# 3.12 - Utilities and Service Systems

## 3.12.1 - Introduction

This section describes the existing utilities and systems and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information provided in the Water Supply Assessment prepared by the Alameda County Water District (ACWD) and information provided by the Union Sanitary District (USD), Alameda County Flood Control and Water Conservation District, the California Department of Resources Recycling and Recovery, and Pacific Gas and Electric Company. The Water Supply Assessment is provided in its entirety in Appendix H.

## 3.12.2 - Environmental Setting

### Potable Water

ACWD provides potable water to the cities of Fremont, Newark, and Union City. ACWD provides water primarily to urban customers: approximately 70 percent of supplies are used by residential customers, with the balance (approximately 30 percent) utilized by commercial, industrial, and institutional customers. Net distribution system water use was approximately 48,800 acre-feet (af) or an average of 43.6 million gallons per day (mgd) in fiscal year 2012-13. ACWD's primary sources of supply come from the California State Water Project (SWP), the San Francisco Regional Water System, and local supplies from the Alameda Creek Watershed and Niles Cone Groundwater Basin (underlying the ACWD service area).

Pursuant to state law, ACWD prepared a Water Supply Assessment for the proposed Community Plan. The Water Supply Assessment is summarized herein.

#### *Historical and Current Water Use*

Table 3.12-1 provides a summary of the last ten years of water use within the ACWD. As shown in the table, residential water use comprises approximately 70 percent of ACWD water with the remaining 30 percent being used by commercial, industrial, and institutional customers.

**Table 3.12-1: Past and Current Water Use**

| Water Use Category | Fiscal Year (Acre-Feet) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 02-03 | 03-04 | 04-05 | 05-06 | 06-07 | 07-08 | 08-09 | 09-10 | 10-11 | 11-12 |
| Single-Family Residential | 25,300 | 26,200 | 23,700 | 25,000 | 25,200 | 24,600 | 24,100 | 21,500 | 21,800 | 21,700 |
| Multi-Family Residential | 8,500 | 8,500 | 8,200 | 8,000 | 8,100 | 8,100 | 7,400 | 7,600 | 7,500 | 7,600 |
| Commercial | 5,000 | 5,200 | 5,300 | 5,500 | 5,300 | 5,200 | 5,100 | 4,700 | 4,700 | 3,800 |
| Industrial | 4,100 | 3,900 | 3,400 | 3,500 | 3,400 | 3,100 | 2,800 | 2,500 | 2,500 | 2,600 |
| Institutional | 2,200 | 2,300 | 2,000 | 2,100 | 2,100 | 2,100 | 2,100 | 1,800 | 1,700 | 1,900 |

**Table 3.12-1 (cont.): Past and Current Water Use**

| Water Use Category | Fiscal Year (Acre-Feet) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 02-03 | 03-04 | 04-05 | 05-06 | 06-07 | 07-08 | 08-09 | 09-10 | 10-11 | 11-12 |
| Landscape | 5,600 | 6,300 | 5,600 | 5,200 | 5,700 | 6,000 | 5,600 | 4,800 | 4,900 | 6,400 |
| Other | 100 | 100 | 100 | 200 | 100 | 100 | 200 | 100 | 200 | 100 |
| Total Consumption | 50,800 | 52,500 | 48,300 | 49,500 | 49,900 | 49,200 | 47,300 | 43,000 | 43,300 | 44,100 |
| Unaccounted for Water | 3,600 | 3,900 | 3,300 | 3,700 | 5,100 | 5,800 | 3,500 | 4,100 | 4,100 | 4,200 |
| Distribution System Total | 54,400 | 56,400 | 51,600 | 53,200 | 55,000 | 55,000 | 50,800 | 47,100 | 47,400 | 48,300 |
| Private Groundwater | 3,400 | 3,600 | 3,800 | 3,000 | 3,000 | 2,200 | 2,100 | 1,900 | 2,000 | 2,600 |
| ARP Pumping | 7,700 | 11,100 | 9,400 | 11,600 | 9,900 | 6,600 | 4,900 | 7,000 | 11,300 | 12,000 |
| Saline Outflow | 5,800 | 7,200 | 6,600 | 8,400 | 6,800 | 7,400 | 7,400 | 6,800 | 6,100 | 4,700 |
| Groundwater System Total | 16,900 | 21,900 | 19,800 | 23,000 | 19,700 | 16,200 | 14,400 | 15,700 | 19,400 | 19,300 |
| Grand Total | 71,300 | 78,300 | 71,400 | 76,200 | 74,700 | 71,200 | 65,200 | 62,800 | 66,800 | 67,600 |

Notes:
Annual consumption is based on units billed during the fiscal year (July 1 to June 30). ACWD uses a bi-monthly billing cycle.
All values rounded to the nearest 100.
Total consumption values may not equal the sum of individual components due to rounding.
Landscape water use includes all dedicated landscape accounts for Multi-Family Residential, Commercial, Industrial, and Institutional customers.
Source: Alameda County Water District, 2013.

Water consumption patterns in the ACWD service area are a function of many independent factors including development, weather conditions, economic conditions, and customer behavior. ACWD saw dramatic declines in consumption during the 1987-1992 drought due to voluntary conservation and ACWD-sponsored demand management efforts. However, during the drought recovery period since 1992, several significant factors have influenced consumption. From 1993 to 2001, accelerated growth of both residential and business customers (including the high-technology industry) occurred as the result of a strong economy. During this period, vacancy rates decreased and water consumption rose. From 2001 to 2007, the overall consumption in the ACWD service area was relatively flat, attributed primarily to less robust local economic conditions, mild weather and ongoing water conservation programs. Between 2008 and 2010, ACWD experienced large declines in overall water consumption, which leveled out in 2010 and have remained relatively constant since. The reduced demand has been attributed to a combination of successive dry year conditions, local and statewide conservation campaigns and a continued economic downturn. As a result, ACWD's 2010 Urban Water Management Plan (UWMP) reflects substantially lower forecast demand for water than was reported in previous UWMPs.

### *Water Demands*

ACWD's approach to water demand forecasting for the UWMP is to: (1) evaluate existing demands of lands already developed in the service area; (2) estimate future demands of currently undeveloped lands that are designated for development; and (3) combine the existing and future demands to estimate the overall ACWD-wide future demands. This demand forecasting is done for five primary land use categories: single-family residential, multi-family residential, commercial, industrial, and institutional. In order to estimate future demands of currently undeveloped lands in each of these categories, ACWD obtains the most recent zoning information for these lands. The land use information is provided by the cities' planning staffs, and includes general plan land use designations and, when available, more detailed information from specific plans or other planning documents. A ACWD-wide water demand forecast for each land use category is then developed by multiplying the planned land use under each land use category by a ACWD-wide average unit water use specific to that land use category. Additional potential future land use is also accounted for in the demand projections and is based on city-approved plans for redevelopment or intensification of specific areas. The demand forecast also considers future demands associated with Association of Bay Area Governments' (ABAG's) most recent Smart Growth projections.

Actual unit water use for any specific land use project may vary significantly from the ACWD-wide average. However, determining the actual unit water use for each specific development project in the service area is beyond the scope of ACWD's UWMP demand forecast. Rather than providing demand forecasts for specific land use projects, the UWMP provides an aggregated, ACWD-wide demand forecast for each land use category, as well as the total ACWD-wide demand. This approach is proven sufficiently accurate for long-term, ACWD-wide demand forecasting and is consistent with the California Water Code requirements for urban water management planning. However, if ACWD has detailed information about the water demands of a specific project during the time it is preparing the UWMP, ACWD will account for the specific project's water demands in the UWMP in lieu of the ACWD-wide average.

ACWD's 2009 forecast is substantially revised from the 2004 forecast in several key areas with a combined effect of reduced long-term demand. Key changes since 2004 are a slower rate of growth in the service area, continued restructuring of the local economy with a net loss of high water use industry (manufacturing), prolonged economic recovery from the recession, increased natural conservation with plumbing code updates, and accelerated conservation effect resulting from recent drought message and public awareness (behavior change).

The projected future demands in the ACWD service area are summarized in Table 3.12-2 (for the years 2015, 2020, 2025, 2030, and 2035). The water demand forecast also includes projected savings from water conservation—both "active conservation" sponsored by the ACWD and "passive conservation" that results from improved plumbing code standards. ACWD is a signatory to the California Urban Water Conservation Council's Memorandum Of Understanding on Urban Water Conservation and is committed to the implementation of all locally cost-effective water conservation best management practices. A complete description of ACWD's water conservation program, as well as water saving assumptions, is provided in Chapter 7 of the UWMP.

**Table 3.12-2: Estimated Future Water Demands – Normal Year**

| Water Use Category | Year (acre-feet/year) | | | | |
|---|---|---|---|---|---|
| | 2015 | 2020 | 2025 | 2030 | 2035 |
| Single-Family Residential | 23,600 | 24,300 | 24,600 | 24,900 | 25,100 |
| Multi-Family Residential | 9,600 | 9,900 | 10,200 | 10,500 | 11,100 |
| Commercial | 6,500 | 7,100 | 7,500 | 7,900 | 8,100 |
| Industrial | 3,700 | 4,400 | 5,000 | 5,800 | 5,900 |
| Institutional | 3,600 | 4,100 | 4,600 | 5,300 | 5,300 |
| Other | 100 | 100 | 100 | 100 | 100 |
| Subtotal | 47,100 | 49,900 | 51,900 | 54,500 | 55,600 |
| Adjustment for Plumbing Code Savings | (800) | (1,500) | (2,000) | (2,400) | (2,700) |
| Subtotal Demand | 46,300 | 48,400 | 49,900 | 52,100 | 52,900 |
| Total Distribution System Demand (with unaccounted for waters) | 50,900 | 53,000 | 54,800 | 57,000 | 58,000 |
| Adjustments for Water Conservation Savings | (800) | (1,400) | (1,400) | (1,400) | (1,400) |
| Groundwater System Demand | 16,200 | 16,200 | 16,200 | 16,200 | 16,200 |
| Total ACWD Forecast Demands | 66,300 | 67,800 | 69,600 | 71,800 | 72,800 |

Notes:
All numbers from ACWD's 2010 UWMP.
All values rounded to nearest 100. Total values may not equal the sum of individual components due to rounding errors.
Source: Alameda County Water District, 2013.

As described in the following section, the project's demands are considered consistent with the ACWD's demand forecast and, therefore, are not listed separately in Table 3.12-2. Demands listed in this table include the demands from all water supply assessments completed to date by ACWD except for those of the Ballpark Village Specific Plan, Masonic Homes Flatlands Projects, and Solyndra Solar Panel Manufacturing Projects, which have all been rescinded.

### *Water Supply*

ACWD's three primary sources of water supply are: (1) the SWP; (2) San Francisco's Regional Water System; and (3) local supplies. The SWP and San Francisco Regional Water Supplies are imported into the ACWD service area through the South Bay Aqueduct and Hetch-Hetchy Aqueduct, respectively. Local supplies include fresh groundwater from the Niles Cone Groundwater Basin (underlying the ACWD service area), desalinated brackish groundwater from portions of the groundwater basin previously impacted by seawater intrusion, and surface water from the Del Valle Reservoir. The primary source of recharge for the Niles Cone Groundwater Basin is percolation of runoff from the Alameda Creek watershed. To a lesser degree, a portion of ACWD's SWP supplies is

also used for local groundwater percolation. Infiltration of rainfall and applied water within the ACWD service area also contribute to local groundwater recharge.

Because of the configuration of ACWD's water production facilities and the interconnection with the ACWD's distribution system, the proposed project may receive water supplies from all three primary sources of supplies, and would not be dependent on any single source of supply. Therefore, a description of all of ACWD's water supplies is provided below. Table 3.12-3 provides a summary of the historical use of these supplies by ACWD.

**Table 3.12-3: Historical Water Supply Utilization**

| Fiscal Year | Acre-Feet/Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | State Water Project Supplies Used ACWD Facilities | Del Valle | San Francisco Regional Water | Newark Desalination Facility | Net Local Groundwater Recharge | Recovered From Semitropic Groundwater Bank | Total In-ACWD Water Supply | State Water Project Supply Delivered to Semitropic Groundwater Bank |
| 92-93 | 14,900 | 4,100 | 13,000 | — | 40,700 | — | 72,700 | — |
| 93-94 | 21,600 | 5,000 | 12,200 | — | 28,500 | — | 67,300 | — |
| 94-95 | 16,100 | 4,200 | 13,000 | — | 35,900 | — | 69,200 | — |
| 95-96 | 18,600 | 5,300 | 12,200 | — | 27,600 | — | 63,700 | — |
| 96-97 | 7,700 | 15,900 | 14,700 | — | 25,300 | — | 63,600 | 6,200 |
| 97-98 | 12,900 | 10,600 | 13,700 | — | 58,000 | — | 95,200 | 10,000 |
| 98-99 | 20,800 | 5,300 | 13,600 | — | 33,200 | — | 72,900 | 18,800 |
| 99-00 | 25,200 | 3,800 | 13,800 | — | 26,900 | — | 69,700 | 7,200 |
| 00-01 | 26,400 | 200 | 13,000 | — | 31,000 | — | 70,600 | 7,300 |
| 01-02 | 21,900 | 4,600 | 13,500 | — | 32,100 | — | 72,100 | 100 |
| 02-03 | 17,600 | 7,400 | 14,000 | — | 31,400 | — | 70,400 | 20,800 |
| 03-04 | 18,500 | 6,700 | 13,700 | 2,600 | 30,700 | — | 72,200 | 4,000 |
| 04-05 | 18,800 | 6,000 | 11,800 | 3,900 | 38,700 | — | 79,200 | 9,300 |
| 05-06 | 15,600 | 7,700 | 11,700 | 3,900 | 38,200 | — | 77,100 | 41,500 |
| 06-07 | 13,800 | 11,000 | 15,300 | 2,800 | 26,000 | — | 68,900 | 11,900 |
| 07-08 | 22,600 | 500 | 15,000 | 3,600 | 24,600 | 5,500 | 71,800 | — |
| 08-09 | 10,400 | 4,200 | 12,600 | 3,200 | 24,100 | 10,600 | 65,100 | — |
| 09-10 | 18,100 | 2,500 | 11,700 | 1,100 | 30,800 | — | 64,200 | — |
| 10-11 | 14,300 | 5,900 | 8,800 | 6,600 | 33,600 | — | 69,200 | — |
| 11-12 | 18,320 | 2,600 | 9,320 | 8,900 | 17,000 | — | 56,140 | 5,000 |

Notes:
All values rounded. Total values may not equal the sum of individual components due to rounding errors.
Recharge figures less evaporation and other losses.
Source: Alameda County Water District, 2013.

*Wholesale Water Supplies*

As described above, ACWD's wholesale water supplies are: (1) SWP supplies purchased from the California Department of Water Resources and (2) San Francisco Regional Water System supplies purchased from San Francisco. Each supply is described in greater detail below.

**State Water Project**

In 1961, ACWD signed a contract with the State Department of Water Resources (DWR) for a maximum annual amount of 42,000 af from the SWP, referred to as ACWD's "maximum Table A allocation." The SWP, managed by the DWR, is the largest state-built, multi-purpose water project in the country. The SWP facilities include 28 dams and reservoirs, 26 pumping and generating plants, and approximately 660 miles of aqueducts. The water stored in the SWP storage facilities originates from rainfall and snowmelt runoff in Northern and Central California watersheds. The SWP's primary storage facility is Lake Oroville in the Feather River Watershed. Releases from Lake Oroville flow down the Feather River to the Sacramento River, which subsequently flows to the Sacramento-San Joaquin Delta. The SWP diverts water from the Delta through the Banks Pumping Plant, which lifts water from the Clifton Court Forebay (in the Delta) to the California Aqueduct and Bethany Reservoir. From Bethany Reservoir, the South Bay Pumping Plant lifts water into the South Bay Aqueduct, delivering SWP supplies to ACWD and other Bay Area water agencies in Alameda and Santa Clara Counties.

*Semitropic Banking of ACWD's SWP Supplies*

Because of the variability in the SWP supply availability, ACWD's 1995 Integrated Resource Plan (IRP) identified the need to secure 140,000 af of offsite storage capacity to improve the dry year reliability of this supply source. Based on this IRP recommendation, ACWD has contracted with Semitropic Water Storage ACWD for participation in the Semitropic Groundwater Banking Program in Kern County. In wet years, ACWD delivers its unused (excess) SWP supplies to Semitropic for storage in their groundwater basin. In dry years, ACWD can recover these supplies through (1) an "in-lieu" exchange whereby ACWD will receive a portion of Semitropic's SWP supplies (and Semitropic will utilize groundwater previously stored by ACWD in its basin), and (2) a "pumpback" program where Semitropic directly pumps stored groundwater into the California Aqueduct and ACWD recovers this supply through SWP exchanges.

The rate at which ACWD can recover stored water in dry years is constrained by contractual limitations and limitations on the capacity of the Semitropic pumpback facilities. Based on the terms of the agreements with Semitropic, the amount of return capacity is based on the amount of storage capacity purchased. Because of these limitations, ACWD secured a total of 150,000 af of storage capacity at Semitropic (in excess of the IRP's recommendation of 140,000 af), in order to provide sufficient dry year return capacity to meet ACWD's projected needs in all but the most severe drought conditions.

The Semitropic Groundwater Banking Program does not provide a new source of supply for the ACWD. Rather, it provides a means to store the ACWD's unused SWP supplies in wet years for use during dry years when the delivery of SWP supplies may be significantly curtailed.

**San Francisco's Regional Water System**

ACWD also receives water from the San Francisco Regional Water System, operated by the San Francisco Public Utilities Commission (SFPUC). This supply is predominantly from the Sierra Nevada, delivered through the Hetch-Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local watersheds and facilities in Alameda and San Mateo Counties. The amount of imported water available to the SFPUC's retail and wholesale customers is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River.

In 2009, ACWD, along with the other wholesale customers, signed a new Master Sales Agreement with San Francisco, supplemented by an individual Water Sales Contract. The new agreements have a term of 25 years and provide a commitment from San Francisco to provide, collectively, up to 184 mgd to its wholesale customers. ACWD's individual supply assurance is 13.76 mgd.

**Local Sources**

As described above, ACWD's local sources include fresh groundwater from the Niles Cone Groundwater Basin, brackish groundwater desalination, and surface water supplies from the Del Valle Reservoir. Each of these supplies is described in greater detail below.

*Niles Cone Groundwater Basin*

The principal source of local supply for the ACWD is the local aquifer system known as the Niles Cone Groundwater Basin. The primary source of recharge for the Niles Cone Groundwater Basin is local runoff from the Alameda Creek Watershed, which is captured, diverted, and recharged at the ACWD's groundwater recharge facilities. To a lesser extent, infiltration of rainfall and applied water within the ACWD service area also provide a local source of recharge for the groundwater basin. Though not a local supply but mentioned here for completeness, ACWD also uses a portion of its imported SWP supplies for groundwater recharge to more effectively manage the groundwater basin.

Chapter 3 of the 2010 UWMP documents the range in availability of supply from Alameda Creek and includes environmental bypass flow requirements from a March 2011 preliminary agreement between ACWD and the National Marine Fisheries Services (NMFS) and the Department of Fish and Wildlife (DFW).

The water quality in the groundwater system is characterized by fresh groundwater in the eastern portion of the groundwater basin transitioning into brackish groundwater in the western portion of the basin. The brackish groundwater is a result of historical seawater intrusion from the adjacent San Francisco Bay. Since the 1960s, ACWD has managed the groundwater basin to prevent any additional seawater intrusion and has an ongoing program to pump trapped brackish groundwater back to San Francisco Bay through the ACWD's Aquifer Reclamation Program wells.

The Niles Cone Groundwater Basin has capacity to store water from year to year (local groundwater storage). However, the usable storage capacity of the groundwater basin is significantly limited by the potential for seawater intrusion if groundwater levels are maintained too low. Although local groundwater storage (i.e., groundwater supplies in excess of recharge) provides a short-term source

of supply during dry years, it is not a supply that is available every year because the groundwater system will require replenishment from freshwater sources, without which seawater intrusion would occur.

Chapter 4 of the UWMP provides a comprehensive description of the Niles Cone Groundwater Basin, including groundwater quality, groundwater levels, historical and projected groundwater pumping, and ACWD's groundwater management activities. A copy of ACWD's groundwater management policy is also provided in the UWMP. The Niles Cone Groundwater Basin is also described in DWR Bulletin 118 – Update 2003: California's Groundwater, and is not listed as in "overdraft" or "potentially overdraft condition" by the DWR.

*Brackish Groundwater Desalination*

In 2003, ACWD commissioned the Newark Desalination Facility. This 5-mgd facility utilizes the reverse osmosis process to remove salts and other impurities from the brackish groundwater pumped at ACWD's Aquifer Reclamation Program wells. Treated water from the Newark Desalination Facility is blended with untreated local groundwater and provided as a supply for the distribution system demands. In 2010, ACWD expanded this facility to 10 mgd.

*Del Valle Reservoir*

The ACWD and Zone 7 Water Agency of the Alameda County Flood Control and Water Conservation District (hereafter referred to as Zone 7), have equal rights on Arroyo Del Valle to divert water to storage. When DWR constructed Del Valle Dam in the upper Alameda Creek Watershed, those rights were recognized in an agreement among DWR, the ACWD, and Zone 7. Consequently, DWR typically makes a total of 15,000 af of storage available annually in Del Valle Reservoir for use by ACWD and Zone 7. ACWD and Zone 7 equally share this storage capacity, thereby providing up to 7,500 af of storage capacity annually to ACWD.

*Recycled Water*

The ACWD's long-term supply strategy includes a potential recycled water program, which will provide up to 1,600 af/year of non-potable supply (e.g., landscape irrigation and industrial process water). As described in Chapter 6 of the UWMP, the source of recycled water will likely be from a joint project with ACWD and Union Sanitary District (USD). As an interim supply, another potential source is the purchase of recycled water from the South Bay Water Recycling Program. Recycled water distribution pipelines will be separate from the ACWD's existing potable distribution system and, therefore, would not adversely affect existing potable supply operations. The volume of recycled water produced would be the same in drought years as in normal years, thus providing a firm source of supply. Demand for recycled water for irrigation purposes is highest in the summer months. Therefore, in addition to increasing water supply, use of reclaimed water would help meet peak monthly and daily production capacity needs.

In 2010, ACWD and USD completed the ACWD/USD Recycled Water Feasibility Study Update. This study identified two potential recycled water projects with a potential combined supply of up to 2,500 af/year. However, a significant portion of this supply would be to meet demands from future land use projects (including a golf course) which, as of 2013, have not yet been developed and are in various stages of the planning process. In addition, because of economic conditions, the 2007-09

drought, and other factors, the existing and projected water demands in the ACWD service area are significantly lower than previous forecasts. Based on discussions with representatives from Fremont, Union City, and Newark, it is also likely that many of the planned development projects (including potential future recycled water customers) will be significantly delayed until economic conditions are more favorable.

Because of the lower projected water demands over the UWMP planning horizon coupled with uncertainties regarding the timing of future developments, recycled water is not included in the 25-year planning horizon of the water supply-demand comparisons provided in the 2010 UWMP. However, recycled water is still considered a potential future source of supply for ACWD, especially in light of uncertainties with the reliability of ACWD's existing supplies, and a potential rebound of water demands in the service area—both of which could accelerate the need for a recycled water project. As part of the ACWD's review of the Integrated Resources Planning Study, ACWD will continue to evaluate the potential timing for a future recycled water project in the service area.

## Wastewater

USD provides wastewater collection and treatment service to Fremont, Newark, and Union City. USD's service area totals 60.2 square miles and has a population of 331,387. USD has 111,184 customer connections.

### *Collection System*

USD's collection system consists of 783 miles of gravity and force mains.

### *Wastewater Treatment Plant*

USD's Alvarado Wastewater Treatment Plant occupies 33 acres and is located at 5072 Benson Road, Union City. The plant opened in 1981 and provides secondary treatment of collected effluent. The plant treats an average of 26 million gallons per day (mgd) under dry weather conditions.

## Storm Drainage

Alameda County Flood Control and Water Conservation District (ACFCWC) oversees storm drainage facilities with Alameda County, including the City of Fremont. ACFCWC is subdivided in 10 zones, which overlap with watershed boundaries.

### *Zone 6*

Most of central and southern Fremont (including the Warm Springs area) is located with Zone 6, which encompasses a 27,400-acre area. Major drainages with Zone 6 include Agua Fria, Agua Caliente, Coyote, Laguna, Mission, Morrison, and Scott. ACFCWC owns and maintains 28 miles of natural creeks, 25 miles of earthen channels, 5 miles of concrete channels, 21 miles of underground pipes, and one mile of improved creeks.

## Solid Waste

Republic Services provides franchise solid waste and recycling collection services to commercial and residential customers in the City of Fremont.

### *Landfills*

Republic Services transports solid waste to the Fremont Recycling and Transfer Station at 41149 Boyce Road. From there, solid waste is transported to one of the landfills listed in Table 3.12-4.

**Table 3.12-4: Landfill Summary**

| Landfill | Location | Tons | Cubic Feet | |
|---|---|---|---|---|
| | | Maximum Permitted Daily Throughput | Permitted Capacity | Remaining Capacity |
| Altamont | Livermore | 11,500 | 62.0 million | 45.7 million |
| Newby Island | San Jose | 4,00 | 50.8 million | 18.3 million |
| Vasco Road | Livermore | 2,250 | 32.9 million | 9.8 million |
| Source: California Department of Resources Recycling and Recovery, 2013. | | | | |

## Energy

Pacific Gas and Electric Company (PG&E) is the primary electricity and natural gas provider to the northern and central parts of California including the City of Fremont.

### *Electricity*

PG&E, which is regulated by the California Public Utilities Commission, provides electricity to all or part of the 47 counties in California, including Alameda County. PG&E charges connection and user fees for all new development, and sliding use-based rates for electrical and natural gas service. In 2012, PG&E obtained 42.7 percent of electricity from its own generation sources and the remaining 57.3 percent from outside sources. PG&E-owned generating facilities include nuclear, natural gas, and hydroelectric, with a net generating capacity of more than 7,640 megawatts. Outside suppliers to PG&E include the California Department of Water Resources, irrigation districts, renewable energy suppliers, and other fossil fuel-fired suppliers. PG&E operates approximately 159,000 circuit miles of transmission and distribution lines. PG&E is interconnected with electric power systems in the western Electricity Coordinating Council, which includes 14 western states; Alberta and British Columbia, Canada; and parts of Mexico. In 2012, PG&E delivered 76,205 gigawatt-hours of electricity to its 5.2 million electrical customers.

### *Natural Gas*

PG&E provides natural gas to all or part of 39 counties in California comprising most of the northern and central portions of the State. PG&E obtains most of its natural gas supplies from western Canada and the balance from U.S. sources. PG&E operates approximately 48,000 miles of transmission and distribution pipelines, and three underground storage fields with a combined storage capacity of 48.7 billion cubic feet (Bcf). In 2012, PG&E delivered 248 billion cubic feet (Bcf) of natural gas to its 4.4 million natural gas customers.

## 3.12.3 - Regulatory Framework

### Federal

#### *National Pollutant Discharge Elimination System*

Pursuant to Section 402 of the CWA and the Porter-Cologne Water Quality Control Act, municipal stormwater discharges in the City of Fremont are regulated under the San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit, Order No. R2-2009-0074, NPDES Permit No. CAS612008, adopted October 14, 2009 and revised November 28, 2011. The Municipal Regional Permit is overseen by the Regional Water Board. The City of Fremont is a member agency of the Alameda Countywide Clean Water Program, which assists municipalities and other agencies in Alameda County with implementation of the Municipal Regional Permit. Provision C.3 addresses post-construction stormwater management requirements for new development and redevelopment projects that add and/or replace 10,000 square feet or more of impervious area. Provision C.3 requires the incorporation of site design, source control, and stormwater treatment measures into development projects in order to minimize the discharge of pollutants in stormwater runoff and non-stormwater discharges and to prevent increases in runoff flows. Low Impact Development (LID) methods are to be the primary mechanism for implementing such controls.

Municipal Regional Permit Provision C.3.g pertains to hydromodification management. This Municipal Regional Permit provision requires that stormwater discharges not cause an increase in the erosion potential of the receiving stream over the existing condition. Increases in runoff flow and volume must be managed so that the post-project runoff not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The Hydromodification Management Susceptibility Map developed by the Alameda Countywide Clean Water Program, indicates that the Community Plan area drains primarily to earthen channels and therefore projects implemented under the Community Plan that create and/or replace one acre or more of impervious surface and increase impervious surface over pre-project conditions are subject to hydromodification management requirements.

### State

#### *California Urban Water Management Planning Act*

The Urban Water Management Planning Act (California Water Code Sections 10610-10656) requires that all urban water suppliers prepare urban water management plans and update them every five years.

#### *California Integrated Waste Management Act*

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed Assembly Bill (AB) 939, the California Integrated Waste Management Act of 1989, effective January 1990. The legislation required each local jurisdiction in the State to set diversion requirements of 25 percent by 1995 and 50 percent by 2000; established a comprehensive statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities; and authorized local jurisdictions to impose fees based on the types or amounts of

solid waste generated. In 2007, Senate Bill (SB) 1016, Wiggins, Chapter 343, Statutes of 2008, introduced a new per capita disposal and goal measurement system that moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a per capita disposal rate factor. As such, the new disposal-based indicator (pounds per person per year) uses only two factors: a jurisdiction's population (or in some cases employment) and its disposal as reported by disposal facilities. In, 1999, the City Council increased the goal to diverting 75% of solid waste generated in Fremont, consistent with the countywide goal established by Alameda County Measure D. Since adoption of the 75% goal, the City has made progress, reaching 74% diversion in 2010

### *Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings*

Title 24, Part 6, of the California Code of Regulations establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings. The standards were updated in 2005 and recently amended in 2008. The 2008 standards set a goal of reducing growth in electricity use by 561.2 gigawatt-hours per year (GWh/y) and growth in natural gas use by 19 million therms per year (therms/y). The savings attributable to new nonresidential buildings are 151.2 GWh/y of electricity savings and 3.3 million therms. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC]; and water heating systems), indoor and outdoor lighting, and illuminated signs.

## Local

### *Alameda County Flood Control and Water Conservation District*

The ACFCWC is responsible for protecting county citizens from flooding by maintaining flood channels and natural creeks within Alameda County. As a condition of receiving a drainage permit, drainage plans for development projects must be reviewed by the ACFCWC to ensure that they are consistent with its policies and regulations pertaining to runoff, stormwater management and detention, flooding, and erosion. In addition, development projects that involve work within the ACFCWC right-of-way or that involve construction, modification, or connection to ACFCWC facilities are required to obtain a Flood Encroachment Permit and must comply with ACFCWC standards and specifications.

### *Alameda County Water District*

The Alameda County Groundwater Protection Act authorizes the ACWD to take action to protect the quality of the local groundwater supply within the ACWD service area by adopting, updating, and revising regulations and standards. Under the Replenishment Assessment Act, the ACWD also has authority to collect fees for water extracted from water supply wells, dewatering wells, and water quality monitoring/treatment wells. The ACWD uses the fees to manage and replenish the Niles Cone Groundwater Basin. ACWD Ordinance No. 2010-01 requires a permit to be obtained for the construction, repair, inactivation, or destruction of any well or exploratory hole, or any excavation that has the potential to impact a groundwater aquifer. The Groundwater Management Policy requires that property owners or developers inform the ACWD of proposed developments or land use changes so that the ACWD can conduct a field and records search for abandoned wells (ACWD

2001). The destruction of any abandoned wells located by the search is a condition of approval for any proposed development or land use change.

### *City of Fremont*

*General Plan*

The City of Fremont General Plan sets forth the following goals and policies related to utility systems:

- Goal 7-2 and Policy 7.2-1 call for protection of water resources.
- Goal 7-4 and Policies 7-4.1, 7-4.2, and 7-4.3 promote water conservation.
- Goal 9-3 calls for providing water sewer and flood control systems that meet community needs.
- Goal 9-4 calls for providing natural gas and electric infrastructure that meet the needs of new development.
- Goal 9-6 promotes maximizing waste diversion.
- Goal 10-3 and Policies 10-3.1 and 10-3.2 call for minimizing risks to life and property from flooding.

## 3.12.4 - Methodology

A Water Supply Assessment was prepared for the proposed project by ACWD. The Water Supply Assessment was required by California Water Code Section 10910, because the proposed project would develop a mixed-use project that would demand an amount of water equivalent to or greater than a 500-unit residential project. The Water Supply Assessment is contained in Appendix H of this Draft EIR.

ACWD's long-term water supply strategy was developed as part of the Integrated Resources Planning Study and adopted by the ACWD Board in 1995. This strategy is incorporated into ACWD's UWMP, which documents ACWD's existing water supplies as well as the projected future demand for water and changing availability of our supplies. The demand projections were made the year prior to completion of the UWMP and relied on the most current published supply reliability and land use planning data at that time. The Water Supply Assessment estimated the water demand for the project and compared it to what was included in the UWMP while using the 2010 UWMP data for analyzing and reporting water supply reliability and documenting ACWD's sources of supply as required under the Water Code.

FirstCarbon Solutions evaluated other utility system impacts using information provided by the USD, ACFCWC, California Department of Resources Recycling and Recovery, and PG&E. Agency websites were reviewed for relevant information about facilities and services provided. Additionally, the PG&E 10-K Annual Report was reviewed for information about electricity and natural gas supplies and usage rates.

## 3.12.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, utility impacts resulting from the implementation of the Community Plan would be considered significant if its implementation would:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

g) Comply with federal, state, and local statutes and regulations related to solid waste.

h) Result in inefficient, wasteful, or unnecessary consumption of energy.

## 3.12.6 - Project Impacts and Mitigation Measures

### Potable Water

**Impact US-1:** **The proposed Community Plan may not be served with sufficient water supplies or require the construction of new water treatment facilities or expansion of existing facilities.**

***Impact Analysis***

Under normal year conditions, ACWD's water supplies are projected to be sufficient to meet the future demands in the service area, including the project's demands. ACWD estimated Community Plan water demands to 1,400 acre-feet annually; refer to Table 3.12-5.[1]

**Table 3.12-5: Community Plan Water Demand Estimate**

| Use | Units | Gallons per Day/Unit | Demand Estimate (acre-feet/year) |
|---|---|---|---|
| Retail/Commercial | 45,000 | 0.2820 | 10 |
| Residential – High Density Multi-Family | 4,000 | 150.0000 | 670 |
| Research & Development/Hi-Tech | 1,749,906 | 0.1035 | 200 |
| General Industrial | 1,749,906 | 0.1035 | 200 |

[1] Note that the estimate of 1,400 acre-feet was based on a higher value for non-residential square footage that has since been reduced. Accordingly, the water demand was based on greater non-residential development and is, therefore, conservative.

**Table 3.12-5 (cont.): Community Plan Water Demand Estimate**

| Use | Units | Gallons per Day/Unit | Demand Estimate (acre-feet/year) |
|---|---|---|---|
| Office | 1,749,906 | 0.1035 | 200 |
| School | 750 | 15.0000 | 10 |
| Estimated Total Water Demand | | | 1,290 |
| Water Supplies Required (8.4 percent Unaccounted for Water) | | | 1,400 |
| Approximate Peak Day Demand in MGD (1.6 x peaking factor) | | | 2.0 |

Notes:
R&D/Hi-Tech, General Industrial, and Office square footage are split evenly.
600-room hotel assumed to have same demands as R&D/Hi-Tech, General Industrial, and Office uses; thus, it is accounted for in those values.
Source: Alameda County Water District, 2013.

The following provides a comparison of ACWD water supplies and projected future demands associated with the proposed Community Plan. The supply/demand comparisons are provided for normal, single year dry, and multiple dry year conditions.

*Normal Year Water Supply*
Table 3.12-6 provides a comparison of normal year water supply and demands under future levels of development in five-year increments from 2015 through 2035. As shown in the table, ACWD's projected supply under normal year conditions is sufficient to meet current and projected future demands, which include demands for this project.

**Table 3.12-6: Water Supply and Demand Comparison – Normal Year**

| Supply/Demand | Year (Acre-Feet) | | | | |
|---|---|---|---|---|---|
| | 2015 | 2020 | 2025 | 2030 | 2035 |
| Total Supply | 78,300 | 78,300 | 78,300 | 78,300 | 78,300 |
| Forecast Demands | 66,300 | 67,800 | 69,600 | 71,800 | 72,800 |
| Anticipated Shortage | — | — | — | — | — |

Notes:
All values rounded to nearest 100 acre-feet.
Forecast Demands include Community Plan demand.
Source: Alameda County Water District, 2013.

*Single Dry Year Water Supply*
Table 3.12-7 documents the comparison of water supply and demand under a single critical dry year condition based on 1977 hydrologic conditions. As with the normal year conditions, the single dry year supply/demand comparison is provided in the same five-year increments between 2015 and 2035.

As shown in the table, ACWD anticipates facing a water supply shortage during single critical dry year supply conditions. This shortage is less than previously anticipated in the 2005 UWMP, due primarily to the reduction in forecast demands. ACWD planning has held since the 1995 IRP that shortages anticipated during critical droughts of this magnitude and frequency (1 in 35 years) will be mitigated through a combination of demand management measures (including rationing) and purchases of dry year water through programs such as the Drought Water Bank (initiated during the 1987-92 drought by the DWR).

**Table 3.12-7: Water Supply and Demand Comparison – Critical Dry Year**

| Supply/Demand | Year (Acre-Feet) | | | | |
|---|---|---|---|---|---|
| | 2015 | 2020 | 2025 | 2030 | 2035 |
| Total Supply | 61,700 | 61,500 | 61,300 | 61,100 | 60,800 |
| Forecast Demands | 64,200 | 64,600 | 65,500 | 66,700 | 66,800 |
| Anticipated Shortage | (2,500) | (3,100) | (4,200) | (5,600) | (6,000) |

Notes:
All values rounded to nearest 100 acre-feet.
Forecast Demands include Community Plan demand.
Source: Alameda County Water District, 2013.

*Multiple Dry Year Water Supply*

Table 3.12-8 documents projected water supply and demand under an extended dry period (multiple year drought). As documented in the UWMP, ACWD recognizes the hydrology of 1987 to 1991 to be most severe five-year period for the ACWD's imported and local supplies. The multiple year dry period was reviewed for the level of demand anticipated between the years of 2031 and 2035, as that is the highest level of demands anticipated during the next 20 years.

**Table 3.12-8: Water Supply and Demand Comparison – Multiple Dry Year**

| Supply/Demand | Year (Acre-Feet) | | | | |
|---|---|---|---|---|---|
| | 2015 | 2020 | 2025 | 2030 | 2035 |
| Total Supply | 69,100 | 67,900 | 67,300 | 63,700 | 65,000 |
| Forecast Demands | 69,300 | 67,500 | 67,200 | 66,900 | 66,100 |
| Anticipated Shortage | (200) | — | — | (3,200) | (1,100) |

Notes:
All values rounded to nearest 100 acre-feet.
Forecast Demands include Community Plan demand.
Source: Alameda County Water District, 2013.

As stated above, under normal year conditions, ACWD's water supplies are projected to be sufficient to meet the future demands in the service area, including the project's demands.

The UWMP identifies that ACWD may face water supply shortages during critically dry years. As described in the UWMP, ACWD would look to secure additional supplies through a DWR drought

water bank or similar water purchase/transfer program under these severe drought conditions. ACWD may also implement a drought contingency plan, which would include provisions for ACWD customers to cut back on water use, the magnitude of which would depend on the severity of the shortage. Because the project's demands are consistent with the UWMP demand forecast, the development of the project would not result in increased shortages from that which is already factored into ACWD's planning. However, because ACWD anticipates potential future shortages under severe drought conditions, water supplies to the project may be cut back during these severe dry year conditions. The level of cut back to the project would be consistent with the rest of ACWD's customers, and would depend on the magnitude of the dry-year shortage facing the entire ACWD area.

ACWD recommended that the Community Plan uses be developed with water efficient plumbing fixtures and irrigation systems at both residential and non-residential developments. This recommendation is reflected in Mitigation Measure US-1. With the implementation of mitigation, impacts would be less than significant.

### *Level of Significance Before Mitigation*
Potentially significant impact.

### *Mitigation Measures*
**MM US-1** Prior to issuance of building permits for development projects that occur pursuant to the Community Plan, the City of Fremont shall require applicants to prepare and submit building plans that demonstrate that water efficient plumbing fixtures and irrigation systems are incorporated into project plans in accordance with Alameda County Water District guidelines. The approved plans shall be incorporated into each individual development project.

### *Level of Significance After Mitigation*
Less than significant impact.

## Wastewater

**Impact US-2:** **Development and land use activities contemplated by the Community Plan would not require or result in the construction of new water or wastewater treatment facilities or expansion of offsite facilities.**

### *Impact Analysis*
The Community Plan is located within the USD service area. Developed properties within the Community Plan area currently discharge effluent to the USD collection system and treatment plant.

The Community Plan is anticipated to increase sewer demand by approximately 260 percent relative to existing conditions. The Community Plan area currently contains a well-developed regional water, sewer, and storm network that, in general, has sufficient capacity to accommodate the proposed land uses and densities. New utility infrastructure improvements would be limited to extending facilities to the various development parcels within new streets or streets identified for improvement. In addition to new sewer infrastructure installed in conjunction with the street

"gridding" of the area expansion, increased sewer flows may require upsizing of the pump station equalization basins to mitigate an increase in wet weather flows. No upgrades are anticipated for the treatment plant based on this plan.

As such, impacts would be less than significant.

### *Level of Significance Before Mitigation*
Less than significant impact.

### *Mitigation Measures*
No mitigation is necessary.

### *Level of Significance After Mitigation*
Less than significant impact.

## Storm Drainage

**Impact US-3: Development and land use activities contemplated by the Community Plan would not result in a need for a new or expanded offsite storm drainage facility.**

### *Impact Analysis*
The Community Plan area is mostly developed with a significant footprint of impervious surfaces (buildings, parking lots, and roadways). The proposed Community Plan would alter development types in the area, but is not anticipated to significantly increase the quantity of impervious surfaces. The Community Plan area currently contains a well-developed regional water, sewer, and storm network that, in general, has sufficient capacity to accommodate the proposed land uses and densities. New utility infrastructure improvements would be limited to extending facilities to the various development parcels within new streets or streets identified for improvement.

Development within the Community Plan area would be required to comply with the California Regional Water Quality Control Board, San Francisco Region's new regional municipal permit. A key element of the permit would require new development to employ Low Impact Development techniques to minimize and treat stormwater runoff. According to the Regional Water Quality Control Board, the goal of Low Impact Development is to "reduce runoff and mimic a site's predevelopment hydrology . . . by infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source." As such, each development within the plan area would be required to demonstrate that it would adequately treat any site runoff to insure the proper quality of the runoff leaving the site; would not increase the quantity, duration, or peak flow of runoff from a site; and would employ proper construction management techniques through the construction process to insure sediment and erosion control (addressed through the State's NPDES requirements).

Accordingly, new development within the Community Plan area would not increase flows substantially within the existing drainage system. As indicated by the Community Plan, the Community Plan area contains well-developed storm systems. New drainage infrastructure required by the Community Plan would be limited to that required for new streets and roadways, and would

be appropriately sized and modeled through the existing drainage system to insure proper sizing to handle stormwater flows. As such, the Community Plan would not result in an increased need for offsite stormwater drainage facilities and impacts would be less than significant.

### *Level of Significance Before Mitigation*
Less than significant impact.

### *Mitigation Measures*
No mitigation is necessary.

### *Level of Significance After Mitigation*
Less than significant impact.

## Solid Waste

**Impact US-4:** **Development and land use activities contemplated by the Community Plan would generate substantial amounts of solid waste that may result in the unnecessary use of regional landfill capacity.**

### *Impact Analysis*
Solid waste would be generated by short-term construction activities and long-term operational activities.

*Construction Waste Generation*
Implementation of development in accordance with the Community Plan would include the construction of 11,521,526 million square feet of nonresidential uses and up to 4,000 dwelling units. Using construction waste generation rates published by the U.S. Environmental Protection Agency, an estimate of the total construction debris generated by the proposed project is provided in Table 3.12-9.

**Table 3.12-9: Construction and Demolition Waste Estimate**

| Activity | Category | Waste Generation Rate | Square Footage | Total | |
|---|---|---|---|---|---|
| | | | | Tons | Cubic Yards |
| Construction | Nonresidential | 3.89 pounds/square foot | 11,521,526 | 22,409 | 31,373 |
| | Residential | 4.38 pounds per square foot | 4,000,000 | 8,760 | 12,264 |
| | | | **Total** | 31,169 | 43,637 |

Notes:
Assuming an average of 1,000 square feet per dwelling unit
1 ton = 2,000 pounds
1 ton = 1.4 cubic yards
Source: U.S. Environmental Protection Agency, 1998; FirstCarbon Solutions, 2013.

Buildout of the Community Plan is estimated to generate 43,637 cubic yards of construction debris. Construction waste generation would occur incrementally over the duration of buildout, which is estimated to be 22 years. Regardless, because this amount represents a significant amount of

construction and demolition waste, mitigation is proposed that would require applicants to implement construction and demolition recycling mitigation to the maximum extent feasible. Implementation of this mitigation measure would reduce short-term solid waste generation substantially. Therefore, short-term construction impacts on landfill capacity would be less than significant.

*Operational Waste*

Table 3.12-10 summarizes the proposed Community Plan's operational waste generation based on rates provided by Cal Recycle. As shown in the table, the proposed Community Plan would generate 48,932 cubic yards of solid waste on an annual basis at buildout. It should be noted that the values in the table only account for new development contemplated by the Community Plan and does not net-out existing waste generation within the plan area.

**Table 3.12-10: Operational Solid Waste Generation Estimate**

| Category | Count | Waste Generation Rate | Annual Total | |
|---|---|---|---|---|
| | | | Tons | Cubic Yards |
| Non-Residential | 11,521,526 square feet | 4.8 pounds/square foot/year | 27,652 | 38,712 |
| Residential | 4,000 dwelling units | 3,650 pounds/unit/year | 7,300 | 10,220 |
| **Total** | | | 34,952 | 48,932 |

Notes:
1 ton = 2,000 pounds
1 ton = 1.4 cubic yards
Source: FirstCarbon Solutions, 2013.

As previously shown in Table 3.12-4, available regional landfill capacity exceeds 73 million cubic yards and, thus, the addition of 48,932 cubic yards of solid waste on an annual basis would represent less than one percent of available capacity. Regardless, operational solid waste could be substantially reduced through recycling and waste reduction practices. Mitigation is proposed that would require development projects within the Community Plan area to implement operational recycling and waste reduction practices to the maximum extent feasible. Implementation of this mitigation measure would reduce operational solid waste generation substantially and conserve landfill capacity. Therefore, long-term operational impacts on landfill capacity would be less than significant.

### *Level of Significance Before Mitigation*

Potentially significant impact.

### *Mitigation Measures*

**MM US-4a** Prior to the issuance of demolition or building permits (which ever comes first), applicants within the Community Plan area shall submit a Construction and Demolition Debris Recycling Plan to the City of Fremont. The plan shall identify the procedures by which construction and demolition debris would be salvaged and recycled to the maximum extent feasible. The plan shall include proof that a

construction and demolition debris recycler is under contract to the applicant to perform this work.

**MM US-4b** Prior to the issuance of occupancy permits, project applicants within the Community Plan area shall submit a Recycling and Waste Reduction Plan to the City of Fremont identifying practices they and their tenants would implement during project operations that demonstrate at least 50 percent diversion. Operation recycling and waste reduction practices shall include but not be limited to:

- Contracting with one or more City-licensed commercial recycling providers to serve all project commercial uses. Recyclable materials collection containers shall be provided in common commercial tenant disposal areas and be equipped to accept aluminum, cardboard, glass, green waste, mixed paper, and plastic materials, and, where feasible, food scraps.
- Compliance with City of Fremont's Waste Handling Guidelines.
- Installation of common recycling facilities in all multi-family residential uses. These facilities shall be equipped to accept aluminum, cardboard, glass, mixed paper, and plastic materials and contain signage clearly identifying accepted materials.
- Periodic notification of residents and commercial tenants about the location of recycling facilities and accepted materials.
- Installation of recyclable materials receptacles in public places. Recycling receptacles shall be of high-quality design and shall display signage clearly identifying accepted materials.
- Common commercial and residential disposal areas shall be designed with sufficient space to accommodate separate containers for solid waste, recyclables, organics, and—for restaurants—tallow, subject to approval of the franchise waste provider and City of Fremont. Plans should include adequate and safe access for solid waste and recycling vehicles to access and collect materials.

### *Level of Significance After Mitigation*

Less than significant impact.

## Energy

| | |
|---|---|
| **Impact US-5:** | **Development and land use activities contemplated by the Community Plan would not result in the unnecessary, wasteful, or inefficient use of energy.** |

### *Impact Analysis*

The Community Plan area is currently served with electricity and natural gas service provided by PG&E. Using consumption figures provided by PG&E and the U.S. Energy Information Administration, the proposed project's estimated building electricity and natural gas consumption following construction is summarized in Table 3.12-11. It should be noted the values in table only account for new development contemplated by the Community Plan and does not net-out existing energy consumption within the plan area.

**Table 3.12-11: Energy Consumption Estimate**

| Use | Energy Source | Annual Consumption Rate | Count | Estimated Annual Consumption |
|---|---|---|---|---|
| Non-residential | Electricity | 15.7 kWh/square foot | 11,521,526 square feet | 181 million kWh |
| | Natural Gas | 58.3 cubic feet/ square foot | | 672 million cubic feet |
| Residential | Electricity | 5,961 kWh/dwelling unit | 4,000 dwelling units | 24 million kWh |
| | Natural Gas | 45,000 cubic feet/ dwelling unit | | 180 million cubic feet |
| Total | Electricity | — | — | 205 million kWh |
| | Natural Gas | — | — | 852 million cubic feet |
| Source: PG&E, 2012 | | | | |

As shown in the table, the Community Plan uses would demand 205 million kWh of electricity and 852 million cubic feet of natural gas at buildout. All new residential and non-residential development within the Community Plan area would be subject to the latest adopted edition of the Title 24 energy efficiency standards, which are among the most stringent in the U.S. As such, implementation of the Community Plan would not result in the unnecessary, wasteful, or inefficient use of energy. Impacts would be less than significant.

### *Level of Significance Before Mitigation*
Less than significant impact.

### *Mitigation Measures*
No mitigation is necessary.

### *Level of Significance After Mitigation*
Less than significant impact.