15 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrology and water quality of the project site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Placer County Government Center Master Plan Update Project (PCGC Master Plan Update or proposed project). This chapter also evaluates impacts associated with implementation of the first two projects under the proposed PCGC Master Plan Update—the Health and Human Services building and the Multifamily Residential project located at 1st Street and B Avenue. The analysis in this chapter incorporates information contained in the PCGC Master Plan Update Master Drainage Report, the Health and Human Services building Preliminary Drainage Report, and the Multifamily Residential project Preliminary Drainage Report. All three reports are provided in Appendix H.

The Notice of Preparation for this EIR was circulated for public review in September 2017. The Central Valley Regional Water Quality Control Board submitted a comment letter describing regulatory and permitting requirements that should be addressed in the EIR. The Notice of Preparation and comments received in response to it are provided in Appendix A.

15.1 EXISTING CONDITIONS

Regional Surface Water Features

The project site is located in the North Auburn area within unincorporated Placer County. The project site encompasses approximately 200 acres, bounded on the east by a mix of commercial and residential uses including The Home Depot and medical offices adjacent to State Route 49 (SR 49), Bell Road on the north, Atwood Road on the south, and a self-storage facility and rural residential land uses on the west. This location is approximately 3 miles northwest of the City of Auburn downtown area. The project site and vicinity are shown in Figure 3-1 in Chapter 3, Project Description.

The PCGC campus is located within the Sacramento River Basin, which is bounded by the Sierra Nevada Mountains to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Delta-Central Sierra area to the south. The Sacramento River is the principal stream in the basin. Its major tributaries are the Pit and McCloud rivers, which join the Sacramento River from the north, and the Feather and American rivers, which are tributaries from the east (Sacramento River Watershed Program 2010).

The project site is located on a ridge at an elevation of 1,400 feet above mean sea level. The northeastern 40-acre portion of the project site drains toward SR 49 into the Rock Creek watershed, and the remaining approximately 160 acres drain toward Atwood Road into the North Auburn Ravine watershed, as shown on Figure 15-1 (Appendix J). All stormwater that flows from the site ultimately flows into the Sacramento River (Appendix H). The project region has a Mediterranean

climate and hydrology in the area is dominated by low-elevation rain, with over 85% of precipitation occurring between November and April (NID 2011). The region receives approximately 36 inches of rain annually.

The Rock Creek watershed is a subwatershed of the Dry Creek watershed, north of the project area. (Note that a creek in western Placer County is also named Dry Creek. That creek is not associated with the Dry Creek that occurs north of the PCGC campus.) Rock Creek, a major tributary to Dry Creek, flows from east to west and drains an area of approximately 4.3 square miles. Dry Creek has a drainage area of 15.5 square miles above the confluence with Orr Creek. Rock Creek Lake is located to the northeast of the PCGC campus, and is used primarily for storing water and diverting it to the Wise Canal, which is owned by Pacific Gas and Electric Company (PG&E) (Montgomery 1992a).

Auburn Ravine is a perennial stream originating just west of the City of Auburn, south of the project area. North Ravine originates approximately 0.5 miles south of the PCGC campus and is a tributary to Auburn Ravine that drains the eastern portion of the Auburn Ravine watershed. North Ravine generally flows from north to south and drains an area of 4.6 square miles above its confluence with Auburn Ravine. The Auburn Ravine drains an area of 10.8 square miles below the confluence with North Ravine. The total drainage area of Auburn Ravine is 79 square miles. Flows are seasonal and variable. Diversions from the Nevada Irrigation District (NID) and PG&E as well as discharges from the City of Auburn wastewater treatment plant contribute to flows in the summer, when the creek would otherwise be dry under average to drought conditions (County of Placer 2003). Auburn Ravine ultimately flows into the East Side Canal, which, in turn, empties into the Cross Canal approximately 1 mile east of SR 99. The Cross Canal empties into the Sacramento River approximately 10 miles north of Sacramento and about 1 mile below the confluence of the Feather River and the Sacramento River (Montgomery 1992a).

Historical streamflow data is not available for Rock Creek or North Ravine. For Auburn Ravine, the City of Auburn conducted a hydrologic analysis as part of the Environmental Impact Report (EIR) for the Auburn Wastewater Facility Plan (City of Auburn 1997, as cited in Eco:Logic Engineering, Inc. 1999). In that analysis, natural flows for Auburn Ravine were estimated from natural streamflow data for Deer Creek, a tributary of the Cosumnes River located south of Auburn Ravine. The estimated natural mean monthly streamflows for Auburn Ravine near SR 65 in Lincoln vary from a high of 70.6 cubic feet per second (cfs) in January to no flow in August and September (County of Placer 2003). However, flows in Auburn Ravine are influenced by several upstream agencies and runoff from irrigation activities, which has "dramatically changed the flow characteristics of Auburn Ravine during the typically dry season" (NID 2011). Streamflow data from NID's gauge in Auburn Ravine below SR 65 for the period 1985 through 1997 showed average streamflows varied from 117 cfs in January to 30 cfs in October (County of Placer 2003), but the wet weather flows decreased and the dry

weather flows increased slightly since 1997. "Mean monthly flows for the 1974 to 2007 irrigation seasons range from 116 cubic feet per second (cfs) in July to 37 cfs in September" (NID 2011).

An extensive network of canals and reservoirs supplies surface water for domestic use throughout the surrounding area, to the City of Auburn, and also to the residential and agricultural regions of the County to the south and west of the PCGC campus. The canals are owned and operated by three different agencies: PG&E, Placer County Water Agency (PCWA), and NID. The source of the water for most of the canals is the Bear River and Lake Combie approximately 6 miles northeast of the PCGC campus. The canals are primarily open rather than encased, allowing the inflow of runoff and surface water. In general, most of the canals transport the water from north to south, with many side diversions and spills. Some of the canals are used solely for water supply purposes (municipal and agricultural), whereas others are also used for power generation (County of Placer 1999).

The primary canal operated by NID in the vicinity of the project area is the Ophir Canal. This canal is used exclusively for water supply (agriculture and domestic).

The Combie-Ophir Canal provides water to the Ophir Canal, which runs from north to south adjacent to the eastern edge of the PCGC campus. It originates at Lake Combie located on the Bear River approximately six miles northeast of the area. The canal generally runs from north to south. The flow in the Ophir Canal is supplemented in the summer months with water from the Fiddler Green Canal, which runs parallel to PG&E's Wise Canal. Normal flow capacity of this canal is approximately 40 cfs (Montgomery 1992a). Placer County has rights to 12 miner's inches (which is equivalent to 35 gallons per minute) of the water carried in the Ophir Canal.

The canal is encased north of Bell Road, but is open and runs along 1st Street between Bell Road and Professional Drive. It is encased in a pipe between Professional Drive and Willow Creek Drive, is open and at ground surface again between Willow Creek Drive and Atwood Road (this segment is referred to as the Kemper Canal), and encased south of Atwood Road where runs south through residential neighborhoods. Farther south, at the intersection of Bean and Kemper roads, the canal is no longer enclosed. The water from the Ophir Canal is used for irrigation purposes south of Atwood Road (County of Placer 2003). NID also releases water from the Ophir Canal to a tributary of Orr Creek; this water is later diverted to Gold Hill Canal via a small reservoir on Orr Creek (County of Placer 1999).

PCWA also operates and maintains canals in the vicinity of the site. The Fiddler Green Canal extends from north to south and is located west and southeast of the site. As with the NID canals, this canal is operated solely for water supply purposes, and only small portions of it have been encased (County of Placer 1999).

PG&E operates and maintains canals in the vicinity of the site primarily for the purpose of water supply and power generation. One of these canals is the Wise Canal, which carries water from north to south. The Wise Canal is the largest canal in the study area (with a capacity of more than 500 cfs) and is not encased except in short segments where the water is diverted into penstocks (County of Placer 1999). The Wise Canal receives water from the Bear River Canal, which releases water to Halsey Forebay. This water is then released via a penstock to Halsey Powerhouse and Halsey Afterbay (located on upper Dry Creek). The water is then diverted from the Halsey Afterbay to the Wise Canal. This segment of the canal transports water from the upper Dry Creek watershed to the Rock Creek watershed, where the water is released into Rock Creek Lake. Water is then diverted from Rock Creek Lake into a lower section of Wise Canal passing into the Auburn Ravine watershed, and ending up in the Wise Forebay. At the Wise Forebay, the canal water enters into a penstock and is carried to Wise Powerhouse located along the Auburn Ravine. From here, canal water is released both to Auburn Ravine and South Canal (County of Placer 1999).

The Wise Canal differs from other smaller water supply canals in the vicinity of the site in that it has no spill points except for those into reservoirs. An emergency spillway for the canal is located at the Wise Forebay and would spill to a small tributary of the North Ravine. However, this is designed to be used only in the event of penstock failure and has not been used to date (County of Placer 1999).

Site-Specific Surface Water Features

The majority of surface water features at the PCGC campus are surface ditches and swales that convey stormwater runoff, with some culverts at street crossings. Several old storm drainpipes were constructed in the 1940s as part of the original hospital construction; these are located in the southern portion of the Study Area. This old system consists primarily of 8-inch clay drainpipes connected to catch basins. The PCGC Campus is a topographic high point, with the western portion of the site draining south into the North Auburn Ravine watershed (catchments 1, 2, 3, and 6) and the eastern portion draining north into the Rock Creek Watershed (catchments 4 and 5). The project site was separated into six main catchments based on the site topography and the locations of outfalls where stormwater leaves the site. Each catchment contains sub-catchments based on the locations of storm drain inlets and storage basins. The six total catchments were divided into 37 sub-catchments within an area of 231 acres. The system would be expected to intercept runoff from the immediate vicinity and as bound by nearby buildings and/or roads. Rainfall depths for the 2-, 10-, and 100-year, 24-hour storms were estimated from the Design Storm Procedures as 2.78, 4.53, and 6.73 inches.

Stormwater improvements have been implemented in the PCGC property in conjunction with specific projects, such as the Main Jail expansion, Juvenile Detention Center, and Finance Administration Building projects. These improvements include construction of detention basins

and installation of stormwater drains in the vicinity of the Juvenile Detention Center and the Finance Administration Building to convey runoff to the basins and from the detention basins to culverts under Atwood Road.

The Master Drainage Report provides the following description of the six catchments within the PCGC property (Appendix H1). The catchments are shown on Figure 15-1.

Catchment 1

Catchment 1 (C1) is located on the western edge of the PCGC and is bounded by Bell Road and the Combie Canal to the north and Atwood Drive to the south. C1 has an area of 88.5 acres and drains to the North Auburn Ravine watershed. Subcatchment 1J is the highest portion of C1 and includes the northern portion of the Community Development Resources Center. Flows from 1J are detained in a 0.3-acre-foot detention basin (1J/Storage1) at the southeast corner of the intersection of Bell Road and Richardson Drive. Flows leaving the detention basin flow west along Bell Road in a combination of pipes and open channels to the intersection of Bell Road and Olympic Way. Flow crosses Olympic Way through a 24-inch culvert and drains southwest in a natural channel. The natural channel continues until it enters a 0.05-acre-foot on-line detention basin (Node 1I/Storage1) located to the west of the Olympic Residential Development. The outflow from the detention basin is controlled by an 18-inch pipe and overflow spillway. The flow continues down the natural channel toward B Avenue. On the upstream side of B Avenue a small amount of flow ponds (Node 1E/Storage2) before entering three parallel box culverts (each 5.2-feet wide by 3.7-feet high) under B Avenue. Runoff from Sub-catchments 1F and 1G also flows into Node E1/Storage upstream of B Avenue. Flow passing under B Avenue then enters the large southwest pond (Node 1B/Storage1, capacity 13.4 acre-feet). Runoff from sub-catchment 1D is collected by a series of inlets along B Avenue and piped through an 18-inch pipe into the northeastern end of this pond. Flows from the Animal Services Center (Subcatchment 1C) also flow into Node 1B/Storage1 on the southern end, after being collected and detained by a 0.33-acre-foot detention basin (Node 1C/Storage1). Flows out of Node 1B/Storage are controlled by a weir box at the southern end and flow through a 48-inch diameter pipe to a natural channel. Flow is constricted at an old 6-foot wide concrete structure represented by Link 122. The southernmost storage (Node 1A/Storage1) is a natural depression, created from the natural topography and the Atwood Drive road embankment. The outfall from C1 is a 48-inch culvert under Atwood Drive with open channel downstream.

Catchment 2

Catchment 2 (C2) has an area of 41.4 acres. C2 spans the central portion of the PCGC and drains to the south towards the North Auburn Ravine watershed. The upstream extent of C2 is the southern portion of the Community Development Resources Center, Finance Administration

Building, Auburn Justice Center, and associated parking lots. A series of inlets collects runoff from Subcatchments 2B through 2F and conveys flow under Catchment 3 (the Jail complex) and to a 3-acre-foot detention basin (Node 2A/Storage1) located to the west of Jail House #4. Outflow from the detention basin is metered by an outlet control structure (Node 2A Control Structure: a combination orifice, v-notch weir and overflow weir); this feature was modeled in XPSTORM by a stage-discharge table. Flow leaves through a 42-inch pipe to a natural channel and storage pond (Node 2A/Storage2) located just north of Atwood Road. Flow from Catchment 3, and overflow from Catchment 6 combine at the Node 2A/Storage2 pond. Two culverts (one 30- and one 15-inch pipe) convey flows under Atwood Drive to an existing pond south of Atwood Road (not modeled), with the inflow to the pond designated as Outfall C2/C3.

Catchment 3

Catchment 3 (C3) has an area of 12.8 acres located in the south-central portion of the PCGC and drains to the North Auburn Ravine watershed. Catchment 3 drains the Jail and Juvenile Detention Center. Runoff is collected by the parking lots and drains through a 42-inch diameter pipe to the southern end of the Jail Complex and into the natural pond (Node 2 A/Storage2).

Catchment 4

Catchment 4 (C4) has an area of 12.7 acres located in the northeast corner of the PCGC and drains to the Rock Creek watershed. The Ophir Canal traverses C4, but is not part of the storm drain system and only receives direct precipitation. C4 collects runoff from the Health and Human Services buildings and parts of 1st Street, with flow directed beneath the Ophir Canal in a pipe. Flow travels north to a natural depression (Node 4A/Storage1) at the eastern boundary of the PCGC. Flow leaves the site through a 24-inch pipe directed east toward Professional Drive.

Catchment 5

Catchment 5 (C5) has an area of 29.9 acres located on the eastern boundary of the PCGC and drains to the Rock Creek Watershed. C5 includes the Home Depot development and the 1st Street and Professional Drive stormwater basins. Runoff from the southern end of C5 (Subcatchment 5C) drains to the 1.03-acre-foot 1st Street detention basin (Node 5C/Storage1) where the outflow is controlled by an orifice outlet. Outflow from the 1st Street detention basin combines with runoff from Subcatchment 5E and is piped along Willow Creek Drive and under the Home Depot parking lot. Runoff from the west end of C5 (Subcatchment 5D) drains to the 2.00-acre-feet Professional Drive detention basin (Node 5D/Storage1) where the outflow is controlled by an orifice outlet. Flow is then piped along the northern edge of Home Depot and routed to the 30-inch outlet pipe (Outlet C5) located at the northeast corner of the C5. On-site runoff from Home Depot is collected and detained in an underground storage facility (Node 5A/Storage1) beneath the parking lot. Flows are controlled by multiple orifices before entering the 30-inch outfall pipe.

Catchment 6

Catchment 6 (C6) drains the southeastern 39.3-acre portion of the PCGC and drains to the North Auburn Ravine watershed. C6 includes the County Government offices and the Corporation Yard. The C6 storm drain system appeared to contain some of the oldest storm drain infrastructure of the PCGC. All runoff in C6 drains toward an open channel along the north side of Atwood Drive. Many of the collector storm pipes were not incorporated into the XPSTORM baseline model as they are less than 10 inches in diameter. The model simplified the feeder drain layout by selecting a main point of concentration for each of the subcatchments. Runoff from the northern Subcatchments 6E, 6F, 6G and 6H are piped to a common junction at Richardson Drive. Runoff from Subcatchments 6B, 6C and 6D are piped towards Atwood Drive where they daylight into the open channel along Atwood Drive. Flows then converge at Richardson Drive and flow west under the road through a 36-inch culvert. After the culvert a natural channel routes flow to the west to a junction and culvert along Atwood Drive. A 22-inch culvert goes under Atwood Drive as Outfall C6. At that junction (Node 6A/6) an overflow weir allows flows in excess of the capacity of the 22-inch culvert to overflow to the east along an open channel to the Node 3A/Storage1 pond, and leave the site through Outfall C2/C3.

An abandoned water treatment pond (or square pond), which was historically used to store water for the abandoned (and demolished) DeWitt Center Water Treatment Plant, is located near the southeast corner of the PCGC property, adjacent to the eastern site boundary. Storage capacity provided by this pond was approximately 3.5 million gallons. This pond formerly received water from the Ophir Canal but is no longer in use.

A ditch/culvert system runs along the southern edge of the PCGC property boundary adjacent to Atwood Road. This ditch/culvert system conveys stormwater runoff from the area, beginning west of the 1st Street entrance. Between the Richardson Road and Main Jail entrances, the drainage is conveyed under Atwood Road to an approximately 2-acre open water pond south of Atwood Road. This pond is herein referred to as Atwood Pond. This pond has an overflow weir on its western edge, such that overflow will be discharged into the same natural drainage that the DeWitt Center Detention Basin and Atwood Road Detention Pond discharge into.

Atwood Pond is privately owned and maintained. This pond was originally a recreational pool for the PCGC property. The pond receives stormwater runoff from approximately 44 acres of Catchments 2, 3, and 6 of the project area via a ditch that runs along Atwood Road and then through a three corrugated steel culverts that runs under Atwood Road just east of the pond. These culverts are 30” and 15” (Outfall C2/C3) and a 22” (Outfall 6). In addition, 7.5 acres located on the south side of Atwood Road drain into the pond via a roadside ditch (Appendix H1).

A large portion of the PCGC property is covered with impervious surfaces, i.e., pavement, buildings, and sidewalks (Appendix C). Site soils are of the Auburn Complex and fall into Hydrologic Soils Group C (Appendix J). These soils exhibit low to medium permeability rates. Site slopes range between 1 and 10 percent. Most of the undeveloped land lies in the southwestern portion of the site around the Main Jail facility and onsite abandoned sewer pond.

Regional Flooding

Regional and local floods occur from October through April. The floods are generally caused by a combination of prolonged rainfall leading to soil saturation and a short period of intense precipitation associated with frontal convection or severe thunderstorms.

The Placer County Flood Control and Water Conservation District has sponsored three studies that reviewed the areas drained by the Auburn Ravine, Coon and Pleasant Grove creeks, and the Dry Creek located in western Placer County. These creeks and their tributaries flow through and drain western Placer County, southeastern Sutter County, and portions of Sacramento County. The studies are:

- Auburn Ravine, Coon, and Pleasant Grove Creeks Flood Mitigation, Volumes 1 and 2 (CH2M Hill, 1993);
- Placer/Sutter County Joint Flood Study, Auburn Ravine, Coon and Pleasant Grove Creeks (CH2M Hill, 1994); and
- The Placer County Flood Control and Water Conservation District and Sacramento County Water Agency Final Report, Dry Creek Watershed Flood Control Plan (James M. Montgomery, 1992b).

These studies were prepared to respond to the concern over potential increases in flooding and to develop potential mitigation for impacts associated with development.

Planned land uses within Placer County allow for industrial, commercial, and residential development that would normally increase flood flows and volumes. An extensive area upstream of the Cross Canal, in eastern Sutter County and western Placer County, has a history of periodically flooding, as does the western Placer County Dry Creek through and downstream of the City of Roseville.

While development can have large impacts on peak flows and volumes, hydrologic modeling of the watershed indicated that “existing” upstream development in the Auburn Ravine/Pleasant Grove Creek watersheds could result in an approximately 0.5-inch increase in flooding depth in the lower (western) watershed during the 100-year flood and that existing flooding problems in

the western portion of the watershed would not be significantly reduced, even if all existing development could be removed from the watershed (CH2M Hill 1993).

Land use projections based on General and Specific Plans in Placer County show that approximately 10 percent of the area developing in the future would have impervious surfaces. Based upon HEC 1 modeling, the CH2M Hill analysis determined that the change in watershed land use from existing conditions to future conditions would result in an approximately 0.12-foot increase in flood stage upstream of the Cross Canal during the 24-hour 100 year storm. The corresponding increase for the 8-day 100-year storm would be approximately 0.08 feet.

In support of the Auburn/Bowman Community Plan Environmental Impact Report (Planning Concepts 1994), James M. Montgomery conducted a drainage study of the region to provide Placer County with information on existing and future flood and water quality issues. The flood of February 1986 caused the most severe flooding damage to date in the region. Most of the flooding problems were due to inadequate bridges and culverts, which resulted in overtopping of these structures. However, at several locations in the Community Plan area, flooding of structures did occur in the floodplains. The Auburn/Bowman Community Plan Environmental Impact Report provides a summary of the known existing problem areas due to flooding. The problem areas identified for the Rock Creek and North Ravine watersheds include:

North Ravine

- Vada Ranch Road at North Ravine
- Calnick Lane at North Ravine
- Warren Way at North Ravine
- Millertown Road at North Ravine
- Mt. Vernon Road at North Ravine
- Harris Road at North Ravine
- Vista Road at North Ravine
- Kemper Road at North Ravine
- Millertown Road at North Ravine Tributary
- Mt. Vernon Road at North Ravine Tributary
- Bar Ranch Road at North Ravine Tributary

Rock Creek Watershed

- Sherwood Way at Rock Creek
- Highway 49 Bridge at Rock Creek
- Joeger Road and Rock Creek
- Richardson Drive at Rock Creek
- Rock Creek Road at Rock Creek
- New Airport Road at Rock Creek
- New Airport Road at Rock Creek Tributary

AR Associates conducted a drainage study for the Main Jail expansion project (NFA 2001). With creation of the 0.69-acre-foot DeWitt Center Detention Basin described above, the study indicated that post-project flows would be the same as or below pre-project flows. The estimated peak flows are summarized in Table 15-1. However, despite the reduced flows, the study indicates that

Atwood Road, with an elevation of 1,390.7 feet, would be overtopped during a 100-year flood event. As shown on Table 15.1, the estimated water surface elevation at Atwood Road is 1,390.95 feet with the 0.55-acre-foot basin, or approximately 0.25 feet above the road elevation.

The PCGC property is not located within the 100-year floodplain. However, peak flow conditions currently result in flooding at Atwood Road. The site does not lie within a sole source aquifer recharge area as designated by the U.S. Environmental Protection Agency (EPA) (NFA 2001).

Cartwright completed three drainage reports for the PCGC Master Plan Update and the two individual construction projects anticipated to occur in the first phase of project implementation: Placer County Government Center Master Drainage Report (Appendix H1), the Preliminary Stormwater Analysis for the Placer County Government Center – Health and Human Services (Appendix H2) and the Preliminary Stormwater Analysis for the Placer County Government Center – Affordable Housing Site (Appendix H3). A model was developed with the XP-STORM platform for the entire 200-acre PCGC to gain an understanding of shortcomings in the existing stormwater infrastructure, and guide stormwater planning according to state and local requirements as the campus evolves toward the ultimate build-out condition. The stormwater model was used in preparation of the Master Drainage Report, which was used to inform the project-specific stormwater analysis for the Health and Human Services building and the Multifamily Residential project located at 1st Street and B Avenue.

Surface Water Quality

The water quality in all nearby streams is of concern for wildlife and fisheries as well as for other downstream uses. Stormwater runoff from rural and urban areas may contain excessive levels of pollutants (i.e., pesticides, herbicides, hydrocarbons) that are toxic to fisheries and other aquatic life in the streams. In addition, the water drained from the site eventually reaches the Sacramento River, a primary source of water for the City of Sacramento as well as for the Sacramento-San Joaquin Delta, which has numerous water uses such as water supply, recreation, fisheries, and wildlife habitats (Montgomery 1992a).

Water quality degradation from non-point source pollutants is primarily the result of stormwater runoff carrying pollutants from the land surface to the receiving waters. The types of pollutants that may be transported to the receiving waters depend on the land use and the associated land use activities. In the vicinity of the PCGC campus, the urban/commercial uses that may contribute to non-point source pollution include automobiles (tires, oil leaks, brake linings, catalytic converters), the improper use and disposal of chemicals (pesticides, fertilizers, herbicides, paints, paint thinners, solvents, petroleum chemicals), erosion of unprotected surfaces, structural surfaces (street pavement, galvanized pipes, roofing materials,

wood preservatives), and solid waste (litter and debris, vegetative matter, pet droppings) (Montgomery 1992a).

Stormwater runoff originating in the majority of the PCGC campus drains to North Ravine, then into Auburn Ravine and then into the western Placer County Dry Creek. Stormwater runoff originating in the northeastern portion of the PCGC campus drains to the Rock Creek watershed. These surface waters are tributary to the Sacramento River. Key beneficial uses of the receiving waters are designated as municipal, domestic, and agricultural supply, recreation, and freshwater habitat (CVRWQCB 1998).

Groundwater Supply

As discussed in the Auburn Bowman Community Plan EIR (County of Placer 1999), there are no significant sources of groundwater in the vicinity of the PCGC campus due to the subsurface conditions. The sedimentary rock unit is of insufficient extent to provide a groundwater resource in the area and the volcanic rock unit is impermeable and contains no groundwater.

15.2 REGULATORY FRAMEWORK

Federal Regulations

The Clean Water Act

The CWA (33 U.S.C. 1251 et seq.), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Important sections of the act are as follows:

- CWA Sections 303 and 304 provide for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives. California is required to establish TMDLs for each pollutant/stressor. A TMDL defines how much of a specific pollutant/stressor a given water body can tolerate and still meet relevant water quality standards. The impairments applicable to the project's receiving waters are described in Section 4.7.2.
- CWA Section 401 (Water Quality Certification) requires an applicant for any federal permit that proposes an activity which may result in a discharge to waters of the United States, to obtain certification from the state that the discharge will comply with other provisions of the act. No federal approvals are necessary to permit the proposed project, and thus no CWA Section 401 certification will be required.

- CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program is administered by the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs), who have several programs that implement individual and general permits related to construction activities, stormwater runoff quality, and various kinds of non-stormwater discharges. The County has a NPDES Permit from the Central Valley Regional Water Quality Control Board (CVRWQCB) and all projects in the County are required to comply with the NPDES Permit requirement that address stormwater runoff discharges to a water of the United States (i.e., the Sacramento–San Joaquin Delta).
- CWA Section 404 establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is jointly administered by the U.S. Army Corps of Engineers and the EPA. The project is not expected to require a permit under CWA Section 404 because grading and land disturbance will not involve dredge or fill into waters of the United States.

Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level this includes the EPA, the U.S. Army Corps of Engineers, the Bureau of Reclamation, and the major federal land management agencies such as the U.S. Forest Service and the Bureau of Land Management. At the state level, with the exception of tribal lands, the California EPA and its sub-agencies, including the SWRCB, have been delegated primary responsibility for administering and enforcing the CWA in California.

National Pollutant Discharge Elimination System

The NPDES program was developed by the EPA in accordance with Section 303 of the CWA. This program regulates all discharges to waters of the United States, including stormwater discharges associated with municipal drainage systems, construction activities, industrial operations, and "point sources" (such as wastewater treatment plant discharges and other direct discharges to water bodies). The intent of the NPDES program is to protect surface water quality. In California, the NPDES program is administered by the SWRCB and implemented and enforced by the RWQCBs.

Placer County is designated within the NPDES Phase II General Permit, which the SWRCB adopted in April 2003. This general permit applies to the discharge of stormwater from small municipal separate storm sewer systems (MS4s). Under this permit, stormwater discharges must not cause or contribute to an exceedance of water quality standards contained in a Statewide Water Quality Control Plan, the California Toxics Rule, or the applicable RWQCB Basin Plan. The project area is within the Central Valley RWQCB's jurisdiction. The SWRCB Water Quality Order 2013-001-DWQ, NPDES General Permit No. CAS000004 for Waste Discharge Requirements for

Storm Water Discharges from Small MS4s (Phase II MS4 Permit), requires stormwater controls to reduce pollutants to the maximum extent practicable. In April 2016, Placer County and other local jurisdictions adopted a West Placer Storm Water Quality Design Manual to assist project applicants to comply with the requirements of the Phase II MS4 Permit for post-construction storm water measures in a standardized format.

The SWRCB Water Quality Order 2009-0009-DWQ, NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, authorizes a general permit for stormwater discharges associated with construction activities that disturb more than 1 acre. Construction activities subject to the permit include clearing, grubbing, grading, stockpiling, and excavation activities. The general permit requires submittal of a Notice of Intent to comply with the permit and the development of a stormwater pollution prevention plan (SWPPP) that must address the following:

- Plans for implementation of structural and operational best management practices (BMPs) to prevent and control impacts to surface water during construction
- Inspection and maintenance of BMPs throughout all phases of construction
- Monitoring of runoff quality during all phases of construction
- Prevention and control of post-construction impacts to runoff quality

The Central Valley Region RWQCB Order R5-2008-0081/NPDES Permit No. CAG995001, Waste Discharge Requirements General Order for Dewatering and Other Low Threat Discharges to Surface Waters, addresses potential discharges of low water quality threat wastewater. Discharges included under this permit are those that are of short duration (4 months or less) or low flow (average dry weather discharge does not exceed 0.25 million gallons per day). Types of discharges covered by this permit that could occur as part of the proposed project include construction dewatering, pipeline pressure testing, and pipeline flushing or dewatering.

Flood Protection

FEMA is responsible for determining flood elevations based on available studies pursuant to the National Flood Insurance Program Final Rule (CFR Parts 59 and 61). FEMA is also responsible for developing the flood insurance rate maps, which are used in the National Flood Insurance Program. No FEMA-mapped floodplains occur on the project site.

Federal Antidegradation Policy

The federal antidegradation policy is designed to protect water quality and water resources. The policy directs states to adopt a statewide policy that includes the following primary provisions: (1) existing instream uses and the water quality necessary to protect those uses shall be maintained

and protected; (2) where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and (3) where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

State Regulations

Porter–Cologne Water Quality Control Act

The Porter–Cologne Act (codified in the California Water Code, Section 13000 et seq.) is the primary water quality control law for California. Whereas the CWA applies to all waters of the United States, the Porter–Cologne Act applies to waters of the state, which includes isolated wetlands and groundwater in addition to federal waters. It is implemented by the SWRCB and the nine RWQCBs. In addition to other regulatory responsibilities, the RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the state[1] could cause pollution or nuisance, including impacts to public health and the environment.

The act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. California Water Code Section 13260 subdivision (a) requires that any person discharging waste or proposing to discharge waste, other than to a community sewer system, that could affect the quality of the waters of the state, to file a Report of Waste Discharge with the applicable RWQCB. For discharges directly to surface water (waters of the United States), an NPDES permit is required, which is issued under both state and federal law; for other types of discharges, such as waste discharges to land (e.g., spoils disposal and storage), erosion from soil disturbance, or discharges to waters of the state (such as groundwater and isolated wetlands), Waste Discharge Requirements (WDRs) are required and are issued exclusively under state law. WDRs typically require many of the same best management practices (BMPs) and pollution control technologies as required by NPDES-derived permits.

Construction General Permit (SWRCB Order 2009-0009-DWQ, as amended). For stormwater discharges associated with construction activity in the State of California, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects in

[1] "Waters of the state" are defined in the Porter–Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050(e)).

which construction activity disturbs 1 acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires the development and implementation of a stormwater pollution prevention plan (SWPPP), which would include and specify water quality BMPs designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Permit, and the SWPPP must be prepared and implemented by qualified individuals as defined by the SWRCB. The project applicant must submit a Notice of Intent (NOI) to the SWRCB to be covered by a NPDES permit and prepare the SWPPP prior to the beginning of construction.

Soil disturbances associated with project construction are anticipated to occur; therefore, the project would require coverage under the Construction General Permit.

Groundwater Quality Regulations

The SWRCB regulates activities that could result in adverse impacts to groundwater quality. Policies and regulations promulgated by the SWRCB (either under its Clean Water Act authority or state-derived authority) are implemented and enforced by the RWQCBs. None of the groundwater-related activities governed by NPDES permits or waste discharge requirements (WDRs) issued by the Lahontan RWQCB are included in the proposed project.

In general, SWRCB policy prohibits degradation of groundwater quality. In cases where impacts occur, the Lahontan RWQCB typically requires restoration of impacted aquifers so residual concentrations do not exceed the EPA's Maximum Concentration Limits for drinking water. Regulations related to drinking water quality are discussed in Chapter 17, Public Services and Utilities.

State Nondegradation Policy

In 1968, as required under the federal antidegradation policy described previously, the SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

a. Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.

b. Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements which would ensure (1) pollution or nuisance would not occur and (2) the highest water quality consistent with the maximum benefit to the people of the state would be maintained.

Local

Placer County General Plan

The goals and policies listed in the following text summarize the priorities of the *Placer County General Plan* (County of Placer 2013) related to hydrology and water quality, and Appendix C of this Draft EIR provides an evaluation of the proposed project's consistency with applicable General Plan policies.

Stormwater Drainage

Goal 4.E: To collect and dispose of stormwater in a manner that least inconveniences the public, reduces potential water-related damage, and enhances the environment.

Policies

4.E.1: The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural features.

4.E.4: The County shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County Land Development Manual.

4.E.6: The County shall continue to support the programs and policies of the watershed flood control plans developed by the Flood Control and Water Conservation District.

4.E.10: The County shall strive to improve the quality of runoff from urban and suburban development through use of appropriate site design measures including, but not limited to vegetated swales, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, rooftop and impervious area disconnection, porous pavement, and other best management practices (BMPs).

4.E.11: The County shall require new development to adequately mitigate increases in stormwater peak flows and/or volume. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within and immediately adjacent to Placer County.

4.E.12: The County shall encourage project designs that minimize drainage concentrations and impervious coverage and maintain, to the extent feasible, natural site drainage conditions.

4.E.13: The County shall require that new development conforms with the applicable programs, policies, recommendations, and plans of the Placer County Flood Control and Water Conservation District.

4.E.14: The County shall require projects that have significant impacts on the quantity and quality of surface water runoff to allocate land as necessary for the purpose of detaining post-project flows, evapotranspiring, infiltrating, harvesting/using, and biotreating stormwater, and/or for the incorporation of mitigation measures for water quality impacts related to urban runoff.

4.E.15: The County shall identify and coordinate mitigation measures with responsible agencies for the control of storm drainage systems, monitoring of discharges, and implementation of measures to control pollutant loads in urban stormwater runoff (e.g., California Regional Water Quality Control Board, Placer County Environmental Health Division, Placer County Department of Public Works, CDRA Engineering and Surveying Division, Placer County Flood Control and Water Conservation District).

Water Resources

Goal 6.A: To protect and enhance the natural qualities of Placer County's rivers, streams, creeks and groundwater.

Policies

6.A.5: The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff and to encourage the use of BMPs for agricultural activities.

6.A.10: The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

6.A.13: The County shall protect groundwater resources from contamination and further overdraft by pursuing the following efforts:

a. Identifying and controlling sources of potential contamination;

b. Protecting important groundwater recharge areas;

c. Encouraging the use of surface water to supply major municipal and industrial consumptive demands;

d. Encouraging the use of treated wastewater for groundwater recharge; and

e. Supporting major consumptive use of groundwater aquifer(s) in the western part of the County only where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area.

Auburn/Bowman Community Plan

The *Auburn/Bowman Community Plan* contains policies governing development in the project vicinity. Below is a list of hydrology and water quality goals and policies, found in the Environmental Resources Management Element, that are applicable to the proposed project.

Goals IV.B.3.a

2. Conserve and enhance, and protect from degradation, surface and ground water supplies and adequately plan for the development and protection of these resources for future generations
3. Safeguard and maintain natural waterways to ensure water quality, flora and fauna species diversity and unique wildlife habitat preservation.
4. Reduce flood hazards both on-site and downstream.

B.3.b.(1) Improve water quality by eliminating existing water pollution sources and by discouraging activities which include the use of hazardous materials around wetland and groundwater recharge areas.

B.3.b.(2) Preserve and enhance watersheds, particularly those adjacent to domestic water supply sources. Where urban or suburban

development is permitted within such watersheds, require that urban runoff be adequately treated before being released.

B.3.b.(6) Promote water conservation through development standards, building requirements, landscape design guidelines, and other applicable policies and programs.

B.3.b.(15) Continue to implement and enforce the *Grading Ordinance* and *Flood Damage Prevention Ordinance.*

B.3.b.(16) Ensure that new development storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's *Stormwater Management Manual* and the County *Land Development Manual*.

B.3.b.(17) Require new development to detain increases in peak stormwater runoff, or to pay appropriate in-lieu fees for compensating improvements, in all areas recommended for local detention in the *Auburn/Bowman Community Plan Hydrology Study* (Appendix D of the Plan's Background Report).

B.3.b.(18) Reduce the negative impacts on water quality resulting from urban runoff for all commercial, industrial, and residential projects by treating such runoff before it enters intermittent or permanent streams. All feasible mitigation measures should be considered, including, but not limited to, artificial wetlands, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, wet scrubbing of parking areas with a scrubbing/vacuum machine and proper wash water disposal, or other effective Best Management Practices, where appropriate.

B.3.b.(23) Evaluate potential flood hazards in an area prior to the approval of future development projects.

B.3.b.(26) Assure that new development conforms to the adopted programs, recommendations, and plans of the Placer County Flood Control and Water Conservation District.

IV.C.2.p Protect natural areas along creeks and canals through the use of non-development setbacks which may vary according to the significance of the area to be protected. (Where canals are to be enclosed and/or

undergrounded, the water quality shall be considered in determining whether naturalized areas along canals shall be protected.)

Goals IV.C.1

1. Protect and preserve open spaces vital for wildlife habitat and/or which contain major or unique ecological significance.

2. Protect the natural beauty and minimize disturbance of natural terrain and vegetation.

3. Provide open space to shape and guide development and to enhance community identity.

4. Conserve visual resources of the community, including important vistas and wooded areas.

Policy IV.C.2.f. In the design and construction of new development, preserve the following types of areas and features as open space to the maximum extent feasible: high erosion hazard areas; areas subject to landslide or with severe slope stability problems; areas with high fire risk; scenic and trail corridors; streams and other areas subject to flooding from a 100-year storm; streamside vegetation; wetlands; significant stands of vegetation; wildlife corridors; and any areas of special ecological significance.

Policy 6.A.6 The County shall require development projects to comply with the municipal and construction stormwater permit requirements of the Federal Clean Water Act National Pollutant Discharge Elimination System (NPDES) Phase I and II programs and the State General Municipal and Construction permits. Municipal requirements affecting project design and construction practices are enacted through the County's Stormwater Quality Ordinance. Separate construction permits may be required by and obtained through the State Water Resources Control Board.

Policy 6.A.7. All new development and redevelopment projects shall be designed so as to minimize the introduction of pollutants into stormwater runoff, to the maximum extent practicable, as well as minimize the amount of runoff through the incorporation of appropriate Best Management Practices.

Policy 6.A.8 The County shall support implementation of Low Impact Development site design and Watershed Process Management requirements for new and redevelopment projects in accordance with the NPDES Phase I and II programs, and applicable NPDES permits.

Policy 6.B.3 The County shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development. Development shall be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands.

Placer County Stormwater Quality Program

Placer County is a designated municipal permittee under the federal NPDES, which regulates stormwater flows into natural water bodies. The NPDES regulations require permitted areas to implement specific activities and actions to eliminate or control stormwater pollution. Under the Phase I NPDES program, Placer County shares a permit with El Dorado County and the City of South Lake Tahoe for the Lake Tahoe watershed area. Under the Phase II NPDES program, Placer County is permitted in the western county area and in the Truckee River Basin. The County's Stormwater Quality Program incorporates federal and State regulations for stormwater quality and includes educational outreach to inform members of the public and businesses of the effects of their activities, controls on construction activities, standards for design of new developments, and a program to assure that County operations themselves are clean. The County's Stormwater Quality Ordinance (Article 8.28, discussed in further detail below) effectively prohibits the disposal of anything except clean water into ditches, creeks, and streams. The County implements the Stormwater Quality Program countywide. The cities of Auburn, Colfax, Lincoln, Loomis, Rocklin, and Roseville, each have their own separate permits.

Stormwater Management Manual

The Placer County Flood Control and Water Conservation District formulates regional strategies for flood control management. According to the Placer County Flood Control and Water Conservation District website, "the primary purpose of the District is to protect lives and property from the effects of flooding by comprehensive, coordinated flood prevention planning" (Placer County FCWCD 2014). This is frequently accomplished with the use of BMPs and engineered structures. The Placer County Flood Control and Water Conservation District's *Stormwater Management Manual* (Placer County FCWCD 1990) presents policies, guidelines, and specific development criteria for stormwater management. The manual addresses the following elements

that must be included in a construction project to mitigate impacts related to stormwater (Placer County FCWCD 1990):

- Drainage structure planning and design to avoid damages to structures or improvements during the 100-year event and prevent inundation of developed or to-be-developed portions of private property during the 10-year event
- Use of detention basins to reduce post-project runoff rates and/or volumes to up to 90% of pre-project levels
- Floodplain Management Plan
- System Monitoring Program
- Operations and Maintenance Program

The *Placer County Land Development Manual* (County of Placer 1996) contains a storm drainage section that supplements the *Stormwater Management Manual*. This section of the Land Development Manual provides objectives and standards that seek to provide a uniform drainage system throughout the County, with primary consideration for avoiding property damage and maintaining natural conditions. The Land Development Manual's storm drainage section identifies minimum requirements for drainage reports and Improvement Plans, and establishes minimum criteria and standards for drainage infrastructure design and maintenance.

Placer County Flood Damage Prevention Ordinance (Placer County Code Article 15.52) addresses floodplain management. The ordinance limits construction within the 100-year floodplain to prevent damage to structures and to limit the effect of development on base flood elevations.

Placer County Code

The County Code includes ordinances associated with hydrology and water quality (Chapter 15, Building and Development). The Stormwater Quality Ordinance (Article 8.28) is intended to ensure that Placer County is compliant with State and federal laws related to stormwater quality by enhancing and protecting the quality of waters of the State in the County through reducing pollutants in stormwater discharges to the maximum extent practicable and controlling non-stormwater discharges to the storm drain system. The Ordinance requires the use of BMPs to reduce adverse effects of polluted runoff discharges on waters of the State, and prohibits illicit discharges to the storm drain system. The Ordinance establishes the County's authority to adopt requirements for stormwater management, including source control requirements, to reduce pollution to the maximum extent practicable; requirements for development projects to reduce stormwater pollution and erosion both during construction and

after the project is complete; and enables the County to implement and enforce any stormwater management plan adopted by the County.

Grading, Erosion and Sediment Control Ordinance

The County's Grading, Erosion and Sediment Control Ordinance (Article 15.48) regulates grading on property within the unincorporated area of Placer County in order to safeguard life, limb, health, property and public welfare; to avoid pollution of watercourses with hazardous materials, nutrients, sediments, or other earthen materials generated on or caused by surface runoff on or across the permit area; and to ensure that the intended use of a graded site is consistent with the PCGP, any specific plans adopted thereto and applicable Placer County ordinances including the Zoning Ordinance, Flood Damage Prevention Ordinance (Article 15.52), Environmental Review Ordinance (Chapter 18 of the Placer County Code), and applicable chapters of the California Building Code. Part 6 of Article 15.48 sets forth design standards for grading activities such as excavation, slopes, fill soil, setbacks, and drainage.

15.3 PROJECT IMPACTS

Significance Criteria

The significance criteria used to evaluate the project impacts to hydrology and water quality are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to hydrology and water quality would occur if the project would:

1. Violate any water quality standards or waste discharge requirements.
2. 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 pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
3. 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 which would result in substantial erosion or siltation on or off site.
4. Substantially alter the existing drainage patter 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 which would result in flooding on or off site.
5. 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.
6. Otherwise substantially degrade water quality.

7. Place housing within a 100-year flood hazard areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
8. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
9. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
10. Result in inundation by seiche, tsunami, or mudflow.

Impact Analysis

Impact 15-1	**Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality?**		
	PCGC Master Plan Update	*Health and Human Services Building*	*Multifamily Residential Project*
Level of Significance:	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures:	Mitigation Measures 14b, 15a through 15d	Mitigation Measures 14b, 15a through 15d	Mitigation Measures 14b, 15a through 15d
Significance after Mitigation:	Less than Significant	Less than Significant	Less than Significant

PCGC Master Plan Update

The Master Plan Update anticipates retention of approximately 650,000 square feet of existing building space, as well as construction of approximately 410,000 square feet of new County offices and facilities, 30,000 square feet of community uses, approximately 182,800 square feet of new mixed use, including retail and office space, and 485 multifamily dwelling units in 486,800 square feet.

Construction

Localized site clearing, grading, and project construction under the Master Plan Update would occur on approximately 160 acres of the almost 200-acre site. Details of proposed site grading, including total area of grading disturbance and volume of soil excavation, are provided in Chapter 14, Geology, Soils, Seismicity, and Paleontology.

Site grading and construction activities would increase the potential for soil erosion and sediment transport and delivery to the Dry Creek watershed by decreasing vegetative cover, breaking up consolidated soils, and modifying site drainage. Further impacts to water quality during construction

could potentially result from leaks or spills of fuel or hydraulic fluid used for grading and construction equipment, or leaks or spills of construction materials, such as paints and solvents.

Each individual project applicant would be required to submit Improvement Plans for review and approval by the Placer County Engineering and Surveying Division (ESD). Mitigation Measure 14b, included in Chapter 14, Geology, Soils, Seismicity, and Paleontology, identifies minimum requirements for the Improvement Plans, including revegetation of disturbed areas and erosion control. The project area is within the NPDES MS4 Phase II Permit area and therefore projects creating and/or replacing more than 5,000 square feet of impervious area are regulated projects subject to the post-construction permit requirements. Mitigation Measure 15a requires compliance with the NPDES MS4 Phase II Permit and the preparation of a Storm Water Quality Plan in accordance with the West Placer Storm Water Quality Design Manual to be submitted with each applicable project's Improvement Plan submittal. Each individual project applicant would also be required to submit a Final Drainage Report for review and approval by the Placer County ESD. As stipulated in Mitigation Measure 15b, the drainage report must include BMPs to minimize erosion, water quality degradation, and discharge of pollutants to stormwater. Some of the BMPs that could be implemented during construction include silt fencing, sand bags, fiber rolls, stabilized construction entrances, sedimentation basins, drain inlet protection, stabilized construction accesses and material management, and other soil stabilization measures.

Any individual project that proposes grading and site disturbance in excess of 1 acre (within the overall Master Plan) is subject to the NPDES construction permit requirements, as identified in Mitigation Measure 15c. As part of NPDES compliance, these projects would be required to prepare and implement a SWPPP. The SWPPP would include the following four major elements:

1. Identify pollutant sources, including sources of sediment that may affect the quality of stormwater discharges from the construction site.
2. Identify non-stormwater discharges.
3. Identify, construct, implement in accordance with a time schedule, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges, from the construction site during construction.
4. Identify, construct, implement in accordance with a time schedule, and assign maintenance responsibilities for post-construction BMPs, which are measures to be installed during construction that are intended to reduce or eliminate pollutants after construction is completed.

The SWPPP for construction activities is required to include site-specific structural and operational BMPs to prevent and control impacts to runoff quality, measures to be implemented before each storm event, inspection and maintenance of BMPs, and monitoring of runoff quality by visual and/or analytical means. The *California Stormwater BMP Handbook for Construction* (California

Stormwater Quality Association 2004) and the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions* (California Stormwater Quality Association 2007), provide examples of BMPs that could be used. BMPs that could be included in the SWPPP are as follows:

- Scheduling materials deliveries to provide for minimal on-site storage and/or providing covered storage for materials wherever practical
- Designating specific areas for overnight construction equipment storage and maintenance, and providing runoff control around those areas to minimize the potential for runoff to contact spilled materials
- Establishing procedures for daily work site cleanup and immediate cleanup of spilled materials and contaminated soil
- Establishing a program of site inspections to ensure that BMPs are consistently implemented and effective
- Conducting visual monitoring of on-site runoff quality
- Placing fiber rolls around drain inlets to prevent sediment and construction-related debris from entering the inlets
- Placing fiber rolls along the perimeter of the site to reduce runoff flow velocities and prevent sediment from leaving the site, and sandbags around potentially affected off-site inlets to prevent sediments from entering the inlets
- Placing silt fences downgradient of disturbed areas to slow down runoff and retain sediment
- Specifying that all disturbed soil will be seeded, mulched or otherwise protected by October 15

Any individual project site that is smaller than 1 acre would be required to comply with Placer County's Grading, Erosion, and Sediment Control (Article 15.48). The Ordinance requires measures such as, but not limited to, temporary mulch, revegetation, slope stabilization, dust prevention, and preparation of erosion and sediment control plans (to County standards). Mitigation Measure 15d requires permanent water quality Best Management Practices to be shown on the Improvement Plans and includes ongoing maintenance obligations. Implementation of Mitigation Measures 14b, 15a and 15b would ensure that potentially significant impacts to water quality during proposed construction activities would be less than significant under the Master Plan Update.

Operation

Following individual project construction, site soils and slopes would be stabilized by revegetation, asphalt paving, landscaping, and building coverage. These features would reduce

potential for erosion and sediment generation from the project site. However, runoff flowing over these surfaces could carry water contaminants, such as automobile fluids, to downstream surface waters.

Runoff from new impervious surfaces in the developed condition could transport typical urban pollutants (automotive fluids, chemicals from landscape and structural maintenance, soil particles, and solid waste) into drainages during storm events and could degrade surface water quality in receiving waters. The majority of the site contains well-drained silt loam soils underlain by metamorphic rock. The drainage analysis also notes that portions (5%) of the site contain soils that have a very rapid runoff characteristic with moderate permeability. In these areas, the conversion of soil to impervious surfaces could result in an increase in runoff.

One such area is the area south of the Main Jail (including the area proposed for the mixed-use portion in the southeast corner of the PCGC property). In those areas, new impervious surfaces would result in an increase in runoff. These areas would require design and treatment such as swales and buffer strips to allow for infiltration of runoff.

Consistent with the NPDES Phase II MS4 Permit and the *West Placer Storm Water Quality Design Manual*, BMPs would be implemented to reduce the volume of sediment and other pollutants transported to the watershed. Small-scale natural and constructed features would be integrated with landscaping and grading along roadways. Permanent facilities, such as a specially designed catch basins, vegetated swales, vaults, water quality basins, and filters, would be built to treat the stormwater and snowmelt runoff from new roadways so sediment, oil and grease, nutrients, and trace metals may be removed prior to discharge to natural waterways. In some areas, cut-off ditches would be used to keep the road runoff separate from runoff from undeveloped areas. Areas disturbed during construction that are not otherwise improved would be promptly revegetated. In addition, runoff from undeveloped areas would be kept separate from new impervious areas until after the BMP facilities are constructed.

Implementation of Mitigation Measures 14b, and 15a through 15d, as described previously, would ensure that the potentially significant impacts to water quality from operation of the PCGC Master Plan Update are reduced to less than significant.

Health and Human Services Building

Construction of the Health and Human Services building would result in a three-story building and associated parking area on a 10.7-acre project site within the greater PCGC campus; the proposed project would require grading and increase the amount of impervious surfaces onsite, thereby altering the existing site drainage. The proposed project includes three drainage management areas which have been engineered to provide drainage patterns that would be similar to pre-project

conditions. The site would drain to two landscaped areas along Richardson Drive, which would include bioretention areas. These bioretention areas would provide biofiltration which would serve as the primary water-quality treatment features for the proposed project. These water quality features for the proposed project were designed according to the guidance of the West Placer County Storm Water Design Manual. The purpose of the Manual is to provide regulatory guidance to comply with the Clean Water Act and the Phase II MS4 Permit (SWRCB Water Quality Order No. 2013-001-DWQ), so by following the design guidance of the Manual the project would not violate any water quality standards. Additionally, the proposed project site would disturb more than 1 acre of land and therefore would be required to comply with the NPDES Construction General Permit, including preparation of a SWPPP to minimize water quality degradation. Implementation of Mitigation Measures 14b, and 15a through 15d, as discussed previously, would ensure that the potentially significant impacts to water quality from construction and operation of the proposed project are reduced to less than significant.

Multifamily Residential Project

The proposed project would result in the creation of a Multifamily Residential development with up to 100 apartments in four buildings on an approximately 3 acre project site within the larger PCGC campus. This project would require grading and would increase the amount of impervious surfaces onsite, thereby altering the existing site drainage and water quality. Water quality features for the proposed project were designed according to the guidance of the West Placer County Storm Water Design Manual (2016). The purpose of the Manual is to provide regulatory guidance to comply with the Clean Water Act and the Phase II MS4 Permit (SWRCB Water Quality Order No. 2013-001-DWQ). By following the design guidance of the Manual, the Project will not violate any water-quality standards. The proposed project site would disturb more than 1 acre and therefore would be required to comply with the NPDES Construction General Permit, including preparation of a SWPPP in order to minimize water quality degradation. Implementation of Mitigation Measures 14b, and 15a through 15d would ensure that the potentially significant impacts to water quality from construction and operation of the proposed project are reduced to less than significant.

Impact 15-2	Would the project 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 which would result in substantial erosion or siltation on- or off-site?		
	PCGC Master Plan Update	*Health and Human Services Building*	*Multifamily Residential Project*
Level of Significance:	Potentially Significant	Less than Significant	Less than Significant
Mitigation Measures:	Mitigation Measures 15a through 15d	None Required	None Required
Significance after Mitigation:	Less than Significant	Less than Significant	Less than Significant

PCGC Master Plan Update

The PCGC Master Plan Update anticipates retention of approximately 650,000 square feet of existing building space, as well as construction of approximately 410,000 square feet of new County offices and facilities, 30,000 square feet of community uses, approximately 182,800 square feet of new mixed use, including retail and office space, and 485 multifamily dwelling units in 486,800 square feet. The Master Drainage Report (Appendix H1), analyzed the effects of the changes planned in the Master Plan Update on stormwater runoff and maximum peak flows in the PCGC property. As described above in Section 15.1, the project site is comprised of two watersheds. Approximately 80% of the PCGC property drains south into the North Auburn Ravine watershed; the remaining 20% of the site drains north into the Rock Creek watershed. There are a total of 6 catchments. Catchments 1, 2, 3, and 6 drain to the North Auburn Ravine watershed; catchments 4 and 5 drain to the Rock Creek watershed. Catchment 1 is located on the western boundary of the PCGC and is bounded by Bell Road and the Combie Canal to the north and Atwood Road to the south. Catchment 2 contains the central portion of the PCGC and drains to the south. Catchment 3 is located in the south-central portion of the PCGC. Catchment 4 is located in the northeast corner of the PCGC. Catchment 5 is located on the eastern boundary of the PCGC property. Catchment 6 drains the southeastern 39.3-acre portion of the PCGC property.

The PCGC Master Plan Update proposes to encase the NID channel that runs parallel to 1st Street at the east end of the PCGC property. This encasement would not change the course of the irrigation canal and no other stream or river exists on site.

As discussed in Impact 15-1 above, site grading and construction activities would increase the potential for soil erosion and sediment transport and delivery to the Dry Creek watershed by decreasing vegetative cover, breaking up consolidated soils, and modifying site drainage. Each individual project applicant would be required to submit Improvement Plans for review and approval by the Placer County ESD. Implementation of Mitigation Measures 15a and 15b would ensure that each individual project design and drainage analysis incorporates low impact development post-

construction requirements in accordance with the SWMM to reduce offsite impacts as part of each project's Improvement Plan submittal. Any individual project that is larger than 1 acre (within the overall Master Plan) is subject to the NPDES program requirements, as identified in Mitigation Measure 15c. The SWPPP for construction activities is required to include site-specific structural and operational BMPs to prevent and control impacts to runoff quality, measures to be implemented before each storm event, inspection and maintenance of BMPs, and monitoring of runoff quality by visual and/or analytical means. Any individual project that is smaller than 1 acre would still be required to comply with Placer County's Grading, Erosion, and Sediment Control (Article 15.48). The Ordinance requires measures such as, but not limited to, temporary mulch, revegetation, slope stabilization, dust prevention, and preparation of erosion and sediment control plans (to County standards).

Compliance with these mitigation measures would ensure that potentially significant impacts that would result in substantially altering the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river in a manner which would result in substantial erosion or siltation on- or off-site would be less than significant under the PCGC Master Plan Update.

Health and Human Services Building

As described above in Section 15.1, the proposed Health and Human Services project site is bounded on all four sides by roads and does not include natural drainage features, such as a stream or river. Under existing conditions, runoff from the project site generally drains to the southwest toward Richardson Drive (existing Subcatchment 2B, Appendix H2). Storm drain inlets along Richardson Drive collect the runoff and direct it to a 48-inch pipe that runs beneath the Auburn Justice Center and Jail, and ultimately leaves PCGC to the south via a culvert under Atwood Drive (Outfall C2/C3).

As discussed in Appendix H2, under proposed conditions, drainage at the project site would be managed in terms of three drainage management areas. These drainage management areas have been designed to be similar to existing, pre-project conditions and would follow the existing topography. The site would drain to two landscaped areas along Richardson Drive. The landscaped areas would include bioretention areas that would serve as the primary water-quality treatment features for the proposed project. The bioretention areas would have outlet control structures that collect treated runoff and convey it to the storm main in Richardson Drive. A small portion of the site would be self-treating and would drain toward B Avenue. Because the proposed project would disturb more than 1 acre, it would require a SWPPP, which would provide guidance for stabilizing the proposed project site to prevent on-site erosion immediately following construction. Runoff from the proposed project would not enter a natural drainage-way until it leaves the PCGC campus at the Atwood Road culvert. Flows would have passed through Basin 2A for stormwater detention

and hydromodification controls prior to leaving the campus and would not exceed pre-project levels. As such, the erosive energy in off-site natural drainage-ways would be no greater than under existing conditions (Appendix H2). Therefore, the proposed project would not 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 which would result in substantial erosion or siltation on- or off-site, and the impact would be less than significant.

Multifamily Residential Project

The proposed project would result in the creation of a Multifamily Residential building on an approximately 3 acre project site within the larger PCGC campus; the proposed project would require grading and increase the amount of impervious surfaces onsite, thereby altering the existing site drainage. The proposed project will disturb more than one acre and will require a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will provide guidance for stabilizing the proposed project site to prevent on-site erosion during and immediately following construction. Runoff from the proposed project does not enter a natural drainageway until it leaves the PCGC campus. Flows will have passed through water-quality features and Subcatchment 5D or Subcatchment 4A for stormwater detention and hydromodification controls prior to leaving the campus and will not exceed pre-project levels. As such, the erosive energy in off-site natural drainage ways will be no greater than under pre-project conditions (Appendix H3). Thus, the proposed project will have a less than significant impact with regards to substantial erosion or siltation.

Impact 15-3	**Would the project 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 which would result in flooding on- or off-site?**		
	PCGC Master Plan Update	*Health and Human Services Building*	*Multifamily Residential Project*
Level of Significance:	Potentially Significant	Potentially significant	Potentially Significant
Mitigation Measures:	Mitigation Measure 15f	Mitigation Measures 15e and 15f	Mitigation Measure 15f
Significance after Mitigation:	Less than Significant	Less than Significant	Less than Significant

PCGC Master Plan Update

The PCGC Master Plan Update anticipates retention of approximately 650,000 square feet of existing building space, as well as construction of approximately 410,000 square feet of new County offices and facilities, 30,000 square feet of community uses, approximately 182,800 square

feet of new mixed use, including retail and office space, and 485 multifamily dwelling units in 486,800 square feet. The Master Drainage Report (Appendix H1), analyzed the effects of the changes planned in the PCGC Master Plan Update on stormwater runoff and maximum peak flows in the PCGC property. Approximately 80% of the PCGC property drains south into the North Auburn Ravine watershed; the remaining 20% of site drains north into the Rock Creek watershed. There are a total of 6 catchments.

A total of seven new stormwater basins and reconfiguration of three existing basins would be needed to meet County requirements for flood control and hydromodification management; a new small basin to control runoff from the proposed residential development in the southwest corner of the planning area (Basin 1K); a new small basin to control runoff from Subcatchments 1G and 1L (Basin 1L); an existing basin to control runoff from Catchment 2 would need to be increased by roughly 8,700 square feet (34 percent)(Basin 2A); two new small basins located in the northeast corner of the project site to control runoff from Catchment 4 (Basins 4A and 4B);an existing basin that controls runoff from Subcatchment 5C, the volume of which is not fully utilized under existing conditions (Basin 5C);the outlet structure would need to be reconfigured to control flow rates in a way that enhances utilization of the storage volume; an existing basin that controls runoff from Subcatchment 5D (Basin 5D);the outlet structure would need to be reconfigured to control flow rates and the top elevation slightly increased to meet freeboard requirements; a new medium-sized basin to control runoff from Subcatchment 5E (Basin 5E);and, finally, two new basin to control runoff from Catchment 6 (Basin 6F for Subcatchment 6F and Basin 6A for Subcatchments 6A-6E).

The 2016 West Placer Storm Water Quality Design Manual (WPSWQDM) provides detailed guidance for integrating low-impact development (LID) strategies into the site design for each individual projects as they are proposed so that they would comply with Clear Water Act regulations, specifically, the NPDES MS4 Permit. The requirements for a project would vary depending on the amount of impervious area to be created or replaced, but in general, the work flow to meet water-quality requirements would be as follows:

1. Complete a site assessment to evaluate local conditions and identify constraints and opportunities for LID features;

2. Develop a site layout that includes site design measures, source control, and stormwater treatment features;

3. Implement site design measures to reduce surface runoff to the maximum extent practicable by infiltration, evapotranspiration, and/or harvesting;

4. Include source control measures to reduce the potential for stormwater and pollutants from coming in contact with one another (e.g. trash enclosures, covered storage areas, and developing "good housekeeping" operational practices);

5. Treat the remaining portion of the post-construction 85th percentile, 24-hour storm with stormwater treatment features (infiltration-based features such as bioretention basins are preferred, but flow-through systems may be permitted in special cases);

6. Develop a Post-Construction Storm Water Quality Plan (SWQP) using the templates provided in the WPSWQDM and submit to the County for review and approval; and

7. Maintain the LID features for the life of the project through a well-developed operations and maintenance plan.

The WPSWQDM presents hydromodification management as a component of the water-quality treatment design process, however, the regional stormwater basins for PCGC would be designed to control the 2-year, 24-hour event to meet the County's hydromodification criteria. Bioretention basins and other LID features typically provide some level of flow control, and would likely reduce flow rates beyond the post-construction flow rates estimated by the XPSTORM model.

All of the improvements to the storm drain system are expected to alleviate the surface flooding problems that were predicted under existing conditions during the 10-year and larger events. The only exception is the shallow flooding the model predicted for the parking lot of the Finance Administration Building. While the Drainage Study did not model the minor collector storm drain pipes, these would be modeled under the drainage reports that are required by the County for each individual projects and would consider how they would interact with the larger property wide drainage system.

The proposed PCGC Master Plan Update would result in a potentially significant increase in runoff volumes or peak flows without proper analysis and design of the proposed stormwater basins, catchments, and subcatchments. Mitigation Measure 15f requires that each individual future project applicant provide a drainage analysis as part of the Improvement Plan review process to ensure that no project results in increases to stormwater peak flows. With implementation of Mitigation Measure 15f, the proposed PCGC Master Plan Update would have a less-than-significant impact associated with increases in the risk of flooding on site, upstream of the site, and downstream.

Health and Human Services Building

The proposed Health and Human Services site is bounded on all four sides by roads. The project site does not include a stream or river. Under existing conditions, runoff from this site generally

drains to the southwest toward Richardson Drive (existing Subcatchment 2B). Storm drain inlets along Richardson Drive collect the runoff and direct it to a 48-inch pipe that runs beneath the Auburn Justice Center and Jail, and ultimately leaves PCGC to the south via a culvert under Atwood Road (Outfall C2/C3). Cartwright prepared a campus-wide strategy for stormwater management, which is described in the Master Drainage Report (Appendix H1) to meet flood control and hydromodification management requirements and leave water-quality treatment requirements to individual projects as they are applied to the County. Stormwater from the proposed project site would run to an existing stormwater basin located to the southwest of the Auburn Main Jail building (Basin 2A). Basin 2A would provide the flow controls for the proposed project to meet the County criteria for flood control and hydromodification. The Master Drainage Report indicated that Basin 2A does not have sufficient freeboard under existing conditions to meet the 1-foot minimum freeboard requirement during the 100-year event, and that the volume of the basin would need to be increased to accommodate the additional runoff from the PCGC Master Plan Update and meet the freeboard requirement.

Cartwright prepared a model which showed that the peak water surface elevation during the 100-year event in Basin 2A would increase by 6 inches once the proposed project is implemented, which would leave approximately 0.3 feet open for freeboard. The Placer County SWMM requires that the hydraulic grade line, or surface of the flowing water, for the 10-year event be no higher than 6 inches below manhole covers and other inlets and that detention basins meet a 1-foot minimum freeboard requirement during the 100-year event. The stormwater main begins along B Avenue, turns down Richardson Drive, flows beneath the jail building, and ends in Basin 2A. Under existing conditions, the stormwater main meets the County criteria for the 10-year event with the exception of one Node which has only 4.5 inches of freeboard to the inlet grate, instead of the required 6 inches. With the inclusion of the proposed project, the model showed the same Node will rise 2.5 inches, which leaves 2 inches of freeboard or 4 inches fewer than required. As such, Cartwright recommended the implementation of Mitigation Measure 15e, which would require Basin 2A to be reconstructed to increase its volume by 1.2 acre-feet; this regrading should include increasing the basin footprint by roughly 8,700 square feet to increase the storage volume in lower elevation bands of the basin as well as ensuring the 10-year criteria are met to contain the hydraulic grade line 6 inches minimum below grates and manhole rims and the replacement of storm pipe in B Avenue to a smooth walled HDPE. Implementation of 15e and 15f to submit detention facility sizing drainage analysis as part of the Improvement Plan submittal will allow Basin 2A to control flows at pre-project, existing conditions with no alterations to the current outlet structure. Thus, with the implementation of Mitigation Measures 15e and 15f, the proposed project would have a **less than significant** impact with regards to stormwater runoff.

Multifamily Residential Project

The proposed project would result in the creation of a Multifamily Residential development with up to 100 apartments in four buildings on an approximately 3-acre project site within the larger PCGC campus. The proposed project would require grading and increase the amount of impervious surfaces onsite, thereby altering the existing site drainage. The grading plan for the proposed project generally follows the existing topography and will not substantially alter drainage patterns. A portion of the southern drainage area will increase from the pre-project drainage areas presented in the Master Drainage Report. The Master Drainage Report indicated that Basin 5D does not have sufficient freeboard under existing conditions to meet the 1-foot minimum freeboard requirement during the 100-year event, and that the volume of the basin would need to be increased to accommodate the additional runoff from the Final Option and meet the freeboard requirement. The model showed that the peak water surface elevation during the 100-year event in Basin 5D would increase by 0.1 feet once the proposed project is implemented (without altering the basin to increase its volume), which would leave roughly 0.6 feet of freeboard. The far eastern corner of Basin 5D is proposed to be regraded to increase its freeboard to meet the County requirement. With these modifications, Basin 5D can accommodate the additional runoff volume without impacting downstream peak flows. Additionally, flows directly leaving Basin 5D will increase slightly for the 100-year event from 4.06 cfs to 4.13 cfs, for a 0.07 cfs increase. However, the peak release at Basin 5D is offset from the peak flow leaving Outfall C5 by roughly 1.5 hours. As a result, the increase in flow leaving Basin 5D has no impact on the 100-year peak flow at Outfall C5. Off-site flooding in the northern drainage will be mitigated through flood control at Basin 4A.

The proposed Multifamily Residential project would result in a potentially significant increase in runoff volumes or peak flows without proper analysis and design of the proposed stormwater basins, catchments, and subcatchments and thus the project, with implementation of Mitigation Measure 15f to provide a drainage analysis as part of the Improvement Plan review process to mitigate for increases to stormwater peak flows, would have a **less-than-significant** impact associated with increases in the risk of flooding on site, upstream of the site, and downstream.

Impact 15-4	Would the project 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?		
	PCGC Master Plan Update	*Health and Human Services Building*	*Multifamily Residential*
Level of Significance:	Potentially Significant	Potentially significant	Potentially Significant
Mitigation Measures:	15b, 15f	15b, 15e, 15f	15b, 15f
Significance after Mitigation:	Less than Significant	Less than Significant	Less than Significant

PCGC Master Plan Update

The PCGC Master Plan Update anticipates retention of approximately 650,000 square feet of existing building space, as well as construction of approximately 410,000 square feet of new County offices and facilities, 30,000 square feet of community uses, approximately 182,800 square feet of new mixed use, including retail and office space, and 485 multifamily dwelling units in 486,800 square feet. The Master Drainage Report, completed April 19, 2018 by Cartwright (Appendix H1), analyzed the effects of the changes planned in the Master Plan Update on stormwater runoff and maximum peak flows in the PCGC property.

As described in the 2018 Master Drainage Report, Cartwright created a model for each storm type, which was based on area, percent impervious, subcatchment width, and slope. The storm system was simplified for the modeling; sections of the storm drain system with open channel flow were modeled as appropriate.

The baseline PCGC model included 13 storage basins which represented the existing stormwater detention basins or natural depressions that collected stormwater runoff. Storage in the basins was modeled using stage-storage tables generated from the background information or from survey data provided by Cartwright. Currently, the PCGC property has five outfall locations, with three along Atwood Drive (C1, C2/C3, and C6), one on Professional Drive (C4), and one between Highway 49 and Heritage Oaks Circle (C5). A total of seven new stormwater basins and reconfiguration of three existing basins are needed to meet County requirements for flood control and hydromodification management. A new small basin would be needed to control runoff from the proposed residential development in the southwest corner of the planning area. A new small basin to control runoff from Subcatchments 1G and 1L. A large existing basin to control runoff from Catchment 2 (Basin 2A) would need to be increased by 34 percent. Two new small basins located in the northeast corner of the project site to control runoff from Catchment 4 (Basins 4A and 4B); an existing basin that controls runoff from Subcatchment 5C, the volume of which is not fully utilized under existing conditions (Basin 5C); the outlet structure would need to be reconfigured to control flow rates in a way that enhances utilization of the storage volume; an

existing basin that controls runoff from Subcatchment 5D (Basin 5D); the outlet structure would need to be reconfigured to control flow rates and the top elevation slightly increased to meet freeboard requirements; a new medium-sized basin to control runoff from Subcatchment 5E (Basin 5E); and, finally, two new basin to control runoff from Catchment 6 (Basin 6F for Subcatchment 6F and Basin 6A for Subcatchments 6A-6E).

Individual projects that would increase impervious surface or alter site grading would impact stormwater runoff and drainage. Cartwright recommended water-quality treatment should be the responsibility of individual projects, and would achieve the favored dispersed treatment approach, likely through the use of a fee structure; each project should plan to set aside roughly 10 percent of the total acreage for water-quality treatment features, although advanced planning and calculations may demonstrate less space is required. This is due to the fact that there are already multiple stormwater basins already in place and controlling flows rates through regional basins that may be an effective stormwater management strategy. However, Cartwright did note that this approach assumes that the land use of individual developments would closely resemble the land use assumed for the sizing of regional basins. In the event that an individual project does not match this assumption, the project would be responsible for controlling additional on-site flow and storage volume. This would all be evaluated, and approved by the County, as part of Mitigation Measure 15b in the required drainage report that would be created for each individual project as it is proposed.

The proposed PCGC Master Plan Update would result in a **potentially significant** increase in runoff volumes or peak flows without proper analysis and design of the proposed stormwater drainage system, basins, catchments, and subcatchments and thus the project, with implementation of Mitigation Measures 15b and 15f to provide a drainage analysis as part of the Improvement Plan review process to mitigate for increases to the existing stormwater system, peak flows, and volumes, would have a **less-than-significant** impact associated with exceeding the capacity of the existing or planned stormwater drainage systems.

Health and Human Services Building

Stormwater in excess of the water-quality treatment volume would be conveyed to an existing stormwater basin located to the southwest of the jail building (Basin 2A). The campus-wide strategy for stormwater management described in the Master Drainage Report is to meet flood control and hydromodification management requirements with several regional basins, and leave water-quality treatment requirements to individual projects as they come online. Basin 2A would provide the flow controls for the proposed project to meet the County criteria for flood control and hydromodification.

As discussed in Impact 15-3, the construction of the proposed project would increase stormwater runoff into Basin 2A, which is located behind the Main Auburn Jail. The proposed project would decrease the freeboarding above the peak water surface line from 4.5 inches to 2 inches, which is below the 6 inches required by the Placer County SWMM during a 10-year event. Implementation of Mitigation Measure 15b to provide a project specific drainage analysis as part of the Improvement Plan submittal and 15e that would require Basin 2A to be reconstructed to increase its volume by 1.2 acre-feet; this regrading should include increasing the basin footprint by roughly 8,700 square feet to increase the storage volume in lower elevation bands of the basin as well as ensuring the 10-year criteria are met to contain the hydraulic grade line 6-inches minimum below grates and manhole rims and the replacement of storm pipe in B Avenue to a smooth walled HDPE. Implementation of 15e will allow Basin 2A to control flows to no greater than pre-project conditions with no alterations to the current outlet structure. Additionally, the proposed project's stormwater would drain to two landscaped areas along Richardson Drive, which would include bioretention areas that provide biofiltration before the stormwater runoff is collected and conveyed via outlet control structures to the storm main in Richardson Drive. Mitigation Measure 15f requires a drainage analysis as part of the Improvement Plan review process to specifically analyze and mitigate for increases to the existing stormwater system, peak flows, and volumes, Thus, with the implementation of Mitigation Measures 15b, 15e and 15f, the impact of the Health and Human Services building with regards to stormwater runoff increases to the existing drainage system would be **less than significant**.

Multifamily Residential Project

The proposed project would develop a Multifamily Residential building on an approximately 3-acre project site within the larger PCGC campus; the proposed project would require grading and increase the amount of impervious surfaces onsite, thereby altering the existing site drainage. The storm drain modeling indicates that, without mitigation, the proposed project will increase the water surface elevation in Basin 5D for the 100-year design storm event. However, Basin 5D is not currently meeting County design requirements for freeboard. Mitigation as part of the Master Plan Update will regrade Basin 5D to accommodate the additional runoff volume from the proposed project and modify the basin to meet County standards for freeboard. Peak flow rates at the C4 and C5 outfall analysis points are modeled to be less than pre-project flows. With implementation of Mitigation Measures 15b and 15f, the proposed project would not result in a significant increase in runoff volumes or peak flows; with the inclusion of Mitigation Measures 15b and 15f to prepare individual drainage reports for each individual project, each project's impacts to the existing storm drainage system and increase detention basin capacity and pipe sizes accordingly, and requiring the construction of modified detention basins and other improvements, the proposed project would have a **less-than-significant** impact.

Impact 15-5	Would the project result in a loss of groundwater recharge opportunity or reduced groundwater quality, substantially deplete groundwater supplies, or interfere substantially with groundwater recharge?		
	PCGC Master Plan Update	*Health and Human Services Building*	*Multifamily Residential Project*
Level of Significance:	Less than Significant	No Impact	No Impact
Mitigation Measures:	None required	None required	None required
Significance after Mitigation:	Less than Significant	No Impact	No Impact

PCGC Master Plan Update

The PCGC Master Plan Update anticipates retention of approximately 650,000 square feet of existing building space, as well as construction of approximately 410,000 square feet of new County offices and facilities, 30,000 square feet of community uses, approximately 182,800 square feet of new mixed use, including retail and office space, and 485 multifamily dwelling units in 486,800 square feet. As described in the PCGC Master Plan Update, the PCGC property receives just over 36 inches of rain per year. This equates to ±608 acre-feet of water hitting the site annually. Of this rainfall, 63% hits the landscape and infiltrates into the soil to recharge groundwater and streams. 4% evaporates. The remaining 33% strikes roofs, paving and other hardscape and runs off. Prior to development, ~95% of this rainfall infiltrated into the ground (charging aquifers and feeding streams), 4% ran off the site (surface runoff), and 1% was evaporated (County of Placer 2018a). As the PCGC property is developed, more of land would become impervious and further reduce the percent of rainfall that infiltrates into the ground.

The greatest potential for impacts to groundwater quality to occur during project operation would be due to specific land uses that may store or transport hazardous materials. Operation of the land uses proposed under the PCGC Master Plan Update is not anticipated to result in the use or transport of substantial quantities of hazardous materials with the potential to result in groundwater contamination. Further discussion of potential impacts associated with use or transport of hazardous materials is provided in Chapter 16, Hazards and Hazardous Materials, of this EIR. Each individual project would tie into the sewer system, and would therefore result in no impacts to groundwater as a result of septic tank failure or high groundwater septic system interaction. BMPs would ensure that surface water quality is maintained, and would reduce the potential for impacts to groundwater to occur as a result of pollutants delivered in stormwater runoff.

Grading and construction for the each individual project would proceed according to the Placer County Grading, Erosion, and Sediment Control (Article 15.48) and a Construction SWPPP, required under the statewide Construction General Permit. A SWPPP would require construction to adhere to BMPs that would minimize potential impacts from construction to groundwater

quality. Leaks or upset of fuel or hydraulic fluid used in construction equipment and outdoor storage of construction materials, or spills of paints, solvents, or other potentially hazardous materials commonly used in construction would not be expected to result in contamination of groundwater, as they would be likely to break down or dilute in the shallow soil layer and be conveyed to surface water runoff. Small quantities of hazardous materials would be required to be stored in compliance with applicable regulations to prevent or contain any spills. Chapter 16, Hazards and Hazardous Materials, provides further discussion regarding hazardous materials use and storage, and the potential for accidental release of hazardous materials during construction and operation of each individual project.

The entire PCGC property ties into the sewer system, and would therefore result in no impacts to groundwater as a result of septic tank failure or high groundwater septic system interaction. The project's BMPs would reduce the potential for impacts to groundwater to occur as a result of pollutants delivered in stormwater runoff. To protect the existing watershed, stormwater runoff from the proposed development areas would be routed through surface and pipe conveyance to water quality treatment features (vegetated swales) before being discharged to an area treated with erosion protection measures (cobbles). As described above, the swales and cobbles would slow the movement of water and filter sediment and other surface water contaminants from the runoff, which then surface flow to the creek. By providing water quality treatment of all runoff before it infiltrates the ground surface, impacts to groundwater quality would be **less than significant**. Additionally, the PCGC property is not located in a groundwater recharge area and there are no significant sources of groundwater at the site, therefore, there would be a less than significant impact to groundwater recharge or quality due to implementation of the proposed project.

Health and Human Services Building

The project site is not located in a groundwater recharge area and there are no significant sources of groundwater at the site; therefore, there would be **no impact** to groundwater recharge or quality due to implementation of the proposed project.

Multifamily Residential Project

The project site is not located in a groundwater recharge area and there are no significant sources of groundwater at the site, therefore, there would be **no impact** to groundwater recharge or quality due to implementation of the proposed project.

Impact 15-6	Would the project place housing of structures within a 100-year Flood Hazard Area?		
	PCGC Master Plan Update	*Health and Human Services Building*	*Multifamily Residential Project*
Level of Significance:	No Impact	No Impact	No Impact
Mitigation Measures:	None Required	None Required	None Required
Significance after Mitigation:	No Impact	No Impact	No Impact

PCGC Master Plan Update

As shown on FEMA map 06061C0275F, the PCGC property is not located in a 100-year Flood Hazard Area. As the project site is not located within any portion of a 100-year flood hazard area, there would be **no impact**.

Health and Human Services Building

The proposed Health and Human Services building is located within the PCGC property. As the project site is not located within any portion of a 100-year flood hazard area, there would be **no impact**.

Multifamily Residential Project

The proposed Multifamily Residential project is located within the PCGC property. As the project site is not located within any portion of a 100-year flood hazard area, there would be **no impact**.

Impact 15-7	Would the project expose people or structures to flooding, including flooding as a result of the failure of a levee or dam?		
	PCGC Master Plan Update	*Health and Human Services Building*	*Multifamily Residential Project*
Level of Significance:	No Impact	No Impact	No Impact
Mitigation Measures:	None Required	None Required	None Required
Significance after Mitigation:	No Impact	No Impact	No Impact

PCGC Master Plan Update

The PCGC property is not located downstream of or in the vicinity of a levee or dam that could fail and result in flooding of the site. Therefore, there would be **no impact**.

Health and Human Services Building

The Health and Human Services building would be located within the PCGC property, which is not located downstream of or in the vicinity of a levee or dam that could fail and result in flooding of the site. Therefore, there would be **no impact**.

Multifamily Residential Project

The Multifamily Residential project located at 1st Street and B Avenue would be located within the PCGC property, which is not located downstream of or in the vicinity of a levee or dam that could fail and result in flooding of the site. Therefore, there would be **no impact**.

Impact 15-8	**Would the project be at risk for inundation by seiche, tsunami, or mudflow?**		
	PCGC Master Plan Update	*Health and Human Services Building*	*Multifamily Residential Project*
Level of Significance:	No Impact	No Impact	No Impact
Mitigation Measures:	None Required	None Required	None Required
Significance after Mitigation:	No Impact	No Impact	No Impact

PCGC Master Plan Update

A tsunami is a long, high, sea wave caused by an earthquake, submarine landslide, or other disturbance. A seiche is a standing wave that occurs in a closed or partially closed body of water. A mudflow occurs during a rain event in which soil and debris are saturated and becomes a stream of mud. The PCGC property is not located near an ocean or a large body of water and is therefore not at risk for tsunami or seiche. The PCGC site is relatively flat and thus a low risk of mudflow. The project is geographically removed from the potential for seiche, tsunami, or mudflow. Therefore, there would be **no impact**.

Health and Human Services Building

The Health and Human Services building would be located within the PCGC property. The project is geographically removed from the potential for seiche, tsunami or mudflow. Therefore, there would be **no impact**.

Multifamily Residential Project

The Multifamily Residential project at 1st Street and B Avenue would be located within the PCGC property. The project is geographically removed from the potential for seiche, tsunami or mudflow. Therefore, there would be **no impact**.

Impact 15-9	**Would the project result in an impact to hydrology or water quality in a cumulative scenario?**		
	PCGC Master Plan Update	*Health and Human Services Building*	*Multifamily Residential Project*
Level of Significance:	Less than Significant	Less than Significant	Less than Significant
Mitigation Measures:	None Required	None Required	None Required
Significance after Mitigation:	Less than Significant	Less than Significant	Less than Significant

PCGC Master Plan Update

The geographic range for assessing cumulative impacts associated with hydrology and water quality is the Auburn/Bowman Community Planning Area. The Auburn/Bowman Community Plan and Placer County General Plan provide overarching guidance for development within the Auburn/Bowman Community Planning Area, including planning for new residential, office, County and commercial land uses.

Based on a review of the County of Placer's CEQA Active Projects List (County of Placer 2018b), there are 21 other reasonably foreseeable development projects in the North Auburn and Newcastle/Ophir Municipal Advisory Council boundaries, which are outlined in Table 5-1 in Chapter 5, Land Use. These projects would provide 997 new residential units and 440,958 square feet of commercial or office space.

The projects in the cumulative scenario, including all future development that may occur under the PCGC Master Plan Update would be required to comply with all federal, state, and local code and regulations with regards to water quality standards and waste discharge requirements. These regulations are intended to protect water quality and adherence to them would ensure that cumulative impacts to associated with water quality remain less than significant. Therefore there would be no significant cumulative impact to which the project could contribute.

The PCGC Master Plan Update would have a less-than-significant impact on groundwater supplies or recharge; all future projects in the cumulative scenario would be required to comply with all federal, state, and local code and regulations related to groundwater. The PCGC Master Plan Update project site does not provide opportunities for groundwater recharge and would not rely on

groundwater for the project's water consumption needs. The PCGC Master Plan Update project would not contribute to

The proposed projects would be required to manage their own drainage on site and would be required to comply with all federal, state, and local regulations and policies. Thus there would be a **less than significant** impact associated with drainage in the cumulative scenario and there would be no cumulative impact to which the project could contribute.

The risk of structures within a 100-year Flood Hazard Area would be site-specific. The PCGC property is not within a 100-year Flood Hazard Area; future projects would be required to address the flooding issues that could occur on its project site. The cumulative impact would remain **less than significant**.

15.5 MITIGATION MEASURES

Mitigation Measure 15a: This project area is located within the permit area covered by Placer County's Small Municipal Separate Storm Sewer System (MS4) Permit (State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES)) (NPDES Phase II MS4 Permit). Project-related storm water discharges are subject to all applicable requirements of said permit.

Each project shall implement permanent and operational source control measures as applicable. Source control measures shall be designed for pollutant generating activities or sources consistent with recommendations from the California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for New Development and Redevelopment, or equivalent manual, and shall be shown on the Improvement Plans.

The project is also required to implement Low Impact Development (LID) standards designed to reduce runoff, treat storm water, and provide baseline hydromodification management as outlined in the West Placer Storm Water Quality Design Manual.

Per the State of California NPDES Phase II MS4 Permit, this project is a Regulated Project that creates and/or replaces 5,000 square feet or more of impervious surface. A final Storm Water Quality Plan (SWQP) shall be submitted, either within the final Drainage Report or as a separate document that identifies how this project will meet the Phase II MS4 permit obligations. Site design measures, source control measures, and Low Impact Development (LID) standards, as necessary, shall be incorporated into the design and shown on the Improvement Plans. In addition, per the Phase II MS4 permit, projects creating and/or replacing one acre or more of

impervious surface (excepting projects that do not increase impervious surface area over the pre-project condition) are also required to demonstrate hydromodification management of storm water such that post-project runoff is maintained to equal or below pre-project flow rates for the 2 year, 24-hour storm event, generally by way of infiltration, rooftop and impervious area disconnection, bioretention, and other LID measures that result in post-project flows that mimic pre-project conditions.

Mitigation Measure 15b: As part of the Improvement Plan submittal process, each project applicant shall provide a final Drainage Report for County review and approval. The final Drainage Report may require more detail than that provided in the preliminary report, and will be reviewed in concert with the Improvement Plans to confirm conformity between the two. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the proposed improvements, all appropriate calculations, watershed maps, changes in flows and patterns, and proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used during construction, as well as long-term post-construction water quality measures. Each final Drainage Report shall be prepared in conformance with the requirements of Section 5 of the Land Development Manual and the Placer County Storm Water Management Manual that are in effect at the time of improvement plan submittal.

Mitigation Measure 15c: Prior to construction commencing, each project applicant for projects disturbing more than 1 acre shall be required to provide evidence to the County of a WDID number generated from the State Regional Water Quality Control Board's Stormwater Multiple Applicatoin & Reports Tracking System (SMARTS). This serves as the RWQCB approval or permit under the National Pollutant Discharge Elimination System (NPDES) construction storm water quality permit.

Mitigation Measure 15d: The Improvement Plans for each project shall show water quality treatment facilities/BMPs designed according to the guidance of the California Stormwater Quality Association's Stormwater Best Management Practice Handbooks for Construction, for New Development/Redevelopment, and for Industrial and Commercial.

Storm drainage from on- and off-site impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the County. BMPs shall

be designed in accordance with the West Placer Storm Water Quality Design Manual for sizing of permanent post-construction Best Management Practices for stormwater quality protection. No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.

All permanent BMPs shall be maintained as required to ensure effectiveness. The project applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to the County upon request. The project owners/permittees shall provide maintenance of these facilities and annually report a certification of completed maintenance to the County DPWF Stormwater Coordinator, unless, and until, a County Service Area is created and said facilities are accepted by the County for maintenance. Contractual evidence of a monthly parking lot sweeping and vacuuming, and catch basin cleaning program shall be provided to the County upon request. Failure to do so will be grounds for discretionary permit revocation. Prior to Improvement Plan approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance.

Mitigation Measure 15e: Construction of the Health and Human Services building shall require Basin 2A to be reconstructed to increase its volume by 1.2 acre-feet; this reconstruction should include increasing the basin footprint by roughly 8,700 square feet to increase the storage volume in lower elevation bands of the basin as well as ensuring the 10-year criteria are met to contain the hydraulic grade line 6 inches minimum below grates and manhole rims and the replacement of storm pipe in B Avenue to a smooth walled HDPE. The reconstruction of Basin 2A shall be shown on the Improvement Plans associated with the Health and Human Services building with supporting analysis for the basin sizing provided in the drainage report to be reviewed and approved by the County.

Mitigation Measure 15f: The Improvement Plan submittal and final Drainage Report shall provide details showing that storm water run-off peak flows and volumes shall be reduced to pre-project conditions through the installation of detention/retention facilities. Detention/retention facilities shall be designed in accordance with the requirements of the Placer County Stormwater Management Manual that are in effect at the time of submittal, and to the satisfaction of the County and shall be shown on the Improvement Plans. Maintenance of detention/retention facilities by the property owner's association, property owner, or entity responsible for project maintenance shall be required. No detention/retention facility construction shall be

permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.

15.6 REFERENCES CITED

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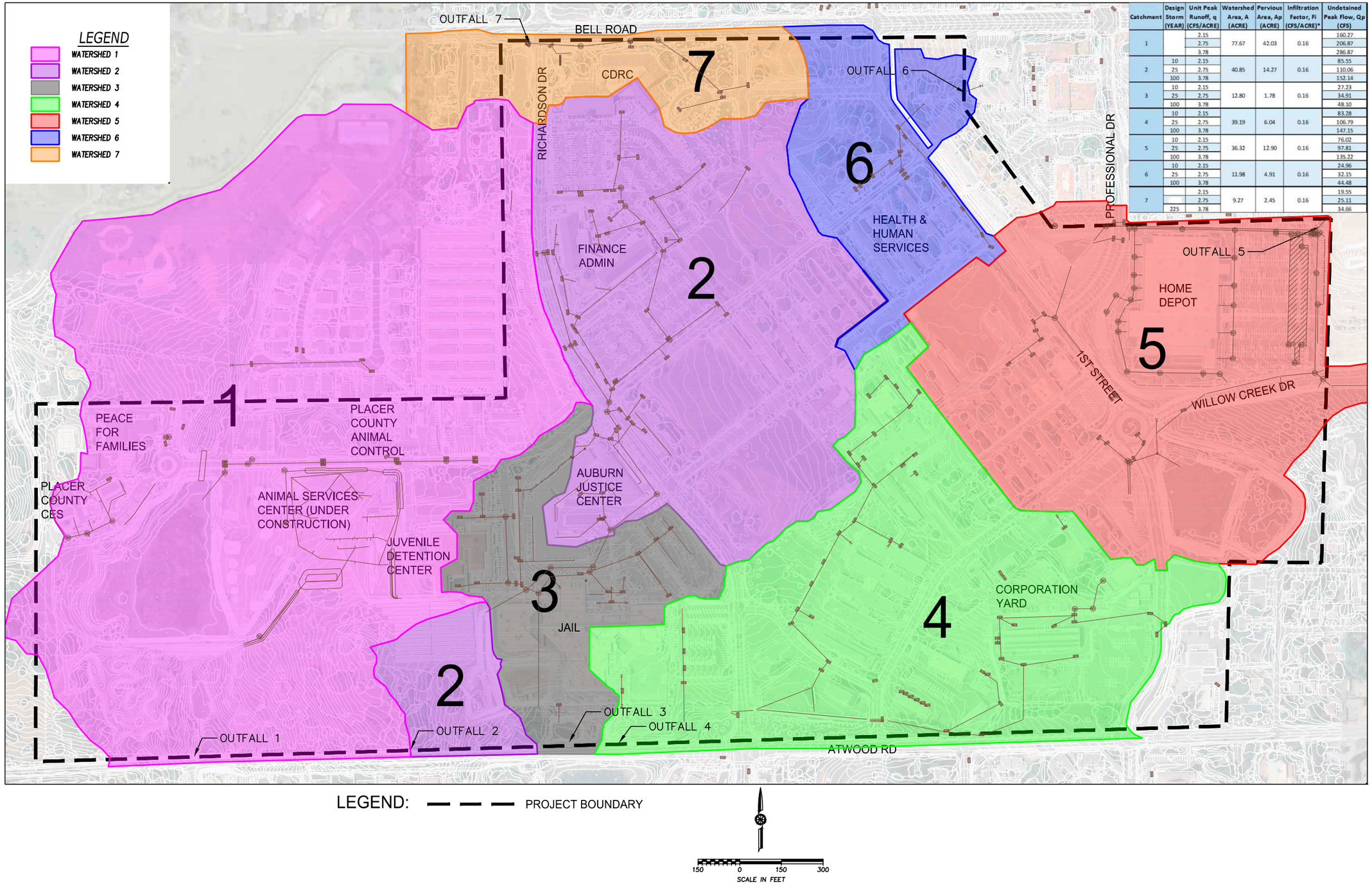

Catchment	Design Storm (YEAR)	Unit Peak Runoff, q (CFS/ACRE)	Watershed Area, A (ACRE)	Pervious Area, Ap (ACRE)	Infiltration Factor, Fi (CFS/ACRE)*	Undetained Peak Flow, Qp (CFS)
1		2.15	77.67	42.03	0.16	160.27
		2.75				206.87
		3.78				286.87
2	10	2.15	40.85	14.27	0.16	85.55
	25	2.75				110.06
	100	3.78				152.14
3	10	2.15	12.80	1.78	0.16	27.23
	25	2.75				34.91
	100	3.78				48.10
4	10	2.15	39.19	6.04	0.16	83.28
	25	2.75				106.79
	100	3.78				147.15
5	10	2.15	36.32	12.90	0.16	76.02
	25	2.75				97.81
	100	3.78				135.22
6	10	2.15	11.98	4.91	0.16	24.96
	25	2.75				32.15
	100	3.78				44.48
7		2.15	9.27	2.45	0.16	19.55
	225	2.75				25.11
		3.78				34.66

LEGEND: PROJECT BOUNDARY

150 0 150 300
SCALE IN FEET

SOURCE: Cartwright Engineers 2018

FIGURE 15-1

Drainage Sheds

Placer County Government Center Master Plan Update

DUDEK

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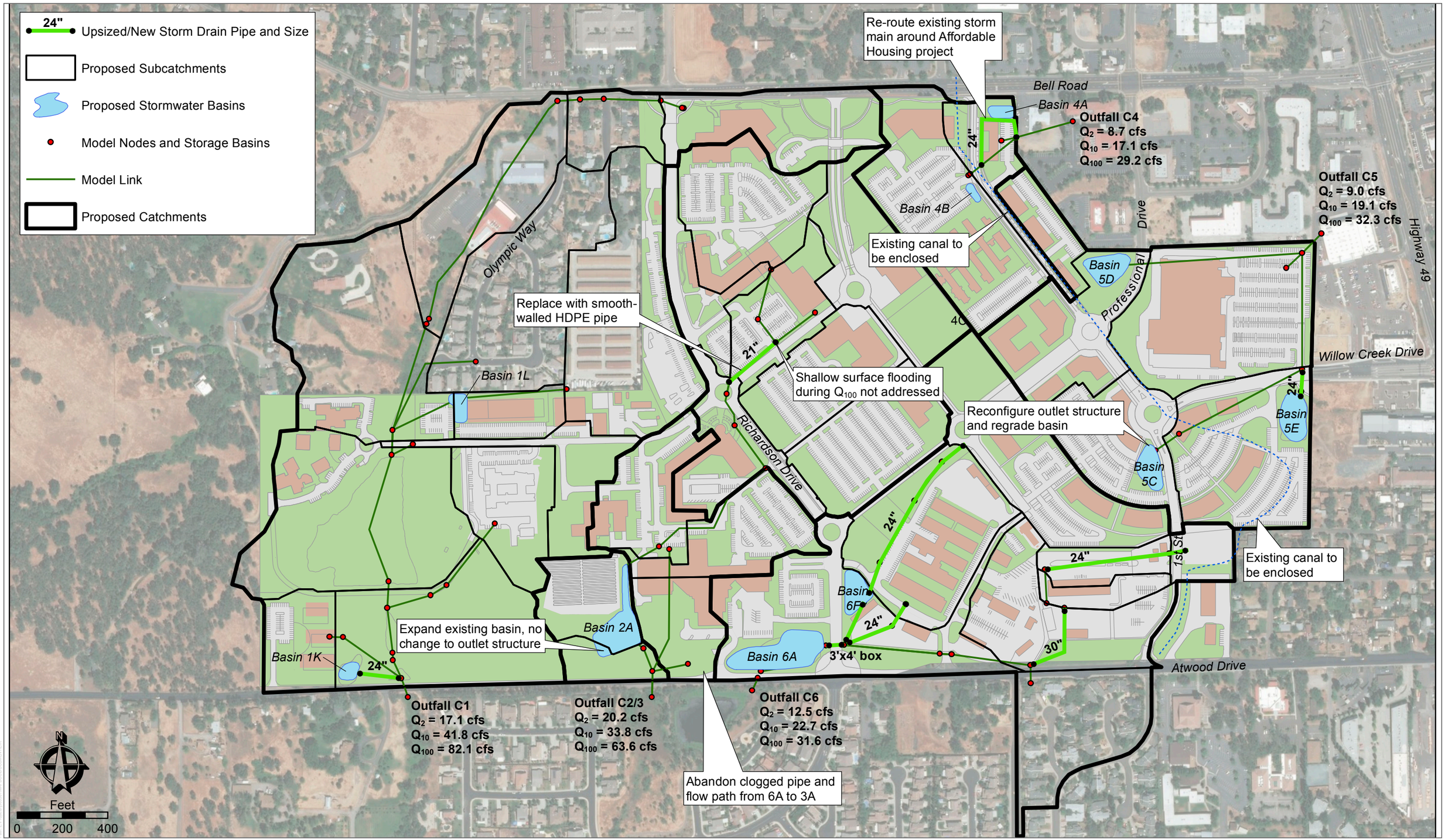

SOURCE: Balance Hydrologics 2018

FIGURE 15-2

Proposed Stormwater Infrastructure

Placer County Government Center Master Plan Update

DUDEK

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