

4.8 HYDROLOGY AND WATER QUALITY

This section analyzes the Project's potential to adversely affect hydrology and water quality. Issues discussed in this section include water quality, stormwater flows, flooding hazards, and site drainage. Potential impacts to wetlands downstream of the Project are discussed in Section 4.3, *Biological Resources*. Potential impacts on water supply are discussed in Section 4.14, *Utilities and Services Systems*.

This section draws from two reports: the *Preliminary Stormwater Control Plan for Heritage Ridge*, dated February 2, 2016 and the *Preliminary Hydraulic Report for North Willow Springs*, dated August 27, 2014. These reports were peer-reviewed for accuracy and revised based upon that review. These reports are contained in their entirety in Appendix G. This section also refers to Figure 2-6 in Section 2.0, *Project Description*, which shows the preliminary Grading and Drainage Plan, including the locations of storm drains, drainage inlets, subterranean drainage retardation, and other features related to hydrology.

4.8.1 Setting

a. Existing Conditions. The 17.36-gross acre Project site is currently made up of 13 undeveloped lots adjacent to the previously developed Willow Springs I and Willow Springs II which is currently under construction. Currently there are two large soils stockpiles onsite with an unpaved access road. One stockpile is located on the west side of the Project site near Calle Koral and another stockpile runs along the north and east property lines. The central portion of the site is an archaeologically sensitive area, and is currently fenced and undisturbed (*Preliminary Stormwater Control Plan for Heritage Ridge*, refer to Appendix G).

Site Surface Drainage. Existing vegetation on the Project site consists of very sparse to moderate growth of weeds and brush. The site soils are classified primarily as Goleta Fine Sandy Loam, Milpitas-Positas Fine Sandy Loam, and Xerorthents, which have relatively high rates of infiltration. The center portion of the Project site has the highest elevations on the site and forms a ridge that divides the site drainage, with approximately half the site draining in a westerly direction and half the site draining in an easterly direction. Ultimately, all runoff from the site drains through existing storm drains and into a 7.25-acre treatment wetland located on the adjacent Willow Springs property. Runoff entering the treatment wetland drains across 500 feet (storm drain "A") and 950 feet (storm drain "C") of wetland vegetation before leaving the property at Hollister Avenue. Vegetative cover on the property is highly variable and dependent upon the activity of the stockpile. The hydrologic soils group is mapped as both soil type B and soil type D (*Preliminary Stormwater Control Plan for Heritage Ridge*, refer to Appendix G).

Surface Runoff Quantity. Retention basin calculations for the treatment wetland were performed as part of the approved *Final Willow Springs I Hydraulic Report* (2002) and accounted for developed runoff from North Willow Springs (the Project site) and Willow Springs II (which has since been constructed). The outflow from the retention basin is controlled through use of a trapezoidal weir.

Post-development hydrographs for the 10-, 25-, 50-, and 100-year rainfall events were routed through the retention basin using the Santa Barbara County Flood Control Urban Hydrograph method (SBUH) and compared with the pre-development hydrographs. Pre-development calculations routed through the retention basin are summarized in Table 4.8-1 (*Preliminary Hydraulic Report for North Willow Springs*, refer to Appendix G).



Table 4.8-1
Pre- and Post-Development Runoff Rates for the Retention Basin

Return Period	Pre-Development Runoff, cfs	Post-Development Runoff, cfs	Difference, cfs
100	95.3	90	-5.3
50	83.0	80	-3.0
25	70.8	69	-1.8
10	56.3	56	0

Source: Preliminary Hydraulic Report for North Willow Springs, Appendix G.

Surface Water Quality. Tecolotito Creek flows southward from the retention basin to its confluence with Los Carneros Creek south of Hollister Avenue and ultimately flows into the Goleta Slough (Slough). Tecolotito Creek and Los Carneros Creek are considered the primary sources of fresh water for the Slough. These waterways are shown in the context of Goleta’s major hydrological features in Figure 4.8-1.

According to California’s 2010 Integrated Report, which is developed by the State Water Resources Control Board (SWRCB) pursuant to the Clean Water Act, both Tecolotito Creek and the Goleta Slough are designated as impaired waterways (SWRCB, 2011). Tecolotito Creek is listed as impaired due to the following pollutants:

- Chloride
- Sodium

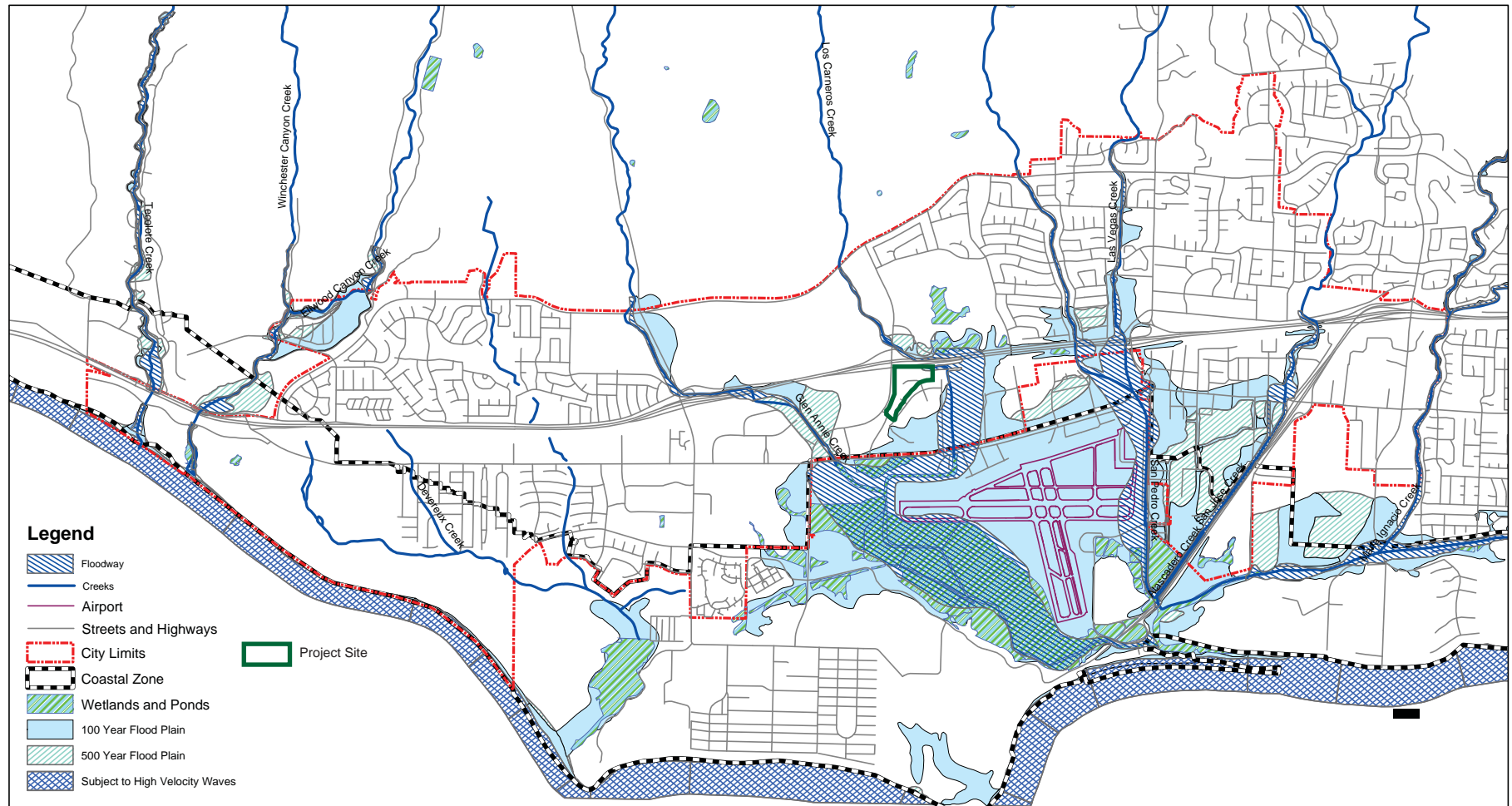
Los Carneros Creek is listed as impaired due to the following pollutants:

- Nitrates
- *Escherichia coli* (*E. coli*)
- pH
- *Enterococcus*
- Electrical Conductivity

The Goleta Slough is listed as an impaired estuary due to pathogens from unknown sources, urban runoff/storm sewers, and natural sources, and due to “priority organics” from non-point sources.

Flood Hazard. The Federal Emergency Management Agency (FEMA) defines 100-year flood hazard areas through the publication of Flood Insurance Rate Maps (FIRM). As shown by Figure 4.8-2, the FIRM for the Project site (Map ID 06083C1362G) shows that the site is not within the 100-year flood zone of any nearby waterways. Low-lying shoreline areas, and areas adjacent to sloughs and coastal streams, are most susceptible to tsunami hazards in Goleta (Goleta, GP/CLUP, Safety Element, 2006). Figure 5-2 in the City of Goleta General Plan shows that the Project site is outside of the potential tsunami run-up area. The City-designated potential run-up area includes anticipated effects from potential earthquake sources and hypothetical extreme landslide sources, generally following the 12-meter (approximately 40 feet) topographic contour. The Tsunami Inundation Map for Emergency Planning developed by California Emergency Management Agency (CalEMA) does not include the Project site within the State-designated Tsunami Inundation Area (CalEMA, 2009).





Source: City of Goleta, May 2004.

Major Hydrological Features in the City of Goleta

Figure 4.8-1
 City of Goleta



Imagery provided by Google and its licensors © 2015. FEMA Flood Levels provided by the County of Santa Barbara, August 2009.

FEMA Flood Map of the Project Location

Figure 4.8-2
City of Goleta

Lake Los Carneros is located north of the Project site, just north of U.S. Highway 101 (U.S. 101). In the event of dam failure at Lake Los Carneros, inundation flows would occur along the same path of the Los Carneros Creek which flows generally north to south through the City toward the Goleta Slough. The creek runs parallel to the U.S. 101/Union Pacific Railroad (UPRR) right-of-way, north of the project site, and south through a concrete channel in the Aero Camino industrial area, east of the site. It then runs westerly parallel to Hollister Avenue to the areas south of the Project site and then on toward the Goleta Slough. Figure 4.3.6-A, Dam Location and Inundation Map, prepared for the Santa Barbara County Hazard Mitigation Plan shows that the Project site is outside of the Lake Los Carneros dam inundation area (County of Santa Barbara, 2006).

b. Regulatory Setting.

Federal.

Clean Water Act. The primary goals of the Federal Clean Water Act, 33 USC §§ 1251, *et seq.* (CWA) are to restore and maintain the chemical, physical, and biological integrity of the nation's waters and to make all surface waters fishable and swimmable. The CWA forms the underlying national regulations for managing water quality and the control of pollutant discharges. The CWA objectives include regulating pollutant and toxic pollutant discharges; providing for water quality which protects and fosters the propagation of fish, shellfish and wildlife; developing waste treatment management plans; and developing and implementing programs for the control of non-point sources pollution.

The CWA provides the legal framework for several water quality regulations including the National Pollutant Discharge Elimination System (NPDES), effluent limitations, water quality standards, pretreatment standards, anti-degradation policy, non-point source discharge programs, and wetlands protection.

Section 303(d) of the CWA (33 U.S.C. § 1313) requires identification and listing of water-quality limited or "impaired" water bodies where water quality standards or receiving water beneficial uses are not met. Once a water body is listed as "impaired," total maximum daily loads (TMDLs) must be established for the pollutants or flows causing the impairment. Once established, the TMDL allocates the loads among current and future pollutant sources to the water body. In general, where urban runoff is identified as a significant source of pollutants causing the impairments and is subject to load allocating, the implementation of and compliance with the TMDL total maximum daily loads requirements is administered through a combination of individual Industrial Stormwater Permits, the General Industrial and General Construction Stormwater Permits, and the City of Goleta's municipal stormwater NPDES program. The Environmental Protection Agency (EPA) has delegated the responsibility for administration of portions of the CWA to state and regional agencies, including the State of California. Accordingly, the primary regulations resulting from the CWA (e.g., the NPDES program) are discussed in the state and local regulation discussions that follow.

The CWA regulates the discharge of dredged or fill material into water of the United States, including wetlands. A 404 permit is required before dredged or fill material may be discharged into waters of the United States and must be reviewed by the U.S. Army Corps of Engineers. A 404 permit was issued to the property owner of Willow Springs I to maintain a riparian area/ wetland adjacent to the development. This permit was issued for stormwater runoff from the Willow Springs II and III.



Federal Antidegradation Policy. The CWA's antidegradation policy requires individual states to develop statewide antidegradation policies and identify methods for implementing them. Pursuant to 40 C.F.R. § 131.12, state anti-degradation policies and implementation methods must, at a minimum, protect and maintain: (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource. State permitting actions must be consistent with the federal antidegradation policy (40 C.F.R. § 131.12).

State.

Porter-Cologne Water Quality Control Act (California Water Code). The State of California is authorized to administer federal law or state-enacted laws regulating water pollution within California. The Porter-Cologne Water Quality Control Act (Water Code §§ 13000, *et seq.*) includes regulations to implement the CWA. These provisions include NPDES permitting, dredge and fill programs, and civil and administrative penalties. The Porter-Cologne Act is broad in scope and addresses issues relating to the conservation, control, and utilization of the water resources of the State. Additionally, the Porter-Cologne Act states that the quality of all the waters of the State (including groundwater and surface water) must be protected for the use and enjoyment by the people of the State (Water Code § 13000).

The SWRCB and its nine Regional Water Quality Control Boards (RWQCBs) are agencies within the umbrella structure of the California Environmental Protection Agency (CalEPA). The SWRCB has the principle responsibility for the development and implementation of California water quality policy and must develop programmatic water quality control procedures to be followed by the RWQCBs. The Central Coast RWQCB is the region that regulates water quality permitting in the City of Goleta. The Central Coast RWQCB adopted a Revised Water Quality Control Plan (Basin Plan) on September 8, 1994. The Basin Plan designates beneficial uses and establishes water quality objectives for groundwater and surface water within the Central Coast Region.

Water Code § 13050 defines what is considered pollution, contamination, or nuisance. Pollution means an alteration of water quality such that it unreasonably affects the beneficial uses of water (which may be for drinking, agricultural supply, or industrial uses). Contamination means an impairment of water quality to the degree that it creates a hazard to the public health. Nuisance is defined as anything that is injurious to health, is offensive to the senses, or is an obstruction to property use, and which affects a considerable number of people.

Discharge Permits. On August 19, 1999, the SWRCB reissued the General Construction Storm Water Permit (Water Quality Order 99-08-DWQ). On December 8, 1999 the State Water Board amended Order 99-08-DWQ to apply to sites as small as one acre. The SWRCB issued a new statewide NPDES General Permit for stormwater discharges associated with construction activities (Order No. 2009-0009-DWQ, amended by 2010-0014-DWQ and 2012-0006-DWQ). To obtain coverage under the most recent General Permit, any project that disturbs an area equal to or greater than one acre requires electronic filing of all permit-related compliance documents and fees. The necessary documents include, but are not limited to, a Notice of Intent (NOI), a Stormwater Pollution Prevention Plan (SWPPP), annual reports, a Notice of Termination (NOT), and numeric action level (NAL) exceedance reports. As the stormwater program develops, the Regional Water Boards may issue General Permits or Individual Permits that contain more specific permit provisions. When this occurs, the SWRCB General Permit no longer regulates those dischargers that obtain coverage under Individual Permits.



The Central Coast RWQCB issues combined NPDES Permits under the CWA and California Water Code to all point source dischargers of waste to surface waters. To ensure protection of water quality, NPDES Permits may contain effluent limitations for pollutants of concern, pollutant monitoring frequencies, reporting requirements, schedules of compliance (when necessary), mandates for operating conditions, BMPs, and administrative requirements. NPDES Permits apply to publicly owned treatment works (POTWs) discharges, industrial wastewater discharges, and municipal, industrial, and construction site stormwater discharges.

State Antidegradation Policy. The SWRCB adopted Resolution No. 68-16 (October 28, 1968), “Statement of Policy with Respect to Maintaining High Quality Waters in California” (more commonly referred to as the “State Antidegradation Policy”), which restricts the degradation of surface waters of the State and protects bodies of water where the existing water quality is higher than necessary for the protection of present and anticipated designated beneficial uses. This State policy is generally consistent with the subsequently adopted Federal Antidegradation Policy discussed previously. The State Antidegradation Policy is implemented by the Central Coast RWQCB.

Local.

Stormwater Technical Guide for Low Impact Development. Effective March 6, 2014, new and redevelopment in the City of Goleta must be designed to prevent water quality impacts from occurring, during both the construction phase, as well as throughout the life of the project, by implementing the Central Coast RWQCB’s Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region. To assist project applicants in meeting these requirements, the City of Goleta has adopted the Santa Barbara County Stormwater Technical Guide for Low Impact Development (Guide) (February 2014). The Guide is designed to ensure City compliance with post-construction requirements, facilitate review of applications, and promote integrated Low Impact Development (LID) design. The Guide interprets, clarifies, and adds to the post-construction requirements.

The purpose of the Guide is to implement and enforce a program designed to reduce the discharge of pollutants to the “maximum extent practicable” (MEP) to protect water quality. According to the Phase II Small MS4 General Permit Order 2013-0001-WQ, effective July 1, 2013, the MEP standard is an ever-evolving, flexible, and advancing concept, which considers technical and economic feasibility. Since knowledge about controlling urban runoff continues to evolve, so does the mitigation, which constitutes the MEP. Reducing the discharge of stormwater pollutants to the MEP in order to protect beneficial uses requires review and improvement, which includes seeking new opportunities. To do this, the City must conduct and document an evaluation and assessment of each relevant element of its program and revise, as necessary, activities, control measures, BMPs, and measurable goals to meet the MEP.

Project Clean Water. Project Clean Water (PCW) is the County of Santa Barbara’s stormwater quality program initiated in 1998 to improve water quality in local creeks and the ocean by implementing many of the aspects of NPDES BMPs. This program also includes watershed planning and restoration as well as pilot treatment control BMPs and monitoring. PCW is managed and staffed by the Santa Barbara County Water Agency and the Environmental Health Services Division (EHS) of the Public Health Department, who are available to work closely with the City of Goleta as needed for access to water quality information.



General Plan/Coastal Land Use Plan. Goleta's General Plan addresses water resource issues and conditions within the City. The Conservation Element of the General Plan established policies that the City will implement with regard to its operations, including regulation of new development. These Conservation Element policies and the objectives that relate to water resources are as follows:

CE 2: Protection of Creeks and Riparian Areas

Objective: *Enhance, maintain, and restore the biological integrity of creek courses and their associated wetlands and riparian habitats as important natural features of Goleta's landscape.*

CE 3: Protection of Wetlands

Objective: *To preserve, protect, and enhance the functions and values of Goleta's wetlands.*

CE 10: Watershed Management and Water Quality

Objective: *To prevent the degradation of the quality of groundwater basins and surface waters in and adjacent to Goleta.*

CE 15: Water Conservation and Materials Recycling

Objective: *To conserve scarce water supply resources and to encourage reduction in the generation of waste materials at the source and recycling of waste materials.*

As discussed further Under Impact HWQ-2, the Central Coast RWQCB has adopted new stormwater quality standards as part of Order R3-2013-0032, which took effect in March 2014. This order creates new specific standards for development projects in the Central Coast region. These standards, termed Post-Construction Stormwater Management Requirements, replace the City's Interim Low Impact Development (LID) Criteria, which had been in effect since 2009.

4.8.2 Impact Analysis

a. Methodology and Significance Thresholds. Impacts to surface drainage were evaluated by a comparison of pre-development drainage, under current site conditions, and calculations of runoff flow rates after development of the Project. Water quality impacts were evaluated based on the expected discharge of pollutants to impaired waterways in the Project vicinity. Lastly, flood hazards were assessed according to FEMA flood maps and estimates of tsunami run-up in the Goleta General Plan and CalEMA tsunami inundation maps.

Based on the *CEQA Guidelines*, a significant impact related to hydrology and water quality could 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)? (Addressed in Section 4.14, Utilities and Services Systems)*



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 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?*
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 area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (Addressed in Section 4.15, Effects Found Not to be Significant)*
8. *Place within a 100-year flood hazard area structures which would impede or redirect flood flows? (Addressed in Section 4.15, Effects Found Not to be Significant)*
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? (Addressed in Section 4.15, Effects Found Not to be Significant)*
10. *Inundation by seiche, tsunami, or mudflow?*

The City of Goleta's *Environmental Thresholds and Guidelines Manual* (2002) specifies the following significance thresholds (these thresholds have been organized according to the topics addressed in this section).

Hydrology and Drainage. The Project would result in a significant impact related to surface drainage if it would:

- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding, increased erosion, or increased sedimentation on-site or off-site [Thresholds 3 and 4]; or*
- *Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or increase runoff into naturally drained areas without storm drains [Threshold 5].*

Surface Water and Groundwater Quality. The Project would result in a significant surface water or groundwater impacts if its construction or operation results in:

- *Disturbance of one (1) or more acres of land if the project is located within an urbanized area of the County and the project construction or redevelopment individually or as a part of a larger common plan of development [Threshold 6];*
- *An increase in the amount of impervious surfaces on a site by 25 percent or more [Thresholds 4 and 5];*
- *Channelization or relocation of a natural drainage channel [Thresholds 3 and 4];*



- *Discharge of pollutants that exceed the water quality standards set forth in the applicable NPDES permit, the Basin Plan or otherwise impairs the beneficial uses of a receiving waterbody [Thresholds 1 and 5];*
- *Results in a discharge of pollutants into an “impaired” waterbody that has been designated as such by the SWRCB or the RWQCB under Section 303 (d) of the CWA [Threshold 1];*
- *Results in a discharge of pollutants of concern to a receiving water body, as identified in by the RWQCB [Threshold 1];*
- *Substantial degradation of groundwater quality [Threshold 1]; or*
- *If a project does not comply with the City’s Stormwater Program [Thresholds 1 and 5].*

Due to the site’s relatively flat topography and the minimal slopes on adjoining parcels, the threat of mudslides and other similar hazards related to hydrology is considered non-existent. Furthermore, the Project site is not subject to any hazard posed by a future failure of any upstream levee or dam. Therefore, impacts related to housing within a 100-year flood hazard area (Thresholds 7 and 8) and exposure of people to a risk of loss, injury, or death involving flooding (Threshold 9) would be less than significant and are not discussed further in this section (refer to Section 4.15, *Effects Found Not to be Significant*).

b. Project Impacts and Mitigation Measures.

Impact HWQ-1 **During grading and construction of the Project, the soil surface would be subject to erosion and downstream watersheds could be subject to temporary sedimentation and discharges of various pollutants. Compliance with discharge requirements during grading and construction would ensure that hydrologic impacts from construction would be Class III, less than significant [Threshold 1].**

The Project would involve construction of 360 residential units and associated landscaping and hardscape. Estimated preliminary Project grading would include approximately 178,000-cubic yards of cut and 15,500-cubic yards of fill with approximately 115,000-cubic yards of export material, as described in Section 2.3.3. Excavation and grading could result in erosion of soils and sedimentation, which could cause temporary impacts to surface water quality and therefore violate water quality standards or contribute additional sources of polluted runoff. Project development would likely require temporary on-site storage of excavated soils (stockpiling). During grading and soil storage, there is the potential for soil migration offsite via wind entrainment and/or water erosion. In addition, there is potential for erosion caused by the tires of vehicles and equipment throughout the construction period.

Impacts would be minimized during all phases of Project construction through compliance with the Construction General Permit (this permit is described above in Section 4.8.1(a), *Existing Conditions*, under the headings *Regulatory Setting*, *State Regulations*, and *Discharge Permits*) and with City grading regulations. To comply with these regulations, the applicant would be required to prepare and implement a SWPPP, which must include erosion and sediment control BMPs that would meet or exceed measures required by the Construction General Permit, as well as BMPs that control other potential construction-related pollutants. Erosion control BMPs are designed to prevent erosion, whereas sediment controls are designed to trap sediment once it has been mobilized. Examples of BMPs that may be implemented during construction include the use of geotextiles and mats, temporary drains



and swales, silt fences and sediments traps. Erosion control practices may include the use of drainage controls such as down drains, detention ponds, filter berms, or infiltration pits; removal of any sediment tracked offsite within the same day that it is tracked; containment of polluted runoff onsite; use of plastic covering to minimize erosion from exposed areas; and restrictions on the washing of construction equipment.

The Construction General Permit requires the SWPPP to include a menu of BMPs to be selected and implemented based on the phase of construction and the weather conditions to effectively control erosion and sediment using the Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology (BAT/BCT) and to protect water quality. These construction site management BMPs would be implemented for the Project during the dry season and wet season as necessary depending upon the phase of construction and weather conditions. These BMPs would help ensure effective control of not only sediment discharge, but also of pollutants associated with sediments, including but not limited to nutrients, heavy metals, and certain pesticides or herbicides. Because the development and implementation of a SWPPP is a standard requirement that would apply to this Project, hydrologic impacts from construction would be less than significant.

Mitigation Measures. Hydrologic impacts from construction would be less than significant with implementation of standard requirements. No mitigation is required to further reduce impacts.

Residual Impact. Impacts from construction would be less than significant without mitigation.

Impact HWQ-2 The Project would alter on-site drainage patterns and increase impermeable surfaces. Preparation of a maintenance agreement is required to ensure long-term protection and maintenance of drainage facilities. Impacts on site drainage would be Class II, significant but mitigable [Thresholds 3 and 4].

The Project would involve a Vesting Tentative Map to merge the existing 13 lots on the Project site into two lots for residential use and one lot for a 2-acre public park, resulting in a substantial increase in impervious surface on the site. The proposed on-site building coverage would total 3.1 acres (representing 17 percent of the 17.36-gross acre site). Accounting for these buildings as well as the proposed driveways, carports, and parking areas, impervious surfaces would cover approximately 6 acres (35 percent) of the Project site. The remainder of site coverage would consist of a 0.6-acre bioretention basin, a 2-acre park, and 7.2 acres of common open space. Total impervious surface area is estimated to be about 37 percent after completion of the Project. The substantial increase in impervious surface would result in reduced infiltration and increased sheetflow on the site. In addition, grading would affect site drainage by reducing the grade differential across the site; however, existing drainage patterns would not be substantially altered because major natural drainage features are not present onsite.

To accommodate changes to the onsite movement of water during operation of the Project, LID design strategies would be incorporated into the Project. Uncovered parking stalls throughout the Project would be constructed with permeable pavers set on a gravel base. Some walkways and patio area would also be constructed with permeable pavers. Runoff from roof areas would be directed to landscape areas where possible. In addition, bioretention basins, vegetated swales, permeable pavers set on a gravel reservoir, and a subsurface ADS Stormtech Chamber system, would be used as Stormwater Control Measures. The detention system also incorporates components that act as stormwater filtration



units at each point of stormwater conveyance into the subsurface system. The bioretention areas and storm drainage storage system are proposed to achieve compliance with the Central Coast RWQCB's Order R3-2013-0032 and City of Goleta flood control and water quality requirements.

The City of Goleta has adopted the Santa Barbara County Stormwater Technical Guide for Low Impact Development. The bioretention basins have been designed using the calculation spreadsheet provided by the stormwater Guide. According to City of Goleta Standard Conditions for Project Plan Approval – Water Quality BMPs, the water quality design volume for stormwater detention on the Project site would be 24,508 cf. The volume of the Project's proposed detention facility is 30,000 cf, thus exceeding the water quality design volume requirement.

Based on these post-development conditions, the *Preliminary Hydraulic Report for North Willow Springs* (refer to Appendix G) estimates overall runoff volumes from the Project site into the City's storm drain system. Total post-development peak flows subject to the proposed drainage control infrastructure are estimated at 56 cfs for the 10-year storm event, 69 cfs for the 25-year storm event, 80 cfs for the 50-year storm event, and 90 cfs for the 100-year storm event. Results of the pre- and post-development calculations routed through the retention basin are summarized in Table 4.8-1 above (*Preliminary Hydraulic Report for North Willow Springs*, refer to Appendix G).

As shown in Table 4.8-1, post-development peak runoff rates would be equal or less than the expected runoff rates for the same return periods from the pre-development peak runoff rates.

Central Coast RWQCB Order R3-2013-0032, which took effect in March 2014, creates new Post-Construction Stormwater Management Requirements (Post-Construction Requirements) for development projects in the Central Coast region. These replace the City's Interim LID Criteria, which had been in effect since 2009. The primary objective of the Post-Construction Requirements is to ensure that Project applicant reduce pollutant discharges to the maximum extent practicable and prevent stormwater discharges from causing or contributing to a violation of receiving water quality standards. The Post-Construction Requirements emphasize protecting and, where degraded, restoring key watershed processes to create and sustain linkages between hydrology, channel geomorphology, and biological health necessary for healthy watersheds. The Post-Construction Requirements include specific standards related to:

- *Site design and runoff reduction;*
- *Water quality treatment;*
- *Runoff retention; and*
- *Management of peak runoff levels.*

The applicant would be required to submit a comprehensive Hydrology and Hydraulic Analysis signed by a registered Civil Engineer that details the pre- and post-development conditions of the Project site. As described in Section 4.3, *Biological Resources*, the Project would not result in a reduction in runoff that would result in any hydrological interruption to in Los Carneros Wetland or affect the existing hydrological process. Consistent with the Post-Construction Requirements, this report would identify drainage control improvements that would be integrated into the Project design. The submitted final Hydrology and Hydraulic Analysis would be reviewed and approved by City staff before approval of any Land Use Permit for the Project.



The preliminary design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the current edition of the Santa Barbara County Project Clean Water's Stormwater Technical Guide. Drainage infrastructure would be constructed as proposed and maintained over the life of the Project. Failure to either construct as proposed and/or maintain the system over the life of the Project could result in failure of these facilities and post-development stormwater flows exceeding pre-development flows causing substantial increases in bank/channel erosion or siltation at this discharge point in local surface waters.

Without a Stormwater Control Plan, the Project would have a potentially significant impact on site drainage.

Mitigation Measures. To reduce impacts to site drainage, the Project would be required to submit a Stormwater Control Plan.

HWQ-2 Maintenance Agreement and Stormwater Control Plan. The applicant must execute a maintenance agreement and Stormwater Control Plan with the City, in a form approved by the City Attorney, that implements maintenance requirements for all improvements associated with all BMPs described in the final approved Hydrology and Hydraulic Analysis and Storm Water Control Plan. The agreement must be executed before the City issues any final certificate of occupancy.

Plan Requirements and Timing: At a minimum, the maintenance agreement and Stormwater Control Plan between the applicant and City must include requirements that all inline storm drain filters must be inspected, repaired, and cleaned per manufacture specifications and at a minimum before September 30th of each year. Additional inspections, repairs, and maintenance must be performed after storm events as needed throughout the rainy season (November 1st to April 15th) and/or per manufacture specifications. Any necessary major repairs must be completed before the next rainy season. Before September 30th of each year, the applicant must submit to Public Works for review and approval a report summarizing all inspections, repairs, and maintenance work done during the prior year.

Monitoring: City Planning and Environmental Review staff must verify compliance before approval of any occupancy permit for the Project. City Planning and Environmental Review staff must verify compliance with the provisions of the agreement periodically and respond to instances of non-compliance with the agreement.

Residual Impact. With preparation of maintenance agreement identified in the Hydrology and Hydraulic Analysis and Storm Water Control Plan, impacts on site drainage would be reduced to a less than significant level.



Impact HWQ-3 New sources of pollution associated with operation of the proposed residential development have the potential to affect impaired waterways in Goleta. However, compliance with State and local requirements would ensure that impacts from water pollutants would remain Class III, less than significant [Thresholds 5 and 6].

The new residential units associated with the Project would introduce a variety of pollutants typical of residential development to a site that is currently vacant and undeveloped. Waste in the form of leftover paints, solvents, cleaning and automotive products, or pool chemicals associated with recreational facilities, could be spilled or dumped into the storm drain system. Nutrients from fertilizers and animal waste along walking trails, including nitrogen and phosphorous, can result in excessive or accelerated growth of vegetation or algae, resulting in oxygen depletion and additional impaired uses of water. Heavy metals such as lead, cadmium, and copper are the most common metals found in urban storm water runoff. These metals can be toxic to aquatic organisms, and have the potential to contaminate drinking water supplies. Furthermore, impermeable surfaces such as driveways would accumulate deposits of oil, grease, and other vehicle fluids and hydrocarbons (which can be toxic to aquatic organisms at low concentrations), while preventing infiltration of polluted runoff during storm events and facilitating the off-site transport of pollutants.

Residential development on the Project site would incrementally increase the amount of pollutants that could be contained in the first flush of runoff from the area associated with residents and associated uses (car washing, chemical cleaners, pets, trash, etc.). The increase in impervious surface to more than 37 percent of the Project site would incrementally increase peak flows from the site to offsite drainages (refer to Table 4.8.1). As discussed in the Section 4.8.1, stormwater runoff from the Project site would generally flow to detention basins before being discharged and eventually flowing into Tecolotito Creek, Los Carneros Creek, and the Goleta Slough.

Project features such as landscaping and permeable paving would mitigate the discharge of polluted runoff. In addition, installation of mutt-mitt dispensers and refuse receptacles along walking paths, and in park or open areas would reduce pollution from animal waste. As discussed in the preliminary drainage analysis for the Project (refer to Appendix G), the proposed drainage infrastructure would provide infiltratable features onsite to remove stormwater pollutants prior to discharge off-site. As downspouts on the proposed buildings convey runoff from rooftops, it would be discharged to landscaped common areas. A portion of runoff on the site would infiltrate the pervious surface in landscaped areas and percolate through the soil, reducing the transport of pollutants off-site. In addition, the proposed use of permeable pavers within the parking areas onsite, would enable infiltration of surface water during storm events. Nevertheless, the potential remains for pollutants from operation of the project to be discharged into Tecolotito Creek, Los Carneros Creek, and the Goleta Slough, all of which are listed as impaired waterways based on Central Coast RWQCB criteria. To address the potential for pollutant discharges into these impaired water bodies, the Project would be required to comply with the Post-Construction Stormwater Management Requirements of Order R3-2013-0032, as described under Impact HWQ-2.

By increasing the amount of effective impervious surface onsite by 37 percent, the Project would be subject to the most stringent criteria under Post-Construction Requirements. Based on the proposed site design, the Project would meet the performance measure for water quality (treatment of stormwater runoff up to the 85th percentile).



The applicant would be required to apply for a National Pollutant Discharge Elimination System (NPDES) Storm Water Permit from the California RWQCB. Implementation of the NPDES-required Storm Water Permit would ensure that 100 percent of rainfall from the site would flow either into/onto the source control BMPs or onto areas of undisturbed natural vegetation, and would reduce impacts that could occur from pollutants on-site or increase in storm flows on or off-site. Furthermore, as part of the comprehensive drainage report discussed under Impact HWQ-2, the applicant would be required to incorporate BMPs for stormwater quality into the Project's design, consistent with the requirements of the Central Coast RWQCB's Post-Construction Requirements.

With compliance with the Post-Construction Requirements, the Project would have a less than significant impact on water quality.

Mitigation Measures. Impacts related to water quality would be less than significant. No mitigation is necessary to further reduce impacts.

Residual Impact. Impacts would be less than significant without mitigation.

Impact HWQ-4 **The Project site is located outside of a FEMA-mapped flood area. Impacts related to flood hazards would be Class III, less than significant [Threshold 10].**

As discussed in Section 4.8.1(a), *Existing Conditions*, the Project site is outside of any flood hazard area as mapped by FEMA. Given the property's relatively flat topography and the minimal slopes on adjoining parcels, the threat of mudslides and other similar hazards is considered non-existent. The Project site is not subject to any hazard posed by a future failure of any upstream levee or dam as it is located outside of any dam inundation area mapped by the County of Santa Barbara (2006). The Project site is not within the General Plan potential tsunami run-up area, and is outside of the Tsunami Inundation Line mapped by CalEMA (2009). Therefore, the Project would have less than significant impacts related to flood hazards.

Mitigation Measures. Mitigation is not required as impacts would be less than significant.

Residual Impact. Impacts would be less than significant without mitigation.

c. Cumulative Impacts. Cumulative projects in the Goleta area, including those that are pending, approved, or under construction, would add 1,511 residential units and more than 1.8 million square feet of commercial and retail space. Collectively, these projects would add new sources of water pollution and would increase the amount of impervious surface in the Goleta area, contributing to existing impairments of waterways such as Tecolotito Creek, Los Carneros Creek, and the Goleta Slough. In particular, the Project could contribute to cumulative stormwater flows; sedimentation and siltation of surface water bodies; and water pollution from bacteria, metals and other sources. Given that Tecolotito Creek, Los Carneros Creek, and the Goleta Slough are currently impacted, cumulative impacts to water quality would be potentially significant.

Nevertheless, the Project would be subject to implementation of appropriate Best Management Practices in accordance with City, State, and Federal requirements. Furthermore, all qualifying projects are subject to the requirements of the NPDES Permit, which is specifically designed to develop, achieve, and implement a timely, comprehensive, and cost-effective storm water pollution control program. As



with the Project, cumulative projects that disturb more than one acre of soil would be required to compile and implement a SWPPP, which would include appropriate BMPs. Moreover, the Project would be expected to meet the applicable water quality standards and sufficiently reduce its incremental contribution to cumulative water quality impacts to a less than significant level. The Project, with incorporation of the proposed on-site detention systems, implementation of storm water standards/regulations, and implementation of mitigation measures included in this EIR would meet requirements for stormwater discharge during construction and operation of the Project. Therefore, the Project would not contribute significantly to cumulative impacts to regional water quality and hydrology.

