4.6 HYDROLOGY AND WATER QUALITY

4.6.1 INTRODUCTION

The Hydrology and Water Quality section of the EIR evaluates potential impacts of the Lincoln40 Project (proposed project) with respect to increases in stormwater runoff, on- and off-site flooding, and degradation of water quality. The analysis in this section relies in part upon the *Lincoln40 Utilities Demand Memorandum*[1] (see Appendix L) and the *Lincoln40: Drainage Evaluation for 2-Year and 10-Year Events* (see Appendix M),[2] both of which were prepared by Cunningham Engineering, and the *Davis General Plan*[3] and associated EIR.[4] It should be noted that impacts associated with water supply and conveyance are addressed in Section 4.12, Utilities and Service Systems, of this EIR.

4.6.2 EXISTING ENVIRONMENTAL SETTING

The section below describes regional and local hydrology and water quality.

Regional Hydrology

The proposed 5.92-acre project site is located in the City of Davis, within Yolo County at the southwestern end of the Sacramento Valley, approximately 30 miles north of the confluence of the San Joaquin and Sacramento Rivers. The Sacramento Valley is bordered by the Coast Ranges and Delta on the west and the foothills of the Sierra Nevada to the east. Water resources in this region include rivers, streams, sloughs, marshes, wetlands, channels, harbors, and underground aquifers.

Climate and Rainfall

Summers in the City of Davis are warm and dry, and winters are cool and mild. The region is subject to wide variations in annual precipitation, and also experiences dry periods and wild fires in the regional watershed and surrounding areas. The temperature range is approximately 30 to 100 degrees Fahrenheit (ºF), with an annual average of 61ºF.[5]

1 Cunningham Engineering, Inc. *Memorandum: Lincoln40 Utilities Demand*. August 17, 2016.
2 Cunningham Engineering, Inc. *Lincoln40: Drainage Evaluation for 2-Year and 10-Year Events*. February 24, 2017.
3 City of Davis. *Davis General Plan.* Adopted May 2001. Amended through January 2007.
4 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.
5 City of Davis. *Program EIR for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School [pg. 5G-1]*. January 2000.

Watersheds

The City of Davis is located in the Sacramento River Hydrologic Region, which covers approximately 17.4 million acres (27,200 square miles) and all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties. Small areas of Alpine and Amador counties are also within the region.

Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento—San Joaquin Delta. The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains. Other significant features include Mount Shasta and Lassen Peak in the southern Cascades, Sutter Buttes in the south-central portion of the valley, and the Sacramento River, which is the longest river system in the State of California, with major tributaries: the Pit, Feather, Yuba, Bear, and American Rivers.

Valley Putah-Cache Hydrologic Unit

The City of Davis is located within the Valley Putah-Cache Hydrologic Unit. For purposes of regional planning, hydrologic units are generally considered to be the appropriate watershed planning level. However, the hydrologic unit level is generally too large in terms of a planning scale for individual projects; and a hydrologic area or hydrologic subarea may be considered more appropriate.

Lower Putah Creek Hydrologic Area

Within the Valley Putah-Cache Hydrologic Unit, the City of Davis is located within the Lower Putah Creek Hydrologic Area. This watershed is approximately 225,301 acres and is bound by Putah Creek to the south and Cache Creek to the north. The headwaters of the watershed begin just west of Winters, near Lake Berryessa, and extend to the east, approximately 25 miles, to the Yolo Bypass. There are 17 water bodies within the Lower Putah Creek Hydrologic Area that are on the 303(d) list (list of impaired and threatened waters), six of which have a Total Maximum Daily Load (TMDL) for various pollutants. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. None of the listed 303(d) water bodies are located in the vicinity of the project site.

Local Hydrology

The City's planning area, as defined by the City of Davis' General Plan, is drained by the Old North Fork of the Putah Creek and the Willow Slough Bypass. There is no direct discharge into the South Fork of Putah Creek. The old North Fork of Putah Creek, which flows through the UCD Arboretum, receives drainage from South Davis.

The California Department of Water Resources (DWR) maintains the Willow Slough Bypass, which directs water away from Willow Slough and Dry Slough, in the eastern section of the Davis

planning area, and carries water eastward to the Yolo Bypass at the eastern boundary of the planning area. The Willow Slough Bypass consists predominately of runoff from agricultural lands to the north of the City. The Yolo Bypass, which runs north-south, is flooded when the Sacramento River carries high stormwater runoff levels. Water is released into the Yolo Bypass from the Fremont Weir located downstream from Knight's Landing.

Within the Lower Putah Creek Hydrologic Area, there are four principal watersheds, which total 198 square miles. The project site is located within the East Davis watershed of the Lower Putah Creek Hydrologic Area.[6]

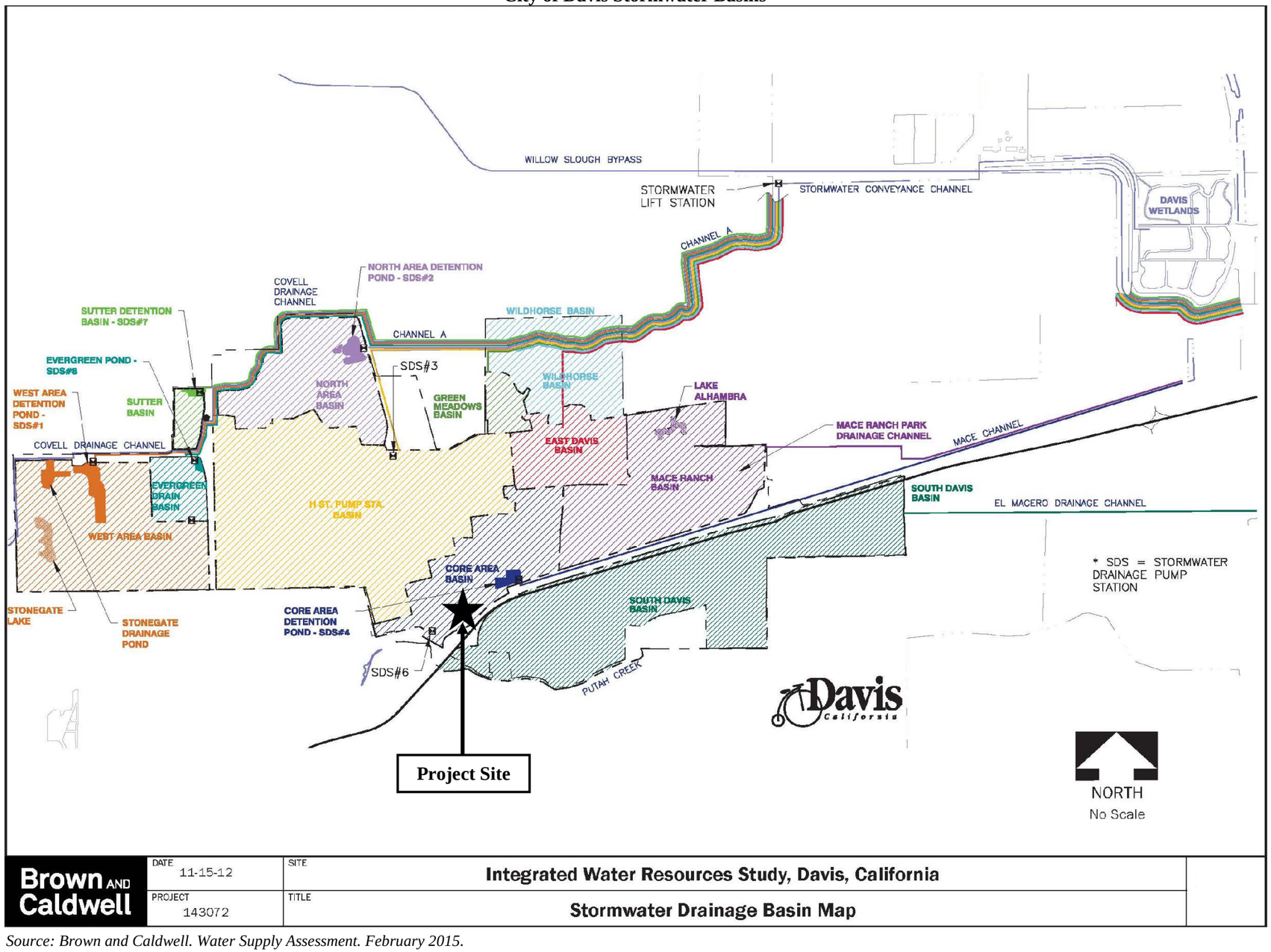
The City's stormwater system collects stormwater from the 11 basins within the City and conveys the stormwater out of the City (see Figure 4.6-1). Rainfall runoff flows by gravity into the City's six detention basins and one retention basin (Stonegate). Pump stations lift water from these facilities into main drainage channels: the Covell Drainage Channel, Channel A, Mace Ranch Park Drainage Channel, and the El Macero Drainage Channel. These channels ultimately drain to the Yolo Bypass, east of the City. The Covell Channel and Channel A flow together north of the City to the Willow Slough Bypass, via a flapper gate. Only in high water events, when enough water is present in the channel, can water then be pumped to the south cell of the Davis Wetlands, and then to Yolo Bypass. Otherwise, stormwater in Channel A flows out through the Willow Slough Bypass to the Yolo Bypass. The Mace Ranch Drainage Channel flows east to the western levee of the Yolo Bypass, and then discharges via gravity into the Yolo Bypass. The El Macero Drainage Channel flows east to the western levee of the Yolo Bypass, where waters are pumped into the Yolo Bypass. The Yolo Bypass comprises multiple wetland areas, including the Yolo Basin Wetland. The City of Davis maintains the El Macero/South Davis Channel and the Mace Detention Channel. The project site is within the Core Area Basin, and drains towards the Core Area Detention Basin and the Railroad Channel, which flows to the Yolo Bypass levee. Figure 4.6-1 presents the basins and the flow paths of the stormwater system.

Project Site Drainage

The proposed project site has been developed with residential structures, with remaining grassland areas interspersed throughout the site. An existing curb drain inlet is located at the end of the paved portion of Hickory Lane, as well as the end of the sidewalk, curb and gutter on the north side of Olive Drive. The existing drain inlets connect to the existing 24-inch storm drain main along Olive Drive. The Olive Drive storm drain main directs stormwater to the Core Area Basin, north of Second Street. All other drainage on the site flows overland to the east.

[6] Yolo County Flood Control & Water Conservation District. *Covell Drainage System Comprehensive Drainage Plan [pg. 7]*. September 1993.

Figure 4.6-1
City of Davis Stormwater Basins



Source: Brown and Caldwell. Water Supply Assessment. February 2015.

Local Flood Hazards

The soils in the eastern portion of Yolo County contain appreciable amounts of clay that limit infiltration rates and consequently cause high runoff rates. Flooding has frequently occurred in the Willow and Dry Sloughs and watersheds north of Putah Creek. Yolo County has been mapped by the Federal Emergency Management Agency (FEMA) as part of the National Flood Insurance Program, which identifies areas of potential flooding and their associated risks.

The potential for flooding in the planning area exists when floodwaters from the Sacramento River back up into the Yolo and Willow Slough Bypasses, eliminating gravity flow from these systems. Ponding also occurs in some areas from combinations of rainfall intensity, impermeable soils, shallow groundwater conditions, and presence of depressions.[7]

Project Site Flood Hazards

The proposed project is located in Zone X, which is defined by the Federal Emergency Management Agency (FEMA) as areas outside of the 0.2 percent annual chance floodplain.[8] Therefore, the project site is outside of any 100-year flood areas within the City.

Dam Failure

The Monticello Dam, located approximately 23 miles from Davis at Lake Berryessa, has the potential to inundate the City of Davis if the dam were to fail. The failure of the Monticello Dam is estimated by the California Emergency Management Agency to cause flooding up to three meters in Davis.[9] Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam.

Larger dams that are higher than 25 feet, or with storage capacities over 50 acre-feet (ac-ft) of water, are regulated by the California Dam Safety Act, which is implemented by the California DWR, Division of Safety of Dams. The Division of Safety of Dams is responsible for inspecting and monitoring larger dams. The California Dam Safety Act requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure. The County Office of Emergency Services is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of flood waters, and provides emergency information.

7 Yolo County Flood Control & Water Conservation District. *Covell Drainage System Comprehensive Drainage Plan [pg. 7]*. September 1993.
8 Federal Emergency Management Agency. *Flood Insurance Rate Map: 06113C0611G*. Effective June 18, 2010.
9 Yolo County. *Yolo County General Plan Update: Background Report.* January 2005.

Water Supply

Historically, groundwater was the sole potable water supply source for the City. 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.[10] With operation of the WDCWA's Regional Water Treatment Facility, treated surface water is replacing groundwater as the main source of water supply. Nevertheless, the City will continue to rely on groundwater during a transitional period, and as needed during high demand periods.[11]

Groundwater

The City has historically obtained groundwater from both the deep and intermediate depth aquifers of the Yolo Basin within the larger Sacramento Valley groundwater basin. 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.

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.[12] Additional groundwater aquifer information is provided in Section 4.12, Utilities and Service Systems, of this EIR. Please refer to Section 4.12 for more discussion on groundwater.

Wholesale Surface 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.

The WDCWA surface water treatment plant capacity is 30 million gallons per day (mgd). Up to 12 mgd would be conveyed to the City of Davis through a 30-inch diameter transmission pipeline. The City would be supplying up to 1.8 mgd of surface water to UC Davis, which means that the maximum capacity available for the City would be 10.2 mgd.[13] Additional information regarding surface water supplies is provided in Section 4.12, Utilities and Service Systems, of this EIR. Please refer to Section 4.12 for more discussion on surface water supplies.

---

10 Woodland – Davis Clean Water Agency. *The Project.* Available at http://www.wdcwa.com/the_project. Accessed September 2016.
11 Woodland – Davis Clean Water Agency. *Introduction to Surface Water*. March 2016.
12 City of Davis. *Final 2015 Urban Water Management Plan.* June 2016.
13 Woodland – Davis Clean Water Agency. *The Project*. Available at http://www.wdcwa.com/the_project. Accessed December 2016.

Water Quality

The City of Davis relies on both groundwater and surface water for the City's water supply. Additionally, existing activities within the City and construction activity related to development within the City can impact both groundwater quality and surface water quality.

Groundwater Quality

The quality of groundwater in the Davis Planning Area affects the City's drinking water supply and wastewater quality. As discussed above, the intermediate depth aquifer in the City's Planning Area is affected by water quality issues related to dissolve solids. In particular, groundwater from intermediate wells can be affected by high concentrations of nitrates, iron, manganese, and selenium, which lead to taste and odor issues. In addition, future updates to water quality Federal and State regulations related to drinking water and wastewater could require the City to begin treating groundwater for contaminants, such as chromium.

Groundwater from deep aquifers in the City's Planning Area tend to be less affected by dissolved solids and other water quality problems. In recent years, the City has constructed deeper wells to access the relatively higher quality groundwater from the deep aquifers. However, because the deep aquifer is hydrologically connected to the intermediate aquifer in the City's Planning Area, the potential exists for deep well pumping to allow vertical flow of lower quality groundwater from the intermediate aquifer, down into the deep aquifer. The extent to which the vertical flow of groundwater from intermediate level aquifers to deep aquifers could impact groundwater quality in the future is currently unknown.

Surface Water Quality

Water is essential to recreation, the viability of agriculture, and the development of housing, commerce, and industry, as well as the maintenance of high-quality fish and wildlife habitats. Potential hazards to surface water quality include but are not limited to, the following nonpoint pollution problems: high turbidity from sediment resulting from erosion activity on improperly graded construction projects; concentration of nitrates and dissolved solids from agriculture, pet wastes, or septic tank failures; contaminated street and lawn runoff from urban areas; excessive chlorine, high biochemical oxygen demand (BOD), or too high or low pH from pool or spa water discharges; and warm water drainage discharges into cool water streams.
A critical period of surface water quality is following a rainstorm which produces significant amounts of drainage runoff into streams at low flow, resulting in poor dilution of contaminants in the low flowing stream. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels and contaminants have accumulated on impervious surfaces over the drier summer months. Besides greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to streams in low flow conditions.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading, vegetation removal, and agricultural practices can lead to increased erosion of exposed earth and

sedimentation of watercourses during rainy periods. In slower moving water bodies, these same factors often cause a buildup of sediment, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affect both aquatic resources and flood control efforts.

Land uses and activities that the City must consider in protecting the quality of the City's water include but are not limited to construction activities and urban runoff.

Construction Activities

Construction grading can impact water quality because it exposes bare soil. Rainfall on bare soil can cause erosion and sedimentation into nearby water bodies. Unstabilized soil can be washed or wind-blown into nearby surface water. Construction activities can also result in petroleum products and other pollutants from construction equipment entering nearby drainages.

Urban Runoff

Urban runoff includes household chemicals (including pesticides, herbicides, and paints), pool water discharges (chlorine, acid, diatomaceous earth, and algae), pet wastes (fecal coliform), yard wastes (excessive BOD), residential projects (sediments, concrete and mortar), commercial drool from improperly stored garbage, food wastes and chemicals, as well as petroleum products from automobiles and landscaping equipment. Municipal sources of pollution include government yards where transportation, fueling, and maintenance activities take place.

4.6.3 REGULATORY CONTEXT

The following is a description of federal, State, and local environmental laws and policies that are relevant to the review of hydrology and water quality under the California Environmental Quality Act (CEQA) process.

Federal Regulations

The following are the federal environmental laws and policies relevant to hydrology and water quality.

Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations and floodplain boundaries and utilizing U.S. Army Corps of Engineers (USACE) levee information and other studies. FEMA is also responsible for distributing the Flood Insurance Rate Maps (FIRMS), which are used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplains.

FEMA allows non-residential development in the floodplain; however, construction activities are restricted within the flood hazard areas, depending upon the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60

of the Code of Federal Regulations (CFR). These standards are implemented at the State level through construction codes and local ordinances; however, these regulations only apply to residential and non-residential structure improvements. CFR Section 60.3(c)(10) restricts cumulative development from increasing the water surface elevation of the base flood by more than one foot within the floodplain.

Federal Clean Water Act

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the federal Clean Water Act (CWA) to regulate municipal and industrial discharges to surface waters of the U.S. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that EPA must consider in setting effluent limits for priority pollutants.

Nonpoint sources are diffuse and originate over a wide area rather than from a definable point. Nonpoint pollution often enters receiving water in the form of surface runoff, but is not conveyed by way of pipelines or discrete conveyances. As defined in the federal regulations, such nonpoint sources are generally exempt from federal NPDES permit program requirements. However, two types of nonpoint source discharges are controlled by the NPDES program – nonpoint source discharge caused by general construction activities, and the general quality of stormwater in municipal stormwater systems.

Section 402 of the CWA mandates that certain types of construction activities comply with the requirements of the NPDES stormwater program. The Phase II Rule, issued in 1999, requires that construction activities that disturb land equal to or greater than one acre require permitting under the NPDES program. In California, permitting occurs under the General Permit for Stormwater Discharges Associated with Construction Activity, issued to the SWRCB, implemented and enforced by the nine Regional Water Quality Control Boards (RWQCBs).

All dischargers with projects that include clearing, grading or stockpiling activities expected to disturb one or more acres of soil are required to obtain compliance under the NPDES Construction General Permit Order 2009-0009-DWQ. This General Permit requires all dischargers, where construction activity disturbs one or more acres, to take the following measures:

1. Determine risk level of the site, file an Notice of Intent with the State Water Resources Control Board electronically;
2. Keep records of all of the following: rainfall events, actions taken in response to monitoring, any samples taken, training of site employees and contractors, and provide these in an annual report to the RWQCB electronically;
3. Describe types and placement of Best Management Practices (BMPs) in the SWPPP that will be used to protect storm water quality;
4. Provide a visual and chemical (if non-visible pollutants are expected) monitoring program for implementation upon BMP failure; and
5. Provide a sediment monitoring plan if the area discharges directly to a water body listed on the 303(d) list for sediment.

To obtain coverage, a SWPPP must be submitted to the RWQCB electronically and a copy of the SWPPP must be submitted to the City of Davis. When project construction is completed, the landowner must file a Notice of Termination (NOT).

Construction Site Runoff Management

In accordance with NPDES regulations, in order to minimize the potential effects of construction runoff on receiving water quality, the State requires that any construction activity affecting one (1) acre or more must obtain a General Construction Activity Stormwater Permit. Permit applicants are required to prepare a SWPPP and implement BMPs to reduce construction effects on receiving water quality by implementing erosion and sediment control measures.

State Regulations

The following are the State environmental laws and policies relevant to hydrology and water quality.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, as revised in December, 2007, provides for protection of the quality of all waters of the State of California for use and enjoyment by the people of California. It further provides that all activities that may affect the quality of waters of the State shall be regulated to obtain the highest water quality that is reasonable, considering all demands being made and to be made on those waters. The Act also establishes provisions for a statewide program for the control of water quality, recognizing that waters of the state are increasingly influenced by interbasin water development projects and other statewide considerations, and that factors such as precipitation, topography, population, recreation, agriculture, industry, and economic development vary regionally within the state. The statewide program for water quality control is therefore administered most effectively on a local level, with statewide oversight. Within this framework, the Act authorizes the SWRCB and regional boards to oversee responsibility for the coordination and control of water quality within California, including those responsibilities under the Federal Clean Water Act that have been delegated to the state.

State Water Resources Control Board

The SWRCB and the RWQCB are responsible for ensuring implementation and compliance with the provisions of the federal CWA and California's Porter-Cologne Water Quality Control Act. The project site is situated within the jurisdiction of the Central Valley Region of the RWQCB (Region 5). The CVRWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within the CVRWQCB's jurisdiction.

Central Valley Regional Water Quality Control Board

As authorized by the Porter-Cologne Water Quality Control Act, the CVRWQCB primary function is to protect the quality of the waters within its jurisdiction for all beneficial uses. State law defines beneficial uses of California's waters that may be protected against quality degradation to include, but not be limited to: domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

The CVRWQCB implements water quality protection measures by formulating and adopting water quality control plans (referred to as basin plans, as discussed below) for specific groundwater and surface water basins, and by prescribing and enforcing requirements on all agricultural, domestic, and industrial waste discharges. The CVRWQCB oversees many programs to support and provide benefit to water quality, including the following major programs: Agricultural Regulatory; Above-Ground Tanks; Basin Planning; CALFED; Confined Animal Facilities; Landfills and Mining; Non-Point Source; Spills, Leaks, Investigations, and Cleanups (SLIC); Storm Water; TMDL; Underground Storage Tanks (UST); Wastewater Discharges (including the NPDES); Water Quality Certification; and Watershed Management.

Local Regulations

The following are the local environmental laws and policies relevant to hydrology and water quality.

City of Davis General Plan

The following City of Davis General Plan policies relating to hydrology and water quality are applicable to the proposed project.

Goal WATER 2 Ensure sufficient supply of high quality water for the Davis Planning Area.

- Policy WATER 2.1 Provide for the current and long-range water needs of the Davis Planning Area, and for protection of the quality and quantity of groundwater resources.
- Policy WATER 2.2 Manage groundwater resources so as to preserve both quantity and quality.
- Policy WATER 2.3 Maintain surface water quality.

Goal WATER 3 Design stormwater drainage and detention facilities to maximize recreational, habitat and aesthetic benefits.

- Policy WATER 3.1 Coordinate and integrate development of storm ponds and channels City-wide, to maximize recreational, habitat and aesthetic benefits.

Policy WATER 3.2 Coordinate and integrate design, construction, and operation of proposed stormwater retention and detention facilities City-wide, to minimize flood damage potential and improve water quality.

Goal HAZ 1 Provide flood protection which minimizes potential damage, while enhancing recreational opportunities and wildlife habitats and water quality.

Policy HAZ 1.1 Site and design developments to prevent flood damage.

Policy HAZ 1.2 Continue to provide flood control improvements that are sensitive to wildlife habitat and open space preservation.

City of Davis Municipal Code

Chapter 30, Stormwater Management and Discharge Control, contains standards related to stormwater facilities. In particular, Chapter 30 enforces the State's NPDES General Permit requirements for Stormwater Discharges Associated with Construction Activity (NPDES General Permit No. CAS000002), and the State of California NPDES Phase II Small Municipal Separate Storm Sewer System General Permit for applicable projects.

4.6.4 IMPACTS AND MITIGATION MEASURES

This section describes the standards of significance and methodology utilized to analyze and determine the proposed project's potential impacts related to hydrology and water quality. A discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

According to CEQA Guidelines, an impact is considered significant if the proposed project would result in any of the following:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of

surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Result in inundation by seiche, tsunami or mudflow.

Issues Not Discussed Further

The project area is not located near any large bodies of water that would pose a seiche or tsunami hazard. The nearest large body of water, Lake Berryessa, is located approximately 26 miles west of the project site. The project site is relatively flat and is not located near any physical or geologic features that would produce a mudflow hazard. Therefore, no impact would occur related to inundation by seiche, tsunami, or mudflow. Issues related to seiche, tsunami, and mudflow hazards are not further discussed.

In addition, the proposed project is not located within a 100-year flood hazard area as mapped on the Federal Flood Insurance Rate Map (FIRM).[14] The proposed project site is within Flood Hazard Zone X, which is described by FEMA as an area of minimal flood hazard, usually above the 500-year flood level. Therefore, development of the proposed project would not place housing within a 100-year flood hazard zone nor place structures within a 100-year floodplain that would impede or redirect flood flows, and restrictions on development or special requirements associated with flooding are not requisite for the project. Issues related to the placement of housing or structures within a 100-year flood hazard zone and providing the applicable urban level of flood protection, are not further discussed.

For the aforementioned reasons, the Initial Study (See Appendix B) prepared for the proposed project determined that development of the proposed project would result in no impact or a less-than-significant impact related to the following:

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows; or
- Result in inundation by seiche, tsunami or mudflow.

[14] Federal Emergency Management Agency. *Flood Insurance Rate Map: 06113C0611G*. Effective June 18, 2010.

Method of Analysis

Cunningham Engineering, Inc. prepared detailed calculations quantifying the runoff that would be created by the proposed impervious and pervious surfaces. The volume of runoff was then used in the *Lincoln40 Utilities Demand* Memorandum,[15] and the *Lincoln40: Drainage Evaluation for 2-Year and 10-Year Events* Memorandum prepared for the proposed project.[16] Cunningham Engineering divided the project site into several drainage sheds (Sheds A through Shed I) for purposes of calculating existing versus proposed peak flows and the amount of source control needed for each shed. Detailed calculations were performed for each shed and the project site as a whole, by Cunningham Engineering, in accordance with section 5 of the California Stormwater Quality Association New Development and Redevelopment BMP Handbook, dated January 2003 per section E.12.e(ii),(c)1)b) of the State General Permit, dated February 5, 2013.

The calculations and stormwater control features were compared to existing City standards, such as the requirements of the City's Municipal Code, Chapter 30. Cunningham Engineering relied on the HEC-HMS model to complete the rainfall/runoff analysis for the *Lincoln40: Drainage Evaluation for 2-Year and 10-Year Events*. Both pre- and post-project conditions were modeled for the 2-year and 10-year storm events using the HEC-HMS model. The peak discharge from the existing-condition sub-basin modeling provided the target site discharge for the proposed model in both 2-year and 10-year storm event scenarios. In the developed condition, approximately 71 percent of the site area would drain to the proposed detention basin, while the remaining 29 percent would drain directly to Olive Drive. The memoranda include proposed stormwater control features throughout the site, which were hydrologically sized based on impervious surface runoff calculations conducted for the project.

The *Preliminary Grading, Drainage and Stormwater Quality Exhibit*, prepared in concert with the aforementioned memorandums, is presented in the Project Impacts and Mitigation Measures section below.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in comparison with the standards of significance identified above.

[15] Cunningham Engineering, Inc. *Memorandum: Lincoln40 Utilities Demand*. August 17, 2016.
[16] Cunningham Engineering, Inc. *Lincoln40: Drainage Evaluation for 2-Year and 10-Year Events*. February 24, 2017.

4.6-1 Violate any water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality through erosion during construction. Based on the analysis below and with implementation of mitigation, the impact is *less than significant.*

Construction activities such as grading, excavation, and trenching for site improvements would result in the disturbance of on-site soils. The exposed soils have the potential to affect water quality in two ways: 1) suspended soil particles and sediments transported through runoff; or 2) sediments transported as dust that eventually reach local water bodies. Spills or leaks from heavy equipment and machinery, staging areas, or building sites also have the potential to enter runoff. Typical pollutants include, but are not limited to, petroleum and heavy metals from equipment and products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of building products could result in water quality degradation if runoff containing the sediment or contaminants should enter receiving waters in sufficient quantities. Impacts from construction-related activities would generally be short-term and of limited duration.

Because development of the site would require construction activities that would result in a land disturbance greater than one acre, the applicant would be required by the State to obtain a General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit), which pertains to pollution from grading and project construction. Compliance with the Permit requires the applicant to file a Notice of Intent (NOI) with the SWRCB and prepare a SWPPP prior to construction. The SWPPP would incorporate BMPs in order to prevent, or reduce to the greatest feasible extent, adverse impacts to water quality from point sources and erosion and sedimentation. Without the project's required compliance with the SWRCB standards, construction activities related to the proposed project could result in a ***significant*** impact related to the violation of water quality standards, discharge requirements, or the creation of a substantial additional source of polluted runoff.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

4.6-1 *Prior to initiation of any ground disturbing activities, the project applicant shall prepare a SWPPP, and implement BMPs that comply with the Stormwater Construction General Permit from the RWQCB, to reduce water quality effects during construction. Such BMPs may include but not be limited to: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, watering down disturbed soil during grading activities, suspending grading or dirt disturbing activities during wind events in excess of 25mph, stabilized construction entrances, and temporary revegetation. Other BMPs may include, but be not limited to, good housekeeping practices such as concrete washout facilities, containerizing*

construction materials, keeping public street front clean of sediments, placing drainage inlet protection on any drainage inlets onsite or downstream of the project site, and having still response kits on-site. The SWPPP shall be kept on-site and implemented during construction activities and shall be made available upon request to representatives of the City of Davis and/or RWQCB.

4.6-2 Violate any water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality during operations. Based on the analysis below and with implementation of mitigation, the impact is *less than significant.*

The proposed project involves the demolition of existing residential structures and subsequent construction of a 130-unit apartment complex with associated parking and amenity features. Although 54,000 sf of the project site are currently overlain with impervious surfaces such as pavements and roofing, the proposed project would increase the intensity of development on the project site and thus increase the amount of impervious surfaces by approximately 2.13 acres. During the dry season, residential communities use small quantities of urban pollutants that can become entrained in stormwater runoff. Anticipated runoff contaminants associated with residential communities include sediment, pesticides, oil and grease, nutrients, metals, bacteria, and trash.

The proposed project includes stormwater control features throughout the project site. Such measures would include flow-based and volume-based Low Impact Development (LID) features such as vegetated swales, stormwater planters, and a bioretention basin. The proposed stormwater control features would serve multiple purposes related to stormwater and water quality. In terms of water quality, stormwater directed to the vegetated swales and the stormwater planters would pass through an active vegetated soil layer, which would remove pollutants from the stormwater runoff, slow the velocity of the runoff, and reduce the volume of runoff before being discharged to the existing 24-inch storm drain in Olive Drive.

Stormwater quality treatment control measures (TCMs) for development in the City of Davis must be designed in accordance with the City's adopted Phase II Small MS4 General Permit. The Phase II Small MS4 General Permit requires that permanent stormwater control measures be incorporated into the proposed project to ensure that new development does not result in the discharge of polluted water or the increase in sources of polluted runoff. Regulated Projects, under the Phase II Small MS4 General Permit, are required to divide the project area into Drainage Management Areas (DMAs) and implement and direct water to appropriately-sized TCMs consistent with the sizing standards in Section E.12.e.(ii)(c). TCMs are designed after the inclusion of Site Design Measures (SDMs) consistent with the standards of Section E.12.b. and E.12.e.(ii)(d). Baseline Hydromodification Measures are implemented consistent with the prescriptive standards of Section E.12.e.(ii)(f) only in the event the project develops more impervious surfacing than the existing project and creates or replaces less than one acre of impervious surfacing. Because the proposed project would create more than one acre of impervious surfacing,

each DMA must be shown via calculations that all stormwater is treated consistent with the standards of Section E.12.e.(ii)(c) and retained consistent with Section E.12.f.. Regulated Projects must additionally include Source Control Best Management Practices (BMPs) where possible. SDMs and Baseline Hydromodifcation Measures include, but are not limited to:

- Rooftop and impervious area disconnection;
- Porous pavement;
- Rain barrels and cisterns;
- Vegetated swales;
- Bio-retention facilities;
- Green roofs; or
- Other equivalent measures, as approved by the City and consistent with Sections E.12.b and E.12.e.(ii)(d) of the Phase II Small MS4 General Permit.

The stormwater treatment control measures, SDMs and Hydromodification Measures included in the proposed project have been preliminarily designed in accordance with the requirements of Section E.12. of the State of California's Phase II Small MS4 General Permit and the City's Municipal Code Chapter 30. Final design and sizing of the stormwater control features will be required during improvement plan review to ensure that a ***significant*** impact would not occur related to the creation of additional sources of polluted runoff or a substantial degradation of water quality during project operations.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

4.6-2 *Prior to issuance of building permits, the applicant shall submit to the City a final plan, identifying permanent stormwater TCMs, SDMs, and Hydromodification Measures, for each DMA to be implemented on the project, as well as a signed stormwater maintenance agreement and corresponding maintenance plan. The plan shall include LID measures consistent with the Lincoln40 Utilities Demand, and the Lincoln40: Drainage Evaluation for 2-Year and 10-Year Events memoranda prepared for the project and shall be subject to review and approval by the Public Works Department.*

4.6-3 Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted). Based on the analysis below, the impact is *less than significant.*

Historically the City relied solely on groundwater from the Yolo subbassin to provide water; recently, however, the City has begun receiving treated surface water through the WDCWA. As discussed in further depth in Section 4.12, Utilities and Service Systems, of this EIR, the City will use surface water to meet base flow demands and would only rely on groundwater during times when Citywide demand for water exceeds the City's allotted supply of surface water. The proposed project would not include the installation of new wells, and would instead connect to City water infrastructure. The use of surface water as a primary source for City water would reduce the proposed project's demand on groundwater resources, and thus the proposed project's water demand would not be anticipated to significantly deplete groundwater supplies.

The proposed project would involve further development of the site, including overlay of additional areas of the project site with impermeable surfaces such as roofing and pavement. Because the proposed project would result in an increase in the amount of impermeable surfaces existing on the project site, the proposed project would have the potential to decrease the amount of water percolating into the on-site soil. However, considering that the proposed project site is partially developed, and the on-site soil has a low permeability,[17] the amount of groundwater recharge currently occurring at the site is relatively small as compared to recharge over the entire groundwater subbasin area. As such, the proposed project's further reduction in on-site stormwater percolation would result in a relatively small change in groundwater recharge.

The proposed project site is not considered an area of where significant groundwater recharge occurs, and potable water for the proposed project would be provided by the City of Davis, which would avoid any potential impacts due to the need for new on-site wells. Therefore, the proposed project would not interfere substantially with groundwater recharge, and related impacts would be ***less than significant***.

Mitigation Measure(s)
None required.

[17] Geocon Consultants, Inc. *Geotechnical Investigation Lincoln40 Student Housing*. February 2016.

4.6-4 Substantially alter the existing drainage pattern of the site or area, or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

The project site is partially developed with residential structures and interspersed with undeveloped fields with ruderal vegetation. Several portions of the project site are paved, including portions of Hickory Lane, a drive aisle and parking lot associated with the existing apartment complex, and a sidewalk along a portion of the project site's Olive Drive frontage. Additional existing impervious surfaces are contributed by the residential structures. However, large portions of the site are undeveloped fields, and stormwater infiltration occurs on such portions of the site not currently overlain by impervious soils.

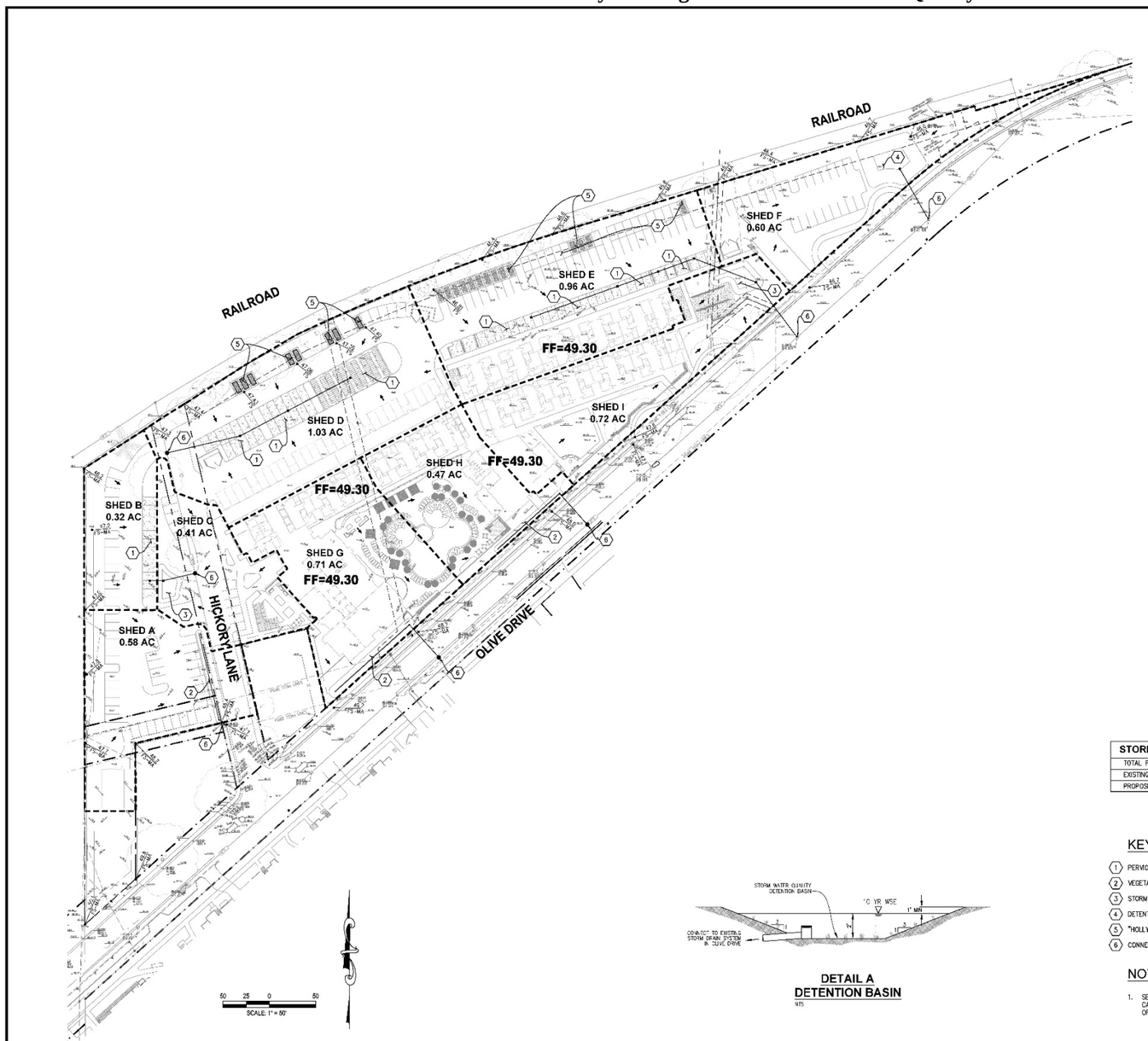
The proposed project would involve the demolition of existing impervious surfaces, and subsequent construction of a 249,788-sf, multi-family residential building with associated parking and outdoor amenity areas. Project components such as the roofs of proposed structures, paved parking areas, paved sidewalks, and paved pedestrian areas would inhibit stormwater infiltration on-site, thus contributing to increased stormwater runoff. However, the project design incorporates several strategies to minimize post-construction stormwater runoff including permeable paving materials, and on-site stormwater control features.

Proposed parking areas would include standard paved impermeable surfaces, as well as paved porous surfaces, and unpaved surfaces. Of the 240 parking spaces provided on the project site, 22 of the spaces would be constructed with gravel and concrete strips to allow for stormwater infiltration within tree driplines. Additionally, 12,966 sf of the proposed parking area would be paved using porous paving materials, which would also allow for some infiltration of stormwater throughout the parking areas. The use of porous paving materials would reduce the amount of overland runoff that would otherwise be anticipated from the use of traditional, impervious materials. However, some runoff from the areas overlain with porous pavement would still be anticipated.

While permeable pavements would reduce runoff from proposed parking areas, stormwater runoff would be generated by paved areas and other areas with impervious surfaces. Currently, a total of 1.24 acres of impervious areas exist on the project site; whereas construction of the proposed project would result in a total impervious surface cover of 3.37 acres.

Runoff from the proposed impervious areas would be directed to stormwater control, LID features, throughout the site (see Figure 4.6-2). The stormwater control features are located near the source of the runoff and are intended to provide flow-based and volume-based stormwater management.

Figure 4.6-2
Preliminary Drainage Plan and Stormwater Quality Exhibit



DETAIL A
DETENTION BASIN
NTS

STORMWATER QUALITY DATA	
TOTAL PROJECT AREA:	5.92 ACRES
EXISTING TOTAL IMPERVIOUS AREA:	1.24 ACRES
PROPOSED TOTAL IMPERVIOUS AREA:	3.37 ACRES

KEYNOTES:

1. PERVIOUS PAVEMENT WITH PERFORATED PIPE UNDERDRAIN FOR STORMWATER QUALITY MANAGEMENT.
2. VEGETATED SWALE FOR STORMWATER QUALITY MANAGEMENT.
3. STORMWATER PLANTER FOR STORMWATER QUALITY MANAGEMENT.
4. DETENTION BASIN FOR STORMWATER QUALITY AND STORMWATER QUANTITY MANAGEMENT. SEE DETAIL "A", THIS SHEET
5. "HOLLYWOOD DRIVE" PARKING STALL FOR EXISTING TREE ROOT PROTECTION.
6. CONNECT TO EXISTING STORM DRAIN INFRASTRUCTURE.

NOTES:

1. SEE SEPARATE STORMWATER QUALITY CALCULATIONS BASED ON SECTION 5.5 OF THE CALIFORNIA STORMWATER BMP HANDBOOK, DATED JANUARY 2003 PER SECTION E.12.E(II).(C)2 OF THE STATE GENERAL PERMIT, DATED FEBRUARY 5, 2013.

NO. | DATE | REVISIONS | BY | APPD.

DESIGNED BY LR
DRAWN BY LR
CHECKED BY ML
SCALE: AS SHOWN

CUNNINGHAM-CUNNINGHAM ENGINEERING

CECWEST.COM

Project Planning • Civil Engineering • Landscape Architecture
Davis Office
2940 Spafford Street, Suite 200
Davis, CA 95618
(530) 758-2026

Sacramento Office
2120 20th Street, Suite Three
Sacramento, CA 95818
(916) 455-2026

HIGHBRIDGE PROPERTIES
LINCOLN 40
PRELIMINARY GRADING, DRAINAGE AND STORMWATER QUALITY EXHIBIT
DAVIS CALIFORNIA

SHEET 1 OF 1
DATE: 1/18/2017
JOB NO: 1542-04

Features providing flow-based stormwater management include vegetated swales located throughout the site as shown in Figure 4.6-2. Vegetated swales are typically wide depressions, which are planted and filled with soil. Runoff being directed to such features is allowed to infiltrate the active soil layer, which filters stormwater, reduces the volume of stormwater reaching downstream stormwater infrastructure, and slows the velocity of the runoff. The active soil layers in the vegetated swales may be underlain by a permeable underdrain, which would direct any excess runoff beyond the 2-year 24-hour storm event to existing stormwater infrastructure in Olive Drive.

The volume-based stormwater control feature would be an on-site detention basin, which would feature vegetation and an active soil layer that would act similarly to the vegetated swales. As opposed to directing stormwater runoff from impervious areas of the site directly to the stormwater main in Olive Drive, stormwater would flow to the detention basin where water would be allowed to pool. Similar to the vegetated swales, stormwater directed to the detention basin would interact with an active soil layer. Stormwater interaction with the active vegetated soil layer would retain the stormwater to the 2-year 24-hour storm event, to allow for infiltration, transpiration, and evaporation to partially reduce the volume of stormwater runoff. Allowing some of the site runoff to pool in the detention basin results in stormwater detention, and, thus, a slow, gradual release of the stormwater to the existing storm drain infrastructure only for volume in excess of the 2 year 24-hour storm event.

The stormwater control features are designed to limit the post-project 10-year peak discharge to estimated existing levels. In addition, current SWRCB requirements call for limiting the 2-year/24-hour peak discharge to pre-project levels, in order to mitigate for potential hydromodification impacts.

It should be noted that the proposed site LID features/water quality BMPs (pervious pavement, bioswales and stormwater planters) may contribute incidental storage (and potentially some peak flow attenuation) during storm events in excess of the stormwater quality storm. However, for the purposes of evaluating the 2-year or 10-year storms, Cunningham Engineering assumed that any additional storage associated with upland BMPs would be zero. Detained site runoff would flow from the proposed on-site detention basin through the City storm drain pipe system and outlet to the Davis Core Area Drainage basin.

The drainage analysis prepared for the proposed project confirms that the detention basin has been adequately sized to ensure that post-project peak flows entering the City's storm drain system in Olive Drive, during the 2-year/24-hour and 10-year/24-hour storm events, would be equal to or less than existing flows for the same storm events.[18]

[18] Cunningham Engineering, Inc. *Lincoln40: Drainage Evaluation for 2-Year and 10-Year Events*. February 24, 2017.

Design and Maintenance of Stormwater Control Features

In accordance with the City's Municipal Code, Chapter 30 Stormwater Management and Discharge Control, the stormwater control features that would be included in the proposed project must be properly maintained by the property owner. Verification of such maintenance would be, at a minimum, guaranteed by a signed stormwater maintenance agreement and stormwater maintenance plan. A fully executed and recorded version of the agreement and maintenance plan shall be filed with the County of Yolo Clerk's Office and a copy with the City of Davis Public Works Department. As specified in Article 30.04 of the City's Municipal Code, the stormwater maintenance agreement shall ensure that the proposed detention basin and stormwater features included in the proposed project would be maintained in good condition and proper repair. Furthermore, Chapter 30 of the City's Municipal Code includes provisions related to inspection and sampling of such stormwater features, which would allow for enforcement of the stormwater maintenance plan if violations were to occur.

Conclusion

In conclusion, the proposed project would result in an increase in the amount of impermeable surfaces on the project site by approximately 2.13 acres. Such an increase in impermeable surfaces would have the potential to alter the existing drainage pattern of the project site, thus increasing the peak amount of stormwater runoff entering the existing 24-inch storm drain main located in Olive Drive. However, the proposed project includes stormwater control features, which have been designed and hydrologically sized to reduce the velocity and volume of stormwater runoff prior to runoff being directed to existing infrastructure.

The stormwater control features included in the proposed project have been preliminarily designed in accordance with the State of California's Phase II Small MS4 General Permit and the City's Municipal Code, which requires that the peak and 2-year 24-hour storm event post-project stormwater runoff from the project site be equal to or less than the peak and 2-year 24-hour storm event pre-project stormwater runoff from the project site. Final sizing of the storm drain system will be required during improvement plan review to ensure that a ***significant*** impact would not occur in relation to altering existing site drainage patterns in such a way as to exceed the capacity of existing infrastructure or lead to flooding on- or off-site.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

4.6-4 Implement Mitigation Measure 4.6-2.

4.6-5 Expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a dam. Based on the analysis below, the impact is *less than significant*.

As discussed above, the City of Davis is at risk from dam failures, specifically from the Monticello Dam located on Putah Creek, approximately 20 miles from the City of Davis. If the Monticello Dam were to fail, portions of the City could be inundated by up to three meters of flood water. The Monticello Dam is regulated by the California Dam Safety Act and thus is inspected and monitored by the Division of Safety of Dams. While the potential for inundation from dam failure exists at the project site, and the entire City, the proposed project would not exacerbate such potential or increase the likelihood of dam failure. Because Monticello Dam is regulated by the California Dam Safety Act, inspected and monitored by the Division of Safety of Dams, and the proposed project would not increase the likelihood of dam failure, the proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding due to failure of a levee or dam. Therefore, the proposed project would result in a ***less-than-significant*** impact.

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. Other proposed and pending projects in the region under the cumulative context would include buildout of the City's General Plan, as well as development of the most recent planned land uses within the vicinity of the project area. Refer to Chapter 5, Statutorily Required Sections, of this EIR for more detail.

4.6-6 Cumulative impacts related to hydrology and water quality within the City of Davis. Based on the analysis below, the project's incremental contribution to this significant cumulative impact is *less than cumulatively considerable*.

Hydrology

Concurrent implementation of the proposed project and other cumulative projects could result in a significant cumulative impact related to increases in storm water runoff from increased impervious areas. As discussed above, development in the City of Davis is required to comply with the State of California's Phase II Small MS4 General Permit and Chapter 30 of the City's Municipal Code. The combined effect of these regulations is that new development in the City would not result in cumulatively considerable incremental increases in stormwater flow or increased pollutant discharge. While the proposed project has the potential to increase stormwater discharge, and degrade water quality, the incorporation of on-site stormwater control features, and the implementation of Mitigation Measure 4.6-2, would ensure that the proposed project meets the requirements of the State of California's Phase II Small MS4 General Permit and Chapter 30 of the City's Municipal Code. Such requirements would be met through the incorporation of the stormwater control features

discussed above. The design of the stormwater control features is required to maintain post-development flows equal to or less than pre-project flows, thus ensuring that project would not contribute to increased stormwater flows. In addition, the stormwater control features would reduce the potential for runoff from the proposed project to substantially reduce water quality.

Water Quality

As noted in Impact 4.6-1, construction activities resulting from the proposed project have the potential to affect water quality and contribute to localized violations of water quality standards if stormwater runoff from construction activities enters receiving waters. Additional runoff from the construction site, in combination with the other reasonably foreseeable projects in the Davis area, could carry sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of building products could result in water quality degradation if runoff containing the sediment or contaminants should enter receiving waters in sufficient quantities.

While continued development within the City of Davis could result in additional stormwater runoff and entry of pollutants into receiving waters via construction, each project is required to comply with the State and City's regulatory stormwater documents, standards, and requirements. Mitigation Measure 4.6-1 would ensure that the Lincoln40 project applicant prepares a SWPPP, and provides adequate storage capacity for the potentially polluted stormwater runoff generated by the construction activities of the project.

In addition, as noted in Impact 4.6-2, the applicant proposes to integrate LID measures throughout the project to provide stormwater quality treatment. The LID measures would include both volume-based best management practices (retention, pervious pavement, etc.) and flow-based best management practices (vegetated swales, storm water planter, etc.) in accordance with the City's Manual of Stormwater Quality Control Standards and Section E.12 of the State of California's Phase II Small MS4 General Permit. Therefore, impacts related to operational water quality would be reduced to a less-than-significant level with implementation of mitigation.

Conclusion

As demonstrated in this section of the EIR, the proposed project would not result in any significant impacts related to water quality or stormwater quality. Overall, the combined water quality effects of potentially increased amounts of pollutants and volume of runoff flows resulting from construction and operation of cumulative projects could be considered significant. However, given that the proposed project and future projects are required, through City ordinances and the State of California's Phase II Small MS4 General Permit and Construction General Permit, to implement BMPs both during and post construction and LID features in the site design for post construction, the incremental contribution of increased volume and pollutants in stormwater runoff resulting from the project would be considered less than cumulatively considerable.

Mitigation Measure(s)
None required.