16. PUBLIC SERVICES AND UTILITIES

This EIR chapter describes the setting, project impacts, and necessary mitigation measures pertaining to public services and utilities, including water, wastewater, fire protection, other emergency services, parks and recreation, public education, and solid waste management.

16.1 WATER

16.1.1 Setting

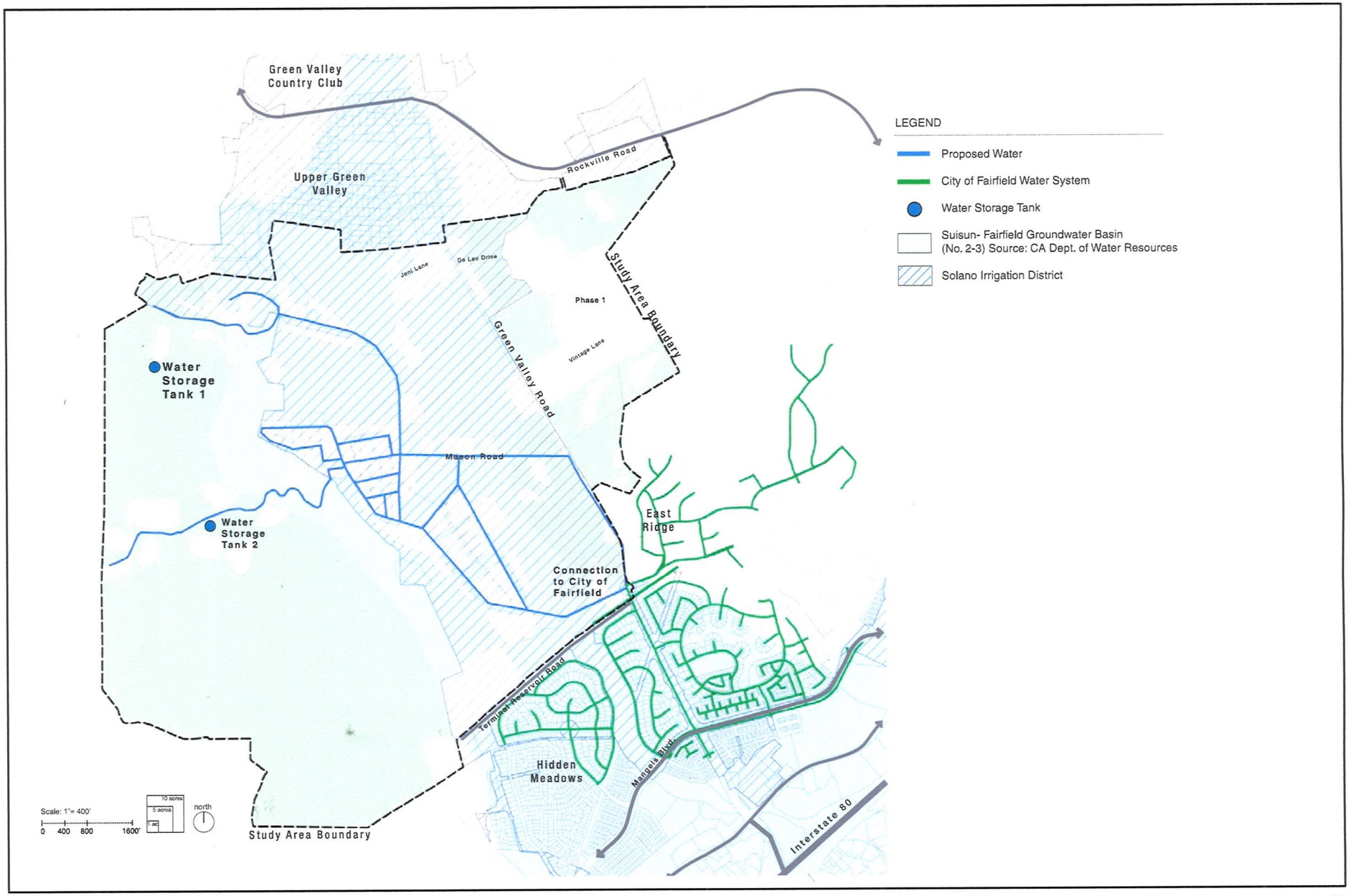
(a) Existing Water Service in the Plan Area. The Specific Plan area currently has two sources of water supply: (1) onsite groundwater, and (2) Solano Irrigation District (SID) agricultural irrigation water.

(1) Groundwater. The approximately 55 existing housing units within the plan area receive water from private, onsite groundwater wells. As shown on Figure 16.1, the central part of the Specific Plan area lies above the Suisun-Fairfield Groundwater Basin. The Suisun-Fairfield Groundwater Basin has been described as one of the few groundwater basins in California not in overdraft, most likely due to the early development of the Solano Project (Lake Berryessa system) to provide for regional irrigation demands.[1] (See further discussion of the Solano Project under subsection [2] "Solano Irrigation District [SID] Agricultural Irrigation Water" which follows.) According to the California Department of Water Resources, wells in this aquifer (the Suisun-Fairfield Groundwater Basin) produce an average of 200 gallons per minute (gpm), with some wells producing up to 500 gpm.[2]

In northern Solano County, groundwater is found within three distinct subsurface regimes: the Sonoma Volcanics bedrock formation, which underlies the Suisun Valley (including portions of the plan area) and is exposed on the ridgeline and slopes of the surrounding hills; an intermediate layer of older alluvium that overlies the volcanics in the valley; and a surface layer of younger alluvium that has been more recently deposited on top of the older alluvium. The most easily recoverable groundwater in the region is contained within the older alluvium, which varies in thickness from zero to as much as 200 feet near the middle of the Suisun Valley, and consists of a mixture of silt, clay, sand and gravel. The younger alluvium is similar to the older alluvium, except it lacks the gravel constituent and is no more than about 60 feet thick. This layer is thought to contribute relatively little to the yield of wells in Suisun Valley, although it appears to effectively transmit percolated surface water down to the older alluvium.

[1]Solano County, Middle Green Valley Specific Plan, Preliminary Draft, October 28, 2009, page 4-18.

[2]California Department of Water Resources, California's Groundwater, Bulletin 118 – Update 2003, October 2003, page 135. Available at http://www.water.ca.gov/pubs/groundwater/bulletin_118/california's_groundwater__bulletin_118_-_update_2003_/bulletin118_entire.pdf



SOURCE: Hart Howerton, Planners and Architects

Figure 16.1

PROPOSED SPECIFIC PLAN WATER SUPPLY FEATURES--
OPTION A (MUNICIPAL CONNECTION) AND OPTION B (ONSITE GROUNDWATER)

Thomasson, et al. (1960)[1] described four wells completed in the Sonoma Volcanics, all located in the vicinity of the plan area. These wells were installed to depths of 415, 800, 712, and 250 feet below National Geodetic Vertical Datum (NGVD, which in the Bay Area is equivalent to mean sea level), proceeding from north to south. The only well for which a well yield has been documented is the 800-foot-below-NGVD well (saturated thickness of volcanics approximately 780 feet), which yielded 500 gpm with a drawdown of 250 feet. The specific capacity of this well was 2.0 gpm per foot of drawdown. Thomasson, et al. observed that high well yields (defined as exceeding 500 gpm) were only obtained from wells that tapped several hundred feet of saturated volcanic rock.

(2) Solano Irrigation District (SID) Agricultural Irrigation Water. The Solano Irrigation District (SID) has jurisdiction over the central part of the plan area (see Figure 16.1) and provides irrigation water to agricultural operations in that part of the plan area. SID receives its water from the Solano Project, which delivers water from Lake Berryessa (storage capacity of 1,602,000 acre-feet), the reservoir area behind Monticello Dam in Napa County, through various Solano Project system features such as the Putah Diversion Dam, the Putah South Canal (PSC) with a small terminal reservoir, and associated waterways, laterals, and drainage works. The PSC and Lake Berryessa are both operated by SID under a contract with the U.S. Bureau of Reclamation (USBR). SID also owns and operates the hydroelectric power plant at the base of Monticello Dam. SID currently delivers Lake Berryessa water to four cities, the Maine Prairie Water District and individual SID customers, including numerous customers in the plan area. The Solano Project also provides a domestic water supply to the Mankas Corner area of the Suisun Valley, through a distribution agreement with SID.

SID's Cereda pumping plant is located in the plan area on Green Valley Road in the vicinity of Jeni Lane. The plant was built in or around 1964 and facilitates delivery of raw water through a pipeline in Green Valley Road to SID's Green Valley unlined in-ground reservoir located opposite Country Club Drive, approximately one-half mile north of the northern boundary of the plan area. This reservoir has a capacity of roughly 3 acre-feet (almost one million gallons). Together, the pump station and reservoir provide service to Green Valley in what are referred to as "upper" and "lower" pressure zones.

SID delivers water for agricultural use to many (but not all) land owners in the Green Valley area (those currently within SID's boundaries) via a distribution system that is reported to be in good working order.

Prior to initiation of the Solano Project in 1960, extensive agricultural use of groundwater had caused static groundwater levels to decline by as much as 60 feet in the Suisun Valley, indicating the aquifer was in a state of overdraft. Since initiation of the Solano Project, SID has distributed water from Lake Berryessa to farmers throughout the county, allowing the Suisun Valley aquifer to recover significantly and raise groundwater levels to between five and ten feet below the valley floor. (Levels vary with the season, rising over the winter and declining through the summer.) The 1960 Thomasson report indicated that the Green Valley-Suisun Valley aquifer had a yearly withdrawal capacity of between 3,500 and 4,500 acre-feet; however, SID estimates that annual withdrawals now total no more than 1,000 acre-feet per year. Currently, according to the San Francisco Bay Regional Water Quality Control Board, the Suisun-Fairfield

[1]Thomasson, H.G., Jr., Olmsted, F.H., and LeRoux, E.F., 1960, Geology, Water Resources and Usable Groundwater Storage Capacity of Part of Solano County, California. U.S. Geological Survey Water Supply Paper 1464.

Groundwater Basin "is not used in significant capacity because of low flow and poor water quality."[1]

(b) Existing Nearby Water Service Outside the Plan Area (City of Fairfield). The City of Fairfield supplies water to the East Ridge and Hidden Meadows subdivisions located off Green Valley Road South, immediately east and southeast of the plan area (see Figure 2.2 herein). The City operates its own water distribution system, which contains more than 270 miles of water mains, and provides water to more than 20,000 service connections within the City limits.[2] City water distribution infrastructure in the vicinity includes a 24-inch main in Green Valley Road at East Ridge Road, at the southeast corner of the plan area (see Figure 16.1).

The City's municipal water supply is contracted through the Solano County Water Agency (SCWA).[3] The City obtains its water from: the North Bay Aqueduct, which is part of the State Water Project; the Solano Project, which is operated by SID under contract with the USBR; "settlement water" (i.e., water received through a legal settlement); and recycled water. Solano Project supplies come to the City through several different agreements. The City does not use groundwater as a source of water supply.[4]

The City operates two water treatment plants, the Waterman Plant and the North Bay Regional Plant. The Waterman Plant currently has a treatment capacity of 16 million gallons per day (mgd), which can be expanded to 45 mgd. The City is currently engaged in a multi-million dollar expansion/upgrade project at the Waterman Plant. The upgrade would expand the plant's reliable capacity from 16 mgd to 30 mgd, though the plant's physical footprint would remain unchanged. The upgrade would also include modernization of all facilities, including a new sedimentation process. The North Bay Regional Plant has a 40-mgd capacity (26.7 mgd for Fairfield), which can be expanded to 90 mgd (40 mgd for Fairfield). Fairfield's combined treatment capacity is currently 49.2 mgd, and is expandable to 85 mgd. The City water system also includes nine water storage reservoirs with a total of 55.1 million gallons of capacity.[5]

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[1]Letter from Jolanta Uchman, P.G., Engineering Geologist, Watershed Division, San Francisco Bay Regional Water Quality Control Board, to Matt Walsh, Solano County Planning Services Division, re. "Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Middle Green Valley Specific Plan, Solano County," July 6, 2009, page 4.

[2]LSA Associates, Inc., Fieldcrest Villages Project Draft EIR, April 2008, page 239.

[3]SCWA provides water to incorporated areas in the county, as well as agricultural and some domestic water to unincorporated areas. SCWA relies on two primary water sources: the United States Bureau of Reclamation (USBR) Solano Project, which provides surface water through Monticello Dam, Putah Diversion Dam, and the Putah South Canal; and the California Department of Water Resources (DWR) State Water Project, which supplies surface water to Solano County through the North Bay Aqueduct. The Solano Project has a firm yield (contracted amount) of approximately 207,350 acre-feet per year. (EDAW, Solano County Draft General Plan Draft Environmental Impact Report, April 18, 2008, page 4.9-1.)

[4]Memorandum from Richard L. Wood, Assistant Public Works Director, City of Fairfield, to Community Development Department, re. "Hypothetical SB 610 Water Supply Assessment and SB 221 Verification of Sufficient Water Supply – Middle Green Valley Development," September 18, 2009, page 2.

[5]LSA Associates, Inc., Fieldcrest Villages Project Draft EIR, April 2008, page 240.

(c) U.S. Bureau of Reclamation Water Facilities Within or Near the Plan Area. The United States Bureau of Reclamation (USBR) Solano Project Terminal Reservoir is located at the southern boundary of the plan area at the end of Reservoir Lane. The northern portion of the reservoir is located within the plan area (see Figure 2.2 herein). In addition, the USBR holds easements for (1) the Putah South Canal Siphon and Spill Pipeline along Reservoir Lane on the southern boundary of the plan area, (2) the Solano Project Green Valley Conduit Pipeline located along the west side of Green Valley Road within the plan area, and (3) the Green Valley Conduit West Pipeline located along Mason Road within the plan area.[1]

(d) City of Vallejo Water Facilities Within or Near the Plan Area. The City of Vallejo's Vallejo Lakes water system serves portions of Green Valley, Old Cordelia, and other areas and obtains water from the Putah South Canal, among other sources. The system includes two facilities located within or near the plan area: (1) the Green Valley Water Treatment Plant located north of the plan area, and (2) a 24-inch water line that extends through the plan area, connecting the Green Valley Water Treatment Plant to other water facilities within the City of Vallejo.[2]

16.1.2 Policy and Regulatory Framework

CEQA requires an EIR to identify the plan and policy setting within which the project is proposed and discuss any inconsistencies between the proposed project and these applicable plans and policies adopted to minimize environmental impacts [CEQA Guidelines sections 15124(b) and 15125(d)]. Adopted federal, state and local policies, regulatory requirements and jurisdictional authority pertinent to consideration of the potential water service impacts of the proposed Specific Plan are described below.

(a) U.S. Safe Drinking Water Act. The U.S. Safe Drinking Water Act (SDWA), established on December 16, 1974, is the main federal law that ensures the quality of Americans' drinking water by setting federal standards for drinking water quality, and provides guidance to the states, localities, and water suppliers who implement those standards. The SDWA drinking-water quality standards control two basic water quality factors: (1) organic and inorganic water contaminants that may have detrimental effects on health and safety, and (2) aesthetic qualities that may make water unpalatable or unpleasant to customers. The SDWA established the U.S. Environmental Protection Agency (EPA) as the primary government entity with responsibility for setting national drinking-water standards for public water systems. Since 1974, EPA has set national water quality standards for more than 80 contaminants in drinking water. The National Primary Drinking Water Standards establish the maximum allowable contaminant levels (MCLs) allowed in public distribution systems. The National Secondary Drinking Water Standards establish the MCLs that apply to potable water supplies at the point of delivery to the customer. Although EPA and state governments enforce water quality standards, local governments and private water suppliers are ultimately responsible for the quality of water supplies.

[1]Letter from Michael R. Finnegan, Area Manager, United States Department of the Interior, Bureau of Reclamation, to Matt Walsh, Principal Planner, Solano County Department of Resource Management, re. "Notice of Preparation of Draft Environmental Impact Report for Green Valley Specific Plan," August 20, 2009, page 1; and letter from Richard Wirth, Assistant Engineer, Solano Irrigation District, to Matt Walsh, Principal Planner, Solano County Department of Resource Management, re. "Notice of Preparation of Draft Environmental Impact Report for Middle Green Valley Specific Plan," August 7, 2009, page 2.

[2]Solano County, Middle Green Valley Specific Plan, Preliminary Draft, October 28, 2009, page 4-26.

(b) State Title 22 Waterworks Standards. Drinking water in the state is governed by the provisions of Title 22, Waterworks Standards (Sections 64417-64710) of the California Code of Regulations (CCR Title 22), which specify the allowable maximum contaminant levels (MCL) for a wide range of primary and secondary water quality constituents. Systems of over 200 connections are directly regulated by the CDPH under CCR Title 22. These regulations have been recently modified (updated Title 22 Standards became effective on March 9, 2008), and are undergoing further proposed revisions (R-14-03).

(c) California Department of Public Health. The California Department of Public Health (CDPH) Drinking Water Program (DWP) under CCR Title 22 is administered by the Department's Division of Drinking Water and Environmental Management. The DWP regulates public water systems; certifies drinking water treatment and distribution operators; supports and promotes water system security; provides support for small water systems and for improving technical, managerial, and financial (TMF) capacity; and provides funding opportunities to water system improvements. The DWP consists of three branches: (1) the Northern California Field Operations Branch, (2) the Southern California Field Operations Branch, and (3) the Technical Programs Branch. The Field Operations Branches (FOBs) are responsible for the enforcement of the federal SDWA and state Title 22 Waterworks Standards and the associated regulatory oversight of public water systems to assure the delivery of safe drinking water. In this capacity, FOB staff perform field inspections, issue operating permits, review plans and specifications for new facilities, take enforcement actions for non-compliance with laws and regulations, review water quality monitoring results, and support and promote water system security.

On the local level, FOB staff work with county health departments, planning departments, and board of supervisors. FOB staff provide oversight, technical assistance, and training for the local agency personnel.

The CDPF, under the provisions of Section 116330 of the California Health and Safety Code (CHSC), delegates the permitting and regulation of certain water systems of under 200 connections to local agencies. Systems of over 200 connections, such as Specific Plan water system Options A and B, are directly regulated by the CDPH under CCR Title 22 and would be subject to standards administered by the CDPH. The current CCR Title 22 regulations require that, prior to CDPH's issuance of an initial permit, the applicant must demonstrate to CDPH satisfaction that the water system's pumping, storage and distribution components meet a comprehensive set of basic requirements pertaining to maximum day demand (MDD), supply, storage, sources (two independent sources of water are required), and well pumping tests.

As proposed, both Specific Plan water supply system options would be owned and operated by the County through establishment of a County Services Area (CSA). The Option B onsite groundwater (well) water supply system would require a permit from the CDPH DWP, Division of Drinking Water and Environmental Management.

(d) State Water Supply Assessment Requirements. In addition to CCR Title 22, the following State legislative requirements have been enacted to regulate the supply and use of water throughout the state:

- Assembly Bill (AB) 325, the Water Conservation and Landscaping Act, directs local governments to require the use of low-flow plumbing fixtures and the installation of drought-tolerant landscaping in all new development.

- Senate Bill (SB) 610 requires that before any project subject to CEQA and consisting of more than 500 single-family dwelling units (or the equivalent water demand) is approved, the project must have an adopted Water Supply Assessment to determine whether adequate water supplies would be available to meet the requirements of all existing plus new customers (i.e., existing customers plus the project plus other anticipated future growth) during normal conditions and during single-year and multiple-year drought conditions.

  Under SB 610, the Water Supply Assessment must describe the proposed project's water demand over a 20-year period, identify the sources of water available to meet that demand, and include an assessment of whether those water supplies are or will be sufficient to meet the demand for water associated with the proposed project, in addition to the demand of existing customers and other planned future development. If the assessment concludes that water supplies are or will be insufficient, then the assessment must describe plans (if any) for acquiring additional water supplies, and the measures that are being undertaken to acquire and develop those supplies.

- SB 221 elaborates on the requirement for water supply assessments (SB 610) by prohibiting approval of residential subdivisions consisting of more than 500 single-family dwelling units (or the equivalent water demand) unless the water supplier(s) verifies there is sufficient water supply for the project from the applicable water supplier(s).

A Water Supply Assessment has been prepared by the City of Fairfield for the proposed Specific Plan water supply Option A, use of City water for supplying the domestic needs of the plan area.[1] The City Water Supply Assessment is described as "hypothetical," ... "should the City of Fairfield be the selected water supplier for the proposed Middle Green Valley development..." The Water Supply Assessment findings are summarized in subsection 16.1.5 which follows. Pursuant to SB 610, the City's Water Supply Assessment memorandum is also included in appendix 23.4 of this Draft EIR.

(e) State Water Resources Control Board Recycled Water Use Policy. The State Water Resources Control Board's (SWRCB) Strategic Plan Update 2008-2012 for the Water Boards includes a priority to increase sustainable local water supplies available for meeting existing and future beneficial uses by 1,725,000 acre-feet per year, in excess of 2002 levels, by 2015, and ensure adequate water flows for fish and wildlife habitat. In 2009, the State Water Resources Control Board (SWRCB) adopted a policy of water quality control for recycled water. The Policy is intended to support the Board's Strategic Plan Update 2008-2012 established priority to promote sustainable local water supplies. The new policy is intended to increase acceptance and promote the use of recycled water as a means towards achieving sustainable local water supplies and reduce greenhouse gases, a significant driver of climate change. The Policy is also intended to encourage beneficial use of, rather than solely disposal of, recycled water.

(f) Solano County Code of Regulations. The Solano County Code of Regulations (County Code) includes provisions covering well permitting and construction, water conservation and landscape water usages, stormwater quality management, and the design and construction of on-site wastewater disposal systems, such as septic tank and leachfield systems.

[1]Memorandum from Richard L. Wood, Assistant Public Works Director, to Community Development Department (City of Fairfield), subject: Hypothetical SB 610 Water Supply Assessment and SB 221 Verification of Sufficient Water Supply--Middle Green Valley Development, September 18, 2009; included in appendix 23.4 of this Draft EIR.

(g) Solano County Division of Environmental Health. The Solano County Environmental Health Services Division is responsible for permitting and implementing County water systems and wells programs, including the small public water systems. The Environmental Health Services Division is responsible for granting groundwater well permits in unincorporated areas of the county. The County's Environmental Health Division conducts and oversees site evaluations, plan reviews, permit issuance, and construction inspection for onsite wells pursuant to the California Well Standards and Solano County Code Chapter 13.10 (Well Standards).

The Division's well permitting process varies depending on the availability of groundwater at the location of the proposed well. The County's standards for groundwater well permits in a given area govern the physical design and location of wells. The standards do not control the use or quantity of water extracted, however, nor do they currently address the sustainable capacity of the underlying aquifer to supply groundwater. The County Code also does not contain detailed procedures for determining potential well interference effects (i.e., the interference of a proposed well on the pumping rate, drawdown, or long-term supply of an adjacent well).

(h) Solano County Local Agency Formation Commission. The Solano County LAFCO is responsible for administering extension of existing service areas in the County. According to Section 56133 of the Government Code, a city or district may provide new or extended services by contract or agreement outside its boundaries through written approval from the Solano County LAFCO.

(i) Solano County General Plan. Policies and implementation programs from the 2008 Solano County General Plan that are pertinent to consideration of proposed Specific Plan and its potential water service impacts are listed below. Where the proposed Specific Plan is found in this EIR to be potentially inconsistent with one or more of these County-adopted water service policies or implementation programs, a potentially significant environmental impact and one or more associated mitigations has been identified in section 16.1.5 herein for incorporation into the Specific Plan to better implement the General Plan. Otherwise, the proposed Specific Plan is considered consistent with the Pertinent General Plan water service policies and implementation programs listed below.

(1) General Plan Policies and Programs Pertinent to All Public Services and Utilities. The Solano County General Plan contains the following policies and implementation programs relevant to all public service provisions, including water service:

- *Assign priority for development countywide to vacant lands where public facilities and services are currently provided.* (Policy LU.P-38)

- *Phase future residential development, giving first priority to those undeveloped areas zoned and designated for rural residential use and where rural residential development has already been established; second priority to undeveloped areas designated but not zoned for rural residential use and where rural residential development has already been established; and third priority to those undeveloped areas designated for rural residential use. Also give priority to lands where public facilities and services are currently provided.* (Implementation Program LU.I-8)

- *Provide public facilities and services essential for health, safety, and welfare in locations to serve local needs.* (Policy PF.P-1)

- *Require new development and redevelopment to pay its fair share of infrastructure and public service costs.* (Policy PF.P-2)

- *Ensure that adequate land is set aside within the unincorporated county for public facilities to support future needs.* (Policy PF.P-4)

- *Design and locate new development to maximize the use of existing facilities and services and to coordinate with the cities the need for additional County services.* (Policy PF.P-5)

- *Guide development requiring urban services to locations within and adjacent to cities.* (Policy PF.P-6)

- *Coordinate with the cities to strongly encourage compact urban development within city urban growth areas to avoid unnecessary extension or reconstruction of roads, water mains, and services and to reduce the need for increased school, police, fire, and other public facilities and services.* (Policy PF.P-7)

- *Notify the appropriate agencies (e.g., school districts, public safety, water) of new development applications within their service area early in the review process to allow sufficient time to assess impacts on facilities.* (Policy PF.P-8)

- *Investigate the feasibility of additional funding mechanisms (such as a CFD) to provide fire, EMS, and other services to unincorporated areas, including rural north Vacaville area, unincorporated areas around the City of Fairfield, and City of Dixon. (Implementation Program PF.I-2)*

- *Evaluate the level of services and funding needs of the various agencies and districts that will provide public facilities and services during project review to ensure that adequate levels of service are provided and facilities are maintained.* (Implementation Program PF.I-4)

(2) General Plan Policies and Programs Specifically Pertinent to Water Service. The Solano County General Plan contains the following policies and implementation programs specifically pertinent to water service:

- *Provide for detailed land planning through the Specific Project Area land use designation and subsequent planning process. Where specific plans and policy plan overlays are required before development in these areas, these plans shall determine:…*

    - *plans describing how the proposed development will be provided with adequate levels of water…service.* (Implementation Program LU.I-6)

- *Adopt a plan (either a specific plan or master plan) to implement these policies for Middle Green Valley. That plan should specify:..*

    - *the details of how the development would be served with water…service. Attempt to secure public water…service through a cooperative effort of property owners, residents, the County, and the City of Fairfield.* (Implementation Program SS.I-1)

- *Maintain water resource quality and quantity for the irrigation of productive farmland so as to prevent the loss of agriculture related to competition from urban water consumption internal or external to the county.* (Policy AG.P-8)

- *Promote efficient management and use of agricultural water resources.* (Policy AG.P-9)

- *Promote sustainable agricultural activities and practices that support and enhance the natural environment. These activities should minimize impacts on…water quantity and quality*…(Implementation Program AG.I-22)

- *Work with the Solano County Water Agency, irrigation districts, reclamation districts, adjacent counties and the resource conservation districts to ensure adequate future water supply and delivery...Review development proposals and require necessary studies, as appropriate, and water conservation and mitigation measures to ensure adequate water service. Examine the potential impact of water transfers from farmland to urban uses internal or external to the county and the implications for agriculture in the county… Explore options for expanding the county's irrigated areas. Working with the Solano County Water Agency, irrigation districts, reclamation districts, and the resource conservation districts, promote sustainable management and efficient use of agricultural water resources.* (Implementation Program AG.I-23)

- *Work with fire districts or other agencies and property owners to coordinate efforts to prevent wildfires and grassfires through fire protection measures such as… provision of water service.* (Policy HS.P-23)

- *…Continue to seek fire district input on new development projects and ensure that such projects incorporate fire-safe planning and building measures. Such measures may include…providing adequate on-site water supplies.* (Implementation Program HS.I-28)

- *Increase efficiency of water… use through integrated and cost-effective design and technology standards for new development and redevelopment.* (Policy PF.P-3)

- *Maintain an adequate water supply by promoting water conservation and development of additional cost-effective water sources that do not result in environmental damage.* (Policy PF.P-10)

- *Promote and model practices to improve the efficiency of water use, including the use of water-efficient landscaping, beneficial reuse of treated wastewater, rainwater harvesting, and water-conserving appliances and plumbing fixtures.* (Policy PF.P-11)

- *In areas identified with marginal water supplies, require appropriate evidence of adequate water supply and recharge to support proposed development and water recharge.* (Policy PF.P-14)

- *Domestic water for rural development shall be provided through the use of on-site individual wells or through public water service.* (Policy PF.P-15)

- *Provide and manage public water service through public water agencies.* (Policy PF.P-16)

- *Limit public water infrastructure to developed areas or those designated for future development to prevent growth-inducing impacts on adjoining agricultural or open space lands.* (Policy PF.P-17)

- *The minimum lot size for properties to be served by individual on site wells and individual on site sewage disposal systems shall be five acres. Where cluster development is proposed with on site wells and sewage disposal systems, parcels may vary in size provided the overall density of the project is not greater than five acres per parcel and that no individual parcel is less than one acre in size.* (Policy PF.P-18)

- *The minimum lot size for properties to be served by public water service with individual on site sewage disposal systems shall be 2.5 acres. Where cluster development is proposed with public water service and on site sewage disposal systems, parcels may vary in size provided the overall density of the project is not greater 2.5 acres per parcel and that no individual parcel is less than one acre in size.* (Policy PF.P-19)

- *Minimize the consumption of water in all new development.* (Policy PF.P-20)

- *Continue to require preparation of a water supply assessment pursuant to the California Water Code to analyze the ability of water supplies to meet the needs of regulated projects, in the context of existing and planned future water demands. Review the availability of water to serve new developments in the unincorporated area before permitting such developments and ensure that the approval of new developments will not have a substantial adverse impact on water supplies for existing water users.* (Implementation Program PF.I-11)

- *Continue to work with water suppliers to ensure adequate future water supply and delivery. Review development proposals and require necessary studies, as appropriate, and water conservation and mitigation measures to ensure adequate water service.* (Implementation Program PF.I-12)

- *Require new development proposing on-site water supplies in areas identified with marginal water supplies to perform a hydrologic assessment to determine whether project plans meet the County's hydrologic standards.* (Implementation Program PF.I-13)

- *Review plans for new development projects to ensure that they have provided for water on-site or through a public agency.* (Implementation Program PF.I-14)

- *Investigate the potential for innovative recycled water systems in Solano County, such as the use of greywater for domestic and agricultural purposes, and identify sources of funding for implementation of these systems.* (Implementation Program PF.I-15)

- *Domestic water for rural development shall be provided principally through on-site individual wells. When individual well systems in an area of the unincorporated County become marginal or inadequate for serving domestic uses, public water service may be permitted in conformance with the General Plan. In such cases, public water service shall be provided and managed through a public agency. If lands proposed for water service are not within the boundaries of an existing public water agency, the Board of Supervisors shall, as a condition of development, designate a public agency to provide and manage the water service. Water facilities shall be designed to provide water service only to the developed areas and those designated for potential development. Such facilities shall be designed to prevent any growth inducing impacts on adjoining designated agricultural and open space lands.* (Housing Element Policy G.2)

For General Plan policies related to protection of water resources and water quality, including groundwater supply and quality, see section 11.2, Pertinent Plans and Policies, in chapter 11, Hydrology and Water Quality, of this Draft EIR.

16.1.3 Significance Criteria

Based on the CEQA Guidelines and County policy, the proposed Specific Plan would result a significant environmental impact related to water supply and service if it would:

(a) require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;[1] or

(b) require new or expanded water entitlements;[2] or

(c) result in a public service condition that is inconsistent with applicable local plans and policies, including the Solano County General Plan, adopted for the purpose of avoiding or mitigating an environmental effect.

16.1.4 Relevant Project Characteristics

(a) Specific Plan-Proposed Water Conservation Features. The Draft Specific Plan states on page 5-68 that turf areas are to be limited in area in order to reduce irrigation needs. The Draft Specific Plan also lists the following water conservation guidelines to be incorporated into new plan area development:[3]

- *Utilize water-conserving appliances and plumbing fixtures. The following average flow rates shall be met by installing high-efficiency fixtures and/or fittings:*

  -- Lavatory faucets must be [less than or equal to] 2.0 gpm
  -- Showers must be [less than or equal to] 2.0 gpm
  -- Toilets must be [less than or equal to] 1.3 gpm

- *Utilize flow restrictions and/or reduced flow aerators on lavatory, sink and shower fixtures.*

- *Commercial buildings are encouraged to utilize automatic fixture sensors and low-consumption fixtures.*

- *Minimize irrigation requirements by using the Approved Plant List, which contains native plant materials and plants well suited to the local climate.*

- *Utilize efficient irrigation systems such as drip irrigation with rain/moisture sensors.*

- *Limit manicured lawn areas.*

[1]CEQA Guidelines, Appendix G, Item XVI(b).

[2]CEQA Guidelines, Appendix G, Item XVI(d).

[3]Solano County, Middle Green Valley Specific Plan, Preliminary Draft, October 28, 2009, pages 5-59 and 5-71.

- *Utilizing indigenous or naturalized plant materials, grouped according to water consumption needs, is required to reduce water needs and to extend the natural ecosystems and habitat of Middle Green Valley.*

- *All permanent irrigation systems are to be below ground and fully automatic. Use of water conserving systems, such as drip irrigation and moisture sensors, is required. An electric, solid state controller is required for all systems and shall be equipped with a master valve terminal and at least two fully independent programs.*

- *Rain/moisture sensors that shut off irrigation during or after rainfall are to be installed.*

- *The use of mulch at least four (4) inches deep in planting areas is required to retain moisture and reduce erosion.*

- *Temporary irrigation systems are required at all revegetation areas. These systems may be abandoned when plantings have been clearly established after a minimum of one growing season.*

- *Individual wells are not permitted.*

(b) Specific Plan Domestic Water Demand Forecast. The Specific Plan civil engineer estimates that the additional development capacity of the proposed Specific Plan (the project) would generate a domestic water demand of approximately 186 acre-feet per year. Table 16.1 shows the engineer's water demand forecast breakdown by land use.

Household water use rates can be highly variable. For single-family detached homes in the region, landscape irrigation can account for roughly half of total water use; showers and toilets can account for roughly 30 to 40 percent. Solano County General Plan Policy PF.P-11 calls for improving water use efficiency in the County through use of water-efficient landscaping, reuse of treated wastewater, rainwater harvesting, and water-conserving appliances and plumbing fixtures.

The Draft Specific Plan proposes that the Solano Irrigation District (SID) would continue to supply plan area's agricultural and irrigation supply needs, and that, by requirement, most development area landscape irrigation needs would be supplied by the SID. The Specific Plan also proposes that, by requirement, onsite water recycling would supply water to most development area toilets.

Based on these Draft Specific Plan-proposed water use efficiency measures, the unit demand rate applied in Table 16.1 (0.34 acre-feet per year per new residential unit) represents approximately a 25 to 40 percent reduction in the typical countywide single-family subdivision home water use rate (approximately 0.45 to 0.50 acre-feet per year per residential unit).[1]

[1]Assuming a conservatively high water demand rate per person of 150 gallons per day, and a Solano County average household size of 3.0 (ABAG "Projections and Priorities 2009" indicates a smaller average household size of approximately 2.85 in 2005), results in an estimated "worst case," business-as-usual use rate of approximately 0.504 acre-feet per year per residential unit. Based on data documented by the City of Fairfield in 2005, the actual average daily residential unit water consumption in the use zone closest to the plan area (Cordelia) was 398 gallons per day (this gpd rate translates to a per unit AFY rate of 0.45).

Table 16.1
SPECIFIC PLAN DEVELOPMENT WATER AND WASTEWATER DEMAND FORECAST

		Water		Wastewater	
Land Uses--Max. Permitted (from Table 12.1)	Units	Unit Demand (AFY)	Total Demand (AFY)	Unit Flow (AFY)	Total Flow (AFY)
Residential (units)	400	0.34	136.00	0.25	100.00
Secondary Res. (units)	100	0.17	17.00	0.13	13.00
Chapel (seats)	200	0.09	17.2	0.05	1.00
Meeting Hall/Farm Stand (acres)	0.069	1.73	0.12	1.52	0.10
Community Rec Center (acres)	0.184	1.50	0.28	1.32	0.24
Conservancy/Post Office (acres)	0.057	1.50	0.09	1.32	0.08
School (students)	300	0.02	4.95	0.01	4.36
Commodity Processing, Commercial Nurseries (acres)	1.148	1.00	1.15	0.88	1.01
Ag. Tourism Retail (acres)	0.230	1.73	0.40	1.52	0.35
Inn (rooms)	25	0.15	3.75	0.13	3.25
Winery Production (cases of wine)	100,000	0.00004	4.42	0.00002	2.21
Neighborhood Commercial (acres)	0.230	1.73	0.40	0.88	0.20
Totals			**185.7**		**134.80**

SOURCE: Sherwood Design Engineers, Wagstaff and Associates, September 2009 (attachment to e-mail from Eric Zickler, P.E., LEED AP, Project Manager, Sherwood Design Engineers, to Brendan Kelly, Hart Howerton, re. “MGV Water and Wastewater Demands,” September 28, 2009).

(c) Specific Plan-Domestic Proposed Water Supply Options. The Specific Plan proposes two options for providing water service to the plan area: Option A: connecting the Specific Plan development areas to the City of Fairfield municipal water system, or Option B: establishing an onsite water (groundwater well) system to serve the Specific Plan development areas.

(1) Water Supply Option A: Water supply Option A would involve connection of the four Specific Plan-proposed development areas to the City of Fairfield municipal water system via the existing 24-inch water main in Green Valley Road (see Figure 16.1). Municipal water would be delivered to the Specific Plan development areas for domestic use via a proposed connection to an existing 24-inch water main "flange" at the corner of Green Valley Road and East Ridge Road near the southeast corner of the plan area. Under Option A, the proposed water supply infrastructure system would consist of approximately nine miles of onsite pipeline and 500,000 gallons of onsite storage (for fire hydrants and sprinklers) in two water storage tanks at elevation. Under Option A, agricultural irrigation water continue to be supplied by the SID, which has jurisdiction over the central part of the plan area, and SID water also be used for domestic irrigation.

(2) Water Supply Option B: Water supply Option B would use local groundwater for domestic supply to the four Specific Plan-designated development areas. Groundwater use would be solely for domestic purposes. Similar to Option A, SID water would continue to be used for agricultural "irrigation," and would also be used for domestic irrigation. Domestic water treatment under Option B would consist of mixed media filtration and disinfection unless measured chemical constituents indicate otherwise. Under Option B, the proposed onsite water supply infrastructure system would consist of three groundwater wells at a sustained flow of 100 gallons per minute each, approximately 4.5 miles of onsite pipelines, and 500,000 gallons of storage (for fire hydrants and sprinklers) in two tanks at elevation (see Figure 16.1).

The three wells would draw groundwater from the Green Valley-Suisun aquifer of the Suisun-Fairfield Groundwater Basin, which has an estimated saturated thickness of in excess of 400 feet. The water would probably be treated by small treatment facilities at each well to and provide filtration and disinfection to CCR Title 22 standards prior to being pumped to an onsite storage facility.

Regardless of which water supply option is chosen, the Specific Plan proposes establishment of a County Service Area (CSA) to fund and oversee water, wastewater, storm drainage and parks and recreation facility construction and provide the necessary ongoing financial and management structure for these plan area facilities. The CSA would be granted limited powers, and administered by the County. The CSA would be required by law to adhere to the federal, state, regional and local (County) water supply standards described in section 16.1.2 herein. It is assumed that the CSA would encompass only the proposed Specific Plan development areas.

The Draft Specific Plan (page 4-26) also mentions a “distant third possibility” of obtaining water from the City of Vallejo, but since this possibility is considered to be highly speculative and is therefore not evaluated in this EIR (as per CEQA Guidelines section 15145, Speculation).

16.1.5 Impacts and Mitigation Measures

Water Supply Adequacy to Meet Project Domestic Demands--Option A (Municipal Connection). Specific Plan water supply Option A would involve connection of the proposed

Specific Plan development areas to the City of Fairfield municipal water system. In response to County request, the City of Fairfield Public Works Department has submitted a Water Supply Assessment (WSA) memorandum as a supplement to its current Urban Water Management Plan. The City memorandum states that, should the City be the selected water supplier for the Middle Green Valley development: (1) the memorandum verifies that the City's water supply is sufficient to serve all currently projected growth through ultimate development, including the Specific Plan-proposed development; and therefore (2) the memorandum complies with state water supply assessment requirements for the Specific Plan (Senate Bill 610). The memorandum also states that it provides substantial evidence that the state water supply assessment requirements for subsequent tentative subdivision maps in the plan area (i.e., state Senate Bill 221) are or will be met for proposed development projects to be served by the City through ultimate development. The memorandum explains that SB 221 also requires imposition of a condition of approval on future tentative maps for this project that sufficient water supply shall be available, and such a condition should be incorporated into any approval of the Specific Plan. Accordingly, the Draft Specific Plan includes policy and implementation provisions reiterating the state SB 221 compliance requirement as a condition of any future plan area subdivision map approval These City WSA conclusions and related Specific Plan provisions provide sufficient verification that, under Specific Plan water supply Option A, no new or expanded water supply entitlements would be required to serve the project and the project would therefore result in a ***less-than-significant environmental impact*** pertaining to water supply adequacy (see criterion [b] in section 16.1.3, "Significance Criteria," above).

Explanation: As noted in section 16.1.2(d) herein (State Water Supply Assessment Requirements), State SB 610 requires that before any project subject to CEQA and consisting of more than 500 dwelling units (or the equivalent water demand) is approved, a Water Supply Assessment (WSA) must be prepared and adopted by the proposed purveyor. State SB 221 elaborates on SB 610 by requiring an updated WSA prior to approval of subdivision tentative maps for residential projects (only). Pursuant to SB 610 and SB 211, the City of Fairfield Public Works Department has prepared a September 18, 2009 Water Supply Assessment memorandum (WSA memorandum)[1] reiterating the City's position and policies that growth should not proceed without adequate water supplies available under a reasonable "worst case" scenario, and documenting "the City's compliance with SB 610 and SB 221 in addressing the adequacy of the City's water supply to meet the proposed Middle Green Valley Specific Plan development (project) demands." The City's WSA memorandum is described as "hypothetical," ... "should the City be selected as domestic water supplier for the plan area." The SB 610 and SB 221 analysis conclusions described in the City's WSA memorandum are described in more detail below:

(a) SB 610 Analysis Conclusions. The City's WSA memorandum explains that the City water supplies are the Solano Project, the State Water Project, Settlement Water, and recycled water. The Solano Project supplies come to the City through several different agreements. The City utilizes no groundwater supply. As required by SB 610, the City's WSA memorandum summarizes City water supply reliability over the past 21 years, i.e., from 1989 through 2009, from the Solano Project and State Water Project, and describes presently forecasted water supplies and demands for the City without and with the proposed project. To ensure

[1]Memorandum from Richard L. Wood, Assistant Public Works Director, to Community Development Department (City of Fairfield), subject: Hypothetical SB 610 Water Supply Assessment and SB 221 Verification of Sufficient Water Supply--Middle Green Valley Development, September 18, 2009; included in appendix 23.4 of this Draft EIR.

consideration of cumulative impacts, the City analysis includes demands from other forecasted developments in the system service area that have gone through similar water supply assessment.

The WSA memorandum states that the analysis considers “ultimate development” (i.e., citywide buildout anticipated beyond the year 2035). The WSA memorandum concludes that, while this level of demand is not currently reflected in the City’s General Plan or water supply planning (including the City’s 2005 Urban Water Management Plan), the City has a sufficient water supply to serve the proposed development.

The WSA memorandum indicates that the City can expect an “ultimate” median-year supply of 56,800 acre-feet of water. Without the Specific Plan-proposed new development in the plan area, the WSA memorandum forecasts an ultimate median-year demand of 46,800 acre-feet, leaving 10,000 acre-feet in reserve. With proposed development in the Specific Plan area, the WSA memorandum forecasts an ultimate median-year demand of 47,000 acre-feet, leaving 9,800 acre-feet in reserve.

The City's WSA memorandum concludes that the City's SB 610 analysis verifies that the City water supply can serve all projected growth, through ultimate development (not just 20 years), including the proposed project. Consequently, the memorandum concludes that "the City has a sufficient water supply for the proposed development, and the requirements of SB 610 are met."[1]

(b) SB 221 Analysis. SB 221 requires, at the tentative map stage, written verification of sufficient water supply. The City's WSA memorandum states that the City's SB 221 analysis undertaken for the proposed Specific Plan "provides substantial evidence that this SB 221 requirement is or will be met for all projects to be served by the City through ultimate development, including the proposed development."

In addition, the WSA memorandum states that "SB 221 also requires imposition of a condition of approval on the tentative subdivision map for this project that sufficient water supply shall be available, and such a condition should be incorporated into any approval of this project. (Govt. Code Sec. 66473.7(b)(1))." These SB 610 and SB 211 Water Supply Assessment conclusions by the City of Fairfield provide sufficient verification that, under water supply Option A, the project would result in a *less-than-significant environmental impact* pertaining to water supply adequacy.

Mitigation: No significant impact (no new or expanded water entitlement need) has been identified; no additional mitigation is necessary.

Water Supply Adequacy to Meet Project Domestic Demands--Option B (Onsite Groundwater). Water supply Option B would receive its primary potable water supply from a series of three or more onsite deep wells. The wells would draw groundwater from the Green Valley-Suisun aquifer, which has an estimated saturated thickness in excess of 400 feet. The water would be treated by small treatment facilities at each well to provide filtration and disinfection to current California Code of Regulations (CCR) Title 22 Waterworks standards prior

[1] SB 610 and SB 221 apply only to certain classes of large projects. The most applicable to the City of Fairfield are residential developments of more than 500 dwelling units. However, City policy is to provide water supply assurance for all developments served regardless of size.

to being pumped to an onsite storage facility. The Specific Plan proposes establishment of a County Service Area (CSA) to provide the financial and management structure for plan area water system. The CSA would be responsible for providing the anticipated minor level of treatment necessary to meet safe standards for residential (domestic) use. At this preliminary point, no hydrologic studies have been completed or test wells drilled for Option B planning purposes. Although the local recharge volume for this aquifer (from rain infiltration, irrigation, and stormwater detention ponds) would be expected to substantially exceed maximum project demands, a detailed hydrological analysis would be necessary when the proposed plan area well locations are more precisely determined, demonstrating that the proposed well system is capable of delivering sustained supply rates sufficient to meet County and State standards for the Specific Plan proposed development program. As a standard condition of approval of any subdivision within the plan area under water supply Option B (i.e., before recordation of the first final subdivision map), the County would require completion of a detailed hydrological study and approval of a Water Master Plan. The Water Master Plan would be required to include engineering specifications regarding well locations and depths; water pumping, filtration and disinfection specifications; and water storage and distribution facilities and sizing. Water supply Option B would also be required to comply with current CCR Title 22 Waterworks Standards and associated California Department of Public Health (CDPH) regulatory oversight. This established County and State review and approval process would ensure that, under water supply Option B, the project would result in a ***less-than-significant environmental impact*** pertaining to water supply adequacy (see criterion [b] in section 16.1.3, "Significance Criteria," above). However, to meet the requirements of Senate Bill 610, County preparation of a Revised Draft EIR or supplement to this EIR, incorporating an Option B WSA, would be required.

Explanation: The Specific Plan speculates that one well at approximately 750 feet deep in Green Valley might be able to supply almost 300 acre-feet per year.[1] However, the San Francisco Bay Regional Water Quality Control Board has indicated that the Suisun-Fairfield Valley Groundwater Basin "is not used in significant capacity because of low flow and poor water quality" and believes that a comprehensive hydrogeology study is needed if the aquifer is to serve as the main source of drinking water for proposed development within the Specific Plan area.[2]

Under currently established County and State water system regulations and review procedures, the County would normally require implementation of the following as standard conditions of any future subdivision approval within the plan area under water supply Option B:

- Prior to subdivision map approval, as a possible Revised Draft EIR or supplement to this EIR, County preparation and approval of a water supply assessment that, consistent with State SB 610, verifies sufficient water supply availability and recharge to meet the requirements of maximum development area buildout during normal conditions and during single-year and multiple year drought conditions (pursuant to General Plan Implementation Program PF.I-11). To provide for public review under CEQA, the Option B WSA would

[1]Solano County, Middle Green Valley Specific Plan, Preliminary Draft, October 28, 2009, pages 4-24 and 4-25.

[2]Letter from Jolanta Uchman, P.G., Engineering Geologist, Watershed Division, San Francisco Bay Regional Water Quality Control Board, to Matt Walsh, Solano County Planning Services Division, re. "Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Middle Green Valley Specific Plan, Solano County," July 6, 2009, page 4.

need to be incorporated into the EIR in the form of a revised Draft EIR or supplement to the EIR.

- Prior to subdivision map approval, the County would require completion of a detailed Water Master Plan for Option B describing how the proposed Specific Plan development program will be provided with adequate water service (pursuant to General Plan Policy LU.I-6 and Implementation Program PF.I-12).

- Prior to subdivision map approval, the County would perform or require performance of a hydrologic assessment to determine whether the proposed Water Master Plan meets the County's hydrologic standards (pursuant to GP Implementation Program PF.I-13). As part of the hydrological study process, the County would require implementation of a well monitoring and reporting program by a County-approved professional groundwater consultant which to jurisdictional satisfaction (i.e., to County satisfaction with regulatory oversight as required by the California Department of Public Health) verifies that the aquifer is responding as expected, and as appropriate, and formulate any additional design recommendations necessary to ensure the long-term operation of the water supply system. Such monitoring programs typically include a jurisdictional-specified pre-construction testing and monitoring period (e.g., 12-months) to establish a baseline for measure of future effects from project well operations, and typically continue beyond system installation for a jurisdictional-specified minimum period (e.g., 9 years) to ensure adequate and safety well performance.

- Prior to subdivision map approval, the required Water Supply Master Plan must be designed to provide water service only to the Specific Plan designated development areas, and to prevent any growth-inducing impacts on adjoining designated agricultural and open space lands (pursuant to GP Housing Element Policy G.2);

- Prior to subdivision map approval, the County would require Cordelia Fire Protection District (CFPD) input into the Water Master Plan formulation process to ensure that the plan meets District fire flow rate and duration standards (pursuant to General Plan Policy Implementation Program HS.I-28);

- Prior to subdivision map approval, the County would require completion of the California Department of Public Health (CDPH) water system initial operating permit issuance process, which requires demonstration to County and CDPH satisfaction that the proposed water system (Water Master Plan) well, pumping, storage and distribution component meet County and State (Title 22) requirements.

Mitigation: No significant environmental impact has been identified; no additional mitigation is required.

Impact 16-1: Project Domestic Water Facilities Impacts on Existing Wells--Option B (Onsite Groundwater). It is anticipated that the three or more onsite wells proposed under water supply Option B under full buildout conditions would use a small and less than significant portion of the water annually recharged into the Green Valley-Suisun Valley aquifer. Although the precise location of the three or more wells proposed under Option B has not yet been determined, it is considered unlikely that any existing wells located in the Middle Green Valley would experience significant water table fluctuations attributable to pumping from one or more of the proposed project wells, given the relatively high water table elevation, high soil permeability, and large aquifer volume in the area. Nevertheless, until Option B well locations have been specifically identified and adequately tested, analyzed and monitored, it is assumed for CEQA purposes that one or more of the project wells could possibly contribute to underperformance or failure of one or more existing nearby wells due to water table fluctuations, particularly after successive years of drought conditions. This possibility represents a ***potentially significant environmental impact*** (see significance criterion [a] under section 16.1.3, "Significance Criteria," above).

Mitigation 16-1: Under water supply Option B, the well monitoring and reporting procedure required by the County for community water systems shall include evaluation (testing, analysis and monitoring) of potential drawdown resulting from operation of the proposed Option B wells. In the event that significant drawdown with documented adverse effects on nearby existing wells is observed, the Option B CSA management shall implement corrective measures sufficient to mitigate the impacts to a level of less than significant, to the satisfaction of the County Division of Environmental Health, possibly including some combination of the following:

- Extending the depth of the problem project well(s) or affected well(s) sufficient to correct the impact;
- Providing replacement project or replacement affected well(s); or
- Providing a water supply connection for the affected well(s) to the Option B water supply system.

Implementation of this measure would reduce this impact to a ***less-than-significant level***.

Impact 16-2: SID System Adequacy to Meet Project Irrigation Demands. The Solano Irrigation District (SID) would continue to provide for agricultural irrigation supply needs within existing SID boundaries. The Specific Plan also proposes that most development area domestic landscape irrigation needs would be supplied by the SID, as is typical of other kinds of residential development in the unincorporated portions of Green Valley. SID has indicated that its existing system serving the plan area is operating at or near capacity, and that additional analysis may be necessary to determine whether sufficient capacity is available to provide additional service within the plan area.[1] Until such additional analysis is completed and verifies to SID satisfaction sufficient system capacity to serve the plan-proposed additional demands, it is assumed that SID capacity may be insufficient, representing a ***potentially significant environmental impact*** (see criterion [b] under section 16.1.3, "Significance Criteria," above)

Mitigation 16-2: Implement the following:[2]

(1) SID will not serve any lands located outside the SID boundary. SID service to any lands within the plan area that are outside the existing SID boundary would require annexation to SID. Annexation of land to SID shall conform to the requirements of SID, USBR, and the Solano County Local Agency Formation Commission (LAFCO). For any proposed SID annexation, complete the additional analysis deemed necessary by SID to determine whether sufficient capacity is available to serve the proposed annexation area, and satisfy the other annexation requirements of SID, USBR, and LAFCO.

(2) Per SID Rules and Regulations, a separate water service (turnout) shall be provided to each newly created parcel within the district (i.e., with the current SID boundary or annexed plan area land) at the applicant/developer's expense. SID and the applicant/developer will need to determine how, if, and what type of service (agricultural irrigation or municipal landscape irrigation) each separate parcel is to receive. The applicant/developer may be required to pay to have SID's engineer perform an analysis of the existing system to determine if there is sufficient capacity to serve the proposed development.

(continued)

[1]Letter from Richard Wirth, Assistant Engineer, Solano Irrigation District, to Matt Walsh, Principal Planner, Solano County Department of Resource Management, re. "Notice of Preparation of Draft Environmental Impact Report for Middle Green Valley Specific Plan," August 7, 2009, pages 1-2.

[2]Letter from Richard Wirth, Assistant Engineer, Solano Irrigation District, to Matt Walsh, Principal Planner, Solano County Department of Resource Management, re. "Notice of Preparation of Draft Environmental Impact Report for Middle Green Valley Specific Plan," August 7, 2009, pages 1-2.

Mitigation 16-2 (continued):

(3) Landscape irrigation service to the proposed development would require the design and installation of a municipal-style water system. At a minimum, the applicant/developer shall provide for a headworks pumping plant, either off one of SID's pipelines or off the USBR Green Valley Conduit, to provide pressurized service to each parcel of the development. Depending on anticipated demand and existing SID system capacity, the applicant/developer may be required to pay for any necessary upgrades to existing SID water facilities required to adequately serve all parcels of the development at the same times, since rotated water service deliveries are impractical and difficult to enforce on municipal-type systems.

(4) If additional SID agricultural service to the proposed development is required, the design and installation of individual turnouts to each parcel and a rotational service schedule would need to be determined and followed. At a minimum, the applicant/developer shall provide for pipelines and appurtenances to provide service to each parcel of the development. In addition, the applicant/developer may be required to pay for any necessary upgrades to existing SID water facilities required to adequately serve all parcels of the development at the same time, depending on the proposed demand and system capacity.

(5) All costs associated with the design and installation of any SID water extension system shall be at the expense of the applicant/developer. SID shall review and approve the proposed system design prepared by the applicant/developer's engineer.

(6) System installation shall be to SID's standards. SID would require the applicant/developer to sign a work order acknowledging and approving all costs associated with the review of the design and to have a SID inspector onsite during system installation.

(7) Arrangements satisfactory to SID shall be made for the design and construction of the new system before SID will approve a parcel map.

(8) The applicant/developer shall provide easements for all new pipelines and facilities that would be granted to SID, including all facilities up to and including individual lot meters.

(9) No permanent structures shall be allowed to be constructed over SID's existing rights-of-way, nor shall any trees be planted within 6 feet of the edge of any SID pipelines.

(10) SID pipelines shall not be located within any of the proposed residential lots.

(continued)

Mitigation 16-2 (continued):

(11) Water that could be provided by SID is non-potable and not for human consumption, and cannot be treated onsite for potable uses. Therefore, before SID provides non-potable water service, the developer shall provide proof of an alternate source of potable water for the property. Since each parcel would be served with both potable and non-potable water, all lines and fixtures connected to SID's non-potable service shall be clearly marked "NON-POTABLE – DO NOT DRINK."

(12) Upon completion of construction of non-potable service to the subject properties, land owners shall contact SID to establish water service accounts.

(13) The SID certificate shall be added to all final parcel maps, subdivision maps, and improvements plans in the plan area, and SID shall review, approve, and sign all maps and plans.

Implementation of this measure would reduce this impact to a ***less-than-significant level***.

Impact 16-3: Project Construction Impacts on Existing SID, USBR and City of Vallejo Facilities in the Plan Area. Construction activity associated with buildout under the proposed Specific Plan, including general development activity as well as Specific Plan-proposed water and wastewater facilities construction, may affect existing Solano Irrigation District (SID), U.S. Bureau of Reclamation (USBR) and City of Vallejo water easements and facilities in the plan area, representing a ***potentially significant environmental impact*** (see criterion [a] under subsection 16.1.3, "Significance Criteria," above).

Existing Solano Irrigation District (SID) facilities within the plan area include its Cereda pumping plant on Green Valley Road near Jeni Lane, a main pipeline in Green Valley Road, and local distribution lines (se section 16.1.1[a][2] herein). Existing USBR facilities in the plan area include a pipeline along Reservoir Lane and another pipeline along Mason Road (see section 16.1.1[c]) herein. The City of Vallejo's Vallejo Lakes water system which serves portions of Green Valley, Old Cordelia, and other areas in the Specific Plan area vicinity includes a 24-inch water line that extends through the plan area, connecting to the Green Valley Water Treatment Plant to the City of Vallejo (see section 16.1[d] herein).

SID has raised the specific concern that, if sewage disposal requires the construction of new onsite systems, the design and placement of lines and leachfields would need to be kept clear of SID and USBR easements.[1]

[1]Letter from Richard Wirth, Assistant Engineer, Solano Irrigation District, to Matt Walsh, Principal Planner, Solano County Department of Resource Management, re. "Notice of Preparation of Draft Environmental Impact Report for Middle Green Valley Specific Plan," August 7, 2009, page 3.

The USBR has indicated that, as per 43 CFR Part 429, USBR will consider the following criteria when reviewing applications for development in the vicinity of USBR facilities: (a) compatibility with authorized project purposes, project operations, safety, and security; (b) environmental compliance; (c) compatibility with public interests; (d) conflicts with federal policies and initiatives; (e) public health and safety; (f) availability of other reasonable alternatives; and (g) best interests of the United States.[1]

Mitigation 16-3: Plans for development contiguous to SID, USBR and City of Vallejo easements and facilities, or roadway or utility crossings of these facilities, shall be submitted to and approved by these agencies prior to implementation. Any submittal to the USBR shall be through the SID. No permanent structures shall be located over or within these existing pipeline easements without an alternative route being offered at developer expense. Utility crossings shall provide a minimum of three feet of clearance between the utility and the pipelines. Proposals for roadway crossings of any of these pipes shall include an engineered stress analysis on the pipe to ensure the pipeline would withstand proposed roadway loadings. Residential lots shall not be located within SID, USBR, City of Vallejo easements. Wastewater lines and other facilities on residential lots shall be kept clear of SID and USBR easements. Any sewer lines crossing USBR facilities shall be installed in a secondary casing across the USBR right-of-way.

The applicant/developer shall sign an "Agreement for Protection of Facilities" before the start of any construction on or contiguous to any SID or USBR facilities. The agreement shall be followed during construction contiguous to or crossing any SID or USBR pipelines and easements. At the applicant/developer's expense, SID would repair any construction damage to SID or USBR facilities, and the City of Vallejo would repair any construction damage to City facilities.

Implementation of this measure would reduce this impact to a ***less-than-significant level***.

Other Project Water Facilities Construction Activity Impacts--Options A (Municipal Connection) and B (Onsite Groundwater). Implementation of Specific Plan proposed water supply Option A (Specific Plan development area connection to the City of Fairfield municipal system) would involve construction of approximately nine miles of new onsite pipeline, most within existing and proposed roadway rights-of-way, as well as construction of two approximately 250,000-gallon water storage tanks at elevation. Similarly, implementation of Specific Plan proposed water supply Option B (local groundwater use) would involve construction of approximately 4.5 miles of new onsite pipeline, most within existing and proposed roadway rights-of-way, as well as construction of the same two water tanks at elevation, plus construction of a small onsite mixed media filtration and disinfection plant. Water pipeline would be installed under streets within the plan area, and the water storage tanks would

[1]Letter from Michael R. Finnegan, Area Manager, United States Department of the Interior, Bureau of Reclamation, to Matt Walsh, Principal Planner, Solano County Department of Resource Management, re. "Notice of Preparation of Draft Environmental Impact Report for Green Valley Specific Plan," August 20, 2009, page 1.

be constructed in the western portion of the plan area as shown on Figure 16.1. These onsite new water system construction activities would be temporary. Associated construction period traffic interruption, dust, odors and noise typically associated with such construction would be mitigated through normal Solano County construction period mitigation procedures [e.g., see Draft EIR chapters 4 (Air Quality), 13 (Noise) and 17 (Transportation and Circulation)]. No unusual, significant environmental impact would be anticipated with this temporary construction activity, or with the operation of the new water infrastructure. The environmental impacts associated with construction of project-related new water distribution, storage and treatment infrastructure would therefore be ***less-than-significant*** [see criterion (a) in subsection 16.1 3, "Significance Criteria," above].

Mitigation: No significant environmental impact associated with the construction of project-related new or expanded water facilities has been identified; no mitigation is required.

Project Domestic Water System Fire Flow Adequacy--Options A (Municipal Connection) and B (Onsite Groundwater). General Plan Implementation Program PF.I-36 requires coordination with fire districts during project review to ensure that all new development incorporates sufficient water supply systems for fire suppression. Both project water supply Options A and B propose onsite storage of 500,000 gallons in two 250,000 gallon water tanks at elevation for emergency fire flow purposes. Prior to issuance of an initial water system operating permit, the applicant would be required to demonstrate that the proposed project water storage and distribution system, including storage tank size and location and associated distribution and fire hydrant specifications, meet the minimum fire flow, residual pressure, and other operational standards of the County, CDPH and Cordelia Fire Protection District (CFPD). The required Master Plan for Water will be required to comply with CFPD water supply, fire flow and fire suppression requirements as a condition of County approval, pursuant to General Plan Policies PF.I-36 and HS.P-23. As a result, ***no significant environmental impact*** related to fire flow adequacy is anticipated [see criterion (c) in section 16.3.1, "Significance Criteria," above].

Mitigation: No significant impact has been identified; no mitigation is required.

Cumulative Water Supply Impacts. Implementation of the Specific Plan in conjunction with the related projects listed in section 12.1.4 (Anticipated Cumulative Projects) of this Draft EIR would result in cumulative water demand impacts. None of the cumulative projects identified in section 12.1.4 is located in the immediate vicinity of the Specific Plan area, and all but one of the projects are located in the City of Fairfield. All of the related projects located within the City of Fairfield would be served by the City's water supply, which the City has determined to be adequate for "ultimate development" (see Water Supply Assessment in appendix 23.4 of this Draft EIR). There is one listed project within unincorporated Solano County, the proposed Rockville Trails Estates Project, that might cumulatively combine with the Specific Plan, under water service Option B, in the use of local groundwater for daily potable water needs. With implementation of the groundwater impact mitigations identified above, implementation of the Specific Plan and this related project would not result in a cumulative overdraft of the area's aquifer. Therefore, cumulative water supply impacts would be ***less than significant*** and no additional mitigation measures are required.

Mitigation. No significant cumulative water supply impact has been identified; no mitigation is required.

16.2 WASTEWATER

16.2.1 Setting

(a) Existing Wastewater Service in the Plan Area. The Specific Plan area currently does not have sewer service. The approximately 55 existing housing units within the plan area are served by onsite septic systems.

(b) Existing Wastewater Service Outside the Plan Area (City of Fairfield). The City of Fairfield and the Fairfield-Suisun Sewer District (FSSD) provide wastewater service in neighboring areas outside the Specific Plan area, including the incorporated City of Fairfield east and south of the Specific Plan area. The FSSD service area includes the incorporated areas of Fairfield and Suisun City, as well as the unincorporated community of Cordelia and parts of Suisun Valley from Rockville Road south to the Fairfield city limits.[1] The FSSD service area does not include the Specific Plan area.

Wastewater Treatment Plant. FSSD operates the wastewater treatment plant that serves Fairfield and Suisun City. The treatment plant is located at 1010 Chadbourne Road, in the southeast quadrant of the Chadbourne Road/Cordelia Road intersection approximately four miles southeast of the Specific Plan area. The Cordelia Pump Station, located approximately two miles south of the Specific Plan area, helps to carry sewage from the Cordelia area to the treatment plant.

The treatment plant is rated for a capacity average dry weather flow (ADWF) of 17.9 million gallons per day (mgd). Its current ADWF is approximately 15 mgd. Flows are expected to increase with new development within Fairfield and Suisun City. The plant is currently undergoing expansion to meet projected demands according to FSSD's current Master Plan, and construction is expected to be finished some time during 2010. The present Master Plan anticipates community needs through the year 2020. The plant expansion will provide an additional 6.2 mgd of dry weather treatment capacity.[2]

The treatment plant also recycles about 5 billion gallons of non-potable water per year, or approximately 10 percent of its annual flow. Recycled water is used for irrigation of food crops, landscape irrigation of parks and golf courses, and industrial cooling towers. The Solano Irrigation District (SID) delivers recycled water from the FSSD treatment plant to a limited number of customers for crop irrigation and to the City of Fairfield for street landscape and commercial property landscape irrigation. The City has contracted with FSSD for 12 million gallons of recycled water per day. Water recycling also benefits the wastewater treatment operation by limiting unnecessary flows of treated wastewater into Suisun Marsh.[3]

[1]EDAW, Solano County Draft General Plan Draft Environmental Impact Report, April 18, 2008, page 4.9-7.

[2]LSA Associates, Inc., Fieldcrest Villages Project Draft EIR, April 2008, page 240.

[3]LSA Associates, Inc., Fieldcrest Villages Project Draft EIR, April 2008, pages 240-241.

Sewer Lines. FSSD operates the trunk sewer lines (pipes 12 inches in diameter or larger) that convey wastewater from city-operated local collection systems to the wastewater treatment plant. FSSD has an existing sewer trunk line in Green Valley Road that begins at Westlake Boulevard. From Westlake Boulevard, the City of Fairfield has extended the Green Valley Road line approximately 1,200 feet to Eastridge Drive to serve the East Ridge subdivision, approximately one-quarter mile south of the Specific Plan area boundary.

16.2.2 Pertinent Plans and Policies and Regulatory Programs

Jurisdictional agencies and associated plans, policies and regulations pertinent to consideration of the three proposed Specific Plan wastewater treatment options--Options A, B and C--and their potential environmental impacts are described below.

(a) California Department of Public Health. The California Department of Public Health (CDPH) Division of Drinking Water and Environmental Management oversees regulation and guidance associated with the use of recycled water. The Specific Plan proposed use of disinfected tertiary treated wastewater for irrigation (wastewater treatment Options B and C) would require direct CDPH approval--i.e., a permit--from the CDPH Drinking Water Program (DWP) based on the standards administered by the CDPH pursuant to CCR Title 22, Division 4, Chapter 3, Article 3, section 60304.

(b) San Francisco Regional Water Quality Control Board. Development of individual septic systems and community wastewater systems serving fewer than 10 connections is regulated in Solano County by the Environmental Health Services Division of the Solano County Department of Resource Management. Projects involving community wastewater systems with 10 or more connections, such as Specific Plan-proposed Options B and C, are referred by the Division to one of the two designated Regional Water Quality Control Board regions that encompass portions of Solano County; in the case of the proposed Specific Plan, the proposed wastewater Options A and B would be referred by the Division to the San Francisco Regional Water Quality Control Board (RWQCB). Any proposal that entails the disposal of significant quantities of wastewater requires review for cumulative effects on regional ground and surface water quality by the RWQCB. The Specific Plan-proposed onsite wastewater treatment Options B and C would therefore fall under the direct purview of the RWQCB. The RWQCB would review the selected wastewater system Option B or C in accordance with the RWQCB-adopted San Francisco Bay Basin Water Quality Control Plan (Basin Plan) and with RWQCB Resolution 78-14: Policy on Descrete Sewerage Facilities. In particular, the proposed disinfected tertiary treated wastewater irrigation component of wastewater Options B and C--i.e., the proposed use of treated wastewater for irrigation--would require a RWQCB Discharge Permit.

(c) Solano County General Plan. Those policies and implementation programs from the 2008 Solano County General Plan that are pertinent to consideration of proposed Specific Plan and its potential wastewater service impacts are listed below. Where any proposed Specific Plan policy or standard is found in this EIR to be potentially inconsistent with one or more of these County-adopted wastewater service policies or implementation programs, a potentially significant environmental impact and one or more associated mitigations is identified for incorporation into the Specific Plan to reduce the impact and better implement the General Plan. Otherwise, the proposed Specific Plan is considered consistent with the wastewater service policies and implementation programs listed below.

General Plan policies and implementation programs that are generally relevant to all public services, including wastewater service, are listed in subsection 16.1.2(a) above. In addition, the

General Plan contains the following policies and implementation programs specifically relevant to wastewater service:

- *Provide for detailed land planning through the Specific Project Area land use designation and subsequent planning process. Where specific plans and policy plan overlays are required before development in these areas, these plans shall determine:…*

  - *plans describing how the proposed development will be provided with adequate levels of…wastewater service.* (Implementation Program LU.I-6)

- *Adopt a plan (either a specific plan or master plan) to implement these policies for Middle Green Valley. That plan should specify:..*

  - *the details of how the development would be served with…wastewater service. Attempt to secure public…wastewater service through a cooperative effort of property owners, residents, the County, and the City of Fairfield.* (Implementation Program SS.I-1)

- *Increase efficiency of…wastewater…use through integrated and cost-effective design and technology standards for new development and redevelopment.* (Policy PF.P-3)

- *Sewer services for development within the unincorporated area may be provided through private individual on-site sewage disposal systems, or centralized community treatment systems managed by a public agency utilizing the best systems available that meet tertiary treatment or higher standards. Use of such centralized sewage treatment systems shall be limited to: (1) existing developed areas, (2) areas designated for commercial or industrial uses, or (3) areas designated for rural residential development when part of a specific plan or policy plan overlay.* (Policy PF.P-21)

- *Ensure that new and existing septic systems and sewage treatment systems do not negatively affect groundwater quality.* (Policy PF.P-22)

- *When reviewing development proposals,*

  - *Require septic systems to be located outside of primary groundwater recharge areas, or where that is not possible, require shallow leaching systems for disposal of septic effluent.*

  - *Require new septic systems or leach fields to be installed at least 100 feet away from natural waterways, including perennial or intermittent streams, seasonal water channels, and natural bodies of standing water. Make an exception for the repair of existing systems if the 100 foot setback area cannot be maintained and if adequate provisions are made for protecting water quality.*

  - *Require the use of alternative wastewater treatment techniques to respond to site characteristics, as determined by the California Department of Health Services and regional water quality control boards.* (Implementation Program PF.I-23)

- *On-site sewage disposal systems for individual lots and subdivisions may be operated by private property owners. A public agency shall manage a centralized community sewage disposal system. If lands proposed to be served by a community sewage disposal system are not within the boundaries or service area of an existing public sewage treatment agency,*

the Board of Supervisors shall, as a condition of development, designate a public agency to provide and manage the public sewer service. Sewer treatment facilities shall be designed to provide sewer service to existing developed areas, areas designated for commercial or industrial uses, or areas designated for rural residential development when part of a specific plan or policy plan overlay. An analysis of the financial viability of constructing, operating, and maintaining a proposed community sewage disposal system shall be required. (Implementation Program PF.I-24)

16.2.3 Significance Criteria

Based on the CEQA Guidelines, the proposed Specific Plan would result in a significant environmental impact related to wastewater service if it would:

(a) exceed the wastewater treatment requirements of the California Department of Public Health and applicable Regional Water Quality Control Board;[1]

(b) require or result in the construction of wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;[2] or

(c) result in a determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.[3]

16.2.4 Relevant Project Characteristics

(a) Specific Plan-Proposed Wastewater Reduction Features. Previous section 16.1.4(a) (Specific Plan-Proposed Water Conservation Features) describes a comprehensive set of water conservation guidelines to be incorporated into new plan area development. Effective implementation of these guidelines would substantially reduce project wastewater generation.

(b) Specific Plan Wastewater Demand Forecast. The Specific Plan civil engineer estimates that the total wastewater treatment requirement of the new Specific Plan permitted development at full buildout would be approximately 134.8 acre-feet per year. Table 16.1 shows the engineer's wastewater demand forecast breakdown by land use.

(c) Specific Plan-Proposed Wastewater Treatment Options. The Specific Plan proposes three options for providing wastewater service to the plan area: Option A: connecting the Specific Plan development areas to the Fairfield-Suisun Sewer District (FSSD) and City of Fairfield wastewater conveyance system; Option B: establishing an onsite wastewater collection and treatment system to serve the Specific Plan development areas; or Option C: establishing an onsite wastewater treatment plant in combination with connection to FSSD/City of Fairfield wastewater treatment/conveyance services.

[1] CEQA Guidelines, Appendix G, Item XVI(a).

[2] CEQA Guidelines, Appendix G, Item XVI(b).

[3] CEQA Guidelines, Appendix G, Item XVI(e).

(1) Wastewater Treatment Option A: Under Specific Plan-proposed wastewater service Option A, the Fairfield-Suisun Sewer District would agree to serve the wastewater treatment requirements of the Specific Plan designated development areas. Option A would involve connection of the proposed Specific Plan development areas to the FSSD system via an existing City of Fairfield sewer main in Green Valley Road (see Figure 16.2). Wet weather period treatment demand increases from the plan area could possibly be reduced by diversion of collected plan area stormwater to cisterns for use in a "blue pipe" system for toilet flushing and other wet weather period uses. Option A would include no onsite wastewater recycling. The Specific Plan proposes an eight-inch sewer line that would connect to the existing City main in Green Valley Road approximately one-quarter mile southeast of the Specific Plan area. The Specific Plan indicates that (1) due to the capacity limitations of this existing sewer main, installation of a new parallel sewer main from the Specific Plan area to the Cordelia Pump Station, approximately two miles to the south, may be required; and (2) the Cordelia Pump Station and FSSD wastewater treatment plant may also require capacity upgrades to accommodate the Specific Plan. The proposed wastewater system infrastructure under Option A would also include approximately nine miles of onsite pipeline (see Figure 16.2).

(2) Wastewater Treatment Option B: Under wastewater treatment Option B, wastewater from the Specific Plan development areas would be collected and treated onsite using a local collection system similar to that proposed under Option A, but with conveyance to an onsite Membrane Bioreactor (MBR) package wastewater treatment plant (see Figure 16.2). Tertiary treated wastewater from the onsite plant would be recycled as follows:

- approximately 60 percent (77 AFY) of the estimated total demand would be directed to the surrounding agricultural and other irrigation users and, during wet weather periods, to the Fairfield Suisun Sewer District.

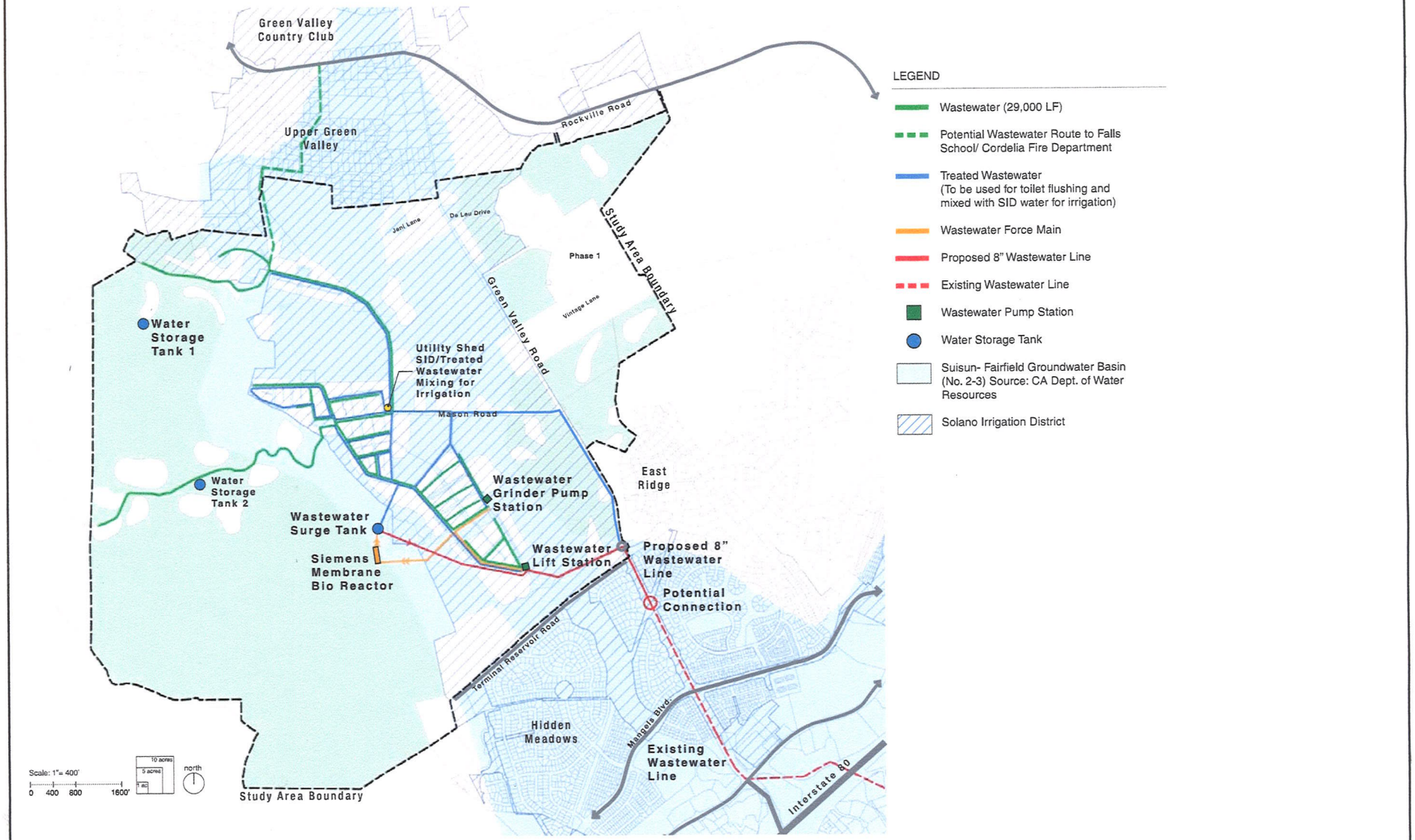
- approximately 40 percent (51 AFY) of the total would be directed to the plan area domestic water recycling (grey water system) to provide reclaimed water for safe year-round domestic irrigation and toilet flushing reuse.

Wastewater directed to both of these uses would be treated to corresponding CCR Title 22 standards for tertiary (advanced) treatment. Recycled water must meet stringent State and County regulatory requirements monitored by the State Department of Health Services and by the Solano County Environmental Health Services Division, Resource Management Department, including treatment to State Title 22 standards for tertiary (advanced) treatment.

The onsite wastewater system proposed under Option B would involve construction of the following onsite facilities (see Figure 16.2):

- A Membrane Bioreactor (MBR) package wastewater treatment plant and wastewater surge tank would be located in the Nightingale Neighborhood within the area designated *Agriculture-Watershed (AG-WS*. The plant would provide a tertiary treatment system that would include an aeration tank, a membrane operating system, and a disinfection unit.

- A pump station and a lift station would also be located in the Nightingale Neighborhood within the area designated *Agriculture-Preserve (AG-P)*.



SOURCE: Hart Howerton, Planners and Architects

Figure 16.2

PROPOSED SPECIFIC PLAN WASTEWATER TREATMENT FEATURES--OPTIONS A, B AND C

- A utility shed where SID and treated wastewater would be mixed for irrigation (see *Impact 16-14* below) would be located in the Elkhorn Neighborhood in an area designated *Public Services (PS)*.

In addition, approximately 5.7 miles of pipeline would be installed under roads in the Specific Plan area (see Figure 16.2).

(3) Wastewater Treatment Option C: Wastewater treatment Option C would be a hybrid of Option A and Option B. Under Option C, development area wastewater from the initial development phases would be conveyed via the existing City of Fairfield sewer main in Green Valley Road to the Fairfield-Suisun Sewer District plant, and subsequent development phases would be served by an onsite wastewater treatment system. Option C would provide for the phased implementation (financing and construction) of the onsite wastewater treatment component. The first approximately 150 homes constructed under the Specific Plan 400-unit "cap" would be initially connected to the FSSD system exclusively, via the City main, and the subsequent phases of up to 250 additional homes would be primarily served by the onsite MBR package treatment plant.[1]

Regardless of which wastewater treatment option is chosen, the Specific Plan proposes that (1) installation of septic tanks on new home sites be prohibited,[2] and (2) a County Service Area (CSA) would be established to fund and oversee water, wastewater, storm drainage and parks and recreation facility construction and provide the necessary ongoing financial and management structure for operation and maintenance of these plan area facilities. For purposes of analysis in this EIR, it is assumed that the CSA would cover only the proposed Specific Plan development areas. This EIR therefore intentionally does not evaluate the possibility of the proposed onsite wastewater treatment system serving parcels outside the plan area that currently contain leachfields; should such an extension be proposed in the future, associated additional CEQA documentation would be required.

(d) Proposed Reuse (Recycling) of Onsite Treated Wastewater and Sludge Yields--Options B and C. Under wastewater treatment Option B and Option C, tertiary-treated wastewater would be reused onsite for agricultural and domestic irrigation purposes in conjunction with Solano Irrigation District (SID) water. The "reclaimed" or "recycled" wastewater would be treated to State Title 22 standards to remove pollutants and contaminants to acceptable levels for safe reuse.

Wastewater treatment Options B and C would also include a back-up connection of the onsite recycling system to the Fairfield-Suisun Sewer District wastewater treatment system in response to anticipated County and RWQCB requirements.

The approximately 60 percent (77 AFY) of system disposal flow ultimately directed to the recycling component would be controlled via a proposed 250,000 gallon wastewater retention (surge) tank in order to maintain steady rather than surge flows (estimated by the Specific Plan

[1]Solano County, Middle Green Valley Specific Plan, Preliminary Draft, October 28, 2009, pages 4-28 and 4-29.

[2]Solano County, Middle Green Valley Specific Plan, Preliminary Draft, October 28, 2009, pages 4-28 and 4-29.

engineers at a steady 0.2 cubic feet per second) to the FSSD during wet weather periods when agricultural fields or landscape irrigation receivers would not require irrigation.

System ultimate sludge yields from the MBR package treatment plant under Options B and C, which would be expected to be less than from more conventional treatment plant designs, would be available for compost and fertilizer use in Solano County and elsewhere.

(e) Proposed Wastewater Master Plan. The Specific Plan contains a provision requiring County approval of a Wastewater Master Plan prior to recordation of the first Final Subdivision Map in the plan area. The Wastewater Master Plan would include information on the conveyance and disposal of effluence, the sizing of facilities, the mapping of sewer systems, updated cost estimates, and wastewater system management. The Wastewater Master Plan would be used to establish the means and methods by which the project would finance the cost of these facilities.[1]

16.2.5 Impacts and Mitigation Measures

Impact 16-4: Potential Project Exceedance of FSSD Wastewater Treatment System Capacity--Options A (FSSD Connection) and C (FSSD Connection/Onsite Treatment Combination). Specific Plan wastewater treatment Option A would involve connection of the proposed Specific Plan development area to the Fairfield Suisun Sewer District (FSSD) via an existing City of Fairfield conveyance system. The proposed Specific Plan development program would generate an estimated approximately 135 acre feet per year of wastewater treatment demand not specifically accounted for in current FSSD wastewater management planning, including the current FSSD Master Plan. The adequacy of the FSSD treatment plant, Cordelia Pump Station and associated City of Fairfield collection mains to accommodate the project contribution to anticipated cumulative future treatment demands has not been determined. The project-plus-cumulative demands for wastewater treatment may therefore exceed future City of Fairfield conveyance and FSSD treatment capacity, representing a ***potentially significant project and cumulative environmental impact*** (see criteria [a] and [c] under section 16.2.3, "Significance Criteria," above).

[1]Solano County, Middle Green Valley Specific Plan, Preliminary Draft, October 28, 2009, page 4-30.

Mitigation 16-4: The Specific Plan proposes establishment of a County Service Area (CSA) pursuant to California Government Code section 25210.1 et seq. to provide the financing and management for providing wastewater treatment services to the proposed Specific Plan development areas. Once approved, the CSA would be granted limited funding and management powers and the Board of Supervisors may act as the CSA board. The proposed CSA may issue general obligation bonds or revenue bonds to finance the necessary wastewater and other common infrastructure, which would be funded by development connection and user fees.

Prior to County approval of any future residential subdivision map or substantive discretionary non-residential development application in the plan area under wastewater treatment Options A or C, implement the following:

(1) establish the Specific Plan-proposed County Services Area (CSA) for the development area;

(2) formulate and adopt the Specific Plan-proposed Wastewater Master Plan for the development area;

(3) establish agreement with the FSSD to serve the ultimate development area wastewater treatment need identified in the Wastewater Master Plan; and

(4) establish associated wastewater system connection and user fees sufficient to fund the ultimate development area wastewater treatment facility needs identified in the Wastewater Master Plan, including purchase of required FSSD treatment capacity and construction of associated sewer system infrastructure--e.g., onsite collection system, offsite parallel municipal sewer main installation, associated capacity upgrades to the Cordelia Pump station, etc. (CSA Responsibility).[1]

Incorporation of these measures as Specific Plan policy would reduce this potential impact to a ***less-than-significant level***.

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[1]California Assembly Bill 1600 (AB 1600), the "Enforced Master Plan Act of 1988" (CGC sections 66000-66009) establishes legal procedures for charging development impact fees (DIFs) in California. The codified legislation provides a fair means of distributing development-generated capital infrastructure capital costs between various types of development on a faire share basis, based on plan formulated to indicate the infrastructure needs to serve anticipated private sector development proposals. The plan must be based on the City or County's adopted land use map, the existing level of service currently provided, identification of the capital facilities necessary to maintain this level of service with the anticipated additional development, identification of the level of responsibility for the identified additional capital facilities needs, and distribution of this capital cost responsibility to differing additional land uses based on relative (or proportional) use.

Impact 16-5: Potential Project Inconsistency with State Tertiary Wastewater Discharge Standards--Options B (Onsite Treatment) and C (FSSD Connection/Onsite Treatment Combination). Under proposed wastewater service Option B (onsite wastewater treatment system), Wastewater from the Specific Plan development areas would be collected and treated onsite using a local collection system similar to Option A, but instead of a connection to the FSSD, the collected wastewater would be conveyed to an onsite Membrane Bioreactor (MBR) package wastewater treatment plant that would treat the collected wastewater to tertiary recycled water standards. The tertiary treated wastewater would then be reused onsite for agricultural irrigation, ornamental landscaping irrigation, park and playing field landscaping irrigation, toilet flushing, and other jurisdictionally permitted uses. Although the Specific Plan proposes to treat all collected wastewater to County and State tertiary cycled water standards, until the Specific Plan proposed Master Wastewater Plan for Options B and C, including complete engineering specifications for the onsite treatment system, are completed to County satisfaction and the associated recycled wastewater reuse aspect is approved by the RWQCB and CDPH, it is assumed that Options B and C may not comply with the wastewater treatment water quality and environmental health protection standards, and ongoing monitoring and reporting requirements, administered by these two state agencies, representing a potentially significant environmental impact (see significance criterion [a] under section 16.2.3, "Significance Criteria," above), representing a ***potentially significant impact*** (see criteria [a] and [c] under subsection 16.2.3, “Significance Criteria,” above).

The "reclaimed" or "recycled" wastewater would be treated to State Title 22 standards to remove pollutants and contaminants to acceptable levels for safe reuse. As previously indicated in section 16.2.3(a) of this Draft EIR chapter, the California Department of Public Health (CDPH) has established treatment standards and regulations for such reuse. The Specific Plan proposes that the Options B and C wastewater disposal system would treat collected wastewater to tertiary recycled water standards and reuse the tertiary treated wastewater onsite for agricultural irrigation, ornamental landscaping irrigation, park and playing field landscaping, and toilet flushing. Tertiary treatment (also referred to as advanced treatment), represents the highest State-defined level of treatment permitting unrestricted reuse for all Title 22-specified reclaimed water applications, including:

- any agricultural irrigation (food crops, vineyards, sod farms, Christmas tree farms, etc.),
- ornamental landscaping,
- park and playing field landscaping,
- golf courses and cemeteries,
- recreational waterways for boating and swimming,
- cooling tower water,
- groundwater recharge, and

- toilet flushing.

Recycled water is currently used by over 160 municipalities in California, including the cities of Monterey, Irvine, Rohnert Park, Los Angeles, Windsor, Newport Beach, San Jose, and Sonoma, for such purposes as irrigation for parks, athletic fields, school playfields, food crops and other agricultural irrigation, landscape irrigation, toilet flushing, roadway median strip irrigation, etc.

Wastewater treatment Options B and C would also include a back-up connection of the onsite recycling system to the Fairfield-Suisun Sewer District wastewater treatment system in response to anticipated County and RWQCB requirements.

The approximately 60 percent (77 AFY) of system disposal flow ultimately directed to the recycling component would be controlled via a proposed 250,000 gallon wastewater retention (surge) tank in order to maintain steady rather than surge flows (estimated by the Specific Plan engineers at a steady 0.2 cubic feet per second) to the FSSD during wet weather periods when agricultural fields or landscape irrigation receivers would not require irrigation.

The development of individual and community wastewater systems with fewer than 10 connections is regulated by the Solano County Department of Resource Management. Proposed community wastewater systems involving more than 10 connections are referred to the San Francisco Bay Regional Water Quality Control Board (RWQCB), a division of the State Water Resources Control Board (SWRCB). The size of the proposed wastewater system under Specific Plan Options B and C would therefore put it under the direct purview of the San Francisco Bay RWQCB (also known as RWQCB Region 2). The San Francisco Bay RWQCB would review the proposed Wastewater System Master Plan in accordance with the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), and Resolution No. 78-14, Policy on Discrete Sewerage Facilities. The proposed use of disinfected tertiary-treated wastewater for irrigation in designated areas would require a RWQCB Discharge Permit. In addition, the Specific Plan-proposed use of disinfected tertiary treated wastewater for irrigation under Options B and C would require direct CDPH permit approval pursuant to CCR Title 22 standards.

Mitigation 16-5: Prior to County approval of any future residential subdivision map or substantive discretionary non-residential development application in the plan area under wastewater treatment option B or C, implement the following:

(1) establish the Specific Plan-proposed CSA for the Specific Plan development area;

(2) formulate and adopt the Specific Plan-proposed Wastewater Master Plan for the proposed development areas (CSA responsibility);

(3) establish associated wastewater system connection and user fees sufficient to fund ultimate Specific Plan development area wastewater treatment facility needs identified in the Wastewater Master Plan, including construction and ongoing operation, monitoring and maintenance of the onsite wastewater treatment and disposal system (CSA responsibility); and

(4) complete the RWQCB Discharge Permit process for the proposed irrigation in designated areas, and CDPH permit procedures pursuant to CCR Title 22 standards for the proposed use of tertiary treated wastewater for irrigation (CSA responsibility).

Impact 16-6: Potential Project Inconsistencies with SID Standards--Options B (Onsite Treatment) and C (FSSD Treatment Combination/Onsite Treatment). The Specific Plan proposes that, under wastewater treatment Options B or C, tertiary-treated wastewater would be reused onsite for agricultural and domestic irrigation purposes in conjunction with Solano Irrigation District (SID) water. The Solano Irrigation District (SID) may determine that delivery of tertiary effluent from the onsite MBR treatment plant via the existing SID conveyance system for agricultural and domestic irrigation purposes may be unsuitable for certain types of irrigation and therefore undesirable to the District. This proposed aspect of Wastewater treatment Options B and C may therefore be infeasible, representing a ***potentially significant impact*** (see criterion [c] under subsection 16.2.3, "Significance Criteria," above).

According to SID, tertiary-treated effluent may be unsuitable for certain types of agricultural irrigation, such as food crops. SID staff have also indicated that use of the SID system for conveyance and delivery of tertiary-treated effluent "is probably undesirable from the District's point of view," and that instead "a non-potable distribution system delivering effluent would likely be privately owned and operated, perhaps by the proposed Community Services District." SID staff have indicated that, if needed to supplement the effluent, SID could deliver raw water to a single point to a single customer, such as a community services district. This

arrangement would be subject to further discussion with SID and would be at the expense of the developer.[1]

Mitigation 16-6: In addition to compliance with California Department of Public Health (CDPH) and San Francisco Bay Regional Water Quality Control Board (RWQCB) groundwater and environmental health protection standards (see Mitigation 16-1-2), any project Wastewater Management Plan proposal to use SID conveyance or delivery components to supplement the project recycling system shall be designed to SID satisfaction or eliminated. One possible approach may involve SID delivery of raw water to a single point in the proposed CSA system, for plan area distribution by a CSA-operated distribution system. Formulation of this Wastewater Master Plan component to SID satisfaction would reduce this impact to a ***less-than-significant level***.

Wastewater Facilities Construction Activity Impacts--Options A (FSSD connection), B (onsite treatment) and C (FSSD connection/onsite treatment combination).
Implementation of Specific Plan proposed wastewater treatment Options A and C would involve construction of approximately nine miles of onsite pipeline (see Figure 16.2). Onsite pipeline would be installed primarily within plan area street rights-of-way. Options A and C would also involve installation of an eight-inch sewer line in Green Valley Road that would connect to the existing municipal main in Green Valley Road approximately one-quarter mile southeast of the Specific Plan area; and due to potential capacity limitations along this existing municipal sewer main, Options A and C may also involve installation of a new parallel sewer main from the Specific Plan area to the Cordelia Pump Station, approximately two miles to the south. The Cordelia Pump Station and FSSD wastewater treatment plant may also require capacity upgrades to accommodate Options A and C.

Wastewater treatment Option B would involve construction of the onsite MBR wastewater treatment plant, including aeration tank, membrane operating system and disinfection unit, pump station and lift station, utility shed and approximately 5.7 miles of pipeline (primarily within existing and proposed roadway rights-of-way).

These Option A, B and C onsite and offsite wastewater system construction activities would be temporary. Associated construction period traffic interruption, dust, odors and noise typically associated with such construction would be mitigated through normal Solano County construction period mitigation procedures [e.g., see Draft EIR chapters 4 (Air Quality), 13 (Noise) and 17 (Transportation and Circulation)]. No unusual, significant environmental impact would be anticipated with this temporary construction activity. The environmental impacts associated with construction of project-related new water distribution, storage and treatment infrastructure would therefore be ***less-than-significant*** [see criterion (a) in subsection 16.1 3, "Significance Criteria," above].

[1]Letter from Richard Wirth, Assistant Engineer, Solano Irrigation District, to Matt Walsh, Principal Planner, Solano County Department of Resource Management, re. "Notice of Preparation of Draft Environmental Impact Report for Middle Green Valley Specific Plan," August 7, 2009, page 1.

Mitigation: No significant construction period environmental impact has been identified; no mitigation is required.

Cumulative Wastewater Collection and Treatment Impacts. Implementation of the Specific Plan in conjunction with the related projects listed in section 12.1.4 (Anticipated Cumulative Development) of this Draft EIR would result in substantial cumulative development of additional residential, commercial, office, and industrial land uses in Solano County. None of the related projects is in the immediate vicinity of the Specific Plan area, and all but one of the projects are located in the City of Fairfield. All of the related projects located within the City of Fairfield, as well as Specific Plan wastewater treatment Options A and C, would be served by the City/FSSD wastewater collection and treatment system. Specific Plan wastewater service Option B would not require City/FSSD services, and the Option B onsite wastewater treatment plant would not accommodate offsite properties. Option A and C contributions to cumulative wastewater collection and treatment impacts are addressed under Impact 16-2-1 herein, and the Option B contribution to cumulative wastewater collection and treatment impacts would be ***less than significant***.

Mitigation. No additional significant cumulative wastewater collection or treatment impact has been identified; beyond Mitigation 16-2-1, no additional mitigation is required.

General Plan Consistency--Wastewater Treatment Options A, B, and C. General Plan Implementation Program SS-I-1 specifically calls for the County to "Adopt a plan (either a specific plan or master plan) ...for Middle Green Valley" and states that "The plan should specify...the details of how the development would be served with...wastewater services;" and that the County should "Attempt to secure public...wastewater service through a cooperative effort of property owners, residents, the County, and the City of Fairfield." Specific Plan wastewater service Options A and C are consistent with this policy. General Plan Policy PF.P-21 states that sewer services for development within unincorporated areas "may be provided through private, individual on-site sewage disposal systems, or centralized treatment systems managed by a public agency utilizing the best systems available that meet tertiary treatment or higher standards;" and that "use of such centralized sewage treatment systems shall be limited to: (1) existing developed areas, (2) areas designated for commercial or industrial uses, or (3) areas designated for rural residential development when part of a specific plan or policy plan overlay." Proposed project wastewater service Option B is consistent with Policy PF.P-21.

As a result, no environmental impact associated with Specific Plan inconsistency with the wastewater treatment policies of the Solano General Plan is anticipated.

Mitigation: No significant impact associated with General Plan consistency has been identified; no mitigation is required.

16.3 FIRE PROTECTION AND EMERGENCY SERVICES

16.3.1 Setting

(a) Fire Protection Services. The Cordelia Fire Protection District (CFPD) provides fire and emergency medical services in the plan area and vicinity. The CFPD is an autonomous district, governed by a five-member elected Board of Directors.

Fire Stations. As shown in Table 16.2, the CFPD maintains two stations (engine companies) that cover a 56-square-mile service area in southern Solano County. The service area includes housing, rural ranchlands and farmlands, and environmentally sensitive marshlands. Some mercantile businesses also operate within the CFPD boundaries.

The CFPD has an automatic mutual-aid agreement with the California Department of Forestry and Fire Protection (CDF) Lake-Sonoma-Napa Unit and the cities of Benicia, Vallejo, and Fairfield, the Suisun Fire Protection District, and the American Canyon Fire Department, to provide back-up assistance during an emergency. In particular, the CDF, which is called upon by the CFPD to assist with nearly all wildfires, operates five back-up fire stations in the surrounding counties that serve the plan area and vicinity (see Table 16.2).

Response Times. Response times are determined by travel distance (i.e., miles between a fire station and a site) and by the ability to navigate the road system. Roadway congestion and intersection level of service along the response route can affect response times. The CFPD's response time goal is less than five minutes for all incidents in the CFPD's service area. This goal is met approximately 83 percent of the time. In the case of wildland fires, CDF airplanes typically respond within 15 minutes from the Sonoma Air Attack base at the Sonoma County Airport, and the nearest CDF copter aircraft (Copter 105) can typically respond within 20 minutes.

Staffing. The CFPD's staff currently includes 4 full-time paid personnel, 12 extra-help firefighters, 13 volunteer firefighters, and between 21 and 26 resident firefighters. The CFPD's goal is to staff each of its two existing stations (engine companies) with three personnel each day of the year and to staff at least one with one of the District's paramedics per shift each day of the year.

The CDF stations are staffed on a seasonal rotation through the months of May to early December. The CFPD and the CDF stations are currently adequately staffed to meet the current demands in the CFPD's service area.

Wildfire Hazards. As an element of California's ecology, wildfires are as natural and inevitable as wind or rain. Factors that affect wildland fire behavior can be categorized into three environment elements: weather, topography, and fuel. Of the three, is only practically possible to manage fuel, both vegetative and structural. Fuel management and adequate fire protection equipment access represent the basic fire protection planning factors in unincorporated rural areas.

Figure 16.3 shows CDF-designated wildland fire hazard levels currently depicted in the Solano County General Plan for the plan area and vicinity, based on fuel (vegetation) patterns and elevation. As shown, the western portions of the plan area are considered to have "high" to "very high" fire danger. The normal fire season conditions of warm, dry summer and fall subject vegetation to prolonged periods of moisture stress, causing portions of the plan area and vicinity to be particularly prone to wildland fires. In addition, north-wind-funneling events on steep topography create high fire danger. Wildland vegetation in the upper reaches of the plan area and vicinity, mostly annual grasses and mixed woodlands, is susceptible to fast, wind-driven fires that can spread quickly.

Past fires in the vicinity include a 50-acre fire that occurred three years ago and a 300-acre fire that occurred 15 years ago. Large wildfires could become more frequent if greenhouse gas

Table 16.2
FIRE STATIONS SERVING SPECIFIC PLAN AREA VICINITY

Fire Station	Location	Equipment	Staff	Approximate Distance From Specific Plan Area
CFPD Station 29	1600 Rockville Road, Fairfield	1 Type I engine 1 Type II engine	1 captain 2 firefighters	1.0 mile
CFPD Station 31	2155 Cordelia Road, Fairfield	1 Type I engine 1 Type I water tender 2 Type III engines	1 fire chief 1 captain 2 firefighters	2.0 miles
CDF Gordon Valley FFS	1345 Wooden Valley Crossroad, Suisun	2 Type III engines 1 fire dozer	1 engine operator 1 dozer operator 2 firefighters	7 miles
CDF Napa FFS	1820 Monticello Road, Napa	1 Type III engine	1 engine operator 2 firefighters	50 miles
CDF Spanish Flat FFS	4454 Knoxville Road, Napa	1 Type III engine	1 engine operator 2 firefighters	30 miles
CDF Brooks FFS	14023 Highway 16, Brooks	1 Type III engine	1 engine operator 2 firefighters	60 miles
Greenwood Ranch CDF/NCFD	1555 Airport Boulevard, Napa	1 Type III engine	2 firefighters	13 miles

SOURCE: Solano County, CFPD, and Wagstaff and Associates.

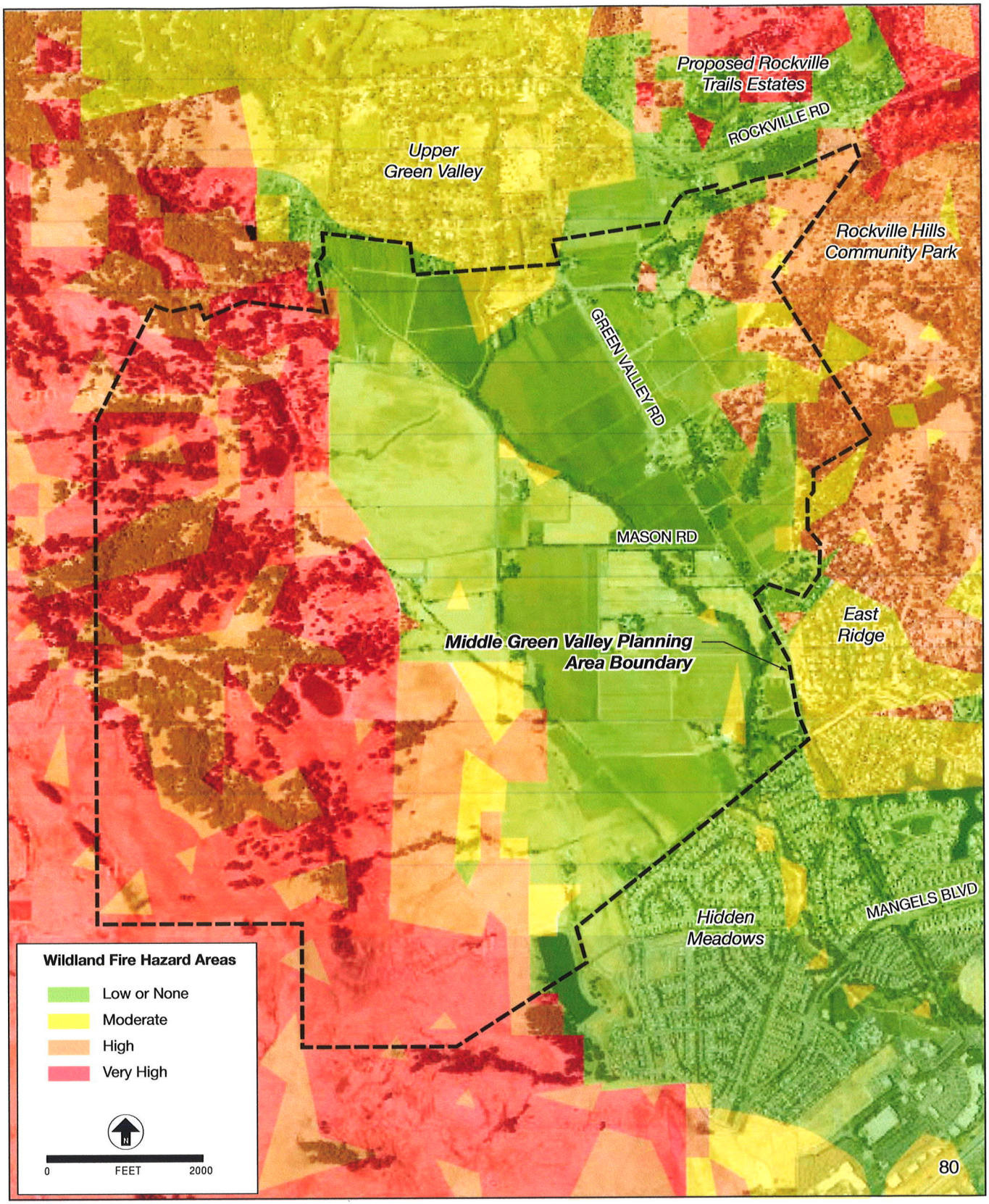
CFPD = Cordelia Fire Protection District
CDF = California Department of Forestry and Fire Protection
FFS = Forest Fire Station
NCFD = Napa County Fire Department

(GHG) emissions, which affect global climate change (GCC), are not significantly reduced (see chapter 7, Climate Change, of this EIR).

Insurance Services Office (ISO) Ratings. The Insurance Services Office (ISO) assigns fire districts grades of 1 to 10, with 1 representing the highest rating and 10 representing the lowest rating, for use by insurance companies to determine hazard insurance premium costs for their customers. ISO determines whether the fire department tests its pumps regularly and inventories each engine company's nozzles, hoses, breathing apparatus, and other equipment.

ISO also reviews individual fire department records to determine the type and extent of training provided to firefighters, response times, and level of staffing. Most fire districts in Solano County have two ISO ratings because they serve rural areas that have longer response times.

The CFPD has an ISO rating of 5/9. The CFPD's lower rating reflects its capabilities in the Suisun Marsh area, where service is less effective due to the lack of fire hydrants.



SOURCE: Solano County General Plan

Figure 16.3
WILDLAND FIRE HAZARD LEVELS IN PLAN AREA AND VICINITY

For CDF's Gordon Valley Station, the applicable ISO rating is 6/9. [1]

Specific Plan Area Concerns. The CFPD's principal concerns regarding the plan area are that: (1) any new residential development is adequately buffered from fire-prone vegetation, and (2) adequate access for emergency vehicles is provided. To meet CFPD minimum standards, any Specific Plan-designated new roads would need to be 18 feet wide, with maximum slopes of 12 percent, and any gates would need to have 20 feet of clearance with "Knox" locks.[2]

(b) Emergency Medical Services. The CFPD also provides emergency medical service to the plan area. The CFPD has four paid employees who assist with the emergency medical service function of the CFPD (two emergency medical technicians [EMTs] and two paramedics). In addition, 55 volunteers (six paramedics and 49 EMTs) assist with this function. The CFPD also contracts with a private ambulance service.

In addition, CDF's Gordon Valley Station has a rescue squad and provides basic pre-hospital emergency care. The station practically staffed by volunteers, however, and the number of people available to assist with emergency medical service fluctuates.[3]

(c) Police Services. The Solano County Sheriff's Department is located in the City of Fairfield and provides police services to the plan area vicinity. The Sheriff's Department is responsible for providing public safety services in the county including patrol, investigations, custody of adult offenders and coroner services. The Sheriff's Department offers several specialized crime enforcement teams to protect citizens and property. The Department operates a variety of community programs, including a Community Oriented Policing and Problem Solving (COPPS) program, the Marine Patrol program, and the Emergency Services Response program.

The Sheriff's Department currently employs 123 sworn officers, 233 correction officers, and 141 civilian employees. The existing level of service for the Sheriff's Department is 1.2 shift patrol officers per 1,000 residents. The average Sheriff's Department response time in the plan area and vicinity is approximately 10 minutes for emergency calls and 30 to 60 minutes for non-emergency calls. The crime rate in the vicinity is low primarily because the area is sparsely populated.

16.3.2 Pertinent Plans and Policies

Policies and implementation programs from the 2008 Solano County General Plan that are pertinent to consideration of proposed Specific Plan and its potential fire protection and emergency services impacts are listed below. Where any proposed Specific Plan land use and development policy or standard is found in this EIR to be substantially inconsistent with one or more of these County-adopted fire protection and emergency services policies or implementation programs, a potentially significant environmental impact and one or more associated mitigations is identified for incorporation into the Specific Plan to reduce the impact

[1] EDAW, Solano County Draft General Plan Draft Environmental Impact Report, April 18, 2008, page 4.9-16.

[2] Jay Huyssoon, Chief, Cordelia Fire Protection District, personal communication, February 27, 2009.

[3] EDAW, Solano County Draft General Plan Draft Environmental Impact Report, April 18, 2008, page 4.9-17.

and better implement the General Plan. Otherwise, the proposed Specific Plan is considered consistent with the General Plan fire protection and emergency services policies and implementation programs listed below.

General Plan policies and implementation programs that are relevant to all public services in general are listed in subsection 16.1.2(a) above. General Plan policies and implementation programs specifically relevant to fire protection and emergency services are listed below:

- *Encourage cluster residential development through incentives to property owners in hillside and valley floor areas that can support residential uses with least affect on resources, steep slopes, or very high wildfire hazard areas.* (Policy SS.P-5)

- *Require that structures be built in fire defensible spaces and minimize the construction of public facilities in areas of high or very high wildfire risk.* (Policy HS.P-20)

- *Work with fire districts or other agencies and property owners to coordinate efforts to prevent wildfires and grassfires through fire protection measures such as consolidation of efforts to abate fuel buildup, access to firefighting equipment, and provision of water service.* (Policy HS.P-23)

- *Seek an appropriate balance between preventing and fighting fires and retaining the County's valuable visual and natural resources.* (Policy HS.P-24)

- *Create fire buffers along heavily traveled roads by promoting grazing, thinning, mowing, plowing, disking, or controlled burning of roadside grass. Coordinate with the California Department of Transportation to ensure that adequate fire buffers are established along state highways. Favor those methods that have the least impact on air quality, such as grazing.* (Implementation Program HS.I-31)

- *Work to ensure the adequacy of disaster response and coordination in the county and the ability of individuals to survive disasters.* (Policy HS.P-32)

- *Plan and designate evacuation and aid routes. Work to create a comprehensive circulation system that is effective in allowing emergency access to and from all parts of the county and which provides alternative routes during unexpected events such as flooding, fires, or hazardous materials accidents that require evacuation.* (Policy HS.P-33)

- *Ensure accessible and cost-effective fire and emergency medical service throughout the county. Facilitate coordination among city and county fire agencies and districts to improve response times, increase services levels, provide additional training, and obtain essential equipment.* (Policy PF.P-38)

- *Identify and require incorporation of fire protection and emergency response measures in the review and approval of new projects.* (Policy PF.P-39)

- *Coordinate with the fire districts and CAL FIRE during project review to ensure that all new development incorporates appropriate fire-safety techniques, including fire-safe building materials, early-warning systems, adequate clear spaces and fuel reduction, adequate escape routes and facilities, fire breaks, and sufficient water supply systems for fire suppression.* (Implementation Program PF.I-35)

- *Collaborate with fire districts to evaluate additional funding options to improve infrastructure needed for fire protection.* (Implementation Program PF.I-36)

- *Provide an effective and responsive level of police protection (including facilities, personnel, and equipment) through the Solano County Office of the Sheriff and in coordination with city police departments.* (Policy PF.P-40)

- *In the review and approval of County and City projects, identify and consider the law enforcement needs generated by the project.* (Policy PF.P-41)

- *Coordinate with the sheriff to identify and consider the impact on law enforcement services during project review.* (Implementation Program PF.I-42)

See previous subsection 16.1.2 for an identification of pertinent policies and regulations regarding emergency water provision.

16.3.3 Significance Criteria

Based on the CEQA Guidelines, the proposed Specific Plan would result in a significant impact on the provision of fire protection or other emergency services if it would:

(a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection or other emergency services;[1]

(b) result in possible interference with an emergency response plan or emergency evacuation plan;[2]

(c) result in inadequate emergency access;[3] or

(d) expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.[4]

16.3.4 Relevant Project Characteristics

Development in accordance with the Specific Plan Land Use Plan (see Figure 2.3 herein) would ultimately accommodate an estimated 1,485 residents and up to 136 employees in the plan area and extend roads and other infrastructure into the plan area. As illustrated by Figure 2.9 (Proposed Specific Plan Circulation System) herein, the Specific Plan would designate three

[1]CEQA Guidelines, Appendix G, item XIII(a).

[2]CEQA Guidelines, Appendix G, item VII(g).

[3]CEQA Guidelines, Appendix G, item XV(e).

[4]CEQA Guidelines, Appendix G, item VII(h).

"Rural Collector" roads: existing Green Valley Road, existing Mason Road, and a third proposed new road extending west from Green Valley Road at the southern end of the plan area (see Figure 2.9 in chapter 2, Project Description). Additional "Neighborhood Roads," "Alleys," "Neighborhood Green" roads, and "Secondary Access/Emergency Vehicle Access" roads would extend from the rural collectors. All of the roads would be two-lane routes except for the "Alleys," which would be one-lane shared roads providing rear service access to buildings, and the "Neighborhood Green" roads, which would be one-lane, one-way roads that encircle the neighborhood greens.

"Secondary Access/Emergency Vehicle Access" roads would extend from the developed parts of the plan area into the foothills to the west. The emergency vehicle access roads (fire roads) would have 16-foot-wide pervious travel ways and would provide secondary means of emergency access for the Elkhorn Neighborhood and Three Creeks Neighborhood. (For more details on Specific Plan-proposed roads, see chapter 17, Transportation and Circulation.)

The Specific Plan would require that all buildings designed for human occupancy and all structures larger than 500 square feet, including garages, be equipped with interior residential fire sprinkler systems installed in accordance with current regulations.[1]

As discussed in section 16.1.4 above, the Specific Plan would provide for 500,000 gallons of onsite emergency water storage (for fire hydrants and sprinklers) in two water storage tanks at elevation (see Figure 16.1, Proposed Specific Plan Water System).

The *Community Services* land use designation proposed by the Specific Plan would include fire stations as an allowable use; however, the Specific Plan does not currently propose development of a fire station within the plan area.

16.3.5 Impacts and Mitigation Measures

Impact 16-7: Project Impact on Fire Protection and Emergency Medical Services. Development in accordance with the Specific Plan may increase the demand for fire protection and emergency medical services sufficiently to create a need for new or altered facilities, representing a ***potentially significant impact*** (see criterion [a] under subsection 16.3.3, "Significance Criteria," above).

Development in accordance with the Specific Plan would accommodate an estimated 1,485 residents and 136 employees in the plan area. The additional people and activity in the plan area would result in a corresponding increase in the need for fire protection and emergency medical services.

The CFPD has identified the need for a new fire station in the general vicinity of the Specific Plan area. Specifically, the CFPD has recently indicated that its current staffing, equipment, and facilities would not be adequate to serve the Rockville Trails Estates project, a 370-unit residential development proposed for a site located on the north side of Rockville Road about one-half mile northeast of the Specific Plan area. The CFPD requested that a fire station be included in that project. The most recent plans for the Rockville Trails Estates project included a fire station, but the project is currently on hold pending adjudication of a lawsuit.

[1]Solano County, Middle Green Valley Specific Plan, Preliminary Draft, October 28, 2009, page 5-59.

Development in the Specific Plan area could create the need for a new fire station if the development occurs before construction of the proposed new fire station in the Rockville Trails Estates project is assured. As noted in subsection 16.3.4 above, the *Community Services* land use designation proposed by the Specific Plan would allow development of a fire station within the Specific Plan area.

Mitigation 16-7. Before approval of the first Tentative Subdivision Map application in the Specific Plan area, the County shall obtain written verification from the Cordelia Fire Protection District (CFPD) that either (1) the CFPD's need for a new fire station in the general vicinity has been met (e.g., by plans for a new station on the Rockville Trails Estates site), or (2) a new fire station is needed within the Specific Plan area. If the latter is verified, the County shall require plans for construction of a fire station within the plan area as a condition of Tentative Subdivision Map approval, and confirm that any necessary additional environmental review is conducted. Incorporation of these measures as Specific Plan policy would reduce the impact to a ***less-than-significant level.***

Impact 16-8: Project Impacts on Emergency Response, Evacuation, and Access. Development in accordance with the Specific Plan would cause traffic increases and congestion on Green Valley Road, possibly delaying emergency response and evacuation. In addition, the 16-foot-wide emergency access roads proposed by the Specific Plan would not meet the CFPD standard (minimum 18-foot width), creating the potential for inadequate emergency access and interference with emergency response and evacuation plans and representing a ***potentially significant impact*** (see criteria [b] and [c] under subsection 16.3.3, "Significance Criteria," above).

As discussed in subsection 16.3.1 above, the CFPD would require that roads in the Specific Plan area be a minimum of 18 feet wide, with maximum slopes of 12 percent. As indicated in subsection 16.3.4 above, the emergency vehicle access roads (fire roads) proposed by the Specific Plan would have 16-foot-wide pervious travel ways. The roads therefore may not meet the CFPD width standard.

Mitigation 16-8. Implement mitigation measures identified in chapter 17, Transportation and Circulation, to reduce the impacts of Specific Plan-related traffic on Green Valley Road and other local roads. In addition, before approval of each Tentative Subdivision Map in the Specific Plan area, the County shall obtain written verification from the CFPD that proposed emergency access provisions meet CFPD road design and emergency access standards and require any necessary changes as a condition of map approval. Incorporation of these measures as Specific Plan policy would reduce impacts on emergency response, evacuation, and access to a ***less-than-significant level.***

Impact 16-9: Project Wildfire Hazard Impact--Ongoing. The Specific Plan would introduce residential (Rural Meadow, Rural Neighborhood and Agriculture-Residential) and residential/commercial (Rural Neighborhood/Community Service) land within or adjacent to areas where wildland fire danger is "moderate" to "very high." Specific Plan-facilitated development within or abutting these areas would create an "urban/wildland interface," increasing the risk of wildland fires and associated needs for additional fire protection personnel and facilities. Failure to sufficiently reduce this urban/wildland interface fire hazard through appropriate fuel management and other fire suppression techniques and/or provide the necessary fire equipment access, emergency evacuation, and additional fire protection personnel and facilities, could result in substantial safety hazard and impair CFPD response time and evacuation efforts, representing a ***potentially significant impact*** (see criteria [b], [c], and [d] under subsection 16.3.3, "Significance Criteria," above).

Mitigation 16-9. Implement *Mitigation 16-7* and *Mitigation 16-8*. In addition, as a condition of Certificate of Occupancy approval, each individual discretionary development project in the Specific Plan area shall meet all applicable California Building Code and California Uniform Fire Code standards (including standards for building materials, construction methods, fire sprinklers, etc.) and all applicable State and County standards (including Solano County General Plan policies) for fuel modification and/or brush clearance in adjacent areas. Incorporation of these measures as Specific Plan policy would reduce the impact to a ***less-than-significant level.***

Impact 16-10: Project Wildfire Hazards--Construction Period. Construction in Specific Plan-designated development areas may involve handling and storage of fuels and other flammable materials, creating temporary fire hazards in the "urban/wildland interface" and representing a ***potentially significant impact*** (see criteria [b] and [c] under subsection 16.3.3, "Significance Criteria," above).

Mitigation 16-10. As a condition of each Tentative Subdivision Map in the Specific Plan area, the County shall require that construction contractors conform to all applicable fire-safe regulations in applicable codes, including California Occupational Safety and Health Administration (OSHA) and local requirements for appropriate storage of flammable liquids and prohibition of open flames within 50 feet of flammable storage areas. Incorporation of these measures as Specific Plan policy would reduce the impact to a ***less-than-significant level.***

Project Impact on Police Services. Development in accordance with the Specific Plan would accommodate an estimated 1,485 residents and 136 employees in the plan area. The additional people and activity would result in an increase in the demand for Solano County Sheriff's Department police services; however, this increase in demand would be unlikely to

result in a need for new or altered police facilities. The effect of the Specific Plan on police services would therefore be considered a ***less-than-significant impact*** (see criterion [a] under subsection 16.3.3, "Significance Criteria," above).

Sheriff's Department's annual projections of staffing and equipment needs are determined in part by the anticipated crime rate, based on the number of crimes reported. The potential for crime rate increases is not necessarily directly proportional to increases in development activity. A number of additional factors, such as police presence, crime prevention measures, and ongoing legislation and funding, also contribute to the resultant crime rate.

Given the types of land uses proposed, it is reasonable to expect that development in accordance with the Specific Plan would not result in a disproportionate or substantial increase in the amount of crime in the vicinity of the plan area. The anticipated Specific Plan effect on countywide Sheriff's Department response times is therefore minimal. Although additional deputies and/or a patrol car could be necessary to serve the Specific Plan area, the additional demand for police services would not require new or substantially altered physical police facilities.

Mitigation. No significant impact has been identified; no mitigation is required.

Cumulative Fire Protection, Emergency Medical, and Police Service Impacts. Implementation of the Specific Plan in conjunction with the related projects listed in section 12.1.4 (Anticipated Cumulative Development) of this Draft EIR would result in substantial cumulative development of additional residential, commercial, office, and industrial land uses in Solano County. None of the listed projects is in the immediate vicinity of the Specific Plan area, and all but one of the projects are located in the City of Fairfield. All of the related projects located within the City of Fairfield would be served by the City's police and fire departments. The Specific Plan area is located in the unincorporated area and is served by the Cordelia Fire Protection District and Solano County Sheriff's Department, and therefore development in the plan area would not contribute to cumulative demands on the City of Fairfield police and fire departments. Thus, cumulative impacts on fire protection, emergency medical, and police services would be ***less than significant*** and no mitigation measures are required.

Mitigation. No significant cumulative fire protection, emergency medical, or police service impact has been identified; no mitigation is required.

16.4 PARKS AND RECREATION

16.4.1 Setting

(a) County Parks. The Solano County Parks Department oversees operation of the county's three regional parks: Belden's Landing in Suisun City, Lake Solano Park in Winters, and Sandy Beach Park in Rio Vista. The County has no current plans to expand existing county parks or to develop new county parks or recreational facilities near the plan area.

(b) City of Fairfield Parks. The parks and recreational areas closest to the Specific Plan area are municipal facilities under the jurisdiction of the City of Fairfield Community Services Department (CSD). These municipal parks include Vintage Green Valley Neighborhood Park, Ridgeview Neighborhood Park, and Rockville Hills Regional Park (see Table 16.3). The City of

Table 16.3
PARKS AND RECREATIONAL FACILITIES NEAR SPECIFIC PLAN AREA

Park	Size and Location	Amenities	Approximate Distance From Specific Plan Area
Vintage Green Valley Neighborhood Park	6 acres at the northeast corner of Mangels Boulevard and Vintage Valley Drive	▪ age-appropriate play structures ▪ picnic areas ▪ basketball court ▪ large multi-purpose turf area ▪ walkways	0.8 mile
Ridgeview Neighborhood Park	8.4 acres at the northeast corner of Silver Creek Road and Oakbrook Drive	▪ age-appropriate play structures ▪ picnic area ▪ 2 half basketball courts ▪ large multi-purpose turf area ▪ skinned Little League field walkways	3.0 miles
Rockville Hills Regional Park	650 acres located south of Rockville Road, generally between Green Valley Road and Suisun Valley Road and north of the Putah South Canal	▪ trails for mountain biking, running and hiking ▪ scenic vistas ▪ picnic areas ▪ preserved natural habitat ▪ fishing	0.5 mile

SOURCE: Solano County and Wagstaff and Associates, 2009.

Fairfield currently has plans to construct two more neighborhood parks and a community park in southern Fairfield within the next ten years.

The City of Fairfield adopted the Rockville Hills Regional Park Management Plan in December 2002. The Management Plan is a long-term management plan for Rockville Hills Regional Park designed to be implemented in two phases from 2003 to 2013. The Management Plan describes proposed improvements that include additional safety features, accessibility improvements, and enhanced park amenities.

(c) State Parks and Recreational Areas. The California Department of Parks and Recreation operates two parks in Solano County: the Benicia Capitol State Historic Park and the Benicia State Recreation Area. Both of these state parks are located in the city of Benicia. The Benicia Capitol State Historic Park is the site of California's third seat of government (1853–1854). The original building has been restored with reconstructed period furnishings and exhibits. The Benicia State Recreation Area is an area of marshland, grassy hillsides, and rocky beaches along the narrowest portion of the Carquinez Strait. This area is predominantly marshland but also provides hiking, jogging, and biking trails, and fishing and picnic areas. [1]

(d) Estimated Countywide Parkland Needs. Solano County's adopted acres-to-population park standard is 10 acres of local and regional parkland for every 1,000 people. As of 2002, 2,858 acres of neighborhood, community, and regional parkland were available in the county for a countywide population of 394,542, representing a ratio of approximately 7.25 acres of local and regional parkland for every 1,000 people. Therefore, the amount of local and regional parkland in Solano County currently does not meet the County's adopted standard.[2]

16.4.2 Pertinent Plans and Policies

(a) Solano County General Plan. Those policies and implementation programs from the 2008 Solano County General Plan that are pertinent to consideration of proposed Specific Plan and its potential parks and recreation facilities impacts are identified below. Where any proposed Specific Plan land use and development policy or standard is found in this EIR to be potentially inconsistent with one or more of these County-adopted parks and recreation facilities policies or implementation programs, a potentially significant environmental impact and one or more associated mitigations is identified for incorporation into the Specific Plan to reduce the impact and better implement the General Plan. Otherwise, the proposed Specific Plan is considered consistent with the parks and recreation facilities policies and implementation programs identified below.

General Plan policies and implementation programs that are relevant to all public services, including parks and recreational facilities, are listed in subsection 16.1.2(a) above. In addition, the Agriculture and Resources chapters of the General Plan contain the following relevant policies and implementation programs specific to parks and recreational facilities:

- *Support recreation and open space activities that are complementary and secondary to the primary agricultural activities on the land.* (Policy AG.P-23)

[1]EDAW, Solano County Draft General Plan Draft Environmental Impact Report, April 18, 2008, page 4.14-1.

[2]EDAW, Solano County General Plan Update Public Facilities and Service Background Report, no date, page 2-54.

- *Support recreation and open space activities that are complementary and secondary to agricultural activities on the land. Encourage agriculturalists to incorporate compatible recreational and educational activities that provide visitor-oriented opportunities into agricultural land in appropriate areas, minimizing the adverse impact on agriculture.* (Implementation Program AG.I-13)

- *Provide trail links and an integrated trail system to connect people to accessible open spaces and to regional trail routes.* (Policy RS.P-41)

- *Encourage the use of existing natural and human-made corridors such as creeks, railroad rights of way, and corridors when creating future bike path and trail alignments.* (Policy RS.P-42)

- *Support the provision of public lands for use in a trail network and where private land is necessary for creating connections for bike path or trail alignments. Work collaboratively with property owners to secure easements across private lands*. (Policy RS.P-44)

- *Support the completion of regional trails that link destinations within Solano County and beyond, including the San Francisco Bay Trail, the Bay Area Ridge Trail and Carquinez Trust Trail Plan*. (Policy RS.P-45)

- *Encourage local farmers and ranchers to incorporate recreational and educational activities that provide visitor-oriented opportunities into agricultural land, in areas deemed appropriate for such opportunities.* (Policy RS.P-46)

- *Require recreational uses to be established in a manner compatible with agricultural activities or that minimizes an adverse impact on agriculture.* (Policy RS.P-47)

In addition, the Park and Recreation Element of the General Plan contains the following relevant objectives and policies:

- *Ensure that there are at least ten (10) acres of regional and local parkland per each 1,000 persons.* (Objective 2)

- *Through its planning role, the County shall work with other agencies and private interests to provide for adequate regional parkland and facilities.* (Policy 2.A)

- *The County shall actively participate in the planning of projects that have regional recreation benefits.* (Policy 2.B)

- *The County shall encourage and support local agency efforts to achieve their objectives for providing local park land. All local providers seek to provide at least five acres of parkland for each 1,000 persons.* (Policy 2.C)

- *The County shall encourage and support other public agencies and private groups in the development of regional recreation facilities that are consistent with Park and Recreation Element objectives.* (Policy 2.E)

- *Provide for the regional recreation needs of the County.* (Objective 7)

- *The County shall provide sites and opportunities for recreational activities that cannot be accommodated within urban areas, as funds and sites ate available.* (Policy 7.A)

- *The County shall encourage development of linkages (such as riding, hiking and biking trails) between population centers and regional recreation facilities. Any trail system which links parklands cannot conflict with agriculture and other land uses.* (Policy 7.B)

- *Recreational needs of rural residents shall be considered in the design and development of rural residential subdivisions and parklands. Appropriate buffers will be provided to protect agriculture.* (Policy 7.C)

- *Encourage the development of private recreational areas within the unincorporated area, which complement public recreation facilities within the County. This may include privately developed campgrounds, golf courses, fishing lakes, etc*. (Objective 9)

- *The County shall encourage privately developed recreational facilities that expand public regional recreation opportunities.* (Policy 9.A)

- *Private recreation facilities should be located and designed in a manner that minimizes adverse impacts on surrounding residential, agricultural and open space uses.* (Policy 9.B)

- *Intensive private commercial recreational developments may be confined to County urban areas if supporting public facilities and services are required.* (Policy 9.C)

(b) Solano County Code Public Facilities Fee Requirements. Chapter 11, Article X of the Solano County Code requires developers to pay fees to cover the costs of necessary public facilities, including regional parks. The fees are to be used to assess the need for, plan, design, construct, develop, lease-purchase, and otherwise acquire public facilities, improvements, fixed assets, and furnishings.[1]

(c) Bay Area Ridge Trail Plan. The Bay Area Ridge Trail is envisioned as a more than 500-mile trail in the hills surrounding the San Francisco Bay Area that would serve hikers, trail runners, mountain bikers, and equestrians. The Bay Area Ridge Trail Council is a non-profit organization that promotes, plans, acquires, builds, and maintains the trail. Approximately 300 miles have been constructed, and the council is working with landowners and regional and local governments to close existing gaps.[2] The ridge trail map shows a proposed trail extending through the Specific Plan area vicinity.[3]

16.4.3 Significance Criteria

Based on the CEQA Guidelines, the proposed Specific Plan would be considered in this EIR to have a potentially significant impact on parks and recreation services if it would:

[1]Solano County Code, Chapter 11, Article X, http://www.co.solano.ca.us/civica/filebank/blobdload.asp?BlobID=4719, viewed on October 5, 2009.

[2]Solano County, Solano County General Plan, December 2008, page RS-47.

[3]http://www.ridgetrail.org/trail/RWMap10_08.pdf, viewed on March 12, 2009.

(a) result in substantial adverse physical impacts associated with the need for or provision of new or physically altered parks and recreation facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives;[1]

(b) increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated;[2] or

(c) include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.[3]

16.4.4 Relevant Project Characteristics

The Specific Plan would set aside areas for passive and active recreation by designating approximately 24 acres as *Open Lands-Passive and Active*. Land uses allowed in areas designated *Open Lands-Passive and Active* would include trails, neighborhood parks, greens, trailheads and parking, playfields, and supporting recreational buildings and improvements. The Specific Plan further defines seven types of "open lands" in the plan area (neighborhood greens, playgrounds/pocket parks, rambles, playfields, community gardens, agricultural lands, and meadows) and specifies design requirements for these areas.

Recreational facilities envisioned for areas designated *Open Lands-Passive and Active* include:

- In the Elkhorn Neighborhood: a 1.0- to 1.5-acre main green along with a network of smaller greens, rambles, community gardens and a trailhead;

- In the Nightingale Neighborhood: greens, rambles, and community gardens, along with a minimum of five acres of sports fields, consisting of a sports field area at the northern edge of the neighborhood and a more casual field area on the south side of Hennessey Creek. (A community recreation center and a spa and fitness facility, designated *Community Services*, are also envisioned for this neighborhood.)

- In the Three Creeks Neighborhood: an approximately 0.75-acre central green with a trailhead.

As shown on Figure 2.9 (Proposed Specific Plan Circulation System) in chapter 2, Project Description, the Specific Plan would designate trails along the west side of Green Valley Road, throughout the Nightingale, Elkhorn, and Three Creeks neighborhoods, and extending into the foothills in the western part of the plan area.

16.4.5 Impacts and Mitigation Measures

Project Demand for Parks and Recreational Facilities. Development in accordance with the Specific Plan would bring an estimated 1,485 residents and 136 employees to the plan area,

[1]CEQA Guidelines, Appendix G, item XIII(d).

[2]CEQA Guidelines, Appendix G, item XIV(a).

[3]CEQA Guidelines, Appendix G, item XIV(b).

increasing the demand for parks and recreational facilities in the vicinity. The Specific Plan would designate approximately 25 acres for recreational uses (*Open Lands-Recreation*) within the plan area. This amount of park and recreational land would exceed the Solano County General Plan objective (Park and Recreation Element Objective 2) of 10 acres of local and regional parkland per 1,000 residents, and therefore the increased park demand would represent a ***less-than-significant impact***.

Assuming 1,485 residents in the plan area, the Solano County General Plan objective would translate to a requirement for 14.85 acres of parkland (1,485 residents divided by 1,000 = 1.485 x 10 acres of parkland = 14.85 acres of parkland required). The amount of land designated by the Specific Plan for recreational uses--approximately 25 acres--would exceed this requirement by approximately nine acres. With this amount of parkland provided within the plan area, it is reasonable to assume that no additional parkland would be needed elsewhere in the vicinity (criterion [a] under subsection 16.4.3 above), and that Specific Plan area residents would not use existing parks or other recreational facilities in the vicinity to such an extent that substantial physical deterioration of the facilities would occur (criterion [b] under subsection 16.4.3 above).

Mitigation. No significant impact has been identified; no mitigation is required.

Impact of Specific Plan Parks and Recreational Facilities. As previously noted, the Specific Plan would designate approximately 25 acres for recreational uses (*Open Lands-Recreation*) within the plan area. While Specific Plan-facilitated development would cause ***potentially significant physical (environmental) impacts*** as described in chapters 3 through 17 of this EIR, the parks and recreation components proposed by the Specific Plan are not expected to have any additional specific adverse physical (environmental) effects. This aspect of the project would therefore represent a ***less-than-significant impact*** (see criterion [c] under subsection 16.4.3, "Significance Criteria," above).

Mitigation. No significant impact has been identified; no mitigation is required.

Impact 16-11: Impact of Specific Plan Proposed Trails on Bay Area Ridge Trail Plan. Unless subsequent trail implementation plans are coordinated with the Bay Area Ridge Trail Council, proposed trails within the Specific Plan area may not meet Bay Area Ridge Trail standards, representing a ***potentially significant impact*** (see criterion [c] under subsection 16.4.3, "Significance Criteria," above).

Mitigation 16-11. As a condition of each Tentative Subdivision Map in the Specific Plan area, the County shall require written verification that the Bay Area Ridge Trail Council has reviewed and approved final trail design and construction to ensure that trails within the Specific Plan area comply with Bay Area Ridge Trail standards, as appropriate. Incorporation of this measure as Specific Plan policy would reduce the impact to a ***less-than-significant level.***

Cumulative Parks and Recreation Impacts. Implementation of the Specific Plan in conjunction with the related projects listed in section 12.1.4 (Anticipated Cumulative Development) of this Draft EIR would result in substantial cumulative development of additional residential, commercial, office, and industrial land uses in Solano County. Residents and employees of these developments would increase demands on parks and recreational facilities located in unincorporated Solano County and the City of Fairfield. Since the amount of park and recreational land proposed by the Specific Plan would exceed the Solano County General Plan objective, development facilitated by the Specific Plan would not make a considerable contribution to cumulative increases in demand for parks and recreational facilities. Therefore, the cumulative parks and recreation impact would be ***less than significant*** and no mitigation measures are required.

Mitigation. No significant cumulative parks and recreation impact has been identified; no mitigation is required.

16.5 PUBLIC EDUCATION

16.5.1 Setting

(a) Schools in Vicinity of Specific Plan Area. Public education services in the plan area vicinity are provided by the Fairfield-Suisun Unified School District (F-SUSD). The F-SUSD has a current enrollment of approximately 23,000 K-12 students in 31 schools including 5 high schools, 5 middle schools, 20 elementary schools, and 1 adult school.[1]

F-SUSD schools serving the plan area vicinity are Nelda Mundy Elementary (grades K-6), located at 570 Vintage Drive in Fairfield; Green Valley Middle School (grades 7-8), located at 1350 Gold Hill Road in Fairfield; and Angelo Rodriguez High School (grades 9-12) located at 5000 Red Top Road in Fairfield. In addition, the F-SUSD owns the nearby, currently closed Falls Elementary School (K-6) site on 1634 Rockville Road at Sidney Jones Lane in upper Green Valley.

Table 16.4 shows student enrollment for all open schools for the 2006-2007, 2007-2008, and 2008-2009 school years. As shown in the table, enrollment has fluctuated slightly during this period. According to the F-SUSD, these schools are at or near capacity.

(b) School Impact Fees. Pursuant to California Education Code section 17620(a)(1), the governing board at any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district, for the purpose of funding the construction or reconstruction of school facilities. The F-SUSD currently charges developer fees of $3.66 per square foot of residential development. As provided in California Government Code section 65996, the payment of such fees is deemed to fully mitigate the impacts of new development on school services.

16.5.2 Pertinent Plans and Policies

Those policies and implementation programs from the 2008 Solano County General Plan that are pertinent to consideration of proposed Specific Plan and its potential public education

[1] http://www.fsusd.k12.ca.us/about_fsusd/, viewed March 12, 2009.

Table 16.4
ENROLLMENT IN SCHOOLS NEAR SPECIFIC PLAN AREA, 2006-2009

	Enrollment (Number of Students)		
School	2006-2007	2007-2008	2008-2009
Nelda Mundy Elementary School	834	740	728
Green Valley Middle School	781	831	848
Angelo Rodriguez High School	2,331	2,410	2,347

SOURCE: California Department of Education, Educational Demographics Office, http://data1.cde.ca.gov/dataquest/, viewed on March 12, 2009.

impacts are identified below. Where any proposed Specific Plan land use and development policy or standard is found in this EIR to be substantially inconsistent with one or more of these County-adopted public education policies or implementation programs, a potentially significant environmental impact and one or more associated mitigations is identified for incorporation into the Specific Plan to reduce the impact and better implement the General Plan. Otherwise, the proposed Specific Plan is considered consistent with the public education goals, policies and implementation programs identified below.

General Plan policies and implementation programs that are generally relevant to all public services, including public education facilities, are listed in subsection 16.1.2(a) above. In addition, the General Plan contains the following relevant policies and implementation programs specific to public education:

- *Coordinate with local school districts and the community college district to plan for and set aside adequate sites for future facilities.* (Policy PF.P-42)

- *Locate educational facilities appropriately to make efficient use of existing and planned facilities, including park and recreational facilities.* (Policy PF.P-43)

- *Coordinate with the local school districts in developing and implementing school facility mitigation plans to ensure the necessary financing for the provision of new school facilities.* (Policy PF.P-44)

- *Coordinate with the local school districts and other public and private education providers to ensure that quality education is available for Solano residents of all ages.* (Policy PF.P-45)

- *Integrate parks and recreation open space corridors and trails where appropriate into existing and future school and community college sites to maximize the benefits of recreational experience as part of the education process. Where possible, pursue joint use sites to allow for shared recreation and education facilities to maximize their use.* (Implementation Program PF.I-46)

- *Continue to work with the school and community college districts to ensure adequate sites are available in the community and that impact fees are assessed correctly.* (Implementation Program PF.I-47)

16.5.3 Significance Criteria

Based on the CEQA Guidelines, the proposed Specific Plan would be considered in this EIR to have a potentially significant impact on public education if it would:

(a) result in substantial adverse physical impacts associated with the need for or provision of new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives.[1]

16.5.4 Relevant Project Characteristics

The *Community Services* land use designation proposed by the Specific Plan would include schools as an allowable use (see chapter 2, Project Description, of this EIR). The Draft Specific Plan also includes a designated 10-acre site in the northwestern corner of Nightingale Neighborhood for future accommodation of an elementary school with a maximum planned enrollment of 325 students--see Figures 2.3 (Specific Plan Land Use Map) and 2.7 (Proposed Illustrative Plan Detail for Nightingale Neighborhood). The Specific Plan anticipates an agreement to transfer site ownership to the F-SUSD prior to County issuance of the 101st plan area residential building permit; otherwise the designated 10-acre site would revert back to other use possibilities consistent with its Specific Plan land use designation (Community Services with Agriculture Tourism Overlay).

16.5.5 Impacts and Mitigation Measures

Project Impact on Public Education Services. While development in accordance with the Specific Plan may increase demand for public education services, developer payment of standard school impact fees would under State law represent adequate payment to cover a fair share of any need for new or altered school facilities. The effect of the Specific Plan on public education services would therefore be considered a ***less-than-significant impact*** (see criterion [a] under subsection 16.5.3, "Significance Criteria," above). The Specific Plan also includes designation of a 10-acre interim public or private elementary school site in the Nightingale Neighborhood.

The Specific Plan would allow development of 400 new primary housing units, along with up to 100 new secondary units. These added units would likely house school-aged children who may attend F-SUSD schools. Based on standard F-SUSD student generation rates (0.366 elementary school student, 0.105 middle school student, and 0.180 high school student per single-family housing unit), the 400 housing units allowed in the plan area would generate

[1] CEQA Guidelines, Appendix G, item XIII(a).

approximately 146 elementary school students, 42 middle school students, and 72 high school students. Based on these same rates, the additional up to 100 secondary units allowed in the plan area would generate approximately 37 elementary school students, 11 middle school students, and 18 high school students; these estimates might be high, however, since the secondary units would likely be smaller than a standard single-family unit and therefore may house fewer students.

Based on current school impact fees, developers in the Specific Plan area would be required to pay $3.66 per square foot of residential development. School impact fees are collected when building permits are issued. The State-mandated school fee maximums may permit increases in local school impact fees prior to issuance of building permits for development in the plan area.

The courts have held that increased classroom enrollment resulting in school overcrowding is considered a "social" rather than a physical "environmental" impact and is not, in itself, a significant environmental impact requiring mitigation under CEQA (Goleta Union School District vs. Regents of University of California [2d Dist. 1995]). Instead, increased school enrollment may only lead to such an impact if the increased enrollment will ultimately require physical changes in the environment. Also, state Government Code sections established in 1998 (sections 65995 and 65996) have pre-empted and limited the ability of local governments to exercise their police power to mitigate school impacts. A local government may not impose development requirements regarding school facilities in a manner inconsistent with State statutes on the subject. The duty of the lead agency to mitigate school impacts beyond the State-mandated fees arises only where there is a physical environmental impact involved beyond the mere addition of students to a school. No significant adverse environmental impact associated with the Specific Plan-designated 10-acre elementary school site in the proposed Nightingale Neighborhood has been identified in this Draft EIR. As a result, under CEQA, the Specific Plan would have ***a less-than-significant impact*** on schools.

Mitigation (School Impact Fees). The permitted method of addressing school enrollment increase impacts is limited to the State-authorized statutory authority of school district to impose impact fees. Specifically, Government Code section 65996 limits methods of addressing impacts on school facilities to State-authorized development impact fees and interim school facility provisions. Therefore, under current statutes and case law, payment of the required school impact fees would address the Specific Plan's impact on school services to the furthest extent permitted by law.

Cumulative Impact on Public Education Services. Implementation of the Specific Plan in conjunction with the related projects listed in section 12.1.4 (Anticipated Cumulative Development) would result in the substantially cumulative additional development of residential land uses in Solano County. Residents of these developments would cumulatively increase demands on school facilities provided by the FSUSD. A cumulative enrollment increase could exceed the current and anticipated capacity of FSUSD facilities. Without definitive, detailed information on specific future school district facility expansion plans, identification of secondary physical environmental impacts associated with any necessary new or expanded school facilities would be highly speculative.

Mitigation (School Impact Fees). School impact fees collected from cumulative residential development would be available for construction of additional school facilities. Payment of the required school impact fees would address the cumulative impact on school services to the

furthest extent permitted by law. State law prohibits a local agency from requiring measures beyond designated impact fees to offset a project's impact on local school facilities. Therefore, under CEQA, cumulative impacts on school services would be ***less than significant***.

16.6 SOLID WASTE MANAGEMENT

16.6.1 Setting

(a) Potrero Hills Landfill. Solid waste generated in the plan area vicinity is collected by the Solano Garbage Company, a franchised hauler under contract with the County that provides waste collection, recycling, transportation, disposal and related services. Solid waste is hauled to the Potrero Hills Landfill located at 3675 Potrero Hills Lane in Suisun City, approximately 10 miles southeast of the plan area, approximately 5 miles southeast of the City of Fairfield, and approximately 1 mile south of State Route 12 (SR 12). The Potrero Hills Landfill's current service area encompasses an approximately 150-mile radius, including portions of the Bay Area, Central Valley, Sierra foothills, and north coast of California. The landfill has access from SR 12 via Scally Road, Kildeer Road, and Potrero Hills Lane.

The Potrero Hills Landfill is a Class 3, municipal solid waste landfill (Permit No. 48-AA-0075) that accepts municipal solid waste, industrial waste, construction waste, ash, tires and sludge. In addition, the landfill provides a materials processing center where resource recovery activities are conducted and materials are diverted from the landfill through composting, wood recycling, concrete and asphalt rubble crushing and screening, metal salvage recovery, and other recycling services.

The Potrero Hills Landfill facility has a permitted capacity of 21.5 million cubic yards (mcy) with a remaining capacity of 8.2 mcy as of January 1, 2006. The landfill has an average daily loading of 3,400 tons per day (tpd) of solid waste and can receive a maximum of 4,330 tpd of solid waste.

The landfill accepts wastes from a variety of communities and transfer facilities located throughout northern California, including the Sierra foothill counties and Alameda, Contra Costa, Marin, Mendocino, Napa, Sacramento, Santa Clara, San Mateo, Solano, and Yolo counties.

The landfill opened in 1986 to replace the Solano Garbage Company facility. In 1987, an adjacent 210-acre parcel was purchased by Potrero Hills Landfill, Inc., to provide for future site operations and buffer area. If the proposed expansion occurs, the 210-acre landfill expansion would add approximately 61.6 mcy of fill capacity. The total site capacity would then be approximately 83 mcy and the disposal life of the landfill would increase by 35 years. The facility has a closure date of January 1, 2011 for the current landfill. The expansion, if approved, would extend operation of the landfill approximately 35 years past the current closure date to the year 2046. Lawsuits involving the landfill expansion have recently been filed in federal court.[1]

(b) B + J Landfill. According to the California Integrated Waste Management Board (CIWMB), another permitted landfill in Solano County is B + J Landfill (Permit No. 48-AA-0002) located at 6426 Hay Road in Vacaville and owned by Norcal Waste Systems Inc. B + J Landfill is a Class

[1]Glover, Mark. "Folsom Trash Hauler Fights to Expand Solano Landfill," Sacramento Bee, September 18, 2009. Available at http://www.sacbee.com/eldorado/story/2191222.html, viewed October 8, 2009.

2 and 3 landfill with a maximum permitted daily loading of 2,400 tons tpd. The landfill is a municipal solid waste landfill that accepts asbestos, construction and demolition debris, municipal solid waste, sludge and tires. The landfill has a maximum permitted capacity of 28,240,000 cubic yards (cy) with a remaining capacity of 22,476,431 cy as of April 30, 2006. The expected closure date is January 1, 2070. Construction debris can be hauled to B + J Landfill. For any additional pick-up and disposal of any plan area-related residential solid waste at the B + J Landfill, contract hauling agreements with Solano County, contract haulers, and B + J Landfill would be required.

16.6.2 Pertinent Plans and Policies

CEQA requires an EIR to identify the plan and policy setting within which the project is proposed and discuss any inconsistencies between the proposed project and these applicable plans and policies [CEQA Guidelines section 15125(d)]. CEQA also indicates that this plan and policy consistency discussion should be limited to the context of evaluation and review of environmental impacts [CEQA Guidelines section 15124(b)].

(a) Solano County General Plan. Those policies and implementation programs from the 2008 Solano County General Plan that are pertinent to consideration of proposed Specific Plan and its potential solid waste management impacts are identified below. Where any proposed Specific Plan land use and development policy or standard is found in this EIR to be potentially inconsistent with one or more of these County-adopted solid waste management policies or implementation programs, a potentially significant environmental impact and one or more associated mitigations is identified for incorporation into the Specific Plan to reduce the impact and better implement the General Plan. Otherwise, the proposed Specific Plan is considered consistent with the solid waste management goals, policies and implementation programs identified below.

General Plan policies and implementation programs that are generally relevant to all public services, including solid waste management, are listed in section 16.1.2(a) above. In addition, the General Plan contains the following policies and implementation programs specifically relevant to solid waste management:

- *Collaborate with the state, regional, and city agencies and landfill operators to ensure that the capacity of available landfills is sufficient. Prioritize capacity for waste generated within the county. Ensure that programs are designed to meet or exceed state requirements for landfill capacities.* (Policy PF.P-25)

- *Implement and participate in local and regional programs that encourage source reduction and recycling of solid and hazardous wastes in Solano County.* (Policy PF.P-26)

- *Require responsible waste management practices, including recycling and composting. Coordinate with service providers to compost green waste and encourage local farmers to use this.* (Policy PF.P-27)

- *Promote technologies that allow the use and reuse of solid waste, including biomass or biofuel as an alternative energy source.* (Policy PF.P-28)

- *Require that demolition projects submit a plan to maximize reuse of building materials at the time of permit application.* (Implementation Program PF.I-28)

- *Expand waste minimization efforts, including household recycling, food waste and green waste recycling, business paper recycling, and construction and demolition recycling. Require commercial and industrial recycling. Require building projects to recycle or reuse a minimum of 50 percent of unused or leftover building materials.* (Implementation Program PF.I-29)

(b) Solano County Source Reduction and Recycling Element and Household Hazardous Waste Element. The California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) was enacted to reduce, recycle, and reuse solid waste generated in the state to the maximum extent feasible. Specifically, AB 939 requires city and county jurisdictions to identify an implementation schedule to divert 50 percent of the total waste stream from landfill disposal by the year 2000. AB 939 also requires each city and county to promote source reduction, recycling, and safe disposal or transformation. California cities and counties are required to submit annual reports to the California Integrated Waste Management Board (CIWMB) on their progress toward AB 939 goals. To date, implementation of AB 939 has proven to be a successful method of reducing landfill waste.

In response to AB 939, Solano County prepared and adopted a Source Reduction and Recycling Element and Household Hazardous Waste Element (SRRE) on May 28, 1997. The SRRE identifies existing and future solid waste quantities and types, inventories existing disposal sites, addresses source reduction and recycling economic feasibility, and identifies a set of associated enforcement programs and an implementation schedule.

According to the SRRE, the unincorporated portions of Solano County disposed of approximately 14,100 tons of solid waste in 1990. Of the waste disposed of by the franchised garbage haulers, 6,045 tons were from residential waste, 1,766 tons were from commercial sources, and 1,927 were from industrial sources. Solano County residents also self-hauled 4,336 tons of waste to landfills in Solano County, Napa County, or Yolo County.

The County's residential diversion rate was estimated to be about 3 percent in the year 2000. A greater percentage of diversion is expected to occur as implementation of SRRE-identified programs is continued and expanded.

16.6.3 Significance Criteria

The proposed Specific Plan would be considered in this EIR to have a potentially significant impact on solid waste and recycling services if it would:

(a) require or result in the construction of new solid waste disposal facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects;[1]

(b) be served by a landfill with insufficient permitted capacity to accommodate the project's waste disposal needs;[2] or

(c) breach published national, state, or local standards relating to solid waste or litter control.[3]

[1]CEQA Guidelines, Appendix G, item XIII(e).

[2]CEQA Guidelines, Appendix G, item XVI(f).

[3]CEQA Guidelines, Appendix G, item XVI(g).

16.6.4 Relevant Project Characteristics

The *Community Services* land use designation proposed by the Specific Plan would include solid waste facilities and utility stations as allowable uses (see chapter 2, Project Description, of this EIR). The Specific Plan does not currently propose development of such uses at a specific locations within the plan area, however.

In addition, the Specific Plan proposes the following guidelines for choosing building materials that would help limit long-term generation of solid waste:[1]

- *Incorporate recycled content materials into the overall building materials selection.*
- *Use building materials that may be recycled at the end of their useful life.*
- *Incorporate salvaged materials into the building design. Materials could include structural timbers such as beams and posts, hardwood flooring, doors and frames, cabinetry, furniture, and brick and decorative detailing salvaged from older buildings that can be refinished and/or remilled.*

16.6.5 Impacts and Mitigation Measures

Impact 16-12: Project Construction-Period and Long-Term Solid Waste Impact on Landfills. Construction and operation of land uses proposed by the Specific Plan would generate solid waste that would require disposal at a landfill. While landfill capacity is currently expected to be adequate to serve this development, the situation could change over the life of the Specific Plan, particularly if the currently pending Potrero Hills Landfill expansion proposal is not approved before the scheduled landfill closure date of January 1, 2011. Any potential for inadequate landfill capacity or the potential need for new facilities would represent a ***potentially significant impact*** (see criteria [a] through [c] under subsection 16.6.3, "Significance Criteria," above).

Based on a standard waste generation rates, the up to 400 new primary housing units and up to 100 new secondary housing units allowed by the Specific Plan would generate an estimated 5,000 pounds of solid waste per day. The proposed 20,000 square feet of retail uses would generate approximately 920 pounds per day, and the proposed 12,000 square feet of office uses would generate approximately 72 pounds per day. A 25-room inn would generate an estimated 100 pounds of waste per day.[2] Other uses allowed by the Specific Plan, such as the recreation center, chapel, agricultural uses, and onsite wastewater

[1]Solano County, Middle Green Valley Specific Plan, Preliminary Draft, October 28, 2009, page 5-57.

[2]Average solid waste generation rates are estimated at 10 pounds per housing unit per day for residential uses, 0.046 pound per square foot per day for retail commercial uses, 0.006 pound per square foot per day for office commercial uses, and 4 pounds per room per day for hotel/motel uses. These rate estimates were derived by Wagstaff and Associates from data provided by the California Integrated Waste Management Board (CIWMB) (www.ciwmb.ca.gov/WasteChar/WasteGenRates, viewed October 8, 2009).

treatment plant (wastewater service *Option B* or *Option C*, if developed), would generate additional solid waste.

Construction of buildings and other facilities in the Specific Plan area would also generate solid waste. Some construction debris, such as wood, metal scrap, formed construction board (cement and dry wall board), soil, brush and other cleared vegetative growth, cardboard packaging, and plastic wrap, could be recycled, salvaged, or composted.

Mitigation 16-12. The project shall comply with Solano County General Plan policies and other provisions calling for source reduction and recycling in construction and ongoing operations. As a condition of each Tentative Subdivision Map in the Specific Plan area, the County shall require the applicant to provide written verification from the appropriate landfill operator that adequate landfill capacity is available to accommodate construction and operation of the project.

In addition, the applicant shall be required to prepare and implement a recycling plan for the construction phase of the project. The recycling plan shall address the major materials generated by project construction and identify means to divert a portion of these materials away from the chosen solid waste landfill.

Incorporation of this measure as Specific Plan policy would reduce the impact to a ***less-than-significant level.***

Cumulative Solid Waste Management Impacts. Implementation of the Specific Plan in conjunction with the related projects listed in section 12.1.4 (Anticipated Cumulative Development) would result in substantial cumulative additional development of residential, commercial, office, and industrial land uses in Solano County. These developments would generate solid waste requiring disposal at landfills. As discussed previously, existing landfills are expected to have available permitted capacity to accommodate solid waste from Specific Plan-facilitated development and related projects.[1] In any case, implementation of *Mitigation 16-21* above would ensure that Specific Plan-facilitated development would not make a considerable contribution to cumulative increases in demand for landfill capacity. Therefore, the cumulative solid waste management impact would be ***less than significant*** and no mitigation measures are required.

Mitigation. No significant cumulative solid waste management impact has been identified; no mitigation is required.

[1]For example, the EIR on the recent Solano County General Plan update concluded that landfill capacity would be adequate and that, with implementation of General Plan policies, the solid waste disposal impacts of General Plan-facilitated development would be less than significant. (EDAW, Solano County Draft General Plan Draft Environmental Impact Report, April 18, 2008, pages 4.9-48 through 4.9-50.)