

INTRODUCTION

The following section describes existing drainage patterns in and around the proposed Specific Plan Area, describes the proposed RiverPark Specific Plan Master Plan of Drainage, and evaluates the potential impacts on existing drainage patterns and conditions. Information on the existing drainage conditions and the design of the proposed drainage system is incorporated from the City of Oxnard Master Plan of Drainage (2001) and a hydrology and hydraulics study prepared by Huitt-Zollars. These studies are available for review at the City of Oxnard.

EXISTING CONDITIONS

City of Oxnard Surface Hydrology Conditions

The Oxnard Plain has little topographic relief and is located at a minimal elevation above sea level. Major drainages in the City of Oxnard include the Santa Clara River, agricultural sloughs, and a combination of City owned and Ventura County Flood Control District (VCFCD) storm drains and flood control channels. The City is located within the Santa Clara River Basin, which drains a watershed area of approximately 1,624 square miles in Ventura and northern Los Angeles Counties. The segment of the Santa Clara River located along the western edge of the City of Oxnard is the last stretch of the river before it discharges into the Pacific Ocean. Flood control responsibility for the Santa Clara River in Ventura County lies with the Ventura County Flood Control District (VCFCD). Improved drainage channels within the City of Oxnard include the Patterson Drain, Doris Avenue Drain, Wooley Road Drain, Oxnard West Drain, Oxnard Industrial Drain, Rice Road Drain, J Street Drain, El Rio Drain, Santa Clara Avenue Drain, the Stroube Drain, and the Fifth Street Drain. These drainage facilities convey runoff to outlet points located in the southern and western portion of the City.

Existing Drainage Conditions

The RiverPark Specific Plan Area is generally flat with existing gradients of less than 0.5 percent. The land generally follows the gradient of the adjacent Santa Clara River and slopes to the southwest corner of the Specific Plan Area near the point where the Ventura Freeway crosses the Santa Clara River. The RiverPark Specific Plan Area contains approximately 701 acres and currently accepts runoff from areas outside the Specific Plan Area totaling over 500 acres. **Figure 4.11.1-1** shows existing

drainage facilities and the drainage areas within, and currently draining to, the Specific Plan Area. The existing drainage areas within the Specific Plan Area and off-site areas that currently drain to the Specific Plan Area are described below.

Drainage Areas within the Specific Plan Area

Drainage Area 1: This drainage area includes RiverPark Area 'A', bounded by the Ventura Freeway, the Santa Clara River, Vineyard Avenue, and the City limits. This area currently consists of approximately agricultural and commercial uses. The two office buildings and streets existing in the southwestern corner of the Specific Plan Area were built in conformance with the City's Oxnard Town Center Specific Plan. Ventura Road and a portion of Town Center Drive were built to support development of these buildings. A large 10-foot wide by 9-foot high reinforced concrete box storm drain was also built at the time Ventura Road and Town Center Drive were built. This facility is commonly referred to as the "Stroube Drain" and currently discharges through the levee to the Santa Clara River approximately 600 feet north of the US 101 Santa Clara River Bridge. As shown on **Figure 4.11.1-1**, the Stroube Drain currently extends from the western edge of the Specific Plan Area to the end of Town Center Drive. Ventura Road also contains a storm drain that contributes runoff to the Stroube Drain. These facilities drain the existing development in this area.

Most of Drainage Area 1 consists of agricultural fields at this time. Runoff from this agricultural land ponds onsite and eventually percolates or enters the Stroube Drain. An open earth drainage ditch located along the north side of El Rio Drive collects runoff and conveys it to the end of Town Center Drive to the Stroube Drain. There is also an existing storm drain system on the north and west edges of the County El Rio Maintenance Yard that drains to an existing Caltrans drain on the north side of the Ventura Freeway.

The portion of Drainage Area 1 located between the Ventura Freeway, Myrtle Street and Vineyard Avenue drains to Vineyard Avenue.

Drainage Areas 2a and 2b: Drainage Areas 2a and 2b include the RiverPark 'B' area. The existing sand and gravel mine occupies the majority of this area. The existing Large Woolsey, Small Woolsey, Brigham and Vickers mine pits occupy the northern and eastern portions of the mine site. The plant and stockpile areas occupy make up the remainder of the mine site. There are existing drains to the Santa Clara River at the southwest corner of the mine site and at the northwest corner of the mine plant area. An open earth drainage channel along the boundary of River Park Areas 'A' and 'drains to a 48-inch outlet through the levee to the river. At the northwest corner of the plant area there are 48-inch and

Figure 4.11.1-1
Site Drainage Area Locations

36-inch drain outlets through the levee. The topography in this portion of the mine site is varied due to the historic mining operations of cutting, filling, and disposal of tailings. A minor amount of the storm flows from this area drain to the west towards the earth drainage ditch located on the boundary of River Park Areas 'A' and 'B' and discharges to the Santa Clara River. The majority of the flows from these areas flow towards and into the existing Brigham/Vickers mine pits.

Off-site Tributary Drainage Areas

Drainage Areas 3a and 3b: The off-site areas located between Vineyard Avenue and the Large and Small Woolsey Mine Pits consist of two distinct drainage areas. Drainage Area 3a includes the Beedy Street industrial area and the site of the Ventura County Juvenile Justice Center, which is currently under construction. Currently the Beedy Street Industrial Area drains to the Large Woolsey Mine Pit through a 24-inch drain. Drainage Area 3b includes the Montgomery Avenue/Lambert Street and Carnegie Street industrial areas. The northern half of the Montgomery Avenue/Lambert Street area drains into the Large Woolsey Mine Pit through a 36-inch drain located at the end Lambert Street. The southern half of the Montgomery Avenue/Lambert Street area drains to the Small Woolsey Pit through a 42-inch drain located on the southern edge of this area and a 36-inch drain at end of Montgomery Street. The smaller Carnegie Street industrial area also drains into the Small Woolsey Pit through a 24-inch drain located at the end of Carnegie Street.

Drainage Area 4: This drainage area consists of the agricultural land located east of Vineyard Avenue, north of the El Rio Community and south of Central Avenue. The majority of the northern and western portion of this area currently drains across Vineyard Avenue to El Rio Retention Basins No. 1 and 2. El Rio Retention Basin No. 1 is an approximate 10-acre basin. El Rio Retention Basin No. 2 is an approximate 65-acre retention basin.

Drainage from this area is collected in a 78-inch drain located in the vicinity of Lemar Avenue and Vineyard Avenue which discharges into El Rio Retention Basin No. 1. There is an 84-inch outlet from this basin that connects to El Rio Retention Basin No. 2, where the majority of high flow events are stored. These combined basins have 100-year storm storage capacities. Flows are retained in these basins and percolate into the aquifer and/or evaporate into the atmosphere. Any excess runoff from El Rio Retention Basin No. 2 is discharged into the existing earth drainage ditch along the boundary of RiverPark Areas 'A' and 'B' that drains to the Santa Clara River.

Drainage in Surrounding Off-site Areas

Area north of Central Avenue: The County of Ventura has constructed a storm drain in Central Avenue which picks up the off-site drainage from areas to the north of Central Avenue and discharges these flows through a trapezoidal channel to the Santa Clara River. All drainage within and northeasterly of this system currently discharges into the Santa Clara River through two 72-inch drains located at the northwest corner of the Large Woolsey Mine Pit.

El Rio Community: The portion of the El Rio Community located south of Stroube Street generally drains south towards the Ventura Freeway. A portion of this area of El Rio drains to and under the Ventura Freeway to the City of Oxnard's El Rio Drain. Further east another drain under the freeway accepts runoff from frontage properties. Frontage properties along Vineyard Avenue drain to an existing drain in Vineyard Avenue that connects to the City's El Rio Drain. The portion of El Rio located north of Stroube Street generally drains to the south and east.

El Rio West Neighborhood: The portion of the El Rio West Neighborhood located between Stroube and Myrtle Streets drains south. The portion of this neighborhood located north of Stroube Street drains south and west to a detention basin located at the end of Stroube Street. This detention basin drains west to the Specific Plan Area through four 12-inch drains.

Area south of Ventura Freeway: Flows from the El Rio Community located east of Vineyard Avenue are prevented from draining into the Specific Plan Area by Vineyard Avenue. Similarly, flows generated south of the Ventura Freeway flow away from the Specific Plan Area.

Existing Flood Conditions and Protection

The proposed Specific Plan Area is currently protected from the Santa Clara River by the existing levee located along the western boundary of the Specific Plan Area. The levee extends along the south bank of the Santa Clara River from Highway 101 about 25,000 feet (approximately 5 miles) north to South Mountain. Constructed in 1961 by the U.S. Army Corps of Engineers (ACOE), the levee is a stone revetted, compacted earth embankment that ranges in height from 4 to 13 feet above the natural ground and has a top width of 18 feet with 2:1 (horizontal to vertical) side slopes. Additional protection to portions of the levee are provided by groins in areas where the levee is subject to direct attack by stream meander. There are no groins north of the Ventura Freeway in the vicinity of the Specific Plan Area. The levee is owned and maintained by the Ventura County Flood Control District (VCFCD).

Improvements or modifications to the levee are subject to approval by VCFCD and review by the ACOE. No flooding from presently occurs onsite from the Santa Clara River.

Some flooding presently occurs south of the Ventura Freeway from the Santa Clara River during a 100-year storm event. During a 100-yr event, the river rises to an elevation of 75.7 feet msl spilling out of the western bank onto the low point of Ventura Road south of the Ventura Freeway and Wagon Wheel Road. Flood waters remain at this low point until the stage of the river recedes sufficiently to again allow gravity drainage. This area of inundation occurs periodically the portion of Ventura Road south of Wagon Wheel Road. The existing building pads built in the southwest corner of the Specific Plan Area along Ventura Road are graded to a minimum elevation of approximately 80 feet msl. This occasional flooding during a large storm primarily affects Ventura Road and has minimal effect on the Specific Plan Area.

The City is also a member of the National Flood Insurance Program (NFIP). Through this program, new development is required, through conditions of approval, to eliminate existing flooding problems identified on the Flood Insurance Rate Maps produced under the NFIP. The NFIP has regulations requiring communities to adopt land use restrictions for their 100-year floodplain to qualify for Federally subsidized flood insurance. These restrictions include a requirement that residential structures be elevated above the level of the 100-year flood and that other types of structures be flood-proofed.

Finally, the floodplain management ordinance, Chapter 35 of the Oxnard City Code, identifies requirements for development in areas subject to flooding. Most of the urbanized area of the City is outside of the 100-year flood zone. The major areas located within the 100-year flood zone in the vicinity are found along the Santa Clara River. The project site is not located within a designated 100-year flood zone.

City of Oxnard Master Plan of Drainage

The City of Oxnard adopted an updated *Master Plan of Drainage* in January of 2001 to facilitate coordinated decision making on drainage and flood protection within the City. The plan inventories existing facilities, adopts drainage standards, defines areas with deficiencies, plans needed improvements, and establishes a strategy for financing recommended works of improvement. The 10-year frequency storm event is used in the *Master Plan of Drainage* as the “design-year storm” for storm water facilities. Where sump or overflow conditions exist, provisions must be made to convey runoff in streets or other approved pathways for conditions equivalent to a 50-year storm event. In all cases,

building pads must be elevated above the level of a 100-year flood. To help fund storm drain improvements, the City collects a fee based on the gross square footage of the site being developed, with cost factors identified in the *Master Plan of Drainage*. These fees vary in accordance with the type(s) of land use proposed.

The Master Plan of Drainage provides a reference from which landowners, developers, and City officials may be informed of the potential need for additional drainage facilities and the estimated costs in meeting those needs.

Facilities recommended in the Master Plan are planned to meet existing and projected needs for storm drainage from initial runoff concentration points to the downstream confluence with regional flood control facilities. The facilities proposed in this report consist of storm drains larger than 30-inches and open channels. The Master Plan states that smaller pipes, catch basins, manholes, junction structures, and inlet and outlet structures will also be required as the major facilities are constructed, but their number, size, and location are to be determined during the design of the major facilities. In most cases, conveyance structures are planned as underground storm drains in the form of reinforced concrete pipe up to a diameter of 72" and as rectangular concrete boxes for larger sizes.

The Master Plan of Drainage was prepared for the purpose of planning facilities on a basin-wide scale. The Master Plan recognizes there are some factors that may necessitate future modifications and refinement of the plan. For example, developments such as small subdivisions, industrial parks, and shopping centers usually require detailed runoff analysis for design of specific drainage facilities, and additional hydrologic investigations may be needed. Also, additional hydrologic calculations may be required when a significant change in land use occurs within a hydrologic sub-area. In this case, the City's adopted method of computing runoff is to be used to calculate appropriate peak discharge amounts and rates to be used in detailed designs.

Master Plan Facilities

Figure 4.11.1-2 shows the Master Plan of Drainage Facilities Map for the area. As shown in this figure, the Master Plan maintains existing drainage patterns in the area. Areas west of Vineyard generally drain towards the existing drains into the Santa Clara River along with the agricultural area east of Vineyard and north of the El Rio Community. The Master Plan also shows new facilities to drain the northern half of the El Rio Community west to the river with the southern half of El Rio draining east to Vineyard and south towards the Ventura Freeway to the City's El Rio Drain.

Figure 4.11.1-2

City of Oxnard Storm Drain Master Plan

The Master Plan shows the Stroube Drain being extended east to the end of the El Rio West Neighborhood to collect runoff from the portion of this neighborhood located north of Stroube Street. The Master Plan also shows easterly extensions of the existing drain in Ventura Road and the existing drain along the southern edge of the Specific Plan Area to drain the rest of the RiverPark 'A' area and the portion of the El Rio West Neighborhood located south of Stroube Street.

New drains are also shown along the northern and southern boundaries of the RiverPark 'B' Area. These drains would connect to the existing drain outlets into the Santa Clara River. The new drain shown on the southern boundary of the RiverPark 'B' Area is planned to drain the northern half of the El Rio Community. Extensions of the existing storm drain in Vineyard Avenue and the existing drains along the freeway are also shown to drain the southern half of the El Rio Community.

PROJECT IMPACTS

Thresholds of Significance

The City of Oxnard considers a project to have a significant impact related to storm drainage and flooding if it would:

- Create or contribute runoff water which would exceed the capacity of existing or planned storm water systems; or
- Place structures within a 100-year flood hazard area.

Proposed Drainage Improvements

As discussed above, the City's Master Plan of Drainage recognizes there are some factors that may necessitate future modifications and refinement of the master plan. The storm drain master plan included in the proposed RiverPark Specific Plan reflects detailed drainage studies completed to support the planning of the Specific Plan Area. The RiverPark Specific Plan Drainage Master Plan is designed to meet and exceed the Ventura County and City of Oxnard drainage criterion. In addition, the proposed drainage system was designed to provide water quality treatment of all storm flows from on and off-site tributary areas.

Figure 4.11.1-3 shows the proposed RiverPark Storm Drain Master Plan. As shown in this figure, the RiverPark Storm Drain Master Plan accepts runoff from areas to the east of Vineyard Avenue in generally the same locations shown in the City's Master Plan. A new storm drain would be built in

Santa Clara River Boulevard extending east from the Ventura Road Drain to Vineyard Avenue. This drain has been sized to accept runoff from the northern portion of the El Rio Community.

The RiverPark Storm Drain Master Plan also includes the extension of the existing Stroube Drain east to Stroube Street as called for in the City's Master Plan to collect runoff from the portion of the El Rio West Neighborhood located north of Stroube Street. A new drain in Myrtle Street would collect runoff from the portion of the El Rio West Neighborhood located south of Stroube Street and convey it to Vineyard Avenue.

Runoff from the agricultural area located north of the El Rio Community and east of Vineyard Avenue would continue to be collected at the northwestern corner of El Rio and conveyed under Vineyard Avenue into a storm water quality basin.

A description of the drainage system for each drainage area is provided below:

Drainage Area 1: will be drained into the new storm drain in Santa Clara River Boulevard and the proposed extension of the Stroube Street Drain. Both of these drains will connect to the existing Stroube Street Drain and outlet to the Santa Clara River. Water quality treatment features including dry swales, pervious pavement in parking fields, centrifugal separators, and other Best Management Practices will be employed to comply with NPDES storm water discharge requirements.

Drainage Area 2a: Runoff from the western portion of Drainage Area 2a will be collected in on-site storm drain systems and drain to a dry swale located along the western edge of the Specific Plan Area. Cleansing the detention of flows will occur here in a manner similar to that described above. These flows will be conveyed to the existing storm drain outlet to the Santa Clara River located at the boundary of RiverPark Areas 'A' and 'B'. The southern portion of Drainage Area 2a will drain south to the Santa Clara River Boulevard Drain.

Drainage Area 2b: The northern portion of Drainage Area 2b will drain to the west to on-site storm drains that will convey the runoff to a dry swale along the eastern edge of the development area. This swale drains to a linear water quality detention basin along the southern edge of the Brigham-Vickers Pit. Low flows from this basin will drain south to the Santa Clara River Boulevard. The western portion of Drainage Area 2b will also drain south to the Santa Clara River Boulevard. A secondary and emergency overflow outlet weir is planned within the South Water Quality Basin to route flows in excess of a 10-year storm event directly into the adjacent Large Woolsey Water Storage/Recharge basin.

Figure 4.11.1-3
RiverPark Storm Drain Master Plan

Drainage Areas 3a and 3b: The storm water discharge from the Area 3b (the Beedy Street Industrial Area) will be collected in a dry swale along the western edge of the Large Woolsey Pit. Drainage from Area 3b (the Montgomery-Lambert Industrial Area) will be collected in a new storm drain along the eastern edge of the Large Woolsey Pit. The runoff from both areas 3a and 3b will be conveyed to the North Water Quality Detention Basin via a series of dry swale and storm drain pipes, offering cleansing to the storm flows as previously described. The detained flows will then drain south to the swale along the western edge of the Specific Plan Area. Flows up to and including 10-year storm event flows will be allowed to settle pollutants out. A secondary and emergency overflow outlet weir is planned within the north water quality basin to route flows in excess of the 10-year event directly into the adjacent large Woolsey Water Storage/Recharge basin.

For the northern portions of Drainage Area 2a and all of area 2b storm water flows will enter the north and south water quality basins where pollutants will be allowed to settle out. For storm water flows larger than a 10-year event, the north and south water quality basins will have a secondary and emergency overflow outlet weir. These outlet weirs will be placed at appropriate elevations within the basins to control flows in excess of the 10-year storm event and route them directly into the adjacent Brigham-Vickers Water Storage/Recharge Basin.

Drainage Area 4: The storm water flows from this area will follow historical routes to the north side of El Rio. The existing swale located along the northern edge of the El Rio Community that currently collects these flows will be replaced with a new dry-swale offering the same water cleansing and polishing described for the previous drainage areas. The treated flows will then flow through the existing 78" pipe and into the modified El Rio Drainage Basin No. 1, called out as the East Water Quality Basin on the RiverPark Storm Drain Master Plan. As with the other water quality basins, flows from storms over a 10-year event will be routed directly into the Brigham-Vickers Water Storage/Recharge Basin.

Impact Analysis

The proposed Storm Drain Master Plan Facilities maintain the general drainage patterns established in the City's Master Plan of Drainage. **Table 4.11.1-1** summarizes the existing and proposed storm water flow characteristics for each drainage area affected by the project. The proposed storm drain system has adequate capacity to accept runoff from areas located east of Vineyard Avenue, from the industrial areas north of the Specific Plan Area and from the Specific Plan Area itself.

Table 4.11.1-1
Existing and Proposed Storm Water Flow Characteristics (10-year / 100-year)
RiverPark Specific Plan

	Existing Condition Volume (Ac-Ft)	Existing Condition Peak Discharge (cfs)	Proposed Condition Volume (Ac-Ft)	Proposed Condition Peak Discharge (cfs)
Drainage Area 1	62 / 109	270 / 473	55.3 / 97.0	241 / 422
Drainage Area 2a	6.6 / 11.6	41 / 72	20.3 / 35.5	126 / 221
Drainage Area 2b	21.0 / 36.0	123 / 216	27.8 / 48.8	167 / 293
Drainage Area 3a	20.9 / 36.7	101 / 177	20.9 / 36.7	101 / 177
Drainage Area 3b	36.7 / 64.5	172 / 302	36.7 / 64.5	172 / 302
Drainage Area 4	100.2 / 175.8	250 / 439	100.2 / 175.8	250 / 439

Source: Huitt-Zollars.

As can be seen in **Table 4.11.1-1**, the flow characteristics in the existing conditions and proposed conditions for drainage areas 1, 2a, and 2b are similar in nature. Because of minor re-routing of the storm flows to adjacent drainage areas, the proposed flow conditions actually drop in Drainage Area 1. In Drainage Area 2a some minor flows are picked up from Drainage Area 1, causing an increase in total volume discharged in to the river of 23.9 ac-ft (Q100) and an increase in peak flow of 149 cfs (Q100). This increase of 0.075 percent is negligible when compared to the total flows in Santa Clara River of 200,000 cfs.

As the proposed drainage system has adequate capacity to for on and off-site runoff, no significant impacts to drainage conditions in the area will result from the RiverPark Project.

Flood Protection

The current Federal Emergency Management Agency (FEMA) generated Flood Insurance Rate Maps (FIRM) along this reach of the Santa Clara River are based on a Q100 flow rate of approximately 160,000 cubic feet per second (cfs). The estimated 1969 flow at the Highway 101 bridge was approximately 165,000 cfs. The 1996 *Santa Clara River Enhancement and Management Plan*, "Flood Protection Report" provided additional flood plain analysis using an updated Q100 flow rate of 200,000 cfs for this section of the river. As shown in **Table 4.11.1-2** below, the levee currently provides a minimum of 3 feet of freeboard along this reach of the Santa Clara River. The RiverPark project will not be subject to any significant flooding impact from the Santa Clara River.

Table 4.11.1-2
Freeboard Analysis - RiverPark at Santa Clara River

Description	Station	Design Flow Line Elevation	Water Surface Elevation	Top of Levee Elevation	Freeboard
1,000' upstream of 101	250+00	64.2	79.4	82.7	3.3
6,000' upstream of 101	300+00	77.5	92.7	95.8	3.1
11,000' upstream of 101	350+00	90	105.2	111	5.8

Source: Jensen Design and Survey, Inc.

References: Flow Depth and Design Q's are from The Santa Clara River Enhancement and Management Plan, "Flood Protection Report" June 1996 Final Draft, Table 4-2 Hydraulic Properties by Reach in Ventura County - Reach From Highway 101 to Highway 118. Present Condition Q100 Flow Quantity 200,000 cfs Flow depth 15.2 ft, Design Flow Line Elevations from Historical Profile Design Flow Line Fig 2-7 and Fig 2-8 NAV 1988 datum.

Engineering Analysis was also completed to determine the capacity of the Large Woolsey and Brigham-Vickers Water Storage/Recharge Basins to accommodate runoff from the project. As proposed, the RiverPark project would route storm water flows from in excess of a 10-year event into the Water Storage and Recharge Basins. The amount of water available to be stored in the pits is based on two main variables, namely the size of the event and the level of groundwater. Assuming the worst case scenario for a storm event, a 100-year event, a total of approximately 326 acre-feet will be diverted to the Water Storage Infiltration Basins as shown in Table 4.11.1-3. Approximately 101 acre-feet would be diverted to the Large Woolsey Basin and 225 acre-feet would be diverted to the Brigham/Vickers Basin.

Table 4.11.1-3
100-year Storm Runoff Discharges to Water Storage/Recharge Basins

Drainage Area	100-year Event Volume (Ac-Ft)	Water Storage Basin Destination	Water Storage Basin Capacity (Ac-Ft) ⁽¹⁾	Resultant Freeboard ⁽²⁾
3a	36.7	Large Woolsey		
3b	64.3			
Total	101.0	Large Woolsey	210	2.6'
2b	48.8	Brigham/Vickers		
4	175.8			
Total	224.6	Brigham/Vickers	623	3.2'

Notes:

(1) Storage is between elevation 75 and elevation 80.

(2) Freeboard calculation is an interpolation between storage capacity at elevation 75 and elevation 80. Freeboard is expressed as the distance from top of storage to elevation 80.

Assuming a worst case scenario of ground water at historic high levels (Elevation 75), the increment of storage between elevation 75 and 80 would be available for storm water storage. As can be seen in **Table 4.11.1-3** there is adequate storage capacity and freeboard for both the Brigham/Vickers Water Storage Basin and the Large Woolsey Water Storage Basin. Based on this analysis, no significant flooding impact from the water storage basins will result.

As proposed, the RiverPark Specific Plan would also allow the Water Storage/Recharge Basins to be used by the United Water Conservation District (UWCD) for the storage of water diverted from the Santa Clara River at the UWCD Freeman Diversion Dam. UWCD has indicated their intent would be to store water in the basins for infiltration to recharge groundwater in the Oxnard Plain Aquifer System. In addition, UWCD has indicated that water stored in these pits may be pumped to other existing groundwater spreading facilities or supply pipelines in the area. UWCD will have the ability to manage the level of water in the Water Storage/Recharge Basins to ensure that adequate capacity for stormflows and adequate freeboard is maintained. As indicated above in **Table 4.11.1-3**, there will be adequate freeboard in the Water Storage/Recharge Basins even during periods when groundwater is high for UWCD to store water and maintain a minimally acceptable freeboard of approximately 2.0 feet. No significant flooding impacts, therefore, will result from the proposed use of the Water Storage/Recharge Basins by UWCD for storage of water.

The RiverPark Specific Plan Project will not result in any structures being placed in any 100-year flood hazard area. No significant flooding impacts will be created by the proposed RiverPark Specific Plan Project.

CUMULATIVE IMPACTS

Two other projects proposed in the immediate vicinity of the RiverPark Project are located in the same drainage area. The Ventura County Juvenile Justice Center (JJC) is located on a site that historically has drained to the Large Woolsey Mine Pit. In addition, the drain from the Beedy Street Industrial Area crosses the JJC site. The drainage system designed for the JJC will collect storm flows into a large basin designed to overflow into the Large Woolsey basin only if the inflow exceeds the capacity of the basin. The design will accommodate well in excess of a 100-year storm. For this reason, overflow into the Large Woolsey Basin not occur on a regular basis.

A residential project is also proposed in the El Rio West Neighborhood immediately east of the RiverPark Specific Plan Area between Stroube and Sycamore Streets. This project is proposed in an

area that would be served by the proposed storm drain in Myrtle Street, which has been designed to accommodate runoff from the portion of the El Rio West Neighborhood located south of Stroube Street.

Based on the drainage characteristics of these related projects and planned drainage improvements, no significant cumulative drainage impacts will result from the RiverPark Project and these related projects.

MITIGATION MEASURES

No mitigation measures are necessary as no significant impacts have been identified.

UNAVOIDABLE SIGNIFICANT IMPACTS

No unavoidable significant impacts related to storm water drainage and flooding will result from the RiverPark Project.