

## 3.9 HYDROLOGY AND WATER QUALITY

This section focuses on hydrologic processes, including water resources and flooding potential related to the proposed project. Impacts of the proposed project are assessed and mitigation measures are recommended to reduce potential project impacts related to hydrologic processes and water quality.

### 3.9.1 ENVIRONMENTAL SETTING

#### **Drainage and Flooding**

Annual rainfall averages approximately 14.11 inches at the Santa Barbara Airport, which is located approximately one mile northeast of the project area. Most rainfall occurs between December and March. Extended periods of heavy rainfall from winter storms originating over the Pacific Ocean can produce floods on the South Coast characterized by a rapid rise in stream flow followed by recession that can be almost as rapid. Streams in the region may be out of their banks for only a few hours or for several days. During winter months, a series of storms or a single stalled storm has produced large floods, which damaged property by erosion, flotation, inundation, and depositing debris against bridges and on downstream properties.

There are no surface creeks or rivers running through the project area. According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Maps (FIRM), the Isla Vista project area is located outside of the 100-year flood inundation area.<sup>1</sup> The only surface water features present in the project area are the man-made pond in Anisq'Oyo' Park and the vernal pools located in the Camino Corto and Del Sol open spaces and along the Del Playa Road bluff top. There are few defined natural drainage courses in the project area. Almost all runoff in the project area is discharged to the Pacific Ocean. Storm drains and street gutters collect runoff which is conveyed through culverts to the ocean. Surface runoff from the western edge (roughly west of Camino Corto Road) of the project area drains to Devereux Slough; the northern edge (roughly north of Picasso Road) drains toward Tecolotito Creek, which flows to Goleta Slough. Runoff from Embarcadero Del Mar and Embarcadero Del Norte Roadways travel by overland flow to the man-made pond in Anisq'Oyo' Park.

Some streets in the project area experience localized flooding during heavy storms when runoff exceeds storm drain capacity. These drains discharge along the bluffs at the 6700 block and the 6500 block of Del Playa Drive. Flooding mostly occurs along the 6500 and 6700 blocks of Sabado Tarde and Trigo Roads when storm drains located at the intersections with Camino Del Sur, Camino Pescadero, and El Embarcadero roadways get clogged with debris or when capacity is exceeded during large storm events.

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<sup>1</sup> FEMA, FIRM Map No. 0603312336E, Panel 2336, Revised June 2, 2004.

Flooding from tsunamis has occurred historically in the Santa Barbara/Goleta area; however, these occurrences are poorly documented. Tsunamis, mistakenly called "tidal waves", are a series of massive waves created by an underwater disturbance such as an earthquake. A tsunami can move hundreds of miles per hour in the open ocean and crash into land with waves as high as 100 feet or more, although most waves are less than 18 feet high.<sup>2</sup> Tsunamis may be generated by distant sources in other parts of the Pacific Rim, or by co seismic displacements on local faults, such as the Channel Islands Thrust fault system. Local earthquake events may trigger large-scale slope failures in the Santa Barbara channel, resulting in moderate to large local tsunami events such as that which occurred in 1812. Recent work suggests that purely tectonically generated tsunamis could result in run-up of about 7 feet, whereas combinations of tectonic sources and submarine mass movements could generate local tsunami run-up as high as about 50 feet (Borrero *et. al.*, 2001). The California Office of Emergency Services has been provided with a recommended tsunami evacuation zone by Synolakis (2003) of 33 feet above sea level for coastal portions of southern Santa Barbara County. The project area is located on a marine terrace that lies at an elevation of approximately 40 feet above mean sea level, seven feet above the tsunami evacuation zone. Therefore, tsunamis are not considered a significant threat in the project area.

### **Surface Water Quality**

Urban development increases the amount of impervious surface in a watershed as farmland, forests, and other vegetation with natural infiltration characteristics are converted into buildings with rooftops, driveways, sidewalks, roads, and parking lots with virtually no ability to absorb storm water. Storm water runoff washes over these impervious areas, picking up pollutants and gaining speed and volume along the way. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The resulting storm water flows are higher in volume, pollutants, and temperature than the flows from more pervious areas, which have more natural vegetation and soil to filter the runoff. Studies reveal that the level of imperviousness in an area strongly correlates with decreased quality of the nearby receiving waters.<sup>3</sup>

The primary source of water pollution in the south coast area comes from the untreated runoff flowing through gutters and storm drains into natural stream courses. This urban runoff comes from rooftops, streets, yards, gardens, open spaces, parking lots, orchards, agricultural fields, animal yards, golf courses, construction sites, and any other surface exposed to rain. Urban runoff also occurs from non-storm water runoff by over watering and other water uses that result in nuisance flows, such as car washing and pavement rinsing. Drainages collect animal waste, oil and rubber residue from cars, asbestos and metals from brake linings, pesticides, sediment, and various types of organic matter. These inputs contain high bacterial counts and viruses, are toxic to marine life, and carry garbage and silt that litter the ocean and its beaches and kill or injure aquatic life. This runoff is conveyed by sheet flow and through storm drains and discharges to local creeks and the ocean. It is generated from multiple

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<sup>2</sup> FEMA, <http://www.fema.gov/areyouready/tsunamis.shtml>, updated May 4, 2004. Accessed October 19, 2004.

<sup>3</sup> Santa Barbara County, *Environmental Thresholds and Guidelines Manual*, 1992, revised 2002.

sources and is considered non-point source pollution. Other than the storm drain system, there are currently no regulated point source discharges in the project area.

The RWQCB identifies beneficial uses for each water body and groundwater basin in its jurisdiction and sets water quality objectives, as well as the level of treatment necessary to maintain the objectives and ensure the continuance of the beneficial uses. These beneficial uses and objectives are presented in the regional Water Quality Control Plan or Basin Plan. The objectives are implemented and enforced through discharge requirements and permits.

Beneficial uses of the water bodies that receive runoff from the project area are listed below in Table 3.9-1.

**Table 3.9-1  
Beneficial Uses of Receiving Waters Adjacent to the Project Area**

WATERBODY	MUN	GWR	FRSH	REC1	REC2	NAV	IND	MAR	WILD	WARM	COLD	EST	MIGR	SPWN	BIOL	RARE	COMM	SHELL
Devereaux Ranch Lagoon/Slough				X	X				X	X		X	X	X	X	X	X	X
Devereaux Creek	X	X	X	X	X				X	X							X	
Goleta Point Marsh				X	X				X	X				X	X	X	X	
Goleta Slough				X	X				X	X		X	X	X	X	X	X	X
Tecolotito Creek	X	X	X	X	X				X	X	X		X				X	
Coastal Water - Coal Oil Pt. to Rincon Pt.				X	X	X	X	X	X							X	X	X

MUN - Municipal and Domestic Supply  
 GWR - Ground Water Recharge  
 FRSH - Freshwater Replenishment  
 REC-1 - Water Contact Recreation  
 REC-2 - Non-Contact Water Recreation  
 NAV - Navigation  
 IND - Industrial Service Supply

MAR - Marine Habitat  
 WILD - Wildlife Habitat  
 WARM - Warm Fresh Water Habitat  
 COLD - Cold Fresh Water Habitat  
 EST - Estuarine Habitat  
 SPWN - Spawning, Reproduction, and/or Early Development

MIGR - Migration of Aquatic Organisms  
 BIOL - Preservation of Biological Habitats of Special Significance  
 RARE - Rare, Threatened, or Endangered Species  
 COMM - Commercial and Sport Fishing  
 SHELL - Shellfish Harvesting

Source: Central Coast RWQCB, Basin Plan, September 1994.

The County’s Project Clean Water has analyzed storm water quality in creeks throughout urbanized areas on the south coast from Rincon Point to western Goleta Valley since 1999. Between 1999 and 2001, samples were taken in the lower Devereux Creek watershed at Devereux Creek between the Ocean Meadows Golf Course and Devereux Slough. This site is slightly upstream of the project area. Nonetheless, analytical results for these samples exceeded applicable water quality standards for pesticides, metals, and bacteria.<sup>4</sup>

The County Public Health Department began testing local beaches for bacteria in 1995. Sampling results for 1998 to 2003 indicate that Sands Beach at Coal Oil Point, approximately one mile west of the project area where Devereux Slough discharges during the rainy season, has exceeded water quality standards for bacteria 4% to 12% of the time. Goleta Beach,

<sup>4</sup> Project Clean Water. Water Quality Analysis Report Rain Year 1999-2000. Santa Barbara County Public Works Department and Public Health Department. 2000.

where Goleta Slough discharges approximately 1.5 miles east of the project area, has exceeded water quality standards for bacteria 11% to 27% of the time.<sup>5</sup>

Goleta Slough/Estuary is listed under Section 303(d) of the Clean Water Act (CWA) as a water quality limited segment due to metals, pathogens, priority organics, and sedimentation/siltation.<sup>6</sup> The law requires that jurisdictions establish priority rankings for water bodies on the list and develop action plans, called Total Maximum Daily Loads (TMDLs) that limit pollutant loads to improve water quality. However, the priority for Goleta Slough/Estuary is ranked low and the RWQCB has not yet established TMDLs.

In an effort to reduce trash and debris on the beach in Isla Vista, the County's Public Works Department began installation of four Continuous Deflective Separation (CDS) units along Del Playa Drive in January 2003. Runoff passes through the units, which collect anything larger than 5 millimeters, before it is directed to the ocean. The units are maintained by Public Works and are cleaned out at least once per year. Public Works emptied 1.2 tons of trash from the first CDS unit after only ten months of operation.

**Erosion/Sedimentation.** As described in Section 3.6, Geologic Hazards, soils in the planning area are classified as sandy loam with some clay layers. The erosion potential for native soils in the project area is considered minimal due to limited topographical variation and drainage courses, with the exception of the bluffs which are subject to wave erosion. Much of the resulting sedimentation is deposited in receiving waters, i.e., Devereux Slough, Tecolotito Creek, Goleta Slough, and the Pacific Ocean. A further discussion of erosion potential in the project area is provided in Section 3.6, Geologic Hazards.

## **Groundwater**

There are no potable groundwater resources beneath the project area that would be impacted by the proposed project. The project area is underlain by approximately 15 to 20 feet of unconsolidated sandy sediments, which overlie dense claystone. Groundwater is only present in the sandy sediments as perched water that flows along the top of the claystone. In the early 1970's, a well was drilled in Anisq'Oyo' Park for irrigation purposes. The well suffered from salt water intrusion into the aquifer and ceased operating. There are no other wells in the project area.

### **3.9.2 REGULATORY FRAMEWORK**

#### **Federal Regulations and Administering Agencies**

**National Flood Insurance Act and Flood Disaster Protection Act.** Congress passed the National Flood Insurance Act (42 USC §§4001 et seq.) of 1968 and the Flood Disaster Protection Act (42 USC §§ 4001 et seq.) of 1973 to reduce the costs of disaster relief and

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<sup>5</sup> Santa Barbara County Public Health Department. <http://www.sbcphd.org/ehs/PerEx1998-2003.htm>, last updated January 26, 2004. Accessed July 27, 2004.

<sup>6</sup> State Water Resources Control Board. 2002 CWA Section 303(d) List of Water Quality Limited Segments. Approved by USEPA July 2003.

reduce the need for large, publicly funded flood control structures and disaster relief efforts by restricting development in floodplains. FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in a floodplain. FEMA issues FIRMs delineating flood hazard zones in the communities participating in the National Flood Insurance Program.

**Clean Water Act.** The Clean Water Act (CWA) (§311; 33 USC §1321; 40 CFR Parts 110, 112, 116, 117) requires the reporting of any prohibited discharge of oil or hazardous substance. In the project area, this requirement is regulated by the Central Coast RWQCB and the County Office of Emergency Services (with oversight provided by the EPA Region IX).

*Sections 401 and 404.* Discharge of dredge or fill material into waters of the U.S. (e.g., wetland, creek) are regulated under Section 404 of the CWA. Such activities would require a 404 Permit from the U.S. Army Corps of Engineers, as well as an associated Section 401 Water Quality Certification from the Central Coast RWQCB. Refer to section 4.4 Biological Resources for more information.

*National Pollutant Discharge Elimination System (NPDES).* The NPDES Storm Water Program (40 CFR §122.1 et seq.) was mandated by Congress under the CWA to address non-agricultural sources of storm water discharges that adversely affect receiving water quality. The program requires regulated entities to obtain coverage under an NPDES storm water permit and implement storm water pollution prevention plans (SWPPPs) or storm water management programs/plans (SWMP) using best management practices (BMPs) that effectively reduce or prevent the discharge of pollutants into receiving waters.

The program was implemented in two phases: Phase I NPDES regulations were published on November 16, 1990, and Phase II regulations were published December 8, 1999. Phase I regulates storm water discharges for medium (100,000 to 250,000 people) and large (250,000 or more people) municipalities, construction activities of five or more acres (less than five acres if part of a common plan of development or sale), and industrial activities. Phase II regulates storm water discharges for small municipalities and construction activities that disturb one or more acres of land (or less than one acre if part of a common plan of development of sale).

The EPA administers the NPDES Program under sections 318, 402, and 405 of the CWA. Pursuant to authority provided by the California Water Code (§13370 et seq.), the State Water Resources Control Board (SWRCB) is authorized to administer the program on behalf of the EPA. Permits are obtained through one of the nine RWQCBs.

*Section 303(d).* Under Section 303(d) of the 1972 Clean Water Act, states, territories and authorized tribes are required to develop a list of water quality limited segments that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water on the lists and develop TMDLs to improve water quality.

### **State Regulations and Administering Agencies**

**California Coastal Act.** The California Coastal Act Coastal Resources Planning and Management Policies include provisions (§30220, 30221, and 30223) for the protection and management of coastal hydrologic resources. The Coastal Act includes several policies (30231.1 through 30231.3) that directly address the issue of storm water runoff and its potential effects on water quality, particularly as it relates to protecting the water quality of wetlands and coastal waters. These policies identify numerous specific measures to reduce the potential for impacts to water quality, including compliance with all applicable standards of the RWQCB (30231.2).

**SWRCB and RWQCB.** The SWRCB manages the quality and allocation of the state's water resources for the benefit of present and future generations. The SWRCB sets statewide water quality protection policy and allocates surface water rights. Each RWQCB makes decisions regarding water quality for its region including setting standards, issuing waste discharge requirements and permits, determining compliance and taking enforcement action.

**NPDES Permits.** The NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Construction General Permit, 99-08-DWQ) requires landowners to file a Notice of Intent (NOI) to discharge storm water runoff to waters of the U.S. from land disturbances greater than one acre or projects that disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original grade or capacity of the facility. The Construction General Permit generally requires dischargers to eliminate non-storm water discharges to storm water systems, develop and implement a SWPPP, and inspect storm water pollution prevention measures. The SWPPP must list BMPs that the discharger will use to protect runoff and the placement of those BMPs. Additionally, the SWPPP must contain a monitoring program. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP.

As part of Phase II regulations, the SWRCB adopted a General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems (MS4s) (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities, including non-traditional small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes. The MS4 General Permit requires the development and implementation of a SWMP with the goal of reducing the discharge of pollutants to the maximum extent practicable. The SWMP specifies what BMPs will be used to address certain program areas. The program areas include public education and outreach; illicit discharge detection and elimination; construction and post-construction; and good housekeeping for municipal operations. In general, medium and large municipalities are required to conduct chemical monitoring, though small municipalities are not.

### **Local Authorities and Administering Agencies**

Administering agencies within the County of Santa Barbara for flooding/hydrology issues are the Department of Public Works and P&D. Within Public Works, the Flood Control and Water Conservation District is charged with flood control activities as they relate to the hydrology and conveyance of storm water in drainages under County jurisdiction, while Project Clean Water deals with water quality issues in both storm water and non-storm water discharges to drainages in the County. Public Works has adopted Standard Conditions for Project Approval Water Quality BMPs, hereby incorporated by reference, that set design standards for capturing and/or treating storm water and non-storm water runoff from certain projects (County of Santa Barbara County, 2003c).

In September 2002, the Board of Supervisors adopted the following items in response to updated water quality regulations:

- Interpretive and implementation guidelines for key Comprehensive Plan policies addressing water quality
- A new section of the Environmental Thresholds and Guidelines Manual to assess surface and storm water quality impacts, to determine whether impacts are significant and to provide a mitigation hierarchy
- Construction site Best Management Practices manuals

In October 2002, the Board of Supervisors adopted revisions to the County grading ordinance to comply with NPDES Phase II regulations. Additional program elements include: revisions to the County's CEQA initial study checklist to bring attention to storm water pollution as an area of new development and redevelopment; and new and revised conditions of approval and mitigation measures to implement key policies and address identified CEQA impacts.

### ***Santa Barbara County Local Coastal Plan (LCP)***

The LCP contains the principal land use policies for development within Santa Barbara County's Coastal Zone. The LCP indicates the kinds, location, and intensity of land uses, the applicable resource protection and development policies and a listing of implementing actions. The County's LCP first came into effect in 1982, and has been revised periodically to update policies in geographic sub-areas.

The County has incorporated numerous goals and policies into the LCP in order to ensure conformance with California Coastal Act policies. These policies include:

- **Policy 3-17:** Temporary vegetation, seeding, mulching, or other suitable stabilization method shall be used to protect soils subject to erosion that have been disturbed during grading or development. All cut and fill slopes shall be stabilized immediately with planting of native grasses and shrubs, appropriate nonnative plants, or with accepted landscaping practices.

- **Policy 3-6:** Development and activity of any kind beyond the required bluff top setback shall be constructed to insure that all surface and subsurface drainage shall not contribute to the erosion of the bluff face or the stability of the bluff itself.
- **Policy 3-16:** Sediment basins, including debris basins, desilting basins, or silt traps, shall be installed on the project site in conjunction with the initial grading operations and maintained throughout the development process to remove sediment from runoff waters. All sediment shall be retained on site unless removed to an appropriate dumping location.
- **Policy 3-18:** Provisions shall be made to conduct surface water to storm drains or suitable watercourses to prevent erosion. Drainage devices shall be designed to accommodate increased runoff resulting from modified soil and surface conditions as a result of development. Water runoff shall be retained on-site whenever possible to facilitate groundwater recharge.
- **Policy 3-19:** Degradation of the water quality of groundwater basins, nearby streams, or wetlands shall not result from development of the site. Pollutants, such as chemicals, fuels, lubricants, raw sewage, and other harmful waste, shall not be discharged into or alongside coastal streams or wetlands either during or after construction.

#### ***County Comprehensive Plan/Goleta Community Plan***

The Goleta Community Plan was adopted by the County Board of Supervisors in July of 1993 as the focused policy document for the unincorporated areas of Goleta. Because the area is within the coastal zone, County policies for the area were reviewed and certified by the California Coastal Commission. Applicable policies in the Goleta Community Plan include:

- **Policy FLD-GV-1:** The number of persons and amount of property exposed to flood hazard shall be minimized through requiring adequate setbacks from the floodway and/or other appropriate means.
- **Policy FLD-GV-2:** No structures (except flood control) shall be allowed within creek channels or along creek banks. Structural setbacks (usually a minimum of 50-feet from top of bank) which are adequate to protect life and property from potential flood hazards shall be provided.

Additional policies call for the proper grading, stabilization, re-vegetation, and restoration of degraded areas to help to reduce erosion and sedimentation.

#### ***County Grading, Erosion, and Sediment Control Ordinance (Ordinance No. 4477)***

The County Grading Ordinance provides minimum standards and procedures necessary to protect and preserve property and public health and welfare. The ordinance also addresses compliance with the NPDES Phase II storm water regulations and sets forth local storm water requirements for the disturbance of less than one acre, to avoid pollution of water courses with sediments or other pollutants generated on or caused by surface runoff across the construction site.



The required contents of the County's Erosion and Sediment Control Plan are contained in Section 14-29 of the County Grading Ordinance. These requirements require, in part, that the Erosion and Sediment Control Plan shall specify which erosion control measures necessary to control runoff shall be in place during the rainy season (November 1 through April 15) and which measures shall be in place year round. At a minimum, during the rainy season no grading shall occur unless approved erosion and sediment control measures are implemented. Erosion and sediment control measures shall be in place prior to any grading on hillsides, sloping or mountainous terrain. Measures for non-storm water construction site discharge shall be implemented year round.

***County Floodplain Management Ordinance (Ordinance No. 3898)***

Federal regulations and the County's Floodplain Management Ordinance prohibit encroachment into the floodway unless it is shown by a Registered Civil Engineer that the encroachment will not result in a rise in the Base Flood Elevation (BFE). If the development would encroach, the project must mitigate for that encroachment and demonstrate "no rise" and no loss of conveyance. Section 15 A-16, Standards for New Construction, Subsection 3.A of the ordinance requires that new construction shall have the lowest floor, including basement, elevated two feet above the BFE, unless such minimum elevation is lowered by the Floodplain Administrator at his discretion (but not below the BFE).

**3.9.3 THRESHOLDS OF SIGNIFICANCE**

The County Board of Supervisors adopted guidelines for assessing project-specific and cumulative water quality impacts on September 24, 2002. The assessment of impacts must account for construction-related impacts, i.e., vegetation removal, erosion, use of construction materials on the site, and staging of construction activities and post-construction or post-development impacts (i.e., increases in impervious surfaces and increased runoff, entrainment of pollutants, and effects of discharges on aquatic habitats and biota).

***Project Specific Potential Significance Impacts***

- (a) A significant water quality impact is presumed to occur 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 or sale would disturb one (1) or more acres of land;
  - Increases the amount of impervious surfaces on a site by 25% or more;
  - Results in channelization or relocation of a natural drainage channel;
  - Results in removal or reduction of riparian vegetation or other vegetation (excluding non-native vegetation removed for restoration projects) from the buffer zone of any streams, creeks or wetlands;
  - Is an industrial facility that falls under one or more of categories of industrial activity regulated under the NPDES Phase I industrial storm water regulations (facilities with effluent limitation; manufacturing; mineral, metal, oil and gas, hazardous waste,

treatment or disposal facilities; landfills; recycling facilities; steam electric plants; transportation facilities; treatment works; and light industrial activity);

- Discharges pollutants that exceed the water quality standards set forth in the applicable NPDES permit, the RWQCB's Basin Plan or otherwise impairs the beneficial uses of a receiving waterbody;
- 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 Federal Water Pollution Prevention and Control Act, i.e., the CWA; and
- Results in a discharge of pollutants of concern to a receiving water body, as identified in by the RWQCB.

(b) Projects that are not specifically identified on the above list or are located outside of the "urbanized areas" may also have a project-specific storm water quality impact. Storm water quality impacts associated with these projects must be evaluated on a project by project basis for a determination of significance. The potential impacts of these projects should be determined in consultation with the County Water Agency, Flood Control Division, and RWQCB. The issues that should be considered are:

- the size of the development;
- the location (proximity to sensitive water bodies, location on hillsides, etc.);
- the timing and duration of the construction activity;
- the nature and extent of directly connected impervious areas;
- the extent to which the natural runoff patterns are altered;
- disturbance to riparian corridors or other native vegetation on or off-site;
- the type of storm water pollutants expected; and
- the extent to which water quality BMPs are included in the project design.

(c) All projects determined to have a potentially significant storm water quality impact must prepare and implement a Storm Water Quality Management Plan (SWQMP) to reduce the impact to the maximum extent practicable. The SWQMP shall include the following elements:

- identification of potential pollutant sources that may affect the quality of the discharges to storm water;
- the proposed design and placement of structural and non-structural BMPs to address identified pollutants;
- a proposed inspection and maintenance program; and
- a method of ensuring maintenance of all BMPs over the life of the project.

The County Water Quality Conditions for Treatment Control BMPs are triggered by the following development sizes and types<sup>7</sup>:

- 1 acre or greater residential
- 0.5 acre or greater commercial, industrial, or transportation / vehicle facilities

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<sup>7</sup> Applies to the development size, not lot size or construction area size.

- Single family hillside residence
- Automotive repair shops
- Retail gasoline outlets greater than 5,000 sf
- Restaurants greater than 5,000 sf
- Home subdivisions with 10 or greater units
- Parking lots 5,000 square feet or more
- Parking lots with 25 or more spaces and exposed to storm water

Implementation of BMPs identified in the SWQMP will generally be considered to reduce the storm water quality impact to a less than significant level.

### *Less than Significant Impacts*

The following land uses and projects are generally presumed to have a less than significant project-specific water quality impact. These include:

- Redevelopment projects that do not increase the amount of impervious surfaces on the site nor change the land use or potential pollutants;
- New development and redevelopment projects that incorporate into the project design construction BMPs for erosion, sediment and construction waste control and incorporate post-construction BMPs to protect sensitive riparian or wetland resources, reduce the quantity of runoff, and treat runoff generated by the project to pre-project levels;
- Lot line adjustments that do not alter the development potential of the lots involved;
- Development of a single family dwelling and associated accessory uses including but not limited to roads and driveways, septic systems, guesthouse, pool, etc., disturbing less than one acre on an existing legal lot.

## **3.9.4 PROJECT IMPACTS AND MITIGATION MEASURES**

### **Impact HYD-1: Construction associated with IVMP development/redevelopment could create water quality impacts.**

Development/redevelopment projects could generate pollutants and sediment in runoff during activities such as site clearing, demolition, excavation, grading, and construction. Bare soil exposed during site clearing and grading would be more prone to erosion than under existing conditions.

Construction projects disturbing one or more acres are subject to NPDES Phase II permit regulations, which require preparation of a SWPPP to control the discharge of pollutants, including sediment, into local surface water drainages. The SWPPP is designed to minimize water quality degradation through storm water monitoring, establish BMPs, implement erosion control measures, and implement spill prevention and containment measures.

In addition to NPDES permit requirements, construction activities would also be subject to the County's grading ordinance. The grading ordinance generally requires a grading permit and an Erosion and Sediment Control Plan for all new grading, excavations, fills, cuts, borrow pits, stockpiling, compaction of fill, and land reclamation projects on privately owned land where the transported amount of materials exceeds 50 cy or the cut or fill exceeds three feet in vertical distance to the natural contour of the land. The County will accept a SWPPP in lieu of an Erosion and Sediment Control Plan, as long as the SWPPP contains the requirements of the County's Erosion and Sediment Control Plan. In addition, a master drainage plan is required as part of the grading plan for all grading permit applications.

a) In accordance with NPDES and/or grading permit requirements, the SWPPP or Erosion and Sediment Control Plan would describe BMPs to be implemented during grading and construction to minimize water quality degradation through erosion control, spill prevention and containment measures, and good housekeeping practices. Implementation of a SWPPP or Erosion and Sediment Control Plan would reduce potential impacts to less than significant levels.

b) For projects not subject to NPDES or grading permit requirements, *potentially significant* impacts may occur. Implementation of the following mitigation measures would ensure that construction related water quality impacts are reduced to less than significant levels.

**Mitigation Measure HYD-1:** At a minimum, the following BMPs designed to reduce or eliminate construction site pollutants shall be incorporated into all project plans as a condition of approval and be implemented during construction:

*Construction Site Planning BMPs*, including but not limited to:

- a) the amount of cuts and fills shall be minimized
- b) only the minimum amount of vegetation necessary for construction shall be removed
- c) the clearing limits, setbacks, protected habitat areas, trees, drainage courses, and buffer zones shall be delineated on plans and in the field to prevent excessive or unnecessary soil disturbance and exposure
- d) excavation and grading shall be avoided during the rainy season
- e) grading operations shall be phased to reduce the extent of disturbed areas and length of exposure
- f) impervious surface areas shall be minimized and permeable paving materials shall be used whenever possible
- g) concrete, asphalt, and seal coat shall be applied during dry weather only; storm drains and manholes within the construction area shall be covered when paving or applying seal coat, slurry, fog seal, etc.

*BMPs to Minimize Soil Movement*, including but not limited to:

- a) exposed stockpiles of soil and other erosive materials shall be covered during the rainy season
- b) soil stabilizers shall be employed, as appropriate
- c) disturbed soils shall be restored and revegetated as soon as practicable

- d) sediment and construction materials shall be dry-swept from finished streets the same day they are deposited
- e) tire wash stations, gravel beds, and/or rumble plates will be installed at site entrance and exit points to prevent sediment from being tracked onto adjacent roadways
- f) any sediment or other materials tracked off site shall be removed the same day as they are tracked using dry cleaning methods
- g) site runoff control structures, such as earth berms, gravel bags, silt fences, drainage swales, and ditches that reduce erosion and convey surface runoff during construction into temporary or permanent sediment detention basins shall be installed and made operational in the initial phase of construction, as necessary.

*Good Housekeeping BMPs*, including but not limited to the following requirements:

- a) all storm drains, drainage patterns, and creeks located near the construction site prior to construction shall be identified to ensure that all subcontractors know their location to prevent pollutants from entering them
- b) storm drain inlets shall be protected from sediment-laden waters for the duration of the grading period and until graded areas have been stabilized by structures, long-term erosion control measures or landscaping
- c) all leaks, spills, drips shall be immediately cleaned up and disposed of properly
- d) one or more emergency spill containment kits shall be placed on-site in easily visible locations and personnel will be trained in proper use and disposal methods
- e) vehicles and heavy equipment shall be refueled and serviced in one designated site located at least 500 feet from creeks and drainage swales; vehicles and heavy equipment that are leaking fuel, oil, hydraulic fluid or other pollutants shall be immediately contained and either repaired immediately or removed from the site
- f) temporary storage of construction equipment shall be limited to a 50- x 50-foot area and shall be located at least 100 feet from any water bodies
- g) trash cans shall be placed liberally around the site and properly maintained
- h) dry clean-up methods shall be used whenever possible
- i) construction material and waste management practices shall be identified, including temporary borrow and waste disposal areas, temporary debris and garbage disposal, and chemical/fuel storage areas
- j) washing of concrete trucks, paint, equipment, or similar activities shall be at least 100 feet from any storm drain, water body or sensitive biological resources and shall occur only in areas where polluted water and materials can be contained for subsequent removal from the site; wash water shall not be discharged to the storm drains, street, drainage ditches, creeks, or wetlands
- k) all subcontractors and laborers shall be educated about proper site maintenance and storm water pollution control measures through periodic “tailgate” meetings

**Residual Impacts:** Implementation of a SWPPP and BMPs during construction has significantly reduced water quality impacts at construction sites throughout the State. With implementation of a SWPPP and BMPs listed above, no substantial erosion or additional pollutants would be expected to occur at construction sites. Residual impacts for HYD-1b would be *mitigated to less than significant levels (Class II)*.

**Impact HYD-2: Water quality may be impacted by build out of the IVMP from occupancy-generated storm water runoff pollution.**

Increased development could potentially reduce the quality of runoff when it picks up pollutants as it flows over rooftops, driveways, sidewalks, roads, and parking lots, which are then carried to receiving waters. Four CDS units are installed along Del Playa Drive to intercept trash before the storm drains discharge to the ocean. The units do not remove dissolved constituents or material smaller than 5 millimeters.

Individual development projects with a potentially significant impact on water quality would be required to implement a SWQMP as described above under Thresholds of Significance part (c) to reduce the impact to the maximum extent practicable. The SWQMP would require identification of potential pollutant sources that may affect the quality of the discharges to storm water, the proposed design and placement of structural and non-structural BMPs, and inspection and maintenance of BMPs over the life of the project.

Measures that can effectively mitigate impacts associated with occupancy-generated storm water runoff pollution fall into three classes of BMPs:

- *Site Planning Measures* that minimize directly-connected impervious surfaces and maximize infiltration, including the following required measures: using pervious paving materials to the maximum extent practicable; directing runoff from roofs and driveways into either a subsurface infiltration trench, French drains, adjacent landscaped areas, or into the site's irrigation system; clustering development and; mandating creation of open space areas.
- *Pollution Prevention/Source Control Measures* that avoid polluting storm water over the long-term by eliminating sources, including the following required measures: providing sufficient waste receptacle containers, creating berms around waste receptacle areas; incorporating low- or no-irrigation landscapings; and, employing Integrated Pest Management techniques in landscape maintenance.
- *Treatment Control Measures* that capture, treat, and/or filter water to remove pollutants from on-site runoff before it enters the storm drain system or other receiving waters must meet design standards of Public Works. These measures may include, but not be limited to: infiltration, evapotranspiration, and storage/reuse, e.g., rooftop catchment systems, vegetated filter strips and bioswales, storm water detention basins, storm drain filters/inserts, and in-line clarifiers or separators.

Implementation of the SWQMP and post-construction BMPs would generally reduce storm water quality impacts to *less than significant levels (Class III)*.

**Impact HYD-3: IVMP Build-out would increase surface runoff.**

Build-out under the IVMP would add 51,485 sf of commercial space and 1,447 residential units, 382 of which would be located in the downtown. Most of the property in the downtown is already developed and the additional square footage of commercial space would be added by additions to existing structures, with infill on underdeveloped properties. The downtown

residential units would be added as second or third stories above commercial space on the ground floor. The IVMP also proposes to remove and relocate some of the existing structures and parking lots in the downtown parks, which would decrease impervious surfaces in the downtown. Build-out outside of the downtown would convert some existing vacant property to residential land uses. Some of the new units would result from density increases on underdeveloped land. New IVMP policies and development standards encourage the use of pervious materials and the reduction of impervious surfaces for new development and redevelopment, except along south side Del Playa Drive where bluff top erosion is a concern. Therefore, increases in impervious surfaces would be relatively minor compared to existing conditions. Nonetheless, build-out of the IVMP would result in an overall increase in impervious surfaces and associated runoff.

Because some streets in the project area experience localized flooding during heavy storms when runoff exceeds storm drain capacity, an increase in runoff would be a significant impact for these areas. Projects that increase impervious surfaces by more than 25% would trigger the threshold identified above and would be required to implement BMPs that would reduce impacts to less than significant. Projects that increase impervious surfaces by less than 25% are generally considered to be insignificant; however, due to the storm drain capacity issues that currently exist in Isla Vista, runoff from these projects could create a *potentially significant impact*.

The following mitigation measures serve to contain, control and decrease surface runoff caused by increased impervious surfaces from new development.

**Mitigation Measure HYD-2:** New development and redevelopment project that would increase impervious surfaces beyond existing site conditions shall include a drainage plan to be submitted to the County Public Works and County Flood Control District for review, assessment of runoff impact to Isla Vista storm drain capacity, and conditioned for BMPs to retain or detain runoff onsite as required by the SWQMP. Where infiltration or retention on site is proposed, the drainage plan shall also be reviewed by the P&D registered geologist for soil feasibility and design constraints.

**Mitigation Measure HYD-3:** To reduce storm water runoff, one of the following driveway designs shall be used on new development and redevelopment projects paving only under wheels, flared driveway, or use of permeable surfaces for temporary or non-permanent parking areas.

**Residual Impacts:** With implementation of the above mitigation measures, runoff and drainage impacts would be minimized and *feasibly mitigated to less than significant (Class II)*.

### **Cumulative Impacts**

The pending and approved projects identified in Chapter 3, will result in cumulative impacts to hydrology and water quality resources. Together, these cumulative projects will ultimately generate 3,351,485 sf of commercial and industrial development and 3,313 new residential units throughout the Goleta Valley, UCSB and Isla Vista area. This will result in a

cumulatively significant amount of storm water runoff that has the potential to affect erosion, receiving bodies, and groundwater quality in the project area.

Build-out under the IVMP would result in increased density and increased impervious surfaces. With respect to surface water quality, construction activity would increase potential sedimentation and other pollutants from spills or leaks, and new development would increase the generation of urban pollutants that can adversely impact water quality over the long-term.

Because of the County's designation under the Phase II NPDES regulations, all discretionary projects (except those that do not result in a physical change to the environment) within the urbanized area whose contributions are cumulatively considerable must implement one or more BMPs to reduce their contribution to the cumulative impact. All future significant development would be subject to implementation of BMPs in accordance with NPDES permit and SQWMP requirements to reduce pollutants in storm water discharges to the maximum extent practicable. In addition, development in the project area would be subject to Mitigation Measures HYD-1 through 4. Therefore, with implementation of applicable requirements on all development in the area, IVMP program impacts would be *reduced to less than significant levels (Class II)*.

The implementation of the IVMP will contribute a significant amount of this cumulative growth to the area (1,447 housing units and 51,485 sf of commercial development). As a result, the project's cumulative impacts to hydrology and water quality are significant and unavoidable (Class I).