4.5 PUBLIC SERVICES AND UTILITIES

4.5.1 Introduction
The Public Services and Utilities chapter summarizes the existing setting related to public services and utilities and identifies potential new demands resulting from the proposed project on fire and police protection services, water supply, wastewater systems, solid waste disposal, and gas, electric, and telecommunications infrastructure. Information for this section was drawn primarily from the Davis General Plan\(^1\) and associated EIR,\(^2\) the City of Davis Final 2015 Urban Water Management Plan (UWMP),\(^3\) and the Davis Integrated Waste Management Plan.\(^4\) Additional information was sourced from a Domestic Water System Design Report and a Sewer System Design Report prepared for the project by BKF Engineers,\(^5\) as well as technical memorandums regarding water and sewer demands prepared for the project by West Yost Associates (referred to as the Water Evaluation and Sewer Evaluation throughout this section of the EIR) (see Appendices H and I).\(^6\)

4.5.2 Existing Environmental Setting
The following section describes the existing fire and police protection services, and other public facilities in the area, as well as existing utilities, including water supply, wastewater conveyance and treatment, solid waste, and gas, electric, and telecommunications infrastructure.

**Fire Protection**
The project site is currently located within the jurisdiction of the Davis Fire Department. The City of Davis Fire Department responds to incidents including, but not limited to, medical emergencies, fires, hazardous materials conditions, technical rescues, and public assistance.

The Department has contractual agreements with the East Davis County Fire Protection District, the Springlake Fire Protection District, and the No Man’s Land Fire Protection District to provide emergency response to these areas. The City is divided into three emergency first-response areas, which provide clearly defined territories for dispatching the nearest fire and EMS personnel and equipment to an emergency. In addition, the Department has an automatic aid agreement with UC Davis, the cities of Woodland, West Sacramento, and Dixon and a mutual aid agreement with all other fire protection agencies in Yolo County and in the State of California.\(^7\)

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\(^{2}\) City of Davis. *Program EIR for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School*. January 2000.
The Davis Fire Department currently operates three fire stations within the City of Davis:

- Station 31, located at 530 Fifth Street;
- Station 32, located at 1350 Arlington Boulevard; and
- Station 33, located at 425 Mace Boulevard.

Station 31, located approximately one mile east of the project site, is known as the Headquarters Station, or the Downtown Station. Station 31 experiences the highest call volume in the City of Davis. Over 50 percent of the emergency calls occurring in the City of Davis are responded to by the staff at Station 31. The Davis Fire Department business office is also located at Station 31. In 2018, the total number of emergency incidents responded to by the Davis Fire Department was 5447.

Currently, the City of Davis Fire Department is staffed by 36 shift personnel (nine captains and 27 firefighters). The shift personnel are divided into three shifts, with each shift working a 24-hour workday. Department apparatus inventory consists of three engines, two squads, two grass/wildland units, one water tender, two reserve engines, three command vehicles, two fire prevention staff vehicles, and two antique fire apparatus. The Davis Fire Department does not have a ladder truck. For all incidents in the City of Davis requiring the response of a ladder truck, Truck 34 from the UC Davis Fire Department is dispatched to assist.

The City relies on a total response time goal of responding to calls for service within 6:00 minutes for EMS calls and 6:20 minutes for fire calls, 90 percent of the time, consistent with the National Fire Protection Agency (NFPA) 1710. The 6:20 minute response time goal for fire calls and NFPA 1710 were adopted by City Council in January 2013.

**Police Protection**

The Davis Police Department (DPD) is located at 2600 Fifth Street, approximately 2.3 miles east of the project site. The DPD is a municipal law enforcement agency, currently staffed with 61 sworn police officers, 34 civilian support professionals, and over 40 volunteers. The DPD provides professional law enforcement, maintenance of public order and safety, crime prevention planning, and coordination services that contribute to discouraging criminal behavior and enhancing community livability and sustainability.

The DPD is organized into the following four Divisions:

- **Administration Division:** The Administration Division provides overall management, planning, coordination and evaluation of department functions.
- **Patrol Division:** The Patrol Division provides first-line emergency response to crimes in progress, accidents, and tactical situations.
- **Investigations Division:** The Investigations Division handles major criminal investigations of all types involving adult and juvenile offenders, as well as missing persons of all ages.
- **Records & Communications Division:** The Records & Communications Division is the hub of the department, which receives all Emergency 911 and nonemergency calls for service and ensures that appropriate resources are dispatched in a timely manner.

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Sworn officers perform law enforcement tasks, as well as administration and supervision, and civilian personnel are involved in administration, support services, supervision, dispatch, parking enforcement, and community service duties. UC Davis also maintains an on-campus police department that has a mutual aid agreement with the City for major incidents.

**Water Supply**

The City of Davis is responsible for providing water service to all residential, commercial, industrial, institutional, and irrigation customers, as well as open space and fire protection uses within the City. The City of Davis’s water system service area coincides with the Davis City Limits and additionally serves areas located outside the City’s boundary, including the El Macero area, the Willowbank area, and the Royal Oak Manufactured Home Community area south of Interstate 80 (I-80) (see Figure 4.5-1). It should be noted that the City’s water system service area does not include UC Davis. The City’s water system currently serves a population of approximately 69,280, which includes residents from the El Macero, Royal Oaks Mobile Home Park, and Willowbank areas.

Water supplies in the City of Davis were historically provided solely by groundwater. However, in June 2016, the City began using treated wholesale surface water from the Woodland – Davis Clean Water Agency’s (WDCWA) Regional Water Treatment Facility. The following section provides a discussion of both sources of water.

**Groundwater**

The following section provides the legislative background on groundwater within the State of California and City of Davis, as well as a description of the characteristics of the groundwater aquifers in Davis.

**Background on Legislation**

Despite the City’s recent transition to surface water from the WDCWA as the main source of water supply, the City will continue to rely on groundwater during a transitional period, and as needed during high demand periods.

The City pumps groundwater from the Yolo Basin, which is a portion of the larger Sacramento Valley groundwater basin. The Yolo Basin is subject to the 2014 Sustainable Groundwater Management Act (SGMA), which became effective January 31, 2015. The SGMA applies to the 127 High and Medium Priority groundwater basins, which account for approximately 96 percent of groundwater use in California. The Yolo subbasin is designated as High Priority under the SGMA. The SGMA requires High and Medium Priority basins under the California Statewide Groundwater Elevation Monitoring (CASGEM) program subject to critical conditions of overdraft to be managed under a groundwater sustainability plan by January 31, 2020 (Water Code § 10720.7(a) (1)), and requires all other groundwater basins designated as High or Medium Priority basins to be managed under a groundwater sustainability plan by January 31, 2022 (Water Code § 10720.7 (a) (2)). According to Bulletin 118 and the UWMP, the Yolo subbasin is not subject to critical conditions of overdraft.

Figure 4.5-1
City of Davis Water Distribution Area

The SGMA requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally-based management plans. The SGMA provides substantial time (20 years) for GSAs to implement plans and achieve long-term groundwater sustainability. The SGMA protects existing surface water and groundwater rights and does not impact current drought response measures. The City has partnered with various other local agencies to form the Yolo Subbasin Groundwater Agency (YSGA), which is currently in the process of preparing the Yolo Subbasin Groundwater Sustainability Plan in compliance with the SGMA.15

**Local Groundwater Aquifer Characteristics**

The City has historically obtained groundwater from both the deep and intermediate depth aquifers. The City’s deep aquifer zone exists throughout the service area, and is more predominant to the north and west. The deep aquifer zone slopes downward from the west of the service area, with gradual flattening towards the east. Both the City and UC Davis primarily relied on the deep aquifer due to its generally better quality in terms of hardness and total dissolved solids compared to water produced from the intermediate depth aquifer. With the operation of the Regional Water Treatment Facility, intermediate groundwater wells will only be used as emergency supplies or as raw water for park irrigation.

The productive aquifers in the Davis area of Yolo County occur in the Tehama and younger formations. In most areas of Yolo County, the sands and gravel of the Tehama Formation are thin, discontinuous layers between silt and clay deposits. In much of the eastern portion of Yolo County, productive aquifers are found up to 700 feet below ground surface with few productive aquifers in the 700-foot to 1,000-foot depth range. In the area (especially to the west), good quality water is also found in the Tehama Formation at depths of approximately 1,200 feet to 1,500 feet.

Aquifers in the Davis area are recharged by percolation of rainfall and to a lesser extent irrigation water. Other significant sources include infiltration in streambeds, channels, and the Yolo Bypass. Relatively course-grained deposits line both Putah and Cache Creeks, allowing substantial infiltration. The deep aquifer has a much longer recharge period as compared to the intermediate depth aquifer, on the order of thousands of years versus hundreds of years, respectively.16

Bulletin 118 states that the Yolo Basin does not exhibit any significant declines in groundwater levels, with the exception of localized pumping depressions in several areas, including in the vicinity of Davis. Historical groundwater elevation measurements show that groundwater elevations declined through the 1950s and 1960s and then increased as a result of the implementation of the Lake Berryessa and Indian Valley Reservoir regional surface water supply projects. In addition to the groundwater elevation changes resulting from variation in land and water use practices over time, groundwater elevations have fluctuated in response to changes in precipitation. Groundwater elevations in the falls of 1977 and 1992 were near the historical lows recorded in the mid-1960s. The maximum groundwater elevation measurements were recorded in spring 1983, the same year that the maximum annual precipitation was recorded.17

In the vicinity of Davis and UC Davis, the base of fresh groundwater occurs at a depth of approximately 2,800 feet below mean sea level, implying that the fresh water aquifer is about

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2,800 feet thick. The total amount of water contained to a depth of 2,000 feet in the 11,600-acre groundwater management plan area is estimated to be over 2 million acre feet (ac-ft). The amount of water in storage is estimated to be approximately 120,000 ac-ft, assuming a specific yield of 10 percent.

Until the recent transition to the use of surface water, the City’s groundwater supply was provided by 20 active wells located within the City’s water system service area. The City’s historic annual groundwater production for the potable water system, presented in units of acre feet per year (afy) is depicted in Table 4.5-1.

### Table 4.5-1

<table>
<thead>
<tr>
<th>Volume Pumped (afy)</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11,531</td>
<td>12,217</td>
<td>12,339</td>
<td>10,903</td>
<td>9,212</td>
</tr>
</tbody>
</table>


With the recent availability of surface water, the City of Davis has started to reduce the total amount of groundwater used. The City has begun to retire, place on standby, and/or convert intermediate wells to non-potable service. The sharp drop of projected groundwater supply coincides with the phase-in of wholesale surface water deliveries from the WDCWA.

The quantity of the City’s water supply available from groundwater is not impacted by dry, average, or wet years. In dry years the groundwater levels may decline, but this does not reduce the pumping capacity of the City’s wells until the groundwater levels drop significantly. The City has an agreement with UC Davis to limit the maximum daily groundwater pumping capacity of the deep aquifer wells. Treatment facilities may be needed on some of the existing deep wells in the future depending on changes in groundwater quality and drinking water standards. Currently, all of the wells meet the drinking water standards.

### Wholesale Water Supply

The City of Davis is now under contract to purchase wholesale surface water from the WDCWA to use in combination with groundwater from the deep wells. The project participants consist of the City of Davis, City of Woodland, and UC Davis. The Regional Water Treatment Facility began operation in June 2016. Per the WDCWA, the Regional Water Treatment Facility is capable of supplying up to 30 million gallons per day (mgd) of water, with an option for future expansion to 34 mgd. Of the 34 mgd of water supplied, the City of Davis is allocated approximately 10.2 mgd.

The WDCWA has two Sacramento River water rights, consisting of a primary water right of 45,000 afy and a secondary right of 10,000 afy. The primary water right is subject to Term 91, which can result in a curtailment of that supply. In the event of a Term 91 curtailment, the secondary water right could be used for the April to October period. When the US Bureau of Reclamation declares a Lake Shasta critical year, the secondary water right is reduced to 7,500 afy.

Historically, the majority of Term 91 curtailments have been 3 months or less in duration. 2014 was unique in that it is the first year since the Term 91 regulations went into effect in 1984 that the curtailments had been in effect for most of the year. A Lake Shasta critical year has been...

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18 Brown and Caldwell. *Water Supply Assessment for the City of Davis* [pg. 4-3]. February 2015.
declared in 2012, 2013, 2014, and 2015 which are four of the eight years of the occurrence of this declaration over the last 40 years.

According to the WSA,\textsuperscript{20} the ability of the WDCWA to supply water during drought conditions concludes that 64 and 42 percent of the annual water demands of the project participants would have been met in 2013 and 2014, respectively. 2013 and 2014 represent the two most severe water right curtailment years since Term 91 went into effect in 1984. The WDCWA has the option of purchasing supplemental Sacramento River water from water rights holders not covered by Term 91. The WSA states that the two existing water rights, in combination with deep aquifer groundwater pumping by the City of Davis, an aquifer storage and recovery (ASR) program by the City of Woodland, and the option to purchase supplemental Sacramento River water, are expected to meet the anticipated water demands of all of the project participants. If implemented, an ASR program could counteract the wholesale supply reduction impacts of Term 91 curtailments.\textsuperscript{21}

**Summary of Water Supplies**

The City Council decided in 2013 that the City’s long-range water portfolio would consist of surface water and groundwater supplemented by well conversion/irrigation, ASR, rainwater catchment, grey water, and storm water, with water conservation to reduce demands.\textsuperscript{22} Some of the supplies would not be implemented until sometime in the future, although the ASR option is currently being evaluated by the City and might be implemented sooner. Surface water and deep aquifer groundwater combined with water conservation comprise the majority of the supply. The analysis assumes that the City would utilize the wholesale surface water supply and the deep aquifer groundwater. The other water portfolio elements would result in very small amounts of water and is assumed that they would not be extensively used to provide more potable water supply.

The maximum annual amount of each water supply available to the City is presented in Table 4.5-2, which does not consider any limitations due to the capacities of existing water system supply facilities and infrastructure.

<table>
<thead>
<tr>
<th>Table 4.5-2 Annual Amount Under Each Water Supply Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply</strong></td>
</tr>
<tr>
<td>------------------------------------</td>
</tr>
<tr>
<td>Groundwater</td>
</tr>
<tr>
<td>Wholesale Surface Water</td>
</tr>
</tbody>
</table>

Notes:

1. While a legal limit on annual pumping does not exist, the City has agreed with UC Davis to limit total groundwater pumping capacity.
2. Assume proportional to treatment plant capacity share. The actual amount available to the City is limited by the capacities of the supply facilities and intermittent Term 91 curtailments.


The annual amounts of groundwater and wholesale surface water available to the City are limited by the capacities of the water supply infrastructure. The water supply infrastructure is sized to serve the maximum day demand. With the recent availability of the wholesale surface water, the City has a maximum day supply capacity of 23.4 mgd, which consists of 13.2 mgd of well capacity.
and 10.2 mgd wholesale supply. The City would have additional groundwater supply capacity from some of the intermediate depth wells that would be kept for emergency standby purposes. The other wells are assumed not to be normally operational.

The City plans to maximize surface water use by routinely using the surface water supply as a base load and using the deep aquifer wells as a supplemental supply during the summer when demands would exceed the surface water supply capacity. The total supply that would be available from both wholesale surface water and groundwater is shown in Table 4.5-3.

### Table 4.5-3
#### Water Supply Capacity

<table>
<thead>
<tr>
<th>Water Supply</th>
<th>Reasonably Available Volume (afy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water</td>
<td>11,246</td>
</tr>
<tr>
<td>Groundwater</td>
<td>14,834</td>
</tr>
<tr>
<td><strong>Total Supply</strong></td>
<td><strong>26,080</strong></td>
</tr>
</tbody>
</table>

Note: Reasonably Available Volume is based on years 2020, 2025, 2030, 2035, and 2040.


### Projected Water Demand

The projected water demands through 2035 include the buildout demand of the City’s existing water system’s service area. Table 4.5-4 presents the projected future demand for water in the City. While single- and multi-family water demand is separated, the commercial, institutional, industrial and governmental water demand is presented together in the “Other” Land Use type category. As shown in Table 4.5-4, the demand for the City is anticipated to grow between 2020 and 2025 as buildout of the City progresses. However, water demand is then expected to decline between 2025 and 2030, as water saving ordinances, codes, and standards take effect.

For instance, regulations within the Model Water Efficient Landscape Ordinance, which became effective on December 1, 2015, are anticipated to reduce outdoor landscape demand in new residential projects by 20 percent, and in commercial projects by 35 percent over the previous ordinance.

### Table 4.5-4
#### Projected Water Demand

<table>
<thead>
<tr>
<th>Land Use</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>6,420</td>
<td>6,374</td>
<td>6,169</td>
<td>6,169</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>2,766</td>
<td>2,782</td>
<td>2,695</td>
<td>2,695</td>
</tr>
<tr>
<td>Other</td>
<td>2,065</td>
<td>2,362</td>
<td>2,307</td>
<td>2,307</td>
</tr>
<tr>
<td>Landscape</td>
<td>496</td>
<td>655</td>
<td>644</td>
<td>644</td>
</tr>
<tr>
<td>Losses</td>
<td>1,745</td>
<td>1,798</td>
<td>1,745</td>
<td>1,745</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13,492</strong></td>
<td><strong>13,971</strong></td>
<td><strong>13,560</strong></td>
<td><strong>13,560</strong></td>
</tr>
</tbody>
</table>


The WSA prepared for the City concluded that the City’s water supply would be sufficient to serve the City’s water demand, during normal water years, under buildout conditions. In the event of drought conditions, the City may experience reduced amounts of surface water availability.

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However, because the City will maintain deep ground water wells and emergency supply intermediate wells, the City would maintain adequate water supply to meet the maximum day demand at buildout during dry years, as shown in Table 4.5-5 below. Citywide growth assumptions conservatively included specific large projects such as the Mace Ranch Innovation Center, the formerly proposed Davis Innovation Center, and the originally proposed Nishi project.

### Table 4.5-5
Projected Dry Year Supply Availability (afy)

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Water Supply</td>
<td>11,246</td>
<td>11,246</td>
<td>11,246</td>
<td>11,246</td>
</tr>
<tr>
<td>Groundwater Supply</td>
<td>14,834</td>
<td>14,834</td>
<td>14,834</td>
<td>14,834</td>
</tr>
<tr>
<td><strong>Total Supply</strong></td>
<td>26,080</td>
<td>26,080</td>
<td>26,080</td>
<td>26,080</td>
</tr>
<tr>
<td><strong>Total Demand</strong></td>
<td>13,492</td>
<td>13,971</td>
<td>13,560</td>
<td>13,560</td>
</tr>
<tr>
<td><strong>Surplus</strong></td>
<td>12,588</td>
<td>12,109</td>
<td>12,520</td>
<td>12,520</td>
</tr>
</tbody>
</table>


**Gallons per Capita per Day Target**

New requirements regarding per capita water use targets are defined in the Water Conservation Act of 2009, which was signed into law in November 2009 as part of a comprehensive water legislation package. Known as Senate Bill (SB) X7-7, the legislation sets a goal of achieving a 20 percent reduction in urban per capita water use statewide by 2020. SB X7-7 requires that retail water suppliers define in their urban water management plans the gallons per capita per day (gpcd) targets for 2020, with an interim 2015 target.

Water purveyors are required to select one of the four methods that the legislation defines for establishing a gpcd target. Although the City’s 2010 UWMP used Method 3 to calculate the gpcd targets, the City’s 2015 UWMP used Method 1. Recalculation using Method 1 identified an interim target of 194 gpcd and a 2020 target of 172 gpcd. As of 2015, the City was in compliance with both stated targets with an actual gpcd of 119.24

**Water Shortage Contingency Planning**

On April 1, 2015, the Governor proclaimed a continued state of emergency directing the State Water Resources Control Board (SWRCB) to enhance emergency regulations adopted in 2014 and reaffirmed on March 17, 2015. The Governor’s Executive Order B-29-15 sets 2013 as a base year and directed the SWRCB to impose restrictions to achieve a statewide 28 percent water reduction through February 28, 2016. Under the emergency regulations, the City was required to meet a mandatory reduction goal of 28 percent as compared to the base year of 2013.

In response, the City enacted Stage 2.5 water restrictions through an Urgency Ordinance, adopted by the City on June 2, 2015. The Urgency Ordinance was designed to implement the State mandates and to provide for penalties and enforcement of the regulations. The regulations correspond to Davis’ 2010 Urban Water Management Plan’s Stage 2/Stage 3 Water Shortage Contingency Plan and is consistent with the SWRCB’s regulations previously adopted on July 15, 2014 and reaffirmed March 17, 2015.

In March 2016, the SWRCB lowered the mandatory reduction target from 28 percent to 25 percent. The City achieved a cumulative water reduction of 27.7 percent between June 2015 and

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March 2016, as compared to the same months in 2013. On April 7, 2017, Governor Edmund Brown Jr. issued Executive Order B-40-17, ending the drought state of emergency in most of California, including Yolo County. In addition to lifting the drought state of emergency, Executive Order B-40-17 rescinds various drought related proclamations and executive orders made in 2014 and 2015. However, to encourage continued water conservation throughout California, Executive Order B-40-17 left in place some specific requirements such as prohibiting certain wasteful water use practices and urban water use reporting requirements.

Although the City of Davis adequately responded to the most recent drought related state of emergency, in order to ensure that the City can adequately respond to future declared water shortages, the City has adopted a Water Shortage Contingency Plan (WSCP). During water shortage conditions, the City Council may authorize the activation of the WSCP based on actual water supply and demand information. The WSCP includes one normal operation stage and four stages of water shortage. Each stage of shortage is defined through specific Triggering Conditions, which correspond to percent reductions in water supply. Drought stages also correspond with restriction, demand reduction measures and enforcement.\textsuperscript{25} The restriction measures of each water shortage stage are designed to ensure that the City maintains adequate water supply to meet a minimum of 50 percent of normal supply during a severe or extended water shortage.

Water demands associated with existing development on the project site were calculated as part of the Domestic Water System Design Report prepared for the proposed project. The water demands are summarized in Table 4.5-6.

**Water Delivery**

The City of Davis’ water distribution system includes three water storage tanks, 16,292 water meters, and 178 miles of water lines. The hydraulic grade in the system is based on the level in an elevated water storage tank.\textsuperscript{26}

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Size</th>
<th>Employees/Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail (383 sf/employee)</td>
<td>60,932 sf</td>
<td>160</td>
</tr>
<tr>
<td>Grocery (938 sf/employee)</td>
<td>13,200 sf</td>
<td>14</td>
</tr>
<tr>
<td>Restaurant Sit Down (100 sf/employee)</td>
<td>28,006 sf</td>
<td>280</td>
</tr>
<tr>
<td>Medical (207 sf/employee)</td>
<td>4,949 sf</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total Employees:</strong></td>
<td><strong>478</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Commercial Water Use per Employee:</strong></td>
<td><strong>15 gpd</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Average Day Demand:</strong></td>
<td><strong>7,170 gpd</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Peaking Factor:</strong></td>
<td><strong>2.0</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Existing Maximum Day Demand:</strong></td>
<td><strong>14,340 gpd (9.96 gpm)</strong></td>
<td></td>
</tr>
</tbody>
</table>


**Table 4.5-6
Existing Water Demand at Project Site**

**Storage Facilities/Booster Pump Stations**

The City’s water system has three storage tanks: the existing Elevated Tank, West Area Tank (WAT), and the East Area Tank (EAT). The three tanks have a combined storage of 8.2 million


gallons (MG). The WAT has a booster pumping capacity of 4,200 gallons per minute (gpm) and the EAT has a total pumping capacity of 8,000 gpm. The WAT and EAT fill during off-peak demand periods, and then the booster station pumps send water back into the system during peak periods based on time and system pressure. The Elevated Tank is located less than 0.5-mile to the northeast of the project site.

Pipelines
The City’s water system consists of piping ranging from two to 14 inches in diameter. Approximately 90 percent of the distribution system consists of six- to 10-inch diameter pipelines. The City’s pipeline system was originally constructed to support localized supply, with wells spread throughout the City, which did not require large diameter transmission mains. However, as a result of the recent changes to the City’s water supply system, treated surface water from the WDCWA’s Regional Water Treatment Facility is distributed to the City by way of a six-mile, 30-inch pipeline along Pole Line Road.

Water Supply Utilities within Project Site Vicinity
Currently, the City of Davis maintains a 12-inch domestic water main in Sycamore Lane to the west of the site and a 10-inch water main in Anderson Road to the east of the site.

Wastewater Collection and Treatment
The City of Davis provides wastewater conveyance and treatment for all residents and businesses within the City of Davis and two unincorporated areas: North Davis Meadows (north of Davis at State Route [SR] 113 and County Road [CR] 29), and El Macero (south of Davis adjacent to the southern City boundary).

Wastewater Treatment Plant Capacity
The City of Davis was authorized by the California Regional Water Quality Board in October 2013 to discharge pursuant to Order R5-2007-0132-02 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079049. The City of Davis submitted a Report of Waste Discharge, dated 4 April 2012, and applied for a NPDES permit renewal to discharge up to 7.5 mgd of treated wastewater from the City of Davis Wastewater Treatment Plant (WWTP). The Order expired on November 1, 2018. On December 7, 2018, the Central Valley Regional Water Quality Control Board (CVRWQCB) adopted renewed waste discharge requirements for the facility under Order R5-2018-0086.27

Under the Permit Order, the City has the ability to discharge treated wastewater from two different discharge points (Discharge Point Nos. 001 and 002). The treatment system for both discharge points consists of a mechanical bar screen, aerated grit tank, three primary sedimentation tanks, three facultative oxidation ponds, two aerated ponds, a polishing pond, an overland flow system, disinfection, and dechlorination. However, prior to the discharge at Discharge Point No. 002, the disinfected effluent passes through treatment wetlands. Each discharge point is located in a different receiving water. Treated wastewater is discharged from Discharge Point No. 001 to the Willow Slough Bypass, a water of the United States, and part of the Yolo Bypass flood protection structure within the Sacramento River Watershed. Treated wastewater is discharged from Discharge Point No. 002 to the Conaway Ranch Toe Drain, a water of the United States, and a part of the Yolo Bypass within the Sacramento River Watershed.

27 Central Valley Regional Water Quality Control Board. Order R5-2018-0086, NPDES No. CA0079049, Waste Discharge Requirements for the City of Davis Wastewater Treatment Plant, Yolo County. Adopted December 2018.
The City’s WWTP has recently been upgraded to ensure compliance with all existing and anticipated wastewater discharge standards. The City’s WWTP upgrade project included design and construction of improvements to the City’s WWTP in order to meet State and federal regulatory discharge requirements contained in the City’s adopted 2013 NPDES permit. With completion of the upgrade, the WWTP has been sized to accommodate 6.0 mgd of average dry weather flow (ADWF). ADWF is defined as the average of the three consecutive lowest-flow calendar months, which for the City usually coincides with the period of July through September. A summary of the ADWF values for the years 2010 through 2014, along with biological oxygen demand (BOD), is presented in Table 4.5-7.

### Table 4.5-7

**Davis WWTP Influent ADWF and BOD Values, 2010-2014**

<table>
<thead>
<tr>
<th>Year</th>
<th>ADWF (mgd)</th>
<th>BOD (mg/L)</th>
<th>BOD (lbs/day)</th>
<th>Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>4.55</td>
<td>198</td>
<td>7,500</td>
<td>July–September</td>
</tr>
<tr>
<td>2011</td>
<td>4.71</td>
<td>205</td>
<td>8,100</td>
<td>August–October</td>
</tr>
<tr>
<td>2012</td>
<td>4.26</td>
<td>230</td>
<td>8,200</td>
<td>July–September</td>
</tr>
<tr>
<td>2013</td>
<td>4.42</td>
<td>205</td>
<td>7,600</td>
<td>July–September</td>
</tr>
<tr>
<td>2014</td>
<td>3.78</td>
<td>258</td>
<td>8,100</td>
<td>July–September</td>
</tr>
<tr>
<td><strong>5-Year Average</strong></td>
<td><strong>4.34</strong></td>
<td><strong>219</strong></td>
<td><strong>7,900</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

Coefficient of variation $^4$ 8.2% 11.4% 4.1% -

Notes:

1. mgd = million gallons per day
2. mg/L = milligrams per liter
3. lbs/day = pounds per day
4. Defined as the standard deviation divided by the arithmetic mean; indicates the degree of variability in the data.


As indicated in Table 4.5-7, the five-year average of ADWF values for the period of 2010–2014 is 4.34 mgd. The lowest ADWF value during that period was 3.78 mgd, measured in 2014, which is reflective of the strict water conservation measures implemented throughout the City during the severe 2014 drought conditions.

Given the relatively high variability in ADWF measurements, there is some question as to what actually represents the “current” ADWF value. Because the 2014 value was unusually low as compared to previous years, the use of the 2014 ADWF may be inappropriately low for assessing available WWTP capacity. Conversely, the inclusion of the 2014 value in a five-year average is reasonable in calculating a sufficiently robust ADWF value, given the potential for periodic drought-related water use reductions.

Based on the above considerations, the five-year average ADWF value for the period of 2010–2014 (i.e., 4.34 mgd) is assumed to represent current ADWF conditions. Growth within the City has been minor over that span, so the flow-generating land uses within the City have remained relatively constant during that period. Given an ADWF of 4.34 mgd and a WWTP capacity of 6.0 mgd, West Yost has estimated that the available ADWF capacity of the WWTP is 1.66 mgd, or 28 percent of design capacity.$^{28}$

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$^{28}$ West Yost Associates. *Impacts of Innovation Center/Nishi Property Development on Wastewater Treatment Plant Capacity* [pg. 4], Technical Memorandum (Final). April 2, 2015.
Wastewater Collection System
The City of Davis wastewater collection system conveys wastewater for the area within the City limits to the WWTP, located at 45400 County Road (CR) 28H. The collection system includes 160 miles of gravity sewers, 2,700 manholes, six pump stations, and 2.63 miles of force mains ranging in size from four to 14 inches. The sewer mains range in size from six to 66 inches in diameter.29

Pipelines
Currently, the City maintains an existing eight-inch sewer main in Sycamore Lane to the west of the site and a six-inch sewer main in Anderson Road to the east of the site. A six-inch lateral extends eastward from the Sycamore Lane sewer main into the project site, adjacent to the existing Trader Joe’s grocery store. In addition, a six-inch sewer stub is located within the site near the northern site boundary.

The capacity of the wastewater conveyance system within the project area was previously evaluated in the City’s 2018 System Evaluation and Capacity Assurance Plan (SECAP). The model developed for the SECAP includes flow projections for buildout conditions on the City of Davis, with flows divided between specific sewershed areas. The project site is located within the Area C Sewershed Area. For the SECAP project, within Area C, ADWF values for commercial areas were calculated using a unit flow factor of 1,500 gpd per acre.

Currently, the project site is developed with an existing community shopping center that includes a variety of commercial uses and restaurants. The wastewater generation associated with existing on-site uses have been accounted for in the SECAP project. Applying the 1,500 gpd per acre SECAP unit flow factor to the project site results in a calculated ADWF of 12,240 gpd, or 0.012 mgd.

Solid Waste Disposal
Solid waste collection and disposal in the City of Davis is provided by Recology Davis, which was recently renamed from Davis Waste Removal (DWR). Recology Davis has a drop-off and buy-back center and provides residential curbside, apartment, and business collection services. In addition to the weekly garbage service, Recology Davis provides green waste and recycling pickup and street sweeping service. Recoverable items include mixed paper, glass, aluminum cans, steel and tin cans, some plastics, corrugated cardboard, yard waste, and used motor oil. In July of 2016, Recology Davis began an organics collection program to allow for collection of organic material and food waste. The program will help achieve the City’s goal of diverting waste sufficient to reduce City-wide waste disposal to 1.9 pounds per person per day by the year 2020 and close to zero pounds per person per day by year 2025.

All non-recyclable, non-organic waste generated by the City of Davis is disposed of at the 770-acre Yolo County Central Landfill, which is located off CR 28H, near its intersection with CR 104. The landfill is owned and operated by the Yolo County Department of Public Works and Transportation. According to the City of Davis Integrated Waste Management Plan, the landfill is not operating at capacity and has a current anticipated closure date of 2124.30 Under the landfill’s existing permit, the facility is allowed to receive up to 1,800 tons per day, 299 days a year. The landfill also includes a recycling drop-off facility, a wood processing facility, and a methane gas

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collection facility, and accepts drop-offs of household hazardous waste at no charge to County residents on designated Saturdays throughout the year.

**Electricity and Natural Gas**
Gas and electric service in the City of Davis, including the project site, has been historically provided by Pacific Gas & Electric (PG&E) under a franchise granted to PG&E by the City. Based in San Francisco, PG&E is the largest provider of gas and electric services in northern and central California. PG&E provides electricity to roughly 5.1 million customers and provides natural gas to nearly 4.2 million customers. A mix of generating sources, including hydropower, gas-fired steam, and nuclear energy, powers the electric system.

On October 25, 2016, the Davis City Council adopted Resolution Number 16-153, Series 2016, which approved the Joint Exercise of Powers Agreement with Yolo County to form the Valley Clean Energy Alliance, which is now referred to as simply Valley Clean Energy (VCE). The resolution adopted by the City, along with similar resolutions adopted by the City of Woodland and Yolo County led to the formation of the VCE joint powers authority. Beginning in June 2018, the VCE began serving the electricity needs of the cities of Woodland, Davis, and unincorporated areas of Yolo County. Customers within the participating areas have the opportunity to continue receiving service from PG&E or receive energy from VCE. While VCE supplies the energy for customers enrolled in the VCE program, VCE electricity is transmitted through PG&E-owned and operated distribution and power lines.

**Telecommunications**
Residents in Davis subscribe to a mix of wireline providers and resellers including AT&T of California, Comcast, Omsoft, and Davis Community Network. A few businesses also utilize fixed wireless providers, including DigitalPath, Inc. and Winters Broadband. Currently, the City of Davis is evaluating the feasibility of installing new fiber optic telecommunications infrastructure throughout the City.31

Comcast has provided six-strands of fiber to 22 “Major Facilities” throughout the City. It also connects three Yolo County facilities that are within the City of Davis, which provides interconnection with the greater Yolo County fiber network. The Comcast network, known as the “I-Net” or Institutional Network, enables the City to provide connectivity for municipal operations, utilities, public safety, and general administration.32

**4.5.3 Regulatory Context**
The following discussion contains a summary review of regulatory controls pertaining to public services and utilities, including federal, State, and local laws and ordinances.

**Federal Regulations**
The following are the federal environmental laws and policies relevant to public services and utilities.

**Safe Drinking Water Act (SDWA)**
The federal SDWA, which was enacted in 1974, gives the United States Environmental Protection Agency (EPA) the authority to set standards for contaminants in drinking water supplies. The EPA

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32 Magellan Advisors, LLC. *Final Yolo Broadband Strategic Plan.* March 26, 2015.
was required to establish primary regulations for the control of contaminants that affected public health and secondary regulations for compounds that affect the taste, odor, and aesthetics of drinking water. Accordingly, the EPA set a maximum contaminant level or treatment technique for each of the 83 contaminants in drinking water listed in the SDWA. Under the provisions of SDWA, the California Department of Health Services (DHS) has the primary enforcement responsibility. Title 22 of the California Administrative Code establishes DHS authority, and stipulates State drinking water quality and monitoring standards.

**State Regulations**
The following are the State environmental laws and policies relevant to public services and utilities.

**Uniform Fire Code**
The Uniform Fire Code with the State of California Amendments contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The Fire Code contains specialized technical regulations related to fire and life safety.

**California Health and Safety Code**
State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, include regulations for building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

**Senate Bill 7**
On September 25, 2016, SB 7 was signed into law. The purpose of SB 7 is to further the State’s water conservation efforts by requiring that new apartment buildings constructed after January 1, 2018 include submeters for every rental unit. Specifically, the bill authorizes the Department of Housing and Community Development to develop, and propose for adoption, building standards that require the installation of water meters or submeters in multi-family residential buildings. In addition, if submeters are used to charge tenants separately for water use, SB 7 imposes requirements on landlords relating to submetered water service to individual dwelling units.

**Senate Bill 610**
The California Water Code requires coordination between land use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted and that planned water supplies are adequate to meet both existing demands and the demands of planned development.

Water Code Sections 10910 – 10915 (inclusive), sometimes referred to as SB 610, require land use lead agencies: 1) to identify the responsible public water purveyor for a proposed development project, and 2) to request from the responsible purveyor, a “Water Supply Assessment” (WSA). The purposes of the WSA are (a) to describe the sufficiency of the purveyors’ water supplies to satisfy the water demands of the proposed development project, while still meeting the current and projected water demands of customers, and, (b) in the absence of a currently sufficient supply to describe the purveyor’s plans for acquiring additional water.
Water Code Sections 10910 - 10915 delineate the specific information that must be included in the WSA.

As stated in CEQA Guidelines Section 15155, which reflects SB 610 requirements, any development with water demand exceeding the equivalent demand associated with 500 dwelling units is considered a “water-demand project” and is required to prepare a WSA. The proposed project includes up to 264 dwelling units and an increase of 46,237 sf of commercial space. As discussed under Impact 4.5-3 below, the project would result in a net increase in average water demand of 56,208 gpd relative to existing conditions. By comparison, a 500-unit single-family residential development would result in an average water demand of approximately 306,000 gpd, based on the City’s standard water demand rate included in the 1989 Water Master Plan (612 gpd per dwelling unit). Thus, a WSA is not required to be prepared for the proposed project.

**Water Conservation in Landscaping Act of 2006**
The Water Conservation in Landscaping Act of 2006 (Assembly Bill [AB] 1881) enacts many, but not all of the recommendations reported to the Governor and Legislature in December 2005 by the CUWCC Landscape Task Force. AB 1881 requires DWR, not later than January 1, 2009, by regulation, to update the model ordinance in accordance with specified requirements, reflecting the provisions of AB 2717. AB 1881 requires local agencies, not later January 1, 2010, to adopt the updated model ordinance or equivalent or it will be automatically adopted by statute. The bill also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

**Sustainable Groundwater Management Act**
The DWR has developed a Strategic Plan for its Sustainable Groundwater Management (SGM) Program. DWR’s SGM Program will implement the new and expanded responsibilities identified in the 2014 Sustainable Groundwater Management Act (SGMA). The expanded responsibilities include the following:

1) Developing regulations to revise groundwater basin boundaries;
2) Adopting regulations for evaluating and implementing Groundwater Sustainability Plans (GSPs) and coordination agreements;
3) Identifying basins subject to critical conditions of overdraft;
4) Identifying water available for groundwater replenishment; and
5) Publishing best management practices for the sustainable management of groundwater.

**California Integrated Waste Management Act—Assembly Bill 939**
To minimize the amount of solid waste that must be disposed of by transformation (i.e., recycling) and land disposal, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties are required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Solid waste plans are required to explain how each city’s AB 939 plan will be integrated within the respective county plan. The plans must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal. Cities and counties that do not meet this mandate are subject to $10,000-per-day fines.
Senate Bill 1016
In 2007, SB 1016 amended portions of AB 939, which allows the California Integrated Waste Management Board (CIWMB) to use per capita disposal as an indicator in evaluating compliance with the requirements of AB 939. Jurisdictions track and report their per capita disposal rates to CalRecycle.

Solid Waste Reuse and Recycling Access Act – Assembly Bill 1327
The Solid Waste Reuse and Recycling Access Act (AB 1327) requires jurisdictions to adopt ordinances requiring development projects to provide adequate storage area for collection and removal of recyclable materials.

Local Regulations and Policies
The following are applicable local regulations relevant to public services and utilities.

City of Davis General Plan
The applicable Davis General Plan policies and standards related to public services and utilities are presented below.

Goal POLFIRE 1 Provide high quality police and fire protection services to all areas of the City.
   Policy POLFIRE 1.2 Develop and maintain the capacity to reach all areas of the City with emergency police and fire service within a five-minute emergency response time, 90% of the time. Response time included alarm processing, turnout time, and travel time.

Goal POLFIRE 2 Provide for an emotionally and physically safe environment where the people of Davis are able to live without fear of violence or other forms of abuse.
   Policy POLFIRE 2.1 Reduce crime through community policing, public education, crime prevention, neighborhood watch, and outreach programs.

Goal POLFIRE 3 Increase fire safety through provision of adequate fire protection infrastructure, public education, and outreach programs.
   Policy POLFIRE 3.1 Provide adequate infrastructure to fight fires in Davis.
   Policy POLFIRE 3.2 Ensure that all new development includes adequate provision for fire safety.

Goal WATER 1 Minimize increases in water use. Reduce per capita water consumption by 20 percent as compared to historic use through programs encouraging water conservation.
   Policy WATER 1.1 Give Priority to demand reduction and conservation over additional water resource development.
Standard 1.1a: Water conserving plumbing is required in all new residential construction as required per state legislation.

Policy WATER 1.2 Require water conserving landscaping.

Standard 1.2b: Developers and builders shall install water-conserving landscaping and irrigation systems in accordance with the City's water conservation in landscaping requirements. Provide homeowners information on water conserving landscaping and irrigation systems, if not provided in construction.

Policy WATER 1.3 Do not approve future development within the City unless an adequate supply of quality water is available or will be developed prior to occupancy.

Goal WATER 5 Remain within the capacity of the City wastewater treatment plant.

Policy WATER 5.1 Evaluate the wastewater production of new large scale development prior to approval to ensure that it will fall within the capacity of the plant.

Policy WATER 5.2 Provided that the existing plant capacity is not exceeded, require new large scale development to pay its fair share of the cost of extending sewer service to the site.

Goal MAT 1 Enhance the quality of the environment by conserving resources and minimizing waste by reducing, reusing, recycling, and re-buying.

Policy MAT 1.1 Promote reduced consumption of non-renewable resource.

Standard 1.1a: Coordinate with Yolo County Central Landfill to encourage the reuse of materials deposited at the landfill.

Standard 1.1b: Encourage reuse of refillable bottles.

Goal C&T 1 Encourage development of infrastructure and service to allow all who live, work and study in Davis to utilize new technologies to communicate with individuals and institutions, regionally, nationally, and globally.

Standard 1.1a: New residential and commercial development projects should include the infrastructure components necessary to support modern communication technologies such as conduit space within joint utility trenches for future high speed data.
equipment and flexible telephone conduit to allow for easy retrofit for high speed data systems.

City of Davis 2015 Urban Water Management Plan
In June 2016, the City of Davis prepared the UWMP, as required by the Urban Water Management Planning Act of 1983. The focus of the 2015 UWMP is the conversion of City water supply from historic use of groundwater to the recently available surface water from the Woodland Davis Water Project. The UWMP also discusses the conservation and efficient use of water in the Davis service area, and the development and implementation of plans to assure reliable water service in the future. The UWMP contains projections for future water use, discusses the reliability of the City’s water supply, describes the City’s water treatment system, and contains a water shortage contingency plan. In addition, the UWMP contains best management practices for efficient water use.

Davis Municipal Code
The Davis Municipal Code ordinances related to public services and utilities that are applicable to the proposed project are presented below.

Article 40.42 Water Efficient Landscaping
The purpose of the landscaping standards contained in this article is to comply with the Water Conservation in Landscaping Act of 2006, Government Code Sections 65591 et. seq. and to establish standards and procedures that promote the design, installation and management of water efficient landscaping.

Chapter 32 Management of Garbage, Other Wastes, Recyclables, and Fees
Therefor
City of Davis’ Municipal Code contains various requirements and standards for existing developments and proposed projects in regards to solid waste. Chapter 32 includes specific regulations for the provision of garbage, waste, organics and recyclable collection in communally serviced residential developments of more than ten units. Additionally, Chapter 32 establishes requirements for the diversion of construction and demolition debris, which includes requiring construction projects to provide proof of diversions.

4.5.4 Impacts and Mitigation Measures
The section below describes the standards of significance and methodology utilized to analyze and determine the proposed project’s potential project-specific impacts related to public services and utilities. In addition, a discussion of the project’s impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance
In accordance with Appendix G of the CEQA Guidelines, impact determinations regarding public services and utilities require consideration as to whether the proposed project would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 any of the public services:
Fire protection;
Sheriff protection;
Schools;
Parks; or
Other public facilities.

- Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments;
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

It should be noted that the Initial Study prepared for the proposed project (see Appendix C) determined that development of the proposed project would result in no impact or a less-than-significant impact related to resulting in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 any of the following public services:

- Schools;
- Parks; and
- Other public facilities.

In addition, the Initial Study concluded that a less-than-significant impact would occur related to requiring or resulting in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. Accordingly, the aforementioned impacts are not analyzed further in this EIR.

**Method of Analysis**
The following sections describe the methodologies employed in the Water Evaluation and Sewer Evaluation prepared for the proposed project by West Yost Associates, as well as the methods used to analyze impacts related to electricity, natural gas, telecommunications facilities, and solid waste.

**Water Supplies**
The Water Evaluation prepared for the proposed project evaluated the availability of existing water supply conveyance infrastructure in the project area to serve the proposed project. Estimated water demands associated with the project were sourced from the Domestic Water System Design Report prepared for the project by BKF Engineers.
Water demand calculations included in the Domestic Water System Design Report were based on the City of Davis Design Procedures Manual and the U.S. Green Building Council’s Building Area per Employee by Business Type, dated May 2008. Existing fire flows were based on a City fire flow test completed at Russell Boulevard on April 21, 2018.

The design and performance criteria used to evaluate the potable water distribution system capacity to serve the proposed development were taken from the City’s Water Distribution System Optimization Plan, dated May 2011, and the City’s Public Works Design Standards. The City’s potable water performance criteria governing West Yost’s potable water hydraulic evaluation are listed below:

- Fire flow requirements indicate that 3,500 gpm must be supplied to High-Density Residential land uses during maximum day demand conditions with a minimum residual pressure of 20 psi. Sprinklered buildings allow for a 50 percent reduction in the required total fire flow, at the Fire Marshal’s discretion.
- Maximum allowed water velocity in pipelines is 10 feet per second (fps).
- Maximum day demand peaking factor equals 2.0 times average day demand.
- Peak hour demand peaking factor equals 1.88 times maximum day demand.
- Minimum pressure allowed during peak hour demand is 35 psi.

The revised future (2030) demand conditions and system operations were assumed based on: the existing conditions provided in the hydraulic modeling for the Water Distribution System Optimization Plan (WDSOP); feedback from the City; and West Yost’s 2018 hydraulic evaluation of the proposed North Davis Meadows service. The assumed operations governing West Yost’s potable water hydraulic evaluation of the proposed redevelopment are listed below:

- Surface water supply is fixed at 10.2 mgd.
- Demands are set to the 2030 maximum day demands, as provided in the WDSOP model, which represents buildout conditions.
- Davis Deep Wells are energized to balance the maximum day demand. Though well 30 is not intended to be energized in all instances under existing operations, all deep wells except 28 and 29 would be needed to supply the 2030 maximum day demand conditions.
- Fire flow is initially provided by the elevated tank. Once the water level in the elevated tank declines or local pressures in the system fall below a set point, the East Area Tank pumps and the West Area Tank pumps energize to supplement flows from the elevated tank.
- North Davis Meadows is served by the City potable water system. The North Davis Meadows maximum day demand is approximately 424 gpm.

To simulate the higher water demands associated with the proposed redevelopment, the existing maximum day demand was replaced by the proposed maximum day demand at the site location. Existing maximum day demand in the WDSOP model was globally scaled to peak hour demand by applying the peaking factor of 1.88 times the maximum day demand, resulting in a proposed peak hour demand of 165.4 gpm at the project site.

**Wastewater**

The Sewer Evaluation prepared for the proposed project evaluated the wastewater generation associated with the project, as well as the capacity of downstream wastewater conveyance infrastructure.
As noted previously, the capacity of the wastewater conveyance system within the project area was previously evaluated in the City’s 2018 SECAP. As part of the Sewer Evaluation, West Yost Associates updated the model developed for the SECAP to reflect wastewater flows associated with buildout of the proposed project.

The following planning/modeling criteria were used to analyze the collection system capacity for the proposed project:

- Gravity mains were determined to have sufficient capacity when Peak Wet Weather Flows (PWWF) did not cause the maximum flow depth (d) to pipe diameter (D) ratio (d/D ratio) to exceed 0.6.
- A design storm establishes the volume and distribution of rainfall that the collection system will experience during a single rainfall event. A synthetic design storm with a 10-year recurrence interval and 24-hour duration is commonly used to evaluate wastewater collection systems in Northern California and was used for the evaluation in this analysis. According to the National Oceanographic and Atmospheric Administration rainfall atlas the 10-year/24-hour storm used for the PWWF analysis totals 3.40-inches of rainfall.

The above criteria were established based on the City’s 2018 SECAP and the City Public Works Design Standards.

**Solid Waste**
Solid waste generated by the proposed project was estimated and considered with respect to the anticipated capacity at the solid waste facilities that would serve the proposed project. Sources of solid waste generation for the proposed project include demolition waste, construction material waste, and waste associated with long-term operations of the proposed project.

**Gas and Electric Facilities**
The gas and electric discussion considers the ability for existing infrastructure to be extended to the project site. Gas and electricity demands for the project are estimated and provided separately in Section 4.2, Greenhouse Gas Emissions and Energy, of this EIR.

**Project-Specific Impacts and Mitigation Measures**
The following discussion of impacts is based on implementation of the proposed project in comparison with the standards of significance identified above.

*4.5-1 Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental services and/or 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 services. Based on the analysis below, the impact is less than significant.*

The proposed project would include demolition of approximately 90,563 sf of the existing University Mall building to create a mixed-use development that would consist of four levels of residential over ground-floor retail development. Buildout of the proposed project would result in the addition of 264 new multi-family residential units.
and approximately 136,800 sf of retail space, not including the existing Trader Joe’s building. By intensifying the use of the site, the proposed project would incrementally increase the demand for fire protection services within the City.

The relevant CEQA threshold is whether new or physically altered stations are needed to meet response times or other performance objectives, the construction of which could cause environmental impacts. As noted previously, the project site is currently served by the Davis Fire Department. The nearest station is the Downtown Station, located approximately one mile east of the project site. The City relies on a response time goal of responding to calls for service within 6:00 minutes for EMS calls and 6:20 minutes for fire calls, 90 percent of the time. According to the Davis Fire Department, the response time goal can be met at the project site given the proximity of the nearest fire stations.33

The multi-story project would likely necessitate use of a ladder truck in the event of a fire emergency on the upper floors. The UC Davis Fire Department currently operates Truck 34, which has a 100-foot ladder. Pursuant to the City’s automatic aid agreement with UC Davis, Truck 34 would be dispatched, as needed, to incidents at the project site. The proposed maximum building height would be approximately 80 feet; thus, with sufficient access, the 100-foot ladder could safely reach all floors of the proposed buildings.

Fire protection service is evaluated and addressed annually on a city-wide level by the Davis City Council and Fire Chief. The City Council adopts an annual budget allocating resources to fire protection services, which effectively establishes the service ratio for that particular year. The annual budget is based on community needs and available resources as determined by the City Council and the Fire Chief. Additionally, the City of Davis has adopted citywide development impact fees, which include Public Safety Impact Fees. In accordance with existing law, prior to issuance of any building permits for any phase of development, the project applicant shall pay the City’s Public Safety Impact Fees. Development impact fees can be adjusted by the City, as needed.

In addition, the proposed structures would be designed in compliance with all applicable provisions of the California Fire Code and would include features such as fire sprinklers and smoke alarms to reduce potential fire hazards. Fire Code consistency review would be performed as part of the construction and development review process for the proposed project, which would include the payment of any necessary development impact fees related to Fire safety services and facilities.34 For the above-discussed reasons, the proposed project would not result in a need for new facilities or improvements to existing fire protection facilities and as a result, the proposed project would have a less-than-significant impact.

**Mitigation Measure(s)**

None required.

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33 Patrick Sandholdt, Fire Marshal, Davis Fire Department. Personal communication [phone] with Nick Pappani, Vice President, Raney Planning and Management, Inc. September 4, 2018.

4.5-2 Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental services and/or facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services. Based on the analysis below, the impact is less than significant.

Police protection for the project site is currently provided by the DPD, which is headquartered approximately 2.3 miles east of the project site. The current headquarters is considered sufficient to serve the current and projected police service demands for the City, including development of the proposed project.

The proposed project would be designed in accordance with the City’s Security Ordinance, which is contained in the City’s Municipal Code as Article 8.14. Article 8.14 includes various minimum requirements for security measures to be included in new non-residential and multi-family residential structures and are reviewed as part of the construction documents. Features required for multi-family dwellings include self-locking devices on exterior doors, proper unit identification, properly secured windows, and minimum security standards for doors. For non-residential structures, required features include silent intrusion alarm systems and use of burglar resistant glass. Furthermore, Article 8.14 includes regulations to ensure that proper lighting is provided in stairwells, walkways, public areas, and parking lots. The inclusion of the aforementioned design features would increase the proposed structure’s security, which would help to minimize security risks related to the proposed project, and reduce the project’s demand on police services.

In addition, the City of Davis maintains Development Impact Fees for various types of new development within the City, including residential and commercial uses. The fees are based on the anticipated demand, and are periodically reviewed by the City. The proposed project would be required to pay applicable development impact fees to fund police protection services.

Because the proposed multi-family structures would be designed in compliance with Article 8.14, Minimum Security Building Standards, and the proposed project would include payment of the applicable development impact fees, the proposed project would not result in a need for new or expanded police protection facilities, the construction of which could cause significant environmental impacts. Therefore, a less-than-significant impact would occur.

Mitigation Measure(s)
None required.
4.5-3 Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Based on the analysis below, the impact is less than significant.

The following sections describe the water, wastewater treatment, stormwater drainage, electric power, natural gas, and telecommunications facilities improvements that would be necessary to serve the proposed project.

Water Conveyance Infrastructure
The proposed project would include new fire water and domestic water connections to the City’s existing 12-inch water line located within Sycamore Lane to the west of the site and the 10-inch water line located in Anderson Road to the east of the site (see Figure 4.5-2). Thus, the project would not necessitate substantial off-site extension of water supply infrastructure. The new 10-inch diameter loop created by the proposed fire water line would include backflow preventers that would prohibit water from flowing through the site (through private water lines) back into the public water system.

As part of the Domestic Water System Design Report, water demands associated with existing development on the project site were compared to demands anticipated to occur with development of the proposed project. The demands are summarized in Table 4.5-8. As shown in the table, development of the proposed project would increase the overall maximum day domestic water demand associated with the project site from 14,340 gpd to 126,756 gpd, or a net change of 101,916 gpd (46.3 mgy). The proposed peak hour demand associated with the project was calculated to be 165.4 gpm. The following sections describe the ability of existing water supply infrastructure to accommodate maximum day and peak hour demands associated with the proposed project in addition to 2030 maximum day demands associated with other development in the project area.

Maximum Day Demand Plus Fire Flow
As noted in the Water Evaluation prepared for the project by West Yost Associates, fire flow for the proposed project would be provided by the City’s 200,000-gallon potable water storage tank located less than 0.5-mile northeast of the project site, which regulates pressure in the City’s water supply system. Once the water level in the tank declines or local pressures in the system fall below a set point, the East Area Tank pumps and the West Area Tank pumps are energized to supplement flows from the elevated tank and raise pressures in the system.
Figure 4.5-2
Preliminary Utility Plan

### Table 4.5-8

**Existing and Proposed Water Demand at Project Site**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Size</th>
<th>Employees/Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail (383 sf/employee)</td>
<td>60,932 sf</td>
<td>160</td>
</tr>
<tr>
<td>Grocery (938 sf/employee)</td>
<td>13,200 sf</td>
<td>14</td>
</tr>
<tr>
<td>Restaurant Sit Down (100 sf/employee)</td>
<td>28,006 sf</td>
<td>280</td>
</tr>
<tr>
<td>Medical (207 sf/employee)</td>
<td>4,949 sf</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total Employees:</strong></td>
<td>478</td>
<td></td>
</tr>
<tr>
<td><strong>Commercial Water Use per Employee:</strong></td>
<td>15 gpd</td>
<td></td>
</tr>
<tr>
<td><strong>Total Average Day Demand:</strong></td>
<td>7,170 gpd</td>
<td></td>
</tr>
<tr>
<td><strong>Peaking Factor:</strong></td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td><strong>Existing Maximum Day Demand:</strong></td>
<td>14,340 gpd (9.96 gpm)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Size</th>
<th>Employees/Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proposed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td>894 beds</td>
<td>894</td>
</tr>
<tr>
<td><strong>Residential Water Use per Resident:</strong></td>
<td>57 gpd</td>
<td></td>
</tr>
<tr>
<td><strong>Average Day Water Demand:</strong></td>
<td>50,958 gpd</td>
<td></td>
</tr>
<tr>
<td><strong>Peaking Factor:</strong></td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td><strong>Proposed Maximum Day Residential Demand:</strong></td>
<td>101,916 gpd (70.8 gpm)</td>
<td></td>
</tr>
<tr>
<td>Grocery (938 sf/employee)</td>
<td>13,200 sf</td>
<td>14</td>
</tr>
<tr>
<td>Restaurant Sit Down (100 sf/employee)</td>
<td>61,670 sf</td>
<td>617</td>
</tr>
<tr>
<td>Retail/Service (383 sf/employee)</td>
<td>75,129 sf</td>
<td>197</td>
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<tr>
<td><strong>Total Employees:</strong></td>
<td>828</td>
<td></td>
</tr>
<tr>
<td><strong>Commercial Water Use per Employee:</strong></td>
<td>15 gpd</td>
<td></td>
</tr>
<tr>
<td><strong>Total Average Day Demand:</strong></td>
<td>12,420 gpd</td>
<td></td>
</tr>
<tr>
<td><strong>Peaking Factor:</strong></td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td><strong>Proposed Maximum Day Commercial Demand:</strong></td>
<td>24,840 gpd (17.25 gpm)</td>
<td></td>
</tr>
<tr>
<td><strong>Overall Proposed Maximum Day Demand:</strong></td>
<td>126,756 gpd (88 gpm)</td>
<td></td>
</tr>
</tbody>
</table>

*Source: BKF Engineers, 2019.*

The City’s Public Works Design Standards recommend a fire flow of 3,500 gpm for high-density residential land uses. For sprinklered buildings, a 50 percent reduction in the total required fire flow may be allowed at the Fire Marshal’s discretion. In order to evaluate the ability of the project to meet fire flow requirements, West Yost Associates modeled the following conditions: fire flow provided exclusively by the elevated tank; and fire flow provided by a combination of the elevated tank and the East Area Tank and West Area Tank pumps.

Under the first condition, West Yost Associates modeled the elevated tank at a water level of 28.7 feet, which is 0.2 feet above the set point that turns on Pump 1 at the West Area Tank. In this condition, fire flows would be provided exclusively by the elevated tank, and system pressures and supply were shown to be capable of serving the required fire flow. The modeled available fire flow at the project site under the first condition is 4,867 gpm, which is above the required fire flow of 3,500 gpm.

Under the second condition, West Yost Associates modeled the elevated tank at a water level of 25.5 feet. A water level of 25.5 feet would trigger Pump 1 at the West Area Tank and Pump 1 and the East Area Tank to supplement the supply, which raises pressures in the system. Additional lower elevated tank levels were modeled, but elevated tank levels less than 25.5 feet triggers additional pumps to turn on at the West Area Tank and East Area Tank, which boosts the system pressures such that an
elevated tank level of 25.5 feet is the limiting condition. The modeled available fire flow at the project site under the second condition is 4,805 gpm (see Figure 4.5-3), which is still above the required fire flow of 3,500 gpm.

Based on the above, under maximum day demands plus fire flow, the existing water conveyance infrastructure in the project vicinity would be sufficient to accommodate the proposed project without requiring upsizing or other improvements.

**Peak Hour Demand**

Under peak hour demand, the system draws from storage and begins draining the elevated storage tank. To model peak hour conditions, West Yost Associates set the elevated tank water level at 21.5 feet. The elevated tank water level triggers on Pumps 1 through 3 at the West Area Tank and Pumps 1 through 3 at the East Area Tank.

The increase in demands during peak hour conditions would decrease pressures systemwide by less than 0.5 psi. System pressures in the vicinity of the project site would remain above the City’s 35 psi minimum standard during peak hour demand conditions. Peak hour demand pressure at the project site would be 39.4 psi (see Figure 4.5-3). Thus, under peak hour demands, sufficient water pressure would be available at the project site, and improvements to existing water conveyance infrastructure in the project vicinity would not be required.

**Wastewater Conveyance Infrastructure**

As noted previously, the City of Davis maintains an existing eight-inch sewer main in Sycamore Lane to the west of the site and a six-inch sewer main in Anderson Road to the east of the site. A six-inch lateral extends eastward from the Sycamore Lane sewer main into the project site adjacent to the existing Trader Joe’s grocery store. In addition, a six-inch sewer stub is located within the site near the northern site boundary. The proposed project would include a new six-inch sanitary sewer line extending westward into the site from the existing sewer main in Anderson Road. In addition, the project would include a new connection to the existing sewer stub near Trader Joe’s.

As noted in the Sewer Evaluation prepared by West Yost Associates, the ADWF associated with the proposed project would be 63,378 gpd, or 0.063 mgd, which conservatively includes the existing development at the site that would remain in service as part of the project (i.e., Trader Joes). As noted previously, the SECAP previously estimated an ADWF for the site of 12,240, or 0.012 mgd. Thus, the project would increase wastewater generation at the site by approximately 0.051 mgd relative to what was previously considered by the City.

As part of the Sewer Evaluation, the model developed for the SECAP was updated to reflect the updated project ADWF of 0.063 mgd in order to determine whether sufficient capacity exists within the downstream sewer trunks to accommodate flows from the proposed project, combined with other cumulative development anticipated to occur under General Plan buildout conditions. Based on the results of the updated hydraulic modeling, West Yost Associates concluded that the additional wastewater generation associated with the proposed project would not result in new exceedances of the City’s
Figure 4.5-3
Potable Water Availability

0.6 d/D maximum design criterion within any of the downstream sewer conveyance infrastructure and would have not have a substantial effect on the downstream infrastructure.

Thus, sewer flows from the proposed project and other cumulative development could be accommodated by the City’s existing collection system infrastructure without requiring any upsizing or other improvements, and a less-than-significant impact would occur.

**Electricity, Natural Gas, and Telecommunications Infrastructure**

The project site currently receives gas and electric service from PG&E, and would continue to be served by PG&E upon development of the proposed project. In addition, future residents would have the option to receive electricity through the City’s new VCE program, under which electricity generated by VCE would be distributed to the project site through PG&E-owned and operated distribution and power lines. The proposed project would connect to existing electrical, natural gas, and telecommunications infrastructure located in the project vicinity. Given that the project site currently contains commercial structures and is surrounded by existing development, the proposed project would not require major infrastructure improvements related to existing electrical, natural gas, and telecommunications utilities.

Electricity and natural gas demands associated with development of the proposed project are discussed in Section 4.2, Greenhouse Gas Emissions and Energy, of this EIR. As noted therein, although the proposed project would increase the demand for energy and natural gas service on the project site, the increase in demand from the project would be relatively small in comparison to overall demand within the City of Davis, and PG&E and VCE are anticipated to have adequate capacity to handle the increase in energy and natural gas service demand from the proposed project.

Based on the above, the proposed project would result in a less-than-significant impact related to electricity, natural gas, and telecommunications facilities.

**Conclusion**

Based on the above, the proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Thus, a **less-than-significant** impact would occur.

**Mitigation Measure(s)**

None required.

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4.5-4 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Based on the analysis below, the impact is less than significant.

The proposed project would increase the overall maximum day domestic water demand associated with the project site from 13,920 gpd to 126,756 gpd, or a net change of 101,496 gpd (37.05 mgy) relative to existing conditions. It should be noted that the aforementioned demands do not account for the estimated 420 gpd of water demand associated with the existing Trader Joe’s grocery store, which is not a part of the proposed project.

The City’s existing water supplies and projected water demands are anticipated to result in annual water surpluses as shown in Table 4.5-9 below.

<table>
<thead>
<tr>
<th>Table 4.5-9</th>
<th>Projected Normal Year Supply Availability (mgy)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2020</td>
</tr>
<tr>
<td>Total Supply</td>
<td>7,296</td>
</tr>
<tr>
<td>Total Demand</td>
<td>4,396</td>
</tr>
<tr>
<td>Surplus</td>
<td>2,900</td>
</tr>
</tbody>
</table>


The demand figures included in the table above were generated using buildout information for the City, which includes general development within the City, as well as potential development of the Mace Ranch Innovation Center and Nishi projects.36 The buildout demand also includes the formerly proposed Davis Innovation Center. Operation of the proposed project would increase average yearly water demand by up to 46.3 mgy relative to existing conditions. Given the City’s surplus of at least 2,744 mgy, the City’s current water supply could accommodate the proposed project’s operational water demand. In addition, as shown in Table 4.5-10 below, sufficient water supply would exist to serve the proposed project’s operational water demand and reasonably foreseeable future development during normal, dry, and multiple dry years. Thus, a less-than-significant impact would occur.

Mitigation Measure(s)
None required.

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Table 4.5-10
Projected Multiple Dry Year Supply Availability (mgy)

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Dry Year</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Supply</td>
<td>7,602</td>
<td>7,602</td>
<td>7,602</td>
<td>7,602</td>
</tr>
<tr>
<td>Total Demand</td>
<td>4,396</td>
<td>4,552</td>
<td>4,419</td>
<td>4,419</td>
</tr>
<tr>
<td>Supply Minus Demand</td>
<td>2,900</td>
<td>3,050</td>
<td>3,183</td>
<td>3,183</td>
</tr>
<tr>
<td><strong>Second Dry Year</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Supply</td>
<td>7,266</td>
<td>7,266</td>
<td>7,266</td>
<td>7,266</td>
</tr>
<tr>
<td>Total Demand</td>
<td>4,396</td>
<td>4,552</td>
<td>4,419</td>
<td>4,419</td>
</tr>
<tr>
<td>Supply Minus Demand</td>
<td>2,870</td>
<td>2,714</td>
<td>2,847</td>
<td>2,847</td>
</tr>
<tr>
<td><strong>Third Dry Year</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Supply</td>
<td>7,296</td>
<td>7,296</td>
<td>7,296</td>
<td>7,296</td>
</tr>
<tr>
<td>Total Demand</td>
<td>4,396</td>
<td>4,552</td>
<td>4,419</td>
<td>4,419</td>
</tr>
<tr>
<td>Supply Minus Demand</td>
<td>2,900</td>
<td>2,744</td>
<td>2,877</td>
<td>2,877</td>
</tr>
</tbody>
</table>


4.5-5 Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments. Based on the analysis below, the impact is less than significant.

As noted previously, per the Sewer Evaluation prepared by West Yost Associates, the proposed project would result in an overall ADWF at the project site of 0.063 mgd, an increase of 0.051 mgd relative to what was previously considered for the site by the City per the SECAP.

Wastewater treatment for the proposed project would continue to be provided by the City’s WWTP. As discussed previously, given an existing ADWF of 4.34 mgd and a WWTP capacity of 6.0 mgd, West Yost has estimated that the available ADWF capacity of the WWTP is 1.66 mgd, or 28 percent of design capacity. Therefore, adequate capacity exists to treat the additional 0.063 mgd of wastewater that would be generated by the proposed project. Furthermore, the project applicant would be required to pay sewer impact fees to the City, which would contribute towards the cost of future upgrades of the City’s wastewater collection system and WWTP.

Based on the above, the proposed project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments. Thus, a less-than-significant impact would occur.

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Mitigation Measure(s)
None required.

4.5-6 Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, or conflict with federal, state, and local management and reduction statutes and regulations related to solid waste. Based on the analysis below, the impact is less than significant.

Solid waste services (collection and recycling) are provided to the City of Davis by Recology Davis, a private firm under contract with the City. All non-recyclable wastes collected from the City are disposed of at the 770-acre Yolo County Central Landfill in the northeast portion of the Davis Planning Area. The City does not contain any special landfill sites.

According to the Davis Integrated Waste Management Plan, the Yolo County Central Landfill is not operating at capacity and has a current anticipated closure date of 2124. The Yolo County Central Landfill is permitted to accept a maximum of 1,800 tons of waste per day; in 2013 the landfill was averaging about 1,000 tons of waste per day. Extrapolated to a 299-day service year, the landfill is authorized to accept 538,200 tons of waste per year, while receiving an average of 299,000 tons of waste per year, or approximately 56 percent of the available permitted throughput. As a result, the Yolo County Central Landfill has a remaining daily capacity of 800 tons per day and 239,200 tons per year.

The proposed redevelopment project would require demolition of approximately 90,563 sf of building space and construction of 412,500 sf of multi-family residential uses and approximately 136,800 sf of retail space. The U.S. EPA’s report, Estimating 2003 Building-Related Construction and Demolition Materials Amounts, was used to estimate the amount of waste that would be generated by construction activities. Per the report, non-residential demolition generates an average of 158 lbs/sf of solid waste. Non-residential and residential construction activities generate an average of 4.34 lbs/sf and 4.39 lbs/sf of waste, respectively. As such, the proposed demolition and construction activities would produce approximately 16,727,761 lbs (8,364 tons) of waste.

The construction and demolition debris estimate presented above represents a conservative analysis of the maximum potential waste production from the construction and demolition process. The City of Davis has adopted Tier 1 of the California Green Building Standards Code, which requires applicable projects to divert at least 65 percent of all construction and demolition debris through recycling, reuse and/or waste reduction. As such, a minimum of 5,437 tons of waste would be diverted away from landfill disposal during construction and demolition. Considering the

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applicable CALGreen Code requirements, buildout of the proposed project would be anticipated to produce 2,927 tons of construction waste.

Waste generated by the demolition and construction phase of the proposed project would be spread over the anticipated 27-month construction phase. However, in order to provide a conservative analysis, the total estimated waste that would be generated by construction and demolition activities was assumed to occur during only one year. Therefore, the project’s anticipated total construction waste of 2,927 tons was compared to the Yolo County Central Landfill’s total yearly capacity and remaining yearly capacity. With the conservative assumption that construction waste occurs in a single year, the estimated waste generation would equal approximately 1.22 percent of the Landfill’s total remaining yearly capacity. Thus, construction waste associated with the proposed project could be accommodated by the Yolo County Central Landfill.

Once constructed, the proposed residential and commercial uses would generate solid waste. The City of Davis estimates that residents of the City produced approximately 2.6 pounds of waste per resident per day in 2013. In addition, per CalRecycle, commercial uses are conservatively estimated to generate approximately 0.046 lbs/sf/day.

Given that the project would house approximately 894 future residents, operation of the residential portion of proposed project would generate approximately 2,324 lbs of waste per day (1.16 tons). The commercial portion of the project would generate approximately 6,293 lbs per day (3.15 tons). Overall, the project would generate approximately 4.31 tons per day, or 1,573 tons per year.

Operational waste generation of 4.31 tons per day would equal approximately 0.54 percent of the Yolo County Central Landfill’s remaining daily capacity. Over the course of an operational year, 1,573 tons would represent 0.66 percent of the Landfill’s total annual remaining capacity. Therefore, the proposed project’s operational waste generation could be accommodated by the existing capacity of the Yolo County Central Landfill.

It should be noted that in 2016, California achieved a Statewide residential waste diversion rate of 61 percent. The diversion rate represents the percentage of the State’s solid waste stream that is diverted from landfills and recycled or composted. Assuming a similar diversion rate for the City of Davis, approximately 1,022 tons of waste generated by operation of the proposed project would be diverted from the Yolo County Central Landfill annually.

Moreover, in 2011 the City of Davis adopted Resolution Number 11-185, which established a goal of reducing per resident waste generation to 1.9 pounds per resident per day by 2020. Such a reduction would represent a 0.7 pounds per resident per day reduction in solid waste production from the 2013 level assumed for this analysis. To achieve the aforementioned waste reduction, the City implemented an

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organics program to collect yard waste, food scraps, and food soiled paper for composting. Food scraps, food soiled paper and non-recyclable organic materials comprise over 30 percent of the City’s existing waste stream; therefore, the operational waste presented above could be reduced by as much as 30 percent due to the project’s operational participation in the City’s organics program. Thus, the waste estimations presented above should be considered conservative, and the actual waste produced by construction and operation of the proposed project would likely be less than what is presented in this EIR.

Based on the above, the proposed project would not exceed the permitted capacity of the Yolo County Central Landfill in the project’s construction and/or operational phases. Additionally, the proposed project would be required to abide by all aforementioned local, State, and federal regulations. As a result, the proposed project would be serviced by a landfill with adequate capacity and would not violate any relevant statutes related to solid waste disposal. Therefore, a less-than-significant impact related to solid waste would occur.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures
The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region. Refer to Chapter 5, Statutorily Required Sections, of this EIR for more detail.

4.5-7 Development of the proposed project, in combination with future buildout in the City of Davis, would increase demand on fire and police protection services. Based on the analysis below, the cumulative impact is less than significant.

The existing structures on the project site are currently provided police protection services by the DPD. Fire protection services are provided by the Davis Fire Department. The General Plan EIR concluded that buildout of the City of Davis would result in a less-than-significant impact related to increased demand on fire protection services, provided that development is located within a five-minute response radius of existing fire stations, as is the case for the proposed project. With regard to police protection services, impacts were similarly determined to be less than significant.

The proposed redevelopment project would have the potential to result in increased demands for fire and police protection services at the project site. However, as discussed under Impacts 4.5-1 and 4.5-2 above, the Davis Fire Department has indicated that new or physically altered fire station facilities would not be needed to adequately serve the proposed project. The proposed structures would be designed in compliance with all applicable provisions of the California Fire Code and would include features such as fire sprinklers and smoke alarms to reduce potential fire hazards. In addition, the proposed project would be designed in accordance with the

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43 Patrick Sandholdt, Acting Fire Marshal, Davis Fire Department. Personal communication [phone] with Nick Pappani, Vice President, Raney Planning and Management, Inc. September 4, 2018.
City’s Security Ordinance, which is contained in the City’s Municipal Code as Article 8.14. Article 8.14 includes various minimum requirements for security measures to be included in new non-residential and multi-family residential structures. Furthermore, the proposed project would be subject to payment of development impacts fees for public safety impacts to support adequate provisions for fire and police facilities and equipment. Similar to the proposed project, other future development projects within the City would be required by the City to pay their fair-share fees toward the provision of adequate public services and facilities, including towards the necessary upgrades and expansions of facilities and equipment.

Based on the above, a less than significant cumulative impact would occur related to resulting in a need for new or expanded fire and police protection facilities, the construction of which could cause significant environmental impacts.

Mitigation Measure(s)
None required.

4.5-8 Development of the proposed project, in combination with future buildout in the City of Davis, would increase demand on utilities and service systems. Based on the analysis below, the project’s incremental contribution to this cumulative impact would be less than cumulatively considerable.

A discussion of potential cumulative impacts on utility systems is provided below.

Water Supply
Water supplies for the proposed project would be provided by the City of Davis. As discussed under Impact 4.5-3 above, the proposed project would increase the overall maximum day domestic water demand associated with the project site from 13,920 gpd to 126,756 gpd, or a net change of 101,496 gpd (37.05 mgy) relative to existing conditions. The aforementioned increase in demand can be accommodated without the need for new or expanded water entitlements. As shown in Table 4.5-9 and Table 4.5-10, the City’s overall water demand is anticipated to peak in 2025. The anticipated water demand for 2025 and beyond includes cumulative growth assumptions from buildout of the City’s General Plan, relevant Specific Plans, and development of the Nishi, Mace Ranch Innovation Center, and formerly proposed Davis Innovation Center project. Thus, the project-level impact discussion for water supply and delivery considers the project’s water demand in conjunction with demand from other cumulative buildout until 2035. As shown in Table 4.5-9 and Table 4.5-10, sufficient water supplies are available to serve the proposed project, other proposed projects, and cumulative growth within the City until at least 2035 during normal-year, single-dry year, and multiple dry-year scenarios.

As such, the water supply system is adequately sized to accommodate cumulative water demand within the City service area, including the proposed project, and the project’s incremental contribution to cumulative impacts related to water supplies would be less than cumulatively considerable.
Wastewater
As discussed under Impact 4.5-3 above, wastewater generation associated with buildout of the General Plan, including the project site, was previously modeled for the City’s 2018 SECAP. As part of the Sewer Evaluation prepared for the project, the SECAP modeling was updated to reflect increased wastewater generation associated with the proposed redevelopment project.

Based on the results of the modeling conducted for the Sewer Evaluation, a number of the downstream sewer main segments are projected to exceed the City’s 0.6 d/D maximum design criterion under buildout of the General Plan, including the proposed project. However, the project would not result in any new exceedances and would not contribute substantially to the segments that were already projected to be deficient in the 2018 SECAP. Thus, the project’s contribution to the cumulative impact would be less than cumulatively considerable. The project’s required payment of applicable sewer impact fees would also contribute towards future sewer conveyance system improvements carried out by the City.

Wastewater treatment for the City of Davis is provided by the City’s WWTP, which has a permitted capacity of 6.0 mgd. Current inflow to the WWTP is 4.34 mgd, leaving 1.66 mgd of capacity. The existing and future capacity of the WWTP is presented in Table 4.5-11 below, along with the estimated demand for buildout of the General Plan and large proposed developments such as Mace Ranch Innovation Center/Triangle, and the Nishi project. As shown in Table 4.5-11, the WWTP is anticipated to have a remaining capacity of 0.95 mgd with buildout of the City’s General Plan. Projects not included in the City’s General Plan, such as the Mace Ranch Innovation Center, the Triangle, the Nishi Project, and Lincoln40 would result in a cumulative ADWF demand of 0.33 mgd.44

<table>
<thead>
<tr>
<th>Condition</th>
<th>ADWF (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWTP Capacity</td>
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</tr>
<tr>
<td>Existing Conditions</td>
<td>4.34</td>
</tr>
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<td>General Plan Buildout</td>
<td>5.05</td>
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<tr>
<td>Remaining Capacity</td>
<td>0.95</td>
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<tr>
<td><strong>Cumulative Development Contribution</strong></td>
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<tr>
<td>Mace Ranch Innovation Center/Triangle</td>
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</tr>
<tr>
<td>Nishi Project</td>
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</tr>
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<td>Lincoln40</td>
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</tr>
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<td>West Davis Active Adult</td>
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<td>3820 Chiles Road</td>
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</tr>
<tr>
<td>Proposed Project</td>
<td>0.05</td>
</tr>
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</table>

**Table 4.5-11**
Summary of Existing and Future WWTP Capacity


Per the Sewer Evaluation prepared by West Yost Associates, the proposed project would result in an overall ADWF at the project site of 0.063 mgd, an increase of 0.051

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mgd relative to what was previously considered for the site by the City per the SECAP. Accounting for wastewater demand from the aforementioned development projects, as well as the proposed project, the WWTP would have a remaining capacity of approximately 0.41 mgd. As such, the WWTP would have adequate capacity to serve the proposed project as well as buildout of the General Plan and the aforementioned development projects, and a less-than-significant cumulative impact would occur.

**Solid Waste**
The proposed project would contribute construction, demolition, and operational waste to the Yolo County Central Landfill. As discussed above, numerous State and federal regulations exist regarding the composition and volume of solid waste being directed to landfills, as well as the amount of solid waste being diverted for recycling or reuse programs. The proposed project would be required by Tier 1 of CALGreen to divert at least 65 percent of construction and demolition waste generated during construction and demolition activities. Additionally, the City has recently implemented an organic waste program, which is estimated to result in a maximum diversion rate of 30 percent. As discussed previously, the Yolo County Landfill currently has permitted capacity to accept an additional 800 tons per day or 239,200 tons per year. The current permitted capacity is anticipated to allow operation of the landfill to continue until the year 2124. The solid waste attributable to the proposed project would not be considered substantial in light of the landfill’s existing capacity of 800 tons per day. Therefore, the proposed project in combination with future buildout in the region would not result in a significant cumulative impact related to solid waste.

**Energy, Natural Gas, and Telecommunications**
As discussed previously, the proposed project would not require major extensions of energy or natural gas infrastructure, as such infrastructure currently exists on-site. Additionally, PG&E services are provided on-demand, and PG&E expands the distribution system as needed to accommodate growth. Cumulative projects would increase demand for electricity and natural gas services, but would be accommodated by PG&E’s infrastructure. Similarly, while cumulative development within the City of Davis would increase demand on the City’s telecommunications service providers (i.e., Comcast, AT&T, Omsoft, etc.), services are readily scalable and would be expanded as necessary to accommodate future growth. Thus, cumulative impacts related to energy, natural gas, and telecommunications would be less than significant.

**Conclusion**
The proposed project, in conjunction with regional development, would increase demand on utilities in the area and have the potential to result in a significant cumulative impact. However, this analysis has demonstrated that the proposed project’s incremental contribution to this cumulative impact would be considered less than cumulatively considerable.

**Mitigation Measure(s)**
None required.