M. Utilities and Service Systems

This section describes existing public utilities on and in the vicinity of the Kaiser Permanente OMC project and evaluates the impact of the proposed project on the provision of public utilities and possible adverse physical impacts to the environment that could result from constructing new or expanded facilities. Topics analyzed in this section include public water supply, sanitary sewer (wastewater), stormwater drainage facilities, solid waste, and gas and electricity services. This section focuses on the effect the proposed project would have on the ability of the City of Oakland and other service providers to effectively deliver these services and utilities and identifies potential impacts.

Setting

Water Service

The East Bay Municipal Utility District (EBMUD), a publicly owned utility, supplies water and provides wastewater treatment to parts of Alameda and Contra Costa counties, including the city of Oakland. EBMUD supplies water to approximately 1.3 million people within its estimated 325-square-mile service area, and the city of Oakland comprises slightly less than one-third of EBMUD's customers.

Water Supply System

The EBMUD water supply system consists of a network of reservoirs, aqueducts, treatment plants, and distribution facilities. This network extends from its principal water source, the Mokelumne River Basin in the Sierra Nevada mountain range, to water treatment plants or to reservoirs[1] within its service area, and ultimately to residences and businesses in the East Bay. On average, 95 percent of the water delivered by EBMUD comes from the Mokelumne River watershed, with the remaining five percent originating as runoff within the service area. EBMUD has water rights and facilities to divert up to a maximum of 325 million gallons of water per day (mgd), subject to the availability of Mokelumne River runoff and prior water rights of other users. Also, untreated water from local and Sierra reservoirs is transported to one of EBMUD's six water treatment plants, which can filter and process more than 375 mgd. The Orinda Water Treatment Plant, which serves the city of Oakland and several surrounding communities, has the largest output, with a maximum capacity up 200 mgd, and in early April 2005 had a seven day average production of 111 mgd (EBMUD, 2005).

EBMUD owns and operates water distribution pipelines along West MacArthur Boulevard, Broadway, Howe Street, Shafter Avenue, Cerrito Avenue, 38th Street, Manila Avenue, and Piedmont Avenue that currently serve the project site and the surrounding area.

[1] EBMUD's East Bay service area includes five reservoirs: Briones, Chabot, Lafayette, San Pablo, and Upper San Leandro.

Water Demand

In early April 2005, EBMUD experienced an average demand of 195.3 mgd (EBMUD Daily Water Supply Report, 2005). During non-drought years, EBMUD customers demand an annual average of about 220 mgd of water. By 2020, EBMUD estimates that water demand will increase to approximately 277 mgd in its service area, although, with successful implementation of water recycling and conservation programs, this demand could be reduced to about 229 mgd (EBMUD Urban Water Management Plan 2000).

As discussed in EBMUD's Urban Water Management Plan 2000, EBMUD adopted a long-term Water Supply Management Program (WSMP) in 1993. The WSMP serves as a planning guide for the reliable provision of quality water to the EBMUD service area through 2020. The WSMP analysis indicates that during a severe drought, [2] the current water supply is not sufficient to meet customer demand. An estimated supplemental supply need of 87 mgd of additional water supply (representing a 42 percent deficiency) would be needed to limit the deficiency to 25 percent. To limit the water supply deficiency to 25 percent by 2020, a supplemental supply of 154 mgd (representing a 67 percent deficiency) would be needed. EBMUD anticipates that customer demand will continue to exceed supply during severe drought conditions until a supplemental water supply project is implemented and a dependable supply is guaranteed for existing and future needs.

To meet 2020 projected water needs and address deficient supply during severe droughts, EBMUD is working to identify supplemental water supplies, recycled water programs, and continued implementation of water conservation measures.

Water Supply Projects

In September 1995 (two years after adopting its long-term Water Supply Management Program), EBMUD authorized a Water Supply Action Plan to identify supplemental water supplies during multiple-year droughts by pursuing several water supply components concurrently. As a result, on December 8, 2000, the U.S. Bureau of Reclamation, EBMUD, and Sacramento parties mutually agreed to develop a joint water supply from the Sacramento River. Components of this action include a diversion one-mile north of the city of Freeport, pumping facilities, treatment facilities, and transmission pipes. A federal Record of Decision was issued in 2004, and the engineering design work is expected to be complete by the spring of 2006. Construction is expected to be complete by 2009. Once completed, the Freeport Project will provide 165,000 acre-feet of water during a three year drought. This would equate to 49 mgd to incorporate with other water supplies available and distribute to the EBMUD service area (Rehnstrom, 2005).

Other resource options identified in the 1995 Water Supply Action Plan (and its 1996 revision) for meeting future water needs include the Bayside Groundwater Project, which involves storing excess water in a deep underground aquifer beneath the cities of San Lorenzo/San Leandro to increase the available supply of water in the event of a drought. Consideration of approval of the

[2] Defined by EBMUD as the third consecutive year in a series of multiple dry years.

Bayside Groundwater Project is anticipated to occur in 2005. A joint effort by the Bay Area's four largest water agencies, EBMUD, the San Francisco Public Utilities Commission, the Contra Costa Water District and the Santa Clara Valley Water District to explore regional desalination facilities to meet future water needs is also underway, and a detailed feasibility and environmental study is anticipated to be completed by December 2006.

Recycled Water

The goals of using recycled water are to supplement the existing potable water supply and assist in meeting future water demands. Water for recycling is drawn from water reservoirs containing untreated water, and from wastewater treatment plants. EBMUD's Nonpotable Water Policy No. 73 (1996) mandates that all customers use recycled water for non-domestic purposes when such water is of adequate quality and quantity, available at reasonable cost, not detrimental to public health and not injurious to plant life, fish, and wildlife. EBMUD currently supplies more than 8 mgd of recycled water and other nonpotable water for irrigation, industrial processes and equipment wash-down. The WSMP established goals of delivering an additional 8 mgd of recycled water by 2020, for a total of 5.8 billion gallons a year.

In January 2002, the City of Oakland adopted a recycled water ordinance that requires new developments within the city to use recycled water provided by EBMUD for common area irrigation, if recycled water is available to the development area. This requires installation of a separate non-potable water distribution system on-site.

The project site is not located within the service area boundary of EBMUD's East Bayshore Recycled Water Project and would not be served by recycled water (Rehnstrom, 2005). However, water recycled within the building (from rainwater, shower and tub water could be considered for use within the site for irrigation. The Office of Statewide Health Planning and Development (OSHPD) would be required to approve, on a case-by-case basis, use of recycled water for internal uses (e.g., toilets or urinals).

Water Conservation

EBMUD has adopted water conservation programs to address both water supply and demand. Demand-side water conservation programs are intended to reduce overall consumption of the water supply. The Water Conservation Master Plan (1994) identifies the use of free water audits, rebates, and other incentives, regulations, education, and support activities to reduce water consumption. These programs are designed to achieve annual water savings of 16 mgd by 2020. With an additional 17 mgd expected to result from "natural replacement,"[3] the total water conservation savings in 2020 is anticipated to be 33 mgd. EBMUD's supply-side conservation measures are directed toward increasing water use efficiency before or after customer use, and include improvements within EBMUD's distribution system (i.e., leak detection, pipe replacement, and corrosion control) and water recycling programs.

[3] Natural replacement is the installation of conservation hardware such as toilets, showerheads, and faucets without participation in an EBMUD program.

Sanitary Sewer Service

In addition to providing water supply, EBMUD provides sanitary sewer treatment services to approximately 640,000 people within an 83-square-mile area of Alameda and Contra Costa counties, including the city of Oakland. The city of Oakland and about eight other communities[4] comprise the EBMUD Special District No. 1 sanitary sewer treatment service area.

Wastewater Collection and Treatment

EBMUD's main wastewater treatment plant is located southwest of the Interstate 580/Interstate 80 (I-580/I-80) interchange in Oakland, south of the San Francisco/Oakland Bay Bridge. Wastewater is collected by 29 miles of interceptor lines that move wastewater from about 1,400 miles of sewers owned and operated by the jurisdictions served. Currently, EBMUD's wastewater treatment plant has an average dry weather capacity of 168 mgd, and an average dry weather flow of approximately 77 mgd (45 percent capacity). During wet weather, the treatment plant accepts more flow[5]; the plant has a sustainable primary treatment capacity of 320 mgd, and a maximum secondary treatment capacity of 168 mgd.[6]

The City of Oakland owns, operates, and maintains a local sanitary sewer collection system covering approximately 48 square miles, approximately 1,000 miles of pipe, and seven pump stations. The city's sewer collection system is divided into basins and subbasins. Each numbered subbasin encompasses a specific physical area, and its sewer flows are assigned to a single discharge point from the City's collection system into the EBMUD's interceptor lines. City sewer pipes range from 6 to 72 inches in diameter, with most lines pre-dating 1938 and with some parts of the system over 100 years old. Most of the system is gravity-fed, and about five pump stations service the entire area. Some areas of Oakland, such as former military bases, cemeteries, large parks, and some hillside areas, are not part of the sewer service system. Over 90 percent of the sewer customers are residential users.

The project site is served by sewer lines in the streets adjacent to the project sites. In general, the north-south pipes flow to the south. Pipes in streets north of West MacArthur Boulevard are intercepted there by a 24-inch diameter[7] line and flow to the west. West of Manila, the 24-inch line becomes a brick interceptor sewer. These include a 16-inch line in Manila Avenue, two 8-inch lines in Broadway, 8-inch and 12-inch lines in Howe Street, and a 10-inch line in Piedmont Avenue. South of MacArthur Boulevard, the sewer system flows towards Broadway and continues to the south away from the project site. These lines include an 8-inch line in Broadway and a 10-inch line in Piedmont Avenue. A 24-inch lines runs along MacArthur Boulevard. The City of Oakland's Public Works Agency (PWA) has indicated that the condition of these pipes are unknown.,

4 EBMUD's main wastewater treatment plant treats municipal wastewater from the cities of Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont, El Cerrito, Kensington, and part of Richmond.
5 Storage basins provide plant capacity for a short-term hydraulic peak of 415 million gallons per day (mgd).
6 *Primary* treatment involves preliminary treatment (screening) and sedimentation (the removal of solid particles from suspension by gravity). *Secondary* treatment involves biological treatment of wastewater to remove remaining organic matter.
7 All sanitary sewer line dimensions stated are inside-diameter measurements.

Inflow/Infiltration Correction Program

A continuing issue with respect to sanitary sewer collection has been inflow and infiltration of stormwater into the EBMUD and Oakland sewer lines, resulting in high flow levels and overflow of untreated wastewater during wet weather events. Most of the stormwater enters sewer systems by infiltration (stormwater that passes through the soil and into deteriorated sewer pipes). Inflow originates from stormwater inlets and manholes that connect to the sanitary sewer system rather than the stormwater system. In 1986, with EBMUD as the lead agency, the Wet Weather Program was initiated to improve treatment capacity for wet weather flows and reduce the amount of inflow and infiltration throughout the EBMUD collection system. The cities of Alameda, Albany, Berkeley, Emeryville, Kensington, Oakland, Piedmont and portions of El Cerrito and Richmond participate in EBMUD's Wet Weather Program. The program has resulted in four new wet weather treatment facilities, two storage basins, 7.5 miles of new interceptors, and expansion of the main wastewater treatment plant. These new facilities accommodate an increase in peak wet weather treatment capacity from 290 mgd to 775 mgd. The City's long-range sewer improvements are anticipated to reduce peak regional flows from 1.1 billion gallons per day to 775 mgd.

The City of Oakland has a 25-year inflow and infiltration collection maintenance and rehabilitation program that will help eliminate overflow by reducing inflow and infiltration of stormwater to upgrade the existing system. The City's collection system is comprised of local collection mains and a network of trunk systems. The City's system capacity improvements have targeted the trunk network only and assume that the remainder of the system – the local mains – has sufficient capacity. The entire system is divided into drainage basins and subbasins. The proposed project is located in Subbasins 52-09 and 50-05, Each subbasin has a projected allocation for base flow increase based on an anticipated growth rate during the period of the inflow and infiltration collection maintenance and rehabilitation program. Growth (base flow increase) within each subbasin must not exceed projections. If exceeded, the impact of the additional growth must be analyzed on the entire City collection, and trunk system and additional system improvements would be required. If redirection of allocation from other subbasins is needed to accommodate a development project, further review and approval from the City would be required in order to determine locations and the amount of potential reallocation. If growth does not exceed projection within each subbasin, then impact analysis may be limited to the study of local mains serving the development site.

Stormwater Drainage Facilities

In Oakland, stormwater runoff is collected from the southwesterly flows from the Oakland/Berkeley hills to the developed flatlands, where it then flows primarily through underground storm drains and culverts to the San Francisco Bay, via the Oakland Estuary (directly or by way of Lake Merritt) or through the city of Emeryville.

The Alameda County Flood Control and Water Conservation District constructs, operates, and maintains major trunk lines and flood-control facilities in Oakland, and the Oakland PWA is responsible for construction and maintenance of the local storm drainage system within

Oakland's public areas and roads. Existing infrastructure around and serving the project site includes a 12-inch diameter storm drain main under MacArthur Boulevard, one catch basin at the northeast corner of Manila Avenue and West MacArthur Boulevard, and a catch basin south of I-580 which receives surface runoff from Site 4 (M/B Center / new hospital) via Piedmont Avenue and Broadway. These main facilities and catchbasins lead to a system of storm drains ranging from 69-inch diameter pipelines to box culverts as small as approximately six inch square.

The PWA makes structural improvements to ensure that the system is able to reasonably handle stormwater flow. The City is currently preparing a comprehensive storm drainage master plan to identify existing deficiencies in the system and develop prioritized recommendations for rehabilitating the system in order to reduce localized flooding (Kashi, 2005). However, as of May 2005, less than 1 percent of the city's pipes had been surveyed. Storm drain complaints are scattered throughout the city and are mostly related to commercial business uses). Based on these complaints, even without televised footage of actual pipes, the City has taken the position that the storm drain system is aged and would not be unable to handle increased runoff flows. Therefore, the City requires developments to detain stormwater, to the extent feasible. (See discussion of City's stormwater detention and retention methods and guidelines in Section IV.G, Hydrology and Water Quality.

Stormwater runoff from nonpoint sources[8] is conveyed from the project site through onsite pavement gutters, surface drains, parking lots, and roof drains. The project area sits in two storm drainage subbasins, with the dividing line running north-south roughly through the existing hospital site. East of this line, the stormwater flows are collected by a 15-inch pipe in Howe Street and a 24-inch pipe in West MacArthur Boulevard. This pipe meets the main trunk in Richmond Boulevard, east of the project site. Existing storm drain infrastructure around and serving the project site includes a 12-inch diameter storm drain main under MacArthur Boulevard and one catch basin at the northeast corner of Manila Avenue and West MacArthur Boulevard. These main facilities and catchbasins lead to a system of storm drain pipes ranging from 69 inches diameter to box culverts as small as 6.0 by 5.5 inches. No information for inclusion in this EIR was available from Alameda County or the City of Oakland regarding the capacity of the existing lines; however, anecdotal evidence from Kaiser Hospital sources indicate the eastern subbasin operates over capacity and street and basement flooding has been observed as a result.

Solid Waste

Waste Management and Disposal

Non-hazardous waste in the city of Oakland is collected by Waste Management of Alameda County (WMAC), which provides curbside pickup for residential, commercial and industrial non-hazardous waste, and transports it to WMAC's Davis Street Transfer Station in the City of San Leandro. The Alameda County Waste Management Authority estimates that in 2000,

[8] Nonpoint pollutant sources are sources that do not have a single, identifiable discharge point but are rather a combination of many sources. For example, a nonpoint source can be stormwater runoff from land that contains petroleum from parking lots, pesticides from farming operations, or sediment from soil erosion.

Oakland disposed of approximately 423,200 tons of solid waste or about 1,160 tons per day (CIWMB, 2004a).

Transfer trucks haul waste to the Altamont Landfill and Resource Facility, located approximately 35 miles east of Oakland near Livermore. The Altamont Landfill has a permitted maximum daily disposal of 11,150 tons per day, ten percent of which is attributable to the city of Oakland (CIWMB, 2004b). The Altamont Landfill has recently updated its conditional use permit, which allows for an additional capacity of approximately 40 million tons of disposal over the next 19 to 38 years (St. John, 2004).

Demolition and construction debris generated in Oakland is generally hauled by contractors and local construction companies to recycling facilities in the East Bay or to the Vasco Road Landfill near the city of Livermore. The Vasco Road Landfill, owned by Republic Services of California I, LLC, is estimated to have sufficient capacity through approximately 2015 (CIWMB, 2004c).

Waste Generation and Diversion

As required by enactment of the California Integrated Waste Management Act (AB 939) in 1989 (discussed in Regulatory Framework, below), the City has prepared a Source Reduction and Recycling Element (SRRE), which is a report that describes (1) the chief characteristics of each city's waste, (2) existing waste diversion programs and rates of waste diversion, and (3) the new or expanded programs the city intends to implement to achieve the mandated rates of diversion.[9] The city of Oakland generated approximately 369,509,000 tons of solid waste in 2003. The City's waste diversion rate has increased from approximately 11 percent in 1990 to an estimated 50 percent in 2002 (Alameda County Waste Management Authority, 2004). The City's waste diversion programs and requirements are discussed below under *Regulatory Framework.*

Energy Services

Electricity and gas service in the City of Oakland is provided primarily by Pacific Gas and Electric (PG&E), which owns the gas and electrical utility supply lines. Some users purchase energy services directly from alternate power providers. Throughout most of Oakland, electrical power is delivered via overhead distribution and transmission lines, and natural gas is distributed through underground piping. PG&E expands its services on an as-needed basis and requires the user to fund the extension of service.

Electricity Service Demand

Following restructuring of the electricity industry in 1996, California experienced a number of problems related to energy supply and demand. These problems were largely driven by increases in demand from population and economic growth paired with insufficient local supply. Inadequate supply was due to the lack of new power plants constructed in the state, and the sale

[9] Waste diversion is defined as the total waste that a jurisdiction generates less the amount that is disposed at a landfill or transformation facility. Waste diversion occurs through reduction, reuse, recycling, and composting programs.

of a number of power plants to privately owned, out-of-state energy companies. As a result, Bay Area consumers have been experiencing rising costs and uncertainty regarding the supply of electricity. The State of California Energy Action Plan, adopted in May 2003, and as outlined in the Action Plan, the California Energy Commission (CEC) is currently considering applications for the development of new power generating facilities in the Bay Area and elsewhere in the state to establish adequate, reliable, and reasonably priced energy for Californians (California, 2003).

The project site is currently fully developed and is served by existing electric and natural gas . . utilities which are available in all street frontages adjoining the site. Electric facilities are underground in Broadway, Piedmont Avenue, and West. MacArthur Boulevard. Overhead electric lines are found in Manila Avenue, 38th Street, and Howe Street. Therefore expansion of these utilities would not be required for the project.

A 60,000 square foot, two-story central utility plant is planned for the southeast corner of the new hospital and parking garage on Site 4. The central utility plan would be approximately 70 feet tall and . house mechanical, electrical, computer, and telephone equipment to serve the facilities on Site 4 and . may also house related office functions for Facilities, Engineering and Related Departments.

An key objective of Kaiser Permanent's master plan design approach includes limiting adverse impacts upon the environment, including energy use, resulting from the siting, design, construction, and operation of its health-care facilities. The design team addresses the life-cycle impacts of facilities through design and construction standards, selection of materials and equipment, and maintenance practices. Additionally Kaiser Permanente would require architects, engineers, and contractors to specify commercially available, cost-competitive materials, products, technologies, and processes, where appropriate, that have a positive impact, or limit any negative impact on environmental quality (including energy consumption) and human health.

Regulatory Framework

Water Quality, Supply, and Distribution

Safe Drinking Water Act

The U.S. Environmental Protection Agency (U.S. EPA) administers the Safe Drinking Water Act (SDWA), the primary federal law that regulates the quality of drinking water and establishes standards to protect public health and safety. The Department of Health Services (DHS) implements the SDWA and oversees public water system quality statewide. DHS establishes legal drinking water standards for contaminates that could threaten public health.

Senate Bill (SB) 610 / Senate Bill (SB) 221

Senate Bill (SB) 610, codified as Sections 10910-10915 of the California Public Resources Code, requires local water providers to conduct a water supply assessment for projects proposing over

500 housing units[10], 250,000 square feet of commercial office space (or more than 1,000 employees), a shopping center or business establishment with over 500,000 square feet (or more than 1,000 employees), or equivalent usage. Local water suppliers must also prepare or have already prepared an Urban Water Management Plan to guide planning and development in the water supplier's service area, and specifically pursue efficient use of water resources.

Stormwater Drainage

Regulations related to the quality and quantity of stormwater runoff (i.e., Federal Clean Water Act / National Pollutant Discharge Elimination System [NPDES] are discussed in Section IV.G, Hydrology and Water Quality. As previously stated, this section focuses on whether the proposed project would result in the need for new or expanded stormwater drainage facilities.

Solid Waste

Assembly Bill (AB) 939

The California Integrated Waste Management Act of 1989, or Assembly Bill (AB) 939, established the Integrated Waste Management Board, required the implementation of integrated waste management plans and also mandated that local jurisdictions divert at least 50 percent of all solid waste generated (from 1990 levels), beginning January 1, 2000, and divert at least 75 percent by 2010. As required by AB 939, the City of Oakland has prepared a Source Reduction and Recycling Element (SRRE) which requires proposed development projects to undergo, as part of the required environmental review, an assessment of project impacts on the City's ability to maintain the mandated 50 percent waste diversion rates. Projects that would have an adverse effect on the City's waste diversion goals are required to include waste diversion mitigation measures to assist in reducing these impacts to less than significant levels.

Alameda County Waste Reduction and Recycling Initiative (Measure D)

In addition to AB 939, the 1990 Voter Initiative Measure D (Alameda County Waste Reduction and Recycling Initiative) mandates all cities in Alameda County to divert 75 percent of their solid waste from landfills by the year 2010.

Construction and Demolition Debris Waste Reduction and Recycling (Ordinance No. 12253 C.M.S.)

The City of Oakland's construction and demolition (C&D) debris waste reduction and recycling requirements are intended to further the goals of AB 939 and Alameda County's Measure D. As part of the application for a building permit, a project applicant is required to prepare and submit a Construction and Demolition Debris Waste Reduction and Recycling Plan (WRRP) to divert at least 50 percent of all C&D debris generated by project development from landfill disposal.

[10] Senate Bill (SB) 221 similarly amended the Subdivision Map Act to ensure confirmation that public water supply is sufficient to serve proposed development projects of 500 dwelling units or more.

Energy

Buildings constructed after June 30, 1977 must comply with standards identified in Title 24 of the California Code of Regulations. Title 24, established by the California Energy Commission (CEC) in 1978, requires the inclusion of state-of-the-art energy conservation features in building design and construction including the incorporation of specific energy conserving design features, use of non-depletable energy resources, or a demonstration that buildings would comply with a designated energy budget.

Office of Statewide Health Planning and Development (OSHPD)

OSHPD has no current regulations relative to sanitary sewer wastes. However starting in 2030, 72-hour storage for both domestic water and sanitary sewer will be required for medical facilities under its purview. OSHPD also has no energy regulations.

Impacts and Mitigation Measures

Significance Criteria

A utilities and service systems impact would be considered significant if it would result in any of the following:

- Exceed wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board;
- Require or result in construction of new stormwater drainage facilities or expansion of existing facilities, construction of which could cause significant environmental effects;
- Exceed water supplies available to serve the project from existing entitlements and resources, and require or result in construction of water facilities or expansion of existing facilities, construction of which could cause significant environmental effects;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the providers' existing commitments and require or result in construction of new wastewater treatment facilities or expansion of existing facilities, construction of which could cause significant environmental effects;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs and require or result in construction of landfill facilities or expansion of existing facilities, construction of which could cause significant environmental effects;
- Violate applicable federal, state, and local statutes and regulations related to solid waste;
- Violate applicable federal, state and local statutes and regulations relating to energy standards; or
- Result in a determination by the energy provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the

providers' existing commitments and require or result in construction of new energy facilities or expansion of existing facilities, construction of which could cause significant environmental effects.

Local Plans and Policies

Oakland General Plan policies and other applicable plans and policies that pertain to public utilities, services systems, and energy, and that apply to the project, are listed and discussed in Section IV.A, Land Use, Plans, and Policies. General Plan policies that are also significance criteria or contain a regulatory threshold that the project must meet are addressed in this section.

Utility and Service Systems Impacts

Impacts on Water Supply

Impact M.1: The project would not exceed water supplies available to serve the project from existing entitlements and resources, nor require or result in construction of water facilities or expansion of existing facilities, construction of which could cause significant environmental effects. (Less than Significant)

Water Demand, Supply, and Capacity

The existing average daily water demand from the project site, both existing Kaiser Permanente OMC facilities and non-Kaiser facilities (i.e., commercial office, retail, automotive sales and services, dry cleaners, animal services, residential) is estimated at 265,267 gallons per day (BKF Engineers, 2005). As summarized in **Table IV.M-1**, the average daily water demand from the project at buildout year 2020 (Phase 3) is estimated at 295,398 gpd.

TABLE IV.M-1
ESTIMATED AVERAGE WATER DEMAND (GALLONS PER DAY / GPD)
EXISTING VERSUS PROJECT BUILDOUT, BY PHASE

	Existing Demand	Phase 1 (2006-2008)	Phase 2 (2008-2012)	Phase 3 (2013-2020)	Total Percent Change (existing to 2020)
Kaiser OMC Facilities	223,957	208,972	276,445	295,398	
Non-Kaiser OMC Facilities[a]	41,310	0	0	0	
Total Demand	**265,267**	**208,972**	**276,445**	**295,398**	**10%**

[a] To be incorporated into proposed Kaiser Permanente OMC medical center as part of the proposed project.

SOURCE: BKF Engineers, 2005a

Operation of the new West Broadway Medical Service Building (MSB) and Cancer Care Center and related parking structure in. Phase 1 would result in a net increase in the average daily water demand on the project site of approximately 21 percent (Phase 2 and Phase 3 development sites conservatively still assumed at existing condition).

Phase 2 would establish the new replacement hospital, new central utility plant, and additional structured parking on Site 4. This increase in development would result in a net increase in average daily water demand on the project site of approximately 24 percent from the end of Phase 1.

Phase 3 would result in a net increase in average daily water demand of approximately 6 percent from the end of Phase 2 with implementation of the Central Administration MSB parking facilities on Site 2.

At buildout, the total increase in water demand resulting from the Kaiser Permanente OMC Project would be approximately 30,131 gpd from existing conditions, or an increase of approximately 10 percent.

Pursuant to Sections 10910-10915 (SB 610) of the California Water Code, the City of Oakland submitted a request to EBMUD to prepare a water supply assessment (WSA) for the proposed project.[11] In April 2005, when the City submitted the WSA for the project as proposed at that time, the estimated average daily water damage was assumed to be 286,000 gpd for a development of 1.8 million square feet in building area. In response to the City's request, EBMUD determined that the project's estimated water demand is accounted for in EBMUD's 2020 water demand projections (Kirkpatrick, WSA, June 2005). According to EBMUD, water consumption by EBMUD customers had remained relatively constant over the past 18 years. Records show that between 1987 and 2005, water consumption ranged from 220 mgd to 170 mg., The proposed project would not change EBMUD's 2020 water demand projection and would not result in a new significant increase in water use. As indicated in **Table IV.M-1** above, the modified project analyzed in this EIR, although still 1.8 millions sq.ft. in building area, estimates an average daily water demand of approximately 9,398 additional gpd (approx 3.3 percent). It is not assumed that this additional volume would result in a change to EBMUD's 2020 projections or result in a significant increase in water use.

As a result, the project would not exceed existing or projected water supply or result in the need for new or expanded water facilities.

Drought and Conservation Measures

The proposed project would increase water demand by buildout in year 2020 by 11 percent. According to EBMUD, the Water Supply Management Program estimate of water demand (227

[11] A "project," as defined by SB 610, includes proposals for new residential use over 500 units; retail use over 500,000 square feet; office use over 250,000 square feet; hotel/motel use over 500 rooms; industrial use over 40 acres or 650,000 square feet; a mixed-use project including any use as large as the above; or any project that would demand water greater than the equivalent of 500 dwelling units.

mgd) can be reduced to 229 mgd with successful water recycling and conservation programs (Kirkpatrick, WSA, June 2005). Kaiser Permanente would participate (along with all other EBMUD customers) in the implementation of the rationing and conservation measures set forth in EBMUD's Drought Management Program. To the extent feasible for its medical service operations, Kaiser would implement such measures and policies in both construction and operations of the facility that could incrementally decrease water demand on the entire system. Although not required to address Impact M.1, the project applicant will be subject to the following uniformly-applied standard condition of aApproval by the City that further reduce the less-than-significant Impact M.1:

> **Standard Condition M.1: As feasible and applicable, the project sponsor shall implement the following water-efficient equipment and devices into building design and project plans, consistent with the Landscape Water Conservation section of the City of Oakland Municipal Code (Chapter 7, Article 10): low-, ultra-low, and dual flush flow toilets and showerheads; water efficient irrigation systems that include drip irrigation and efficient sprinkler heads; evapotranspiration (ET) irrigation controllers; drought-resistant and native plants for landscaping; and minimization of turf areas.**

Expansion of Water Facilities

The existing water distribution pipelines at West MacArthur Boulevard, Broadway, Howe Street, Shafter Avenue, Cerrito Avenue, 38th Street, Manila Avenue and Piedmont Avenue would continue to serve the project site and be adequate to accommodate the project's expected water demand. Water main extensions, designed and supplied by EBMUD, would be required to create service connections to new buildings on each development site, however, the project would not require or result in construction of water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Additionally, according to EBMUD, existing static water pressure at the project site ranges between 100 to 110 pounds per square inch (psi). With the required fire demand volumes of 1500 gallons per minute (gpm) applied, the projected residual pressures are the project site would range from 90-100 psi. From this data, the available flow at 20 psi, the minimum pressure per fire code, is approximately 4500 gpm. This is well above the minimum baseline fire flow of 1500 gpm, but below the fire code flows for building of the size planned for the project. Fire flows given in the Fire Code may be reduced in a building with sprinklers at the discretion of the Oakland Fire Marshal. The adequacy of the system will be determined by water system modeling, design of the fire system, and the determination of the Fire Marshal.

Summary of Water Supply Impact

Although the project would result in an increase in water demand (11 percent), the project would not exceed existing or projected water supply, result in the need for new or expanded water facilities, and would participate in, as feasible, water recycling and conservation programs of EBMUD and the City of Oakland.

Mitigation: None Required.

Impacts on Sanitary Sewer (Wastewater)

Impact M.2: The project's projected wastewater demand would not result in the City of Oakland exceeding its citywide projected base flow allocation for Subbasins 52-09 and 50-05; nor would the project require or result in construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (Less than Significant)

The loads on the sanitary sewer system are a factor of water use, in addition to the design, capacity, and condition of the sanitary sewer facilities. In general, the average dry-weather demand sewer flow is 90 percent of the average water use. The wet weather demand sewer flow adds a factor for inflow and infiltration of the system from stormwater and wet soils. Therefore during wet weather, peak sanitary sewer flows can be greater than dry weather flows.

TABLE IV. M-2
ESTIMATED SEWER DEMAND
EXISTING VERSUS PROJECT BUILDOUT, BY PHASE

	Existing Demand	Phase 1 (2006-2008)	Phase 2 (2008-2012)	Phase 3 (2013-2020)
Daily Demand	238,740 gpd	188,075 gpd	248,801 gpd	265,858 gpd

SOURCE: BKF Engineers, 2005b

Average sewer demand is projected to decrease from existing conditions through the end of Phase 1, and increase after Phase 2 , with implementation of the new hospital. The project would be anticipated to increase The estimated average dry weather wastewater flow would increase from the existing 238,740 gpd to approximately 265,858 gpd[12] at buildout (Phase 3), approximately . an 11 percent (BKF, 2005b). The project site is located in Subbasins 52-09 and 50-05, and the City of Oakland PWA has indicated that there is sufficient capacity in these subbasins to handle the proposed development's additional base flow. However, as part of the project permitting, local onsite mains serving the additional base flow that would result from the project must be analyzed by the project sponsor to determine the adequacy of the system's capacity and upgrade the local system, if necessary.

The existing sanitary sewer lines located under existing streets would continue to serve the project site. The project does not propose any major replacement or improvement of existing

[12] The estimated wastewater flow is approximately 90 percent of the project's anticipated water demand. This estimate does not include projected water demand associated with irrigation.

sanitary sewer lines. Although the project may be required to extend or enlarge existing onsite sewer mains to serve new buildings on each development site, and that could result in construction impacts, those impacts would be considered less than significant with implementation of mitigation measures identified throughout this EIR in Section IV.B, Transportation, Circulation, and Parking (Construction Traffic); IV.C, Air Quality; Section IV.D, Noise; and Section IV.G, Hydrology and Water Quality**.**

Mitigation: None Required.

Stormwater Drainage Facilities

Impact M.3: The project would not require or result in construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (Less than Significant)

As evaluated in Section IV.G, Hydrology and Water Quality, overall stormwater runoff from the project site is expected to decrease with the project, in large part through the introduction of storm runoff reduction measures, such as filtering through permeable pavers, raised paver systems on upper-level courtyards, and landscape planters, to decrease the rate and volume of stormwater runoff from the site into the storm drain system. BKF Engineers prepared a stormwater runoff analysis that determined the existing rate of storm runoff (for a 100-year storm) from the entire project site (including sites not proposed for new construction) is approximately 56 cubic feet per second (cfs) (BKF, 2005c). **Table IV.G-1** in Section IV.G, Hydrology and Water Quality, summarizes the reduction in runoff that would occur. The City Ordinance does not set a baseline for acceptable reduction levels (i.e., "to the extent possible"). Calculated for the three sites proposed for redevelopment only (Site 7, Site 4, and Site 2), the project would result in an approximately 7.0 percent reduction in runoff. For the entire Kaiser Permanent OMC project site, the reduction in runoff at buildout (Phase 3) would be approximately 5.0 percent, including existing sites not proposed for redevelopment. As a result, the amount of runoff from the site would be less than existing conditions and thus would not significantly affect the existing storm drainage system.

A segment of Glen Echo Creek flows through the project site, specifically through Site 7 of the New Outpatient Zone, southward toward Mosswood Park. The entire length of the creek is culverted, except for the approximately 145-foot daylighted section midblock, between 38th Street and MacArthur Boulevard at Manila Avenue. The project would implement restoration and revegetation measures on the eastern bank of the daylighted segment of the creek, however no changes are proposed to the creek or storm drain culvert.

Although these activities could result in construction impacts, those impacts would be considered less than significant with implementation of mitigation measures identified throughout this EIR in Section IV.B, Transportation, Circulation, and Parking; C, Air Quality; Section IV.D, Noise; and Section IV.G, Hydrology and Water Quality.

Mitigation: None Required.

Solid Waste

Impact M.4: The project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs, and would not require or result in construction of landfill facilities or expansion of existing facilities, construction of which could cause significant environmental effects. Additionally, the project would not impede the ability of the City to meet the waste diversion requirements of the California Integrated Waste Management Act or the Alameda County Waste Reduction and Recycling Initiative or cause the City to violate other applicable federal, state, and local statutes and regulations related to solid waste. (Less than Significant)

Project Construction

Project construction would generate construction waste and debris. Waste generated by total construction of the project is estimated at a total of 88,565 cubic yards (cu.yds): approximately 13,667 cu.yds in Phase 1; approximately 72,676 cu.yds in Phase 2; and approximately 2,222 cu.yds. in Phase 3.

The construction-generated waste would be removed from the project site and disposed of primarily at the Vasco Road Landfill, which is estimated to have sufficient capacity to serve existing users through approximately 2015 (CIWMB, 2004c). The project would also dispose of certain construction-related debris and soil, as appropriate, at the WMAC's Davis Street Dump, the Altamont Landfill, Specialty Crushing, or Chemical Waste Management. Pursuant to AB 939 and City of Oakland Ordinance No. 12253, the project would prepare and implement a Construction and Demolition Debris Waste Reduction and Recycling Plan (WRRP) to ensure diversion of at least 50 percent of the construction and demolition debris from each stage of project implementation. The project would also adhere to and participate in all other waste reduction and diversion requirements and programs administered by the Alameda County. As such, the project would not prevent the City of Oakland from being able to meet mandated state or local diversion rates.

Project Operations

The California Integrated Waste Management Board (CIWMB) provides estimates for solid waste generation by land use category. The project would include hospital uses as well as medical office use, which for purposes of estimating waste is considered general office use. In general, medical service land uses generate an estimated 37,256 tons of solid waste annually (California Integrated Waste Management Board, 1999). Existing total solid waste generation at the Kaiser Permanente OMC was estimated at 1,014 tons in 2004. Projected solid waste generation at from the proposed project is estimated to be 1,383 tons at Phase 3, an increase of about 36 percent from 2004 levels. Kaiser Permanente's recycling program reduced total solid waste generation by approximately 147 tons per year, which, when applied to the estimate for the project at

buildout, the total volumes generated for the project would potentially be reduced to 1,236 tons per year, an increase of approximately 11 percent compared to 2004 levels. The existing overall rate of solid waste generated per employee (0.3 annual tons per employee) is not anticipated to increase in the future.

In 2000, the City of Oakland disposed of approximately 423,200 tons of waste at the Altamont Landfill. The project's estimated 1,383 annual tons of solid waste represents an increase of approximately .33 percent in Oakland's solid waste deposits. The project-generated waste would be disposed of at the Altamont Landfill and would result in an increase of less than .03 percent of the total amount of refuse processed annually at that facility. The Altamont Landfill currently has adequate permitted capacity to accommodate this increase in solid waste disposal. Neither the total annual solid waste generated estimated to be generated by the project, nor the degree of increase from existing conditions, would be considered a significant level that would potentially exceed landfill capacity.

In addition, the project would, to the extent feasible, participate in the City and County's recycling and waste diversion programs. The project would ensure suitable storage locations and containers for recyclable materials in or around the project buildings and public outdoor spaces, and the design, location, and maintenance of recycling collection and storage areas would comply with the City Planning Commission's *Guidelines for the Development and Evaluation of Recycling Collection and Storage Areas*, (Policy No. 100-28). Therefore, the project's contribution to Oakland's overall waste stream in and of itself is not considered significant, and with continued participation and adherence to these programs, the proposed project would not require or result in new or expanded landfill facilities or impede the City's ability to meet mandated waste diversion requirements. As required for all City development projects, the project would be required to comply with the following standard condition of approval, which the City will incorporate as a condition of approval for the project:

Standard Condition M.4: The project sponsor shall prepare, and subjected to review and approval by the City, implement a Construction and Demolition Debris Waste Reduction and Recycling Plan (WRRP) to ensure diversion of at least 50 percent of the construction and demolition debris from each stage of project implementation, as well as throughout operations of the project.

Significance after Implementation of Standard Condition: Impact would remain Less Than Significant.

Energy

Impact M.5: The project would not violate applicable federal, state and local statutes and regulations relating to energy standards; nor would the proposed project result in a

determination by the energy provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the providers' existing commitments and require or result in construction of new energy facilities or expansion of existing facilities, construction of which could cause significant environmental effects. (Less than Significant)

The project would result in an incremental increase in the demand for gas and electrical power given the increase in development on the project site. The new hospital project is estimated to consume about 42 million kilowatt-hours (KWH) per year. The existing structures being displaced are estimated to consume a total 5 to 7 million KWH per year, thus the net increase would be an estimated 35 to 37 million KWH per year. The new project is estimated to consume 13 million Therms of natural gas energy per year. (Ted Jacobs, 2005). Additionally, the project proposes a cogeneration facility estimated to reduce annual utility and natural gas consumption.

Overall, the level of public energy required of the proposed project would not be expected to violate applicable federal, state and local statutes and regulations relating to energy standards or exceed PG&E's service capacity or require new or expanded facilities, particularly given the level of development that the project would be replacing, including an existing hospital and medical services facilities. The project would be required by the City to comply with all standards of Title 24 of the California Code of Regulations, aimed at the incorporation of energy-conserving design and construction Also, PG&E infrastructure exists on the project site, and any improvements and extensions required to accommodate the project would be determined in consultation with PG&E prior to installation**.** As a result, although the project would increase energy consumption, it would not result in a significant impact related to the provision of energy services.

Mitigation: None Required.

Cumulative Impacts

Cumulative Context

As discussed above, the project would not result in significant project-level effects on the ability of the City of Oakland and other service providers to effectively deliver public water supply, sanitary sewer (wastewater), stormwater drainage, solid waste, and gas and electricity services to the project site. Considered in combination with other foreseeable development, there would likely be a cumulative increase in demand for utility services. The geographic context used for the cumulative assessment of water supply impacts is EBMUD’s entire service area, which includes Oakland and several other jurisdictions throughout Alameda County and Contra Costa County. Oakland and its surrounding areas (per the Oakland Cumulative Growth Scenario as refined for this EIR) was used as context for assessing cumulative impacts for sanitary sewer (wastewater) impacts and stormwater drainage impacts. The geographic context used to assess cumulative solid waste impacts was the service regions of the Altamont Landfill and Resource Facility and the

Vasco Road Landfill. PG&E's 70,000-square-mile service area of northern and central California is the cumulative context for gas and electricity service.

Cumulative Impacts on Utility and Service System

Impact M.6: The increased development resulting from the proposed project, in conjunction with population and density of other foreseeable development in the city, would not result in cumulative impacts on utilities and service systems. (Less than Significant)

Water Supply

The proposed project, in conjunction with reasonably foreseeable future projects, could result in a cumulative increase in demand for water service, however, as discussed in the above analysis, the Kaiser Permanente OMC Project would not exceed water supplies available to serve the project, nor cause significant environmental effects due the construction of new or expanded water facilities. Additionally, the increases in demand attributable to other future development would be addressed on a site-by-site basis by EBMUD prior to approval of new development.

Also, the proposed project and other foreseeable development would employ EBMUD's recommended water conservation measures, and wherever feasible, participate in water recycling programs, to minimize the effects of water supply during severe drought. Projects would also comply with the City's Landscape Water Conservation Ordinance and all City policies aimed at water use reduction, as would other reasonably foreseeable future projects in Oakland.

The project site and other foreseeable future projects in Oakland (approximately one-third of EBMUD's service area) is a largely built-out urban area where water supply is already provided. Although the service to the onsite development parcels will required extension of extension and possibly relocation of existing water mains, which could result in construction impacts, those impacts would be reduced to less-than-significant levels by implementation of mitigation measures identified throughout this EIR. Thus, the effect of the proposed project on water supply, in combination with other foreseeable projects would be less than significant.

Sanitary Sewer (Wastewater)

The proposed project, in conjunction with reasonably foreseeable future projects, could result in a cumulative increase in sewage generation, resulting in increased demand on EBMUD's wastewater treatment facility serving the project site. The City would continue to implement its infiltration/inflow correction program intended to reduce the amount of inflow and infiltration, but this would not provide additional capacity beyond that projected for future years.

As discussed in the analysis above, the wastewater demands of the project itself would not exceed the capacity of the system, but will require a capacity analysis for local onsite mains. Other foreseeable future projects would also be required to adhere to the same requirements to ensure adequate capacity for the specific projects as well as cumulatively. Therefore, as a result of existing capacity and continued implementation of programs and City ordinances aimed at improve the systems function, the proposed project, in combination with other reasonably

foreseeable future projects would not result in the need for new or expanded wastewater treatment facilities. Although the project may require the extension of onsite sewer connections, which could result in construction impacts, those impacts would be reduced to less-than-significant levels with implementation of mitigation measures identified throughout this EIR.

Stormwater Drainage Facilities

As discussed earlier in this section, the project would result in a decrease in the rate and volume of stormwater runoff from the site into the storm drain system, much through the implementation of landscape related strategies, including those outlined in the NPDES Provision C.3 requirements. Foreseeable future project also would be subject to the requirements and programs aimed to reduce impacts on the storm drain system citywide.

The City's ongoing preparation and implementation of its comprehensive storm drainage master plan, as well as efforts to implement the City's stormwater guidelines, will reduce the potential for a significant cumulative impact under cumulative conditions. Therefore, the proposed project, in conjunction with reasonably foreseeable future projects, would not result in a cumulative increase in stormwater runoff, requiring the need for new or expanded stormwater drainage facilities.

Solid Waste

The proposed project, in conjunction with reasonably foreseeable future projects, could result in a cumulative increase in solid waste and debris generated by project construction and operations, however, area landfills have adequate future capacity and implementation of City and County waste reduction and diversion requirements and programs would continue, thereby reducing the potential for exceeding existing capacities. . The Kaiser Permanent OMC Project and other reasonably foreseeable future projects would adhere to and participate in all other waste reduction and diversion requirements and programs administered by the City and Alameda County, and therefore would not result in new or expanded landfill facilities or impede the City's ability to meet mandated waste diversion requirements. Thus, the effect of the proposed project on solid waste, in combination with other foreseeable projects, would be less than significant.

Energy

The proposed project, in conjunction with reasonably foreseeable future projects, could result in a cumulative increase in the demand for gas and electrical power in PG&E's service area of northern and central California. Energy consumption statewide increases annually while the in-state power generation facilities are aging and most of the natural gas supply is produced out of state. Regardless, the development of the Kaiser Permanente OMC Project and other reasonably foreseeable future projects in Oakland, which is mostly already served by gas and electricity infrastructure, and the net increased power demand from these projects relative to the regional service area, would be minimal and not require expanded or new power facilities as a direct result of project development. Furthermore, the proposed project and other reasonably foreseeable future projects would comply with all standards of Title 24 of the California Code of Regulations, (or other similar special building codes that would apply to hospital facilities). Therefore, , the

effect of the proposed project on energy consumption levels, in combination with other foreseeable projects, would be less than significant.

Mitigation: None Required.

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