed November 8, 2018.

<sup>4</sup> *Ibid.*

<sup>5</sup> Department of Water Resources, California's Groundwater Bulletin 118. Ygnacio Valley Groundwater Basin.

The Contra Costa County Flood Control and Water Conservation District guides regional drainage plans throughout incorporated and unincorporated County areas. The Flood Control and Water Conservation District owns property throughout the County for the purpose of constructing and maintaining regional flood control basins, channels, and creeks.<sup>6</sup>

### **Project Site**

The project site is located in Drainage Area 44, which is “unformed.”<sup>7</sup> Drainage Areas are formed to collect fees from developers to pay for planned drainage infrastructure including detention basins, pipes, channels, and related costs. An unformed drainage area is a watershed that has been identified, but does not have development fees. The nearest point of connection to Drainage Area 44 is located approximately 160 feet to the north along Las Juntas Way; however, the existing elevation difference between the invert for the catch basin and the invert of the proposed storm drain leaving the project site would not allow for positive drainage.

A private 18-inch storm drain is located in Roble Road bordering the project’s northern boundary. The nearest point of connection to this drain is approximately 250 feet to the east of the project site, and drains eastward to the Walnut Creek Channel within Drainage Area 44. The applicant does not have permission to construct new storm drainage infrastructure in this private street.

The project therefore proposes to connect to Drainage Area 44B. A public storm drain is located in Del Hombre Lane bordering the project site’s western boundary, and the nearest point of connection is at the intersection of Del Hombre Lane and Roble Road. This drain connects to an 84-inch storm drain line in Iron Horse Trail.<sup>8</sup>

## **Flooding and Inundation**

### **Contra Costa County**

#### *100-year Flood*

Flood hazard areas—those areas susceptible to flooding—are mapped by the Federal Emergency Management Agency (FEMA). FEMA maps do not take into account future conditions. To protect such areas from flood hazards, FEMA administers the National Flood Insurance Program (NFIP). The NFIP is a federal program created to avert future flood losses through building and zoning ordinances and to provide federally backed flood insurance protection for property owners. The County is a participant in the NFIP.

To support the NFIP, FEMA publishes Flood Insurance Rate Maps (FIRMs) for participating communities, which are used for flood insurance and floodplain management purposes. The FIRMs delineate different special flood hazard area zones. Special flood hazard areas associated with the 1 percent probability of annual exceedance are zones that begin with the letter “A” (e.g., Zone A, Zone AE, and Zone AO). FEMA released preliminary FIRM 06013C0291F for the County on June 16, 2009. The project site is listed under Zone X—an area of minimal flood hazard.

<sup>6</sup> Contra Costa County, Flood Control District. Website: <http://www.cccounty.us/5586/Flood-Control>. Accessed 11/19/2018.

<sup>7</sup> BKF. Technical Memorandum. May 23, 2018.

<sup>8</sup> BKF. Preliminary Stormwater Control Plan. October 9, 2018.

### *Mudflow*

Mudflows typically occur on steep slopes where vegetation is not sufficient to prevent rapid erosion.

### **Project Site**

#### *100-year Flood*

According to FEMA FIRM Map 06013C0291F effective June 16, 2009, the project site is located within Zone X—Area of Minimal Flood Hazard.<sup>9</sup>

### *Mudflow*

The project site is relatively flat and does not contain steep, unvegetated slopes susceptible to mudflows.

## **3.9.3 - Regulatory Framework**

### **Federal**

#### ***Clean Water Act***

The Clean Water Act (CWA) (33 United States Code [USC] § 1251, *et seq.*) is the major federal legislation governing the water quality aspects of construction and operation of the project or variant. The CWA established the basic structure for regulating discharges of pollutants into waters of the United States (not including groundwater) and waters of the State. The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” The CWA establishes the basic structure for regulating the discharge of pollutants into waters of the United States.

The CWA authorizes the United States Environmental Protection Agency (EPA) to implement pollution control programs. Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters, unless an NPDES permit is obtained. In addition, the CWA requires each state to adopt water quality standards for receiving water bodies and to have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality objectives necessary to support those uses.

Responsibility for protecting water quality in California resides with the State Water Board and nine RWQCBs. The State Water Board establishes Statewide policies and regulations for the implementation of water quality control programs mandated by federal and State water quality statutes and regulations. The RWQCBs develop and implement water quality control plans (basin plans) that consider regional beneficial uses, water quality characteristics, and water quality problems. Water quality standards applicable to the project are listed in the San Francisco Bay’s (Region 2) RWQCB’s Basin Plan.

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<sup>9</sup> Federal Emergency Management Agency (FEMA). FEMA Flood Map Service Center: Search By Address. Website: <https://msc.fema.gov/portal/search?AddressQuery=1350%20treat%20blvd%2C%20Walnut%20Creek%2C%20CA#searchresultsanch> or. Accessed December 27, 2018.

### *Section 303—Water Quality Standards and Total Maximum Daily Loads*

Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the United States based on the water body's designated beneficial use. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based on biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards.

CWA Section 303(d) requires states and authorized Native American tribes to develop a list of water quality-impaired segments of waterways. The list includes waters that do not meet water quality standards necessary to support a waterway's beneficial uses even after the minimum required levels of pollution control technology have been installed. Listed water bodies are to be priority ranked for development of a total maximum daily load (TMDL). A TMDL is a calculation of the total maximum daily load (amount) of a pollutant that a water body can receive on a daily basis and still safely meet water quality standards. The TMDLs include waste load allocations for urban stormwater runoff as well as municipal and industrial wastewater discharges, with allocations apportioned for individual Municipal Separate Storm Sewer Systems (MS4s) and wastewater treatment plants, including those in Contra Costa County. For stormwater, load reductions would be required to meet the TMDL waste load allocations within the 20 years required by the TMDLs.

The State Water Board, RWQCBs, and EPA are responsible for establishing TMDL waste load allocations and incorporating approved TMDLs into water quality control plans, NPDES permits, and waste discharge requirements (WDRs) in accordance with a specified schedule for completion. The San Francisco Bay RWQCB develops TMDLs for the Contra Costa County area.

### *Section 401—Water Quality Certification*

Section 401 of the CWA requires compliance with State water quality standards for actions within State waters. Under CWA Section 401, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain a certificate from the appropriate agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the State Water Board delegates authority to either grant water quality certification or waive the requirements to the nine RWQCBs. The San Francisco Bay RWQCB is responsible for the project site.

### *Section 402—National Pollution Discharge Elimination System Permits*

The RWQCBs administer the NPDES stormwater permitting program, under Section 402(d) of the federal CWA, on behalf of EPA. The objective of the NPDES program is to control and reduce levels of pollutants in water bodies from discharges of municipal and industrial wastewater and stormwater runoff. CWA Section 402(d) establishes a framework for regulating nonpoint-source stormwater discharges (33 USC 1251). Under the CWA, discharges of pollutants to receiving water are prohibited unless the discharge complies with an NPDES permit. The NPDES permit specifies discharge prohibitions, effluent limitations, and other provisions, such as monitoring deemed necessary to protect water quality based on criteria specified in the National Toxics Rule (NTR), the California Toxics Rule (CTR), and the basin plan.

Discharge prohibitions and limitations in an NPDES permit for wastewater treatment plants are designed to maintain public health and safety, protect receiving-water resources, and safeguard the water's designated beneficial uses. Discharge limitations typically define allowable effluent quantities for flow, biochemical oxygen demand, total suspended matter, residual chlorine, settleable matter, total coliform, oil and grease, pH, and toxic pollutants. Limitations also typically encompass narrative requirements regarding mineralization and toxicity to aquatic life. Under the NPDES permits issued to the City/County to operate the treatment plants, the City/County is required to implement a pretreatment program. This program must comply with the regulations incorporated in the CWA and the General Pretreatment Regulations (Code of Federal Regulations [CFR] Title 40, Part 403 [40 CFR 403]).

#### *Section 401—Water Quality Certification*

Section 404 of the CWA regulates temporary and permanent fill and disturbance of wetlands and waters of the United States. Under Section 404, the discharge (temporary or permanent) of dredged or fill material into waters of the United States, including wetlands, typically must be authorized by the United States Army Corps of Engineers (USACE) through either the Nationwide Permit (general categories of discharges with minimal effects) or the Individual Permit.

#### ***River and Harbors Act Section 10***

Section 10 of the Rivers and Harbors Act of 1899 requires that regulated activities conducted below the ordinary high-water elevation of navigable waters of the United States be approved and permitted by the USACE. Regulated activities include the placement or removal of structures, work involving dredging, disposal of dredged material, filling, excavation, or any other disturbance of soils/sediments or modification of a navigable waterway. Navigable waters of the United States are those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high-water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. Section 10 also regulates tributaries and backwater areas that are associated with navigable waters of the United States and are located below the ordinary high-water elevation of the adjacent navigable waterway.

A project proponent can apply for a permit/letter of permission for work regulated under Section 404 (CWA) and Section 10 (Rivers and Harbors Act) by completing and submitting one application form. An application for a USACE permit will serve as an application for both Section 404 and Section 10 permits.

#### ***Federal Antidegradation Policy***

The federal antidegradation policy is designed to protect existing water uses, water quality, and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- Existing instream uses and the water quality necessary to protect those uses shall be maintained and protected.

- Where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development.
- Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

### ***National Toxics Rule and California Toxics Rule***

In 1992, the EPA promulgated the NTR under the CWA to establish numeric criteria for priority toxic pollutants for 14 states to bring all states into compliance with the requirements of CWA Section 303(c)(2)(B). The NTR established water quality standards for 42 pollutants not covered under California's Statewide water quality regulations at that time. As a result of the court-ordered revocation of California's Statewide basin plans in September 1994, the EPA initiated efforts to promulgate additional federal water quality standards for California. In May 2000, the EPA issued the CTR, which includes all the priority pollutants for which the EPA has issued numeric criteria not included in the NTR.

### ***Executive Order 11988***

Executive Order 11988, "Floodplain Management," directs all federal agencies to avoid, to the extent possible, long- and short-term adverse impacts of occupancy and modification of floodplains, and to avoid supporting development in a floodplain either directly or indirectly wherever there is a practicable alternative. Compliance requirements are outlined in 23 Code of Federal Regulations 650, Subpart A, "Location and Hydraulic Design of Encroachment on Floodplains."

If a project involves significant encroachment into the floodplain, the final environmental document must include:

- The reasons why the proposed action must be located in the floodplain,
- Alternatives considered and the reasons they were not practicable, and
- A statement indicating whether the action conforms to applicable state or local floodplain protection standards.

### ***National Toxics Rule and California Toxics Rule***

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 were enacted to reduce the need for flood protection structures and limit disaster relief costs by restricting development in floodplains. FEMA, established in 1979, is responsible for predicting hazards from flooding events and forecasting the level of inundation under various conditions. As part of its duty to develop standards for delineating fluvial and coastal floodplains, FEMA provides information on FIRMs about the potential for flood hazards and inundation and, where appropriate, designates regions as special flood hazard areas. Special flood hazard areas are defined as areas that have a 1 percent chance of flooding in a given year.

FEMA also administers the NFIP, a federal program that enables property owners in participating communities to purchase insurance as protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages.

## **State**

### ***Porter-Cologne Water Quality Control Act***

The Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act) is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The RWQCBs are required to formulate and adopt basin plans for all areas in the region and establish water quality objectives in the plans. The Porter-Cologne Act sets forth the obligations of the State Water Board and RWQCBs to adopt and periodically update basin plans. The San Francisco Bay RWQCB is responsible for the project site.

Basin plans are the regional water quality control plans required by both the CWA and the Porter-Cologne Act that establish beneficial uses, water quality objectives, and implementation programs for each of the nine regions in California. The Act also requires waste dischargers to notify the RWQCBs of their activities by filing reports of waste discharge and authorizes the State Water Board and RWQCBs to issue and enforce WDRs, NPDES permits, CWA Section 401 water quality certifications, or other approvals. The RWQCBs are also authorized to issue waivers to reports of waste discharge and WDRs for broad categories of "low threat" discharge activities that have minimal potential to cause adverse water quality effects when implemented according to prescribed terms and conditions.

### ***National Pollutant Discharge Elimination System***

The NPDES permits all involve similar processes, which include submitting notices of intent for discharging to water in areas under the San Francisco Bay RWQCB's jurisdiction and implementing Best Management Practices (BMPs) to minimize those discharges. The San Francisco Bay RWQCB may also issue site-specific WDRs, or waivers to WDRs, for certain waste discharges to land or waters of the State.

### ***Construction Activity***

The State Water Board stormwater general permit for construction activity (Order 2009-009-DWQ, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ) applies to all construction activities that would disturb 1 acre of land or more. Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters.

Through the NPDES and WDR processes, the State Water Board seeks to ensure that the conditions at a project site during and after construction do not cause or contribute to direct or indirect impacts on water quality (i.e., pollution and/or hydromodification) upstream and downstream. To comply with the requirements of the construction general permit, the project applicant must file a notice of

intent with the State Water Board to obtain coverage under the permit; prepare a Storm Water Pollution Prevention Plan (SWPPP); and implement inspection, monitoring, and reporting requirements appropriate to the project's risk level as specified in the SWPPP. The SWPPP includes a site map, describes construction activities and potential pollutants, and identifies BMPs that will be employed to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources, such as petroleum products, solvents, paints, and cement. The permit also requires the discharger to consider using post-construction permanent BMPs that will remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

Project sites served by the combined sewer system are not required to obtain coverage under the NPDES construction general permit.

#### *Industrial General Stormwater Permit*

The Statewide stormwater NPDES permit for general industrial activity (Order 2014-0057-DWQ, superseding Order 97-03-DWQ) regulates discharges associated with 10 broad categories of industrial activities, such as operation of wastewater treatment works, and with recycling facilities. The industrial general permit requires the implementation of Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to achieve performance standards. The permit also requires development of a SWPPP that identifies the site-specific sources of pollutants and describes the measures at the facility applied to reduce stormwater pollution. A monitoring plan is also required.

#### *Stormwater*

In November 1990, the EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase I of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons. Phase II of the NPDES stormwater permit regulations, which became effective in March 2003, required that NPDES permits be issued for construction activity for projects disturbing 1–5 acres. Phase II of the municipal permit system (known as the NPDES General Permit for Small MS4s, Order No. 2003-0005-DWQ as amended by 2013-0001-DWQ) required small municipalities of fewer than 100,000 persons to develop stormwater management programs. This permit authorizes discharges of stormwater and some categories of non-stormwater that are not “significant contributors of pollutants.”

#### ***California Toxics Rule and State Implementation Policy***

The CTR, presented in 2000 in response to requirements of EPA's NTR, establishes numeric water quality criteria for approximately 130 priority pollutant trace metals and organic compounds. The CTR criteria are regulatory criteria adopted for inland surface waters, enclosed bays, and estuaries in California that are on the CWA Section 303(c) list for contaminants. The CTR includes criteria for the protection of aquatic life and human health. Human health criteria (water- and organism-based) apply to all waters with a municipal and domestic water supply beneficial use designation as indicated in the basin plans. The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, also known as the State Implementation Policy,

was adopted by the State Water Board in 2000. It establishes provisions for translating CTR criteria, NTR criteria, and basin plan water quality objectives for toxic pollutants into:

- NPDES permit effluent limits,
- Effluent compliance determinations,
- Monitoring for 2,3,7,8-tcdd (dioxin) and its toxic equivalents,
- Chronic (long-term) toxicity control provisions,
- Site-specific water quality objectives, and
- Granting of effluent compliance exceptions.

The goal of the State Implementation Plan is to establish a standardized approach for permitting discharges of toxic effluent to inland surface waters, enclosed bays, and estuaries throughout the State.

## Local

### ***Contra Costa County General Plan***

#### *General Plan Conservation Element*

The General Plan Conservation Element set forth the following applicable goals and policies that are relevant to hydrologic resources:

- **Goal 8-T:** To conserve, enhance, and manage water resources, protect their quality, and assure an adequate long-term supply of water for domestic, fishing, industrial and agricultural use.
- **Goal 8-U:** To maintain the ecology and hydrology of creeks and streams and provide an amenity to the public, while at the same time preventing flooding, erosion and danger to life and property.
- **Goal 8-W:** To employ alternative drainage system improvements which rely on increased retention capacity to lessen or eliminate the need for structural modifications to watercourses, whenever economically possible.
- **Goal 8-X:** To enhance opportunities for public accessibility and recreational use of creeks, streams, drainage channels and other drainage system improvements.
- **Policy 8-74:** Preserve watersheds and groundwater recharge areas by avoiding the placement of potential pollution sources in areas with high percolation rates.
- **Policy 8-77:** Provide development standards in recharge areas to maintain and protect the quality of groundwater supplies.
- **Policy 8-87:** On-site water control shall be required of major new developments so that no increase in peak flows occurs relative to the site's pre-development condition, unless Planning Agency determines that off-site measures can be employed which are equally effective in preventing adverse downstream impacts.

### ***Contra Costa County Ordinance Code***

Section 914-2.002 requires that all portions of a subdivision shall be protected from flood hazards and storm drainage facilities within the subdivision shall be designed and constructed in compliance with current specifications and design standards of the Public Works Department. Division 1014, Stormwater Management and Discharge carries out the conditions in the County's NPDES permit

issued by the San Francisco Bay RWQCB that require implementation of appropriate source control and site design measures and stormwater treatment measures for projects that create or replace 1 acre or more of impervious surface.

### 3.9.4 - Impacts and Mitigation Measures

#### Significance Criteria

According to CEQA Guidelines Appendix G, to determine whether impacts related to hydrology and water quality are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

- a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
- b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
  - i) result in substantial erosion or siltation on- or off-site;
  - ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
  - iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;  
or
  - iv) impede or redirect flood flows?
- d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

#### Approach to Analysis

Impacts related to hydrology and water quality were determined by reviewing information regarding regional and local hydrology, climate, topography, and geology contained in the Contra Costa County General Plan and EIR and San Francisco Bay RWQCB Basin Plan, FEMA FIRMs, and project utility plans. Evaluation of impacts is based on comparison of existing conditions to the project's built condition, such as changes in impervious area and facilities located within flood zones. Specifically, the impact evaluation focuses on effects on surface and groundwater quality, groundwater supply, and drainage (in terms of erosion, siltation, flooding, stormwater system exceedance, and polluted runoff). Water quality conditions are compared with water quality standards and WDRs by identifying potential contaminants and pollution pathways, amount of impervious area, and runoff treatment requirements. Finally, as part of the analysis, inundation and flooding on the project site

is assessed by reviewing potential inundation zone elevations relative to the final grade elevations of facilities and features for the project.

### Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of Hydrology and Water Quality impacts resulting from implementation of the project.

- Violate any water quality standards or waste discharge requirements established by a regulatory body with jurisdiction over the project area.
- Deplete groundwater supplies or interfere with groundwater recharge such that the production rate or volumes of wells or aquifers would drop.
- Alter an existing drainage pattern through alteration of the course of a stream or river or increased impervious surfaces and resulting in erosion, siltation, or flooding on- or off-site.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Expose people to pollutants due to inundation related to flooding, tsunami, or seiche.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

### Impact Evaluation

#### Surface and Groundwater Quality

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**Impact HYD-1:**      **The project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.**

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#### Construction

Construction activities would expose soils on the project site to potential water erosion and construction equipment-related pollutants. Runoff carrying eroded soils and pollutants could enter storm drainage systems and enter Walnut Creek, increasing sedimentation and degrading downstream water quality. These sediments also would be carried downstream and discharged into the Suisun Bay leading to the San Francisco Bay and Pacific Ocean, degrading surface water quality, or allowed to seep into the associated groundwater table. This would represent a potentially significant construction impact related to surface and groundwater quality.

Given that proposed construction would disturb more than 1 acre of land, the project would be required to comply with the terms of NPDES permits and the Contra Costa County Ordinance Code Chapter 1014-4, which requires the preparation and implementation of a SWPPP. The SWPPP includes BMPs to ensure reduction of pollutants from construction activities potentially entering surface waters. Additionally, implementation of the SWPPP would also prevent pollutants from entering the Ygnacio groundwater basin by preventing pollutants from moving off-site. As described in Section 3.6, Geology and Soils, the project site contains soils that are poorly drained and would prevent pollutants from seeping into groundwater.

Although construction activities have the potential to generate increased sedimentation, compliance with Contra Costa County Ordinance Code Division 1014 would minimize the potential to degrade water quality in downstream water bodies to the maximum extent possible. As a result, construction-related project impacts related to surface and groundwater and respective water quality would be less than significant.

### **Operation**

The project site is located in an urbanized area with mostly pervious surfaces. Project operation would generate runoff, which may carry pollutants, such as pesticides, fertilizers, and deposits of fluids and metals from motor vehicles into Walnut Creek or allow seepage of such pollutants into the associated groundwater table. This would represent a potentially significant operational impact related to surface and groundwater quality.

The project would increase impervious surfaces compared to existing conditions, and would therefore would generate increased amounts of runoff that could carry pollutants into Walnut Creek or groundwater basins. However, the project would comply with the County's NPDES program and the CCCWP, and all County Ordinance Codes related to stormwater pollution, which would minimize the potential to degrade water quality in downstream water bodies to the maximum extent possible. Furthermore, the project site's existing soils are poorly drained and seepage of pollutants into the groundwater basin would be unlikely. Therefore, operation-related project impacts related to surface and groundwater and respective water quality would be less than significant.

### **Level of Significance**

Less Than Significant

### **Groundwater Supply/Recharge**

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**Impact HYD-2:**      **The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.**

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### **Construction**

Impacts related to depletion of groundwater supplies or interference with groundwater recharge are limited to operational impacts. No respective construction impacts would occur.

### **Operation**

The project would develop a 2.37-acre project site that is mostly composed of pervious surfaces. The project site contains groundwater depths of 15 to 20 feet.<sup>10</sup> In addition, the project site's clay and silty fine soils are poorly drained, and therefore would not be expected to impact groundwater supplies or recharge. In addition, the CCWD does not utilize groundwater as a water source.

Compared to existing conditions, the project would increase impervious surfaces. However, the project would not significantly impact groundwater recharge rate due to the existing soils and groundwater depth. As discussed in Section 3.17, Utilities and Service Systems, the CCWD would be

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<sup>10</sup> ENGEO. Geotechnical Report, page 4. April 6, 2018.

able to provide adequate water services to the project site and the rest of its service area during normal, dry, and multiple dry years under its Water Conservation Plan, and no groundwater would be used. Thus, the project would not interfere substantially with groundwater supply, recharge, or groundwater management. Therefore, impacts related to groundwater recharge and supply would be less than significant.

**Level of Significance**

Less Than Significant

**Drainage Leading to Erosion/Siltation, Flooding, Additional Sources of Polluted Runoff, or Impedance of Flood Flows**

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- Impact HYD-3:**      **The project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:**
- i) result in substantial erosion or siltation on- or off-site;**
  - ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;**
  - iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or**
  - iv) impede or redirect flood flows?**
- 

***i) Construction-related Erosion and Siltation***

The project would have a significant impact if it were to substantially alter the existing drainage pattern of the site in a manner that would result in substantial erosion or siltation on- or off-site. Such drainage effects could occur from grade changes at the project site, exposure of soils for periods of time during stormwater discharge, or alterations to creek beds. These types of changes would have a potentially significant impact to on-site drainage patterns.

The project would involve grading and construction of a 2.37-acre project site that is currently composed of pervious surfaces. Construction activity could result in substantial erosion or siltation, leading to drainage pattern alteration and the potential for polluted runoff entering Walnut Creek, which is located approximately 1,500 feet to the east. This would represent a potentially significant impact.

However, implementation of Mitigation Measure (MM) HYD-3 would ensure the project complies with regulations of the NPDES permit consistent with Division 1014 of the Ordinance Code. Additionally, as part of compliance with Ordinance Code Division 1014 the project would be required to prepare and implement a SWPPP. The SWPPP would be designed to ensure that erosion, siltation, and flooding are prevented or minimized to the maximum extent feasible during construction. In addition, the SWPPP includes both structural (physical devices or measures) and operational (timing of construction) BMPs, that prevent or reduce the discharge of pollutants directly or indirectly into waterbodies. Therefore, the construction impact related to alteration of drainage patterns resulting in erosion or siltation would be less than significant.

### ***Operation-related Erosion and Siltation***

The project site is located in an urbanized area and primarily consists of pervious surfaces. Development of the project site would increase impervious surfaces compared to existing conditions. Thus, project operation could result in increased amounts of stormwater runoff that could carry pollutants into Walnut Creek.

However, implementation of MM HYD-3 would ensure the project collects and conveys stormwater entering or originating from the project site consistent with Division 914 of the Ordinance Code, and the project applicant prepares and submits a Final Storm Water Control Plan and Stormwater Control Operation and Maintenance Plan to the County Public Works Department for approval. In addition, the project would comply with the County's NPDES program and the CCCWP, and all relevant provisions of the Ordinance Code related to stormwater pollution. Therefore, the operational impact related to alteration of drainage pattern resulting in erosion or siltation would be less than significant.

### ***ii) Construction-related Surface Runoff***

Impacts related to the potential for the project to increase the rate or amount of surface runoff resulting in flooding are limited to operational impacts. As such, no construction impacts would occur.

### ***Operation-related Surface Runoff***

The project would develop a 2.37-acre project site composed of mostly pervious surfaces. At operation, the project would result in 83,228 square feet of building roof coverage and 21,305 square feet of landscaped space.<sup>11</sup> Compared to existing conditions, the project would result in an increase of 78,320 square feet of impervious surfaces. This would represent a potentially significant impact.

The applicant will be required to comply with Division 914 collect and convey requirements, and MM HYD-3, which requires that the site discharge to facilities with adequate capacity or that the downstream facilities be made adequate for runoff from and through the site. Therefore, operation of the project would not result in substantial off-site flooding.

On-site drainage flows first to C.3 facilities, which includes an underground detention pipe system with a high-flow rate media filter and pump to overcome the lack of fall and regulate flow from the C.3 facility to pre-project flow rates for small storms in accordance with C.3 hydro-modification requirements. An overflow pipe shall be included in the design for larger storms and to convey flow should the pump system fail. As such, the operation of the project would not result in substantial on-site flooding. Therefore, the operational impact related to increased impervious surfaces in turn increasing the rate or amount of surface runoff resulting in flooding would be less than significant.

### ***iii) Construction-related Exceedance of Storm Drain Capacity***

The project would be required to implement a SWPPP as part of its Construction General Permit to ensure that additional sources of polluted runoff is prevented during construction. Thus, construction of the project would not create or contribute runoff water that would provide substantial additional sources of polluted runoff. Therefore, the construction impact related to additional sources of polluted runoff would be less than significant.

<sup>11</sup> BKF. Del Hombre Due Diligence, Appendix C. May 23, 2018.

### ***Operation-related Exceedance of Storm Drain Capacity***

The project would result in increased impervious surface area and increased runoff. The project would drain most of the site to an underground detention pipe system along the northern portions of the property. The project would divert additional runoff from DA44 to DA44B via an existing 24-inch storm drain pipe that connects to the 84-inch storm drain line in the Iron Horse Trail.<sup>12</sup> Such a diversion would conflict with Contra Costa County Code 914-2.004 and would require an exception request in conjunction with the tentative map (pursuant to Contra Costa County Code, Chapter 92.6). The underground detention basin would be privately maintained, and because it is only necessary to meet C.3 requirements and is not necessary to meet collection and conveyance requirements as set forth in the Contra Costa County Ordinance Code Division 914, the detention system would not require an exception. Implementation of MM HYD-3 would ensure the project collects and conveys stormwater entering or originating from the project site in accordance with Division 914 of the Ordinance Code. MM HYD-3 would also ensure that the project complies with regulations of the NPDES permit, and that the project applicant prepares and submits a Final Storm Water Control Plan and Stormwater Control Operation and Maintenance Plan to the County Public Works Department for approval.

In addition, consistent with Provision C.3 San Francisco Bay Regional Municipal Stormwater NPDES Permit, Low Impact Development (LID) techniques are required to be implemented in order to treat stormwater runoff. LID techniques such as bioretention areas, allow for stormwater infiltration into the soil and detain stormwater on-site in order to reduce peak flows and prevent erosion and siltation. Per the Municipal Regional Stormwater Permit Order No. R2-0074, certain “Special Projects” are eligible for LID Treatment Reduction Credits.<sup>13</sup> The LID Treatment Reduction Credit is the maximum percentage of the amount of runoff that may be treated with non-LID treatment measures, such as tree-box-type high flowrate biofilters or vault-based high flowrate media filters.<sup>14</sup> The project would be eligible for a 100 percent LID Treatment Reduction Credit due to the project site being located within one-quarter mile of a transit hub, having a project housing density greater than 100 units per acre, and having zero surface parking. A 100 percent LID Treatment Credit would allow 100 percent of the runoff to be treated with mechanical treatment.

Furthermore, compliance with the CCCWP and County Ordinance Code would ensure that project operation would not create runoff that exceeds the capacity of existing or planned stormwater drainage systems or provide sources of stormwater or polluted runoff. Thus, operation of the project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems (see Impact UTIL-1) or provide substantial additional sources of polluted runoff. Therefore, the operational impact related to additional sources of polluted runoff would be less than significant with mitigation.

### ***iv) Construction-related Impacts to Flood Flows***

Impacts related to impedance of flood flows would only occur during the operational phase of the project. As such, no construction impedance of flood flow impacts would occur.

<sup>12</sup> BKF Engineers. 2018. Del Hombre Apartment Project—Annexation to Drainage Area 44B. October.

<sup>13</sup> BKF. Del Hombre Due Diligence. May 23, 2018.

<sup>14</sup> *Ibid.*

### **Operation-related Impacts to Flood Flows**

The project would not be located in an area prone to flooding or within a designated flood hazard zone. As described in further detail under Impact HYD-4, the project site is not susceptible to inundation from flood hazards, tsunamis, or seiches. As a result, the project would not impede or redirect flood flows. Therefore, there would be no operational impediment of flood flow impact.

### **Level of Significance Before Mitigation**

Potentially Significant

### **Mitigation Measures**

#### **MM HYD-3 Prepare Drainage Plan Prior to Grading**

- In accordance with Division 914 of the Ordinance Code, the project applicant shall collect and convey all stormwater entering and/or originating on this property, without diversion and within an adequate storm drainage facility, to a natural watercourse having definable bed and banks, or to an existing adequate public storm drainage system that conveys the stormwater to a natural watercourse. Any proposed diversions of the watershed shall be subject to hearing body approval. Prior to issuance of a grading permit, the applicant shall submit improvement plans for proposed drainage improvements, and a drainage report with hydrology and hydraulic calculations to the Engineering Services Division of the Public Works Department for review and approval that demonstrates the adequacy of the in-tract drainage system and the downstream drainage system. The applicant shall verify the adequacy at any downstream drainage facility accepting stormwater from this project between the site and the outfall of the downstream storm drain system to the Walnut Creek Channel prior to discharging runoff. If the downstream system(s) is not adequate to handle the Existing Plus Project condition for the required design storm, improvements shall be constructed to make the system adequate. The applicant shall obtain access rights to make any necessary improvements to off-site facilities.
- Comply with all rules, regulations and procedures of the National Pollutant Discharge Elimination System (NPDES) for municipal, construction and industrial activities as promulgated by the California State Water Resources Control Board, or any of its Regional Water Quality Control Boards (San Francisco Bay—Region II); and
- Submit a Final Stormwater Control Plan and a Stormwater Control Operation and Maintenance Plan (O+M Plan) to the Public Works Department, which shall be reviewed for compliance with the County's National Pollutant Discharge Elimination System (NPDES) Permit and shall be deemed consistent with the County's Stormwater Management and Discharge Control Ordinance (Division 1014) prior to issuance of a building permit. Improvement Plans shall be reviewed to verify consistency with the Final Stormwater Control Plan and compliance with Provision C.3 of the County's NPDES Permit and the County's Stormwater Management and Discharge Control Ordinance (Division 1014).

**Level of Significance After Mitigation**

Less Than Significant with Mitigation

**Risk of Pollutant Release Due to Inundation**

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**Impact HYD-4:** The project would not be located in a flood hazard zone, tsunami, or seiche zone, or risk release of pollutants due to project inundation.

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**Construction**

Impacts related to inundation are limited to operational impacts. As such, no construction impacts would occur.

**Operation**

The project site is not located within a designated FEMA flood hazard zone or 100-year flood zone. According to the FEMA Flood Map Service Center, the project site is located within Zone X “Area of Minimal Flood Hazard.” In addition, the closest designated flood hazard zone to the project site is along Walnut Creek, located approximately 1,500 feet to the east. The Contra Costa County General Plan identifies the areas immediately adjacent to Walnut Creek as a 100-year flood zone. The project site is not adjacent to Walnut Creek and would not be located within a recognized flood hazard area.

The project site is not located near the ocean, and as such would not be susceptible to inundation from a tsunami. The project site is not located near a large, enclosed body of water and as such would not be susceptible to inundation from a seiche. As a result, the project site would not be a risk for inundation from flooding, tsunami, or seiche. Therefore, impacts related to risk of pollutant release due to inundation would be less than significant.

**Level of Significance**

Less Than Significant

**Water Quality Control or Sustainable Groundwater Management Plans Consistency**

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**Impact HYD-5:** The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

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**Construction**

The project would not conflict with the County Watershed Program and the County’s NPDES program. Given that proposed construction would disturb more than 1 acre of land, the project would be required to comply with the terms of the Construction General Permit, which require the preparation and implementation of a SWPPP that includes BMPs to ensure reduction of pollutants from construction activities potentially entering surface waters. Therefore, construction impacts related to water quality control plan or groundwater management plan consistency would be less than significant.

### **Operation**

The project site is located within the Ygnacio Valley Groundwater Basin. The project site has little potential for groundwater recharge due to poorly drained soils and shallow groundwater levels. In addition, CCWD would provide potable water to the project site and does not use groundwater as a water source. As a result, the project would not conflict with or obstruct a sustainable groundwater management plan. Therefore, operational impacts related to a water quality control plan or groundwater management plan consistency would be less than significant.

### **Level of Significance**

Less Than Significant

## **3.9.5 - Cumulative Impacts**

### **Hydrology**

Cumulative impacts related to hydrology and water quality typically occur within a defined watershed. All properties on the cumulative projects list in Table 3-1 are located within the Walnut Creek Watershed, and all respective surface water in the watershed eventually discharges into Suisun Bay. Some cumulative projects are located within Contra Costa County, including the project, and would be required to comply with the CCCWP and Contra Costa County General Plan policies, which prevent a project from increasing off-site surface water flow from existing conditions and ensure that projects adhere to best practices during construction to prevent pollutants from being carried off-site. Some cumulative projects are located in the Cities of Pleasant Hill and Walnut Creek. Cumulative development in the City of Walnut Creek would be required to demonstrate consistency with the City of Walnut Creek General Plan and applicable codes, ordinances, and policies related to preventing pollutants from being conveyed off-site. Cumulative development in the City of Pleasant Hill would be required to demonstrate consistency with the City of Pleasant Hill General Plan and applicable codes, ordinances, and policies related to preventing pollutants from being conveyed off-site. The combination of these policies and best practices would prevent significant cumulative impacts to hydrology. Thus, there would be a less than significant cumulative impact related to hydrology.

### **Water Quality**

The geographic context for consideration of cumulative impacts related to surface water quality is the Walnut Creek Watershed. All cumulative projects, including the project, would involve short-term construction and long-term operational activities that would have the potential to degrade water quality in downstream water bodies, including Walnut Creek and Suisun Bay. All cumulative project construction would be required to obtain a Construction General Permit from the State Water Board, which would require preparation of a SWPPP that would control potential discharges of contaminants into Walnut Creek and Suisun Bay. Operations of these cumulative projects would be required to comply with the CCCWP, County Ordinance Code regarding stormwater, or the Cities of Walnut Creek and Pleasant Hill applicable codes, ordinances, and policies related to water quality. Development in the County would be required to implement similar measures in accordance with adopted regulations, while projects would be subject to the Construction General Permit if applicable. Development in the City of Walnut Creek would be required to implement similar measures in accordance with adopted regulations, while projects would be subject to the

Construction General Permit if applicable. Development in the City of Pleasant Hill would be required to implement similar measures in accordance with adopted regulations, while projects would be subject to the Construction General Permit if applicable. Thus, there would be a less than significant cumulative impact related to surface water quality.

The geographic context for consideration of cumulative impacts related to groundwater quality and management is the Ygnacio Valley Groundwater Basin. All cumulative projects, including the project, would involve short-term construction and long-term operational activities that would have the potential to impact groundwater quality and management. All cumulative project construction would be required to obtain a Construction General Permit from the State Water Board, which would require preparation of a SWPPP that would control pollutants that could seep into groundwater. Operations of cumulative projects in Contra Costa County would be required to comply with the CCCWP and the County Ordinance Code regarding groundwater. Operations of cumulative projects in Walnut Creek would be required to comply with the CCCWP and the City of Walnut Creek Ordinance Code regarding groundwater. Operations of cumulative projects in Pleasant Hill would be required to comply with the CCCWP and the City of Pleasant Hill Ordinance Code regarding groundwater. Thus, there would be a less than significant cumulative impact related to groundwater quality.

***Level of Cumulative Significance***

Less Than Significant