IV. ENVIRONMENTAL IMPACT ANALYSIS
D. DRAINAGE AND SURFACE WATER QUALITY

The analysis of drainage impacts included in this section is based on the *Storm Drainage Environmental Impact Report* prepared by Psomas Associates, Inc., dated September 13, 2000. This study is presented in Appendix C of this Draft EIR.

1. ENVIRONMENTAL SETTING

a. Drainage

(1) Regional Setting

The City of Los Angeles (City) is located within the Los Angeles River Basin, an area which includes the coastal portions of Los Angeles County and part of Ventura County, and into which drain the Los Angeles River, the Rio Hondo, and the San Gabriel River. The majority of the City is located within a gently sloping coastal plain of low relief which contains few large depressions or ponding areas. Given the highly urbanized character of the City, impervious surfaces constitute a greater percentage of terrain than do natural surfaces, thereby limiting the infiltration of precipitation and increasing the rate of storm water runoff. Runoff volumes and rates are further increased by the presence of drainage channels throughout the City, including channelized and/or culverted streams and rivers. Thus, drainage issues pertaining to flooding potential are directly related to the ability of storm drains and other flood control facilities to accommodate storm water runoff. Other factors which influence drainage characteristics include: local precipitation patterns; the size, topography, and permeability of the tributary drainage area; the location of floodplains or dams with the potential to be breached; and the location of lakes or other water bodies with the potential to experience seiches (wave oscillation of the surface water in an enclosed basin initiated by a seismic event).[30]

Storm drains within the City are constructed and maintained by both the City Department of Public Works, Bureau of Engineering (BOE) and the Los Angeles County Flood Control District (LACFCD). In general, the City constructs interconnecting drains that are tributary to the LACFCD's major storm drains and open flood control channels (e.g., the Los Angeles River,

[30] *Los Angeles Citywide General Plan Framework Draft Environmental Impact Report, pages 2.8-1 - 2.8-4.*

Ballona Creek). In addition, the U.S. Army Corps of Engineers aids in the construction of certain major flood control projects.[31]

(2) Local Setting

The Project site is located within a drainage area comprised of two watersheds. Runoff from the watersheds drains in both north-south and east-west directions, within local streets and underground storm drain systems. Runoff from the Project site drains to drainage facilities located in Pico Boulevard and Cherry Street. These systems confluence at Budlong Avenue and Jefferson Boulevard and then flow westerly to the outlet at Ballona Creek which then flows to the Pacific Ocean. For this study, the drains in the Project vicinity are identified as the Pico Boulevard Drain and Cherry Street Drains shown in Figure 34 on page 197.

Land uses within the existing two watersheds are of a highly urbanized nature. Very little undeveloped area remains in the watershed upstream of the project site. A field investigation and review of aerial photographs revealed that current land uses adjoining the Project site boundary consist of high-density apartments, commercial developments, and parking facilities. The land within the Project site boundary currently consists primarily of paved parking lots. Under existing conditions, runoff from the parking lots flows to large catch basins that are distributed throughout the Project site. The catch basins are connected either directly to the storm drain system or are piped to parkway drains in the curb. The runoff flows from the parkway drains through the gutters to the public catch basins and into the storm drain system.

The Project site does not contain surface water bodies, nor does it contain any blueline stream, as designated by the United States Geological Survey. The Project site is within Federal Emergency Management Agency (FEMA) Flood Zone C, which indicates an area of minimal flooding.[32] The Project site consists almost entirely of impervious surfaces. Minimal pervious surfaces are associated with these areas.

Based upon an evaluation of the City's design calculations, field investigations, and discussions with the Los Angeles Convention and Exhibition Center staff and BOE staff, it was determined that some flooding occurs downstream of the Los Angeles Convention and Exhibition Center, south of Pico Boulevard. The existing drainage system downstream of the Project site is flowing at or above capacity and therefore, the streets and Los Angeles Convention and Exhibition Center property are subject to flooding.

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[31] *Ibid, page 2.8-4.*

[32] *Flood Insurance Rate Map, Community Panel 060137 0068 D, revised February 4, 1987.*

Figure 34 Storm Drain Infrastructure

Pico Boulevard Drain

The existing Pico Boulevard drainage system was analyzed in five (5) reaches, extending from Venice Boulevard at the downstream end to 7th Street at the upstream end. The existing Pico Boulevard Drain was relocated between Venice Boulevard and Georgia Street when the Los Angeles Convention Center was constructed in 1968. The drainage watershed for the Pico Boulevard Drain upstream of the project is approximately 210 acres. The watershed is bounded by Wilshire Boulevard to the north, 12th Street to the south, Grand Avenue to the east, and Blaine Street west of the Harbor Freeway.

Reach 1, between Venice Boulevard and Pico Boulevard, is located within South Convention Hall Drive, a private street located within the Los Angeles Convention and Exhibition Center property. The drain is a 54-inch reinforced concrete pipe (RCP) at Venice Boulevard, then changes into double 48-inch RCPs within South Convention Hall Drive, and finally, into a 60-inch RCP at Pico Boulevard. Reach 1 intercepts runoff from the Los Angeles Convention and Exhibition Center South Hall, Pico Boulevard, and South Convention Hall Drive.

Prior to the construction of the Los Angeles Convention and Exhibition Center South Hall, runoff along Pico Boulevard, from Figueroa Street to Cherry Street, was routed north-south within the streets. With the construction of the South Convention Hall, those outlets were eliminated and flow was restricted to Pico Boulevard and South Convention Hall Drive. The 50-year peak flow in Pico Boulevard is approximately 200 cubic feet per second (cfs), and is restricted to the northerly half of the street. At South Convention Hall Drive, the runoff crosses Pico Boulevard onto the Convention Center South Hall site, resulting in flooding up to 1.5 feet deep.

Reach 2, located in Pico Boulevard, from South Convention Hall Drive to Gilbert Lindsay Drive is a 60-inch RCP. A burp catch basin with an outlet capacity of 148 cfs is located at the intersection of Gilbert Lindsay Drive and Pico Boulevard. A diversion structure located upstream of the burp catch basin controls flow to the basin. Downstream of the burp basin, there is a 24-inch RCP that drains the areas west of Hope Street, eventually joining the 60-inch RCP. Reach 2 intercepts runoff from the Convention Center West Hall and the area east of the Project to Grand Avenue.

Reach 3, located between the STAPLES Center and the Los Angeles Convention and Exhibition Center, runs from Pico Boulevard to Georgia Street. It starts at 11th Street as a 10.75-feet wide by 3.25-feet high reinforced concrete box culvert (RCB) until just in front of the Los Angeles Convention and Exhibition Center entry where it becomes a 6-feet by 6-feet RCB. A 33-inch RCP draining from the east joins the RCB at 12th Street. Reach 3 intercepts runoff from the STAPLES Center, the Figueroa Properties portion of the project site, and easterly to Grand Avenue.

Reach 4, located in Georgia Street, from 11th Street to Olympic Boulevard is a 45-inch RCP. Reach 4 intercepts runoff from the easterly half of the Olympic Properties portion of the Project site.

Reach 5, the remainder of the drains upstream of Olympic Boulevard, consists of 18-inch to 33-inch RCP main lines. The drains intercept runoff from the area bounded by Olympic Boulevard on the south, Wilshire Boulevard to the north, Flower Street on the east, and Blaine Street on the west.

Cherry Street Drain

The existing Cherry Street Drain crosses the Harbor Freeway at 12th Place and drains southerly to Jefferson Boulevard. From the Harbor Freeway and 12th Place intersection, the Cherry Street drain runs northerly (downstream to upstream) in Cherry Street. At 11th Street, the drain runs easterly to Georgia Street. South of the intersection of Cherry Street and 11th Street, a burp basin with a design outlet capacity of 55 cfs flows onto Cherry Street.

The drainage watershed for the Cherry Street Drain immediately upstream of the Project site is approximately 35 acres, bounded by Olympic Boulevard on the north, Georgia Street on the east, and the Harbor Freeway to the west. Prior to construction of the Los Angeles Convention and Exhibition Center, a greater area was tributary to the Cherry Street Drain. The peak 50-year runoff in Cherry Street was approximately 120 cfs. With the development of the Los Angeles Convention and Exhibition Center, flow in Cherry Street was reduced to 60 cfs, with the remaining flow diverted to Pico Boulevard.

b. Surface Water Quality, NPDES Permits and Regional Board Requirements

Surface water quality can be affected by a number of variables, including: (1) land use; (2) hydrology; (3) meteorology; (4) geology; and (5) soils. Land uses may affect surface water quality based on associated activities; for example, an office building generates little in the way of exterior pollutants which can be washed away by runoff, whereas a surface parking lot has deposits of oil, gasoline, and other pollutants which can be washed away by runoff. Meteorology may affect surface water quality through the quantity and intensity of storm events which determine to what extent pollutants are washed away by runoff. Geology and soils may affect surface water quality in that they determine infiltration and runoff velocity. The more infiltration of runoff into the soil, and the slower the runoff (i.e., as in running over a flat surface instead of downhill), the less ability the runoff has to carry sediments and pollutants.

In receiving waters, excess sediments cause high turbidity and rapid accumulation of sediments in lakes and ponds, with adverse impacts on biological organisms. In urban areas, toxins

such as zinc, copper, and lead, which can cause toxic effects in high concentrations, are most commonly associated with surface runoff. Additionally, other toxic elements, especially those associated with hazardous waste, can be present within surface flows.

(1) Construction

Regulatory and permitting processes have been established to control the quality of water runoff from urban construction sites. In 1972, the Federal Water Pollution Control Act, also referred to as the Clean Water Act (CWA), was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) general permit. In 1990, the U.S. Environmental Protection Agency (EPA) issued regulations requiring that discharges of storm water associated with construction activity that includes clearing, grading, or excavation resulting in soil disturbance of at least five acres of total land area be regulated by a NPDES general construction storm water permit. In California, NPDES permits are issued through the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). The SWRCB has adopted a statewide general construction permit that applies to most construction activities. The County of Los Angeles and local agencies are regulated specifically by NPDES Permit No. CAS614001.[33] This permit allows storm water discharges under certain conditions during the construction period. Permit compliance must be achieved prior to, and is verified at the time of, individual project application review by the local RWQCB. The primary objectives of the construction storm water permit are to:

- Reduce excessive erosion potential;
- Minimize excessive sedimentation;
- Prevent other materials used at the site from causing off-site contamination;
- Eliminate non-storm water discharge from the construction site;
- Install appropriate measures to reduce impacts on watering from the finished project, and ensure that these measures will be maintained; and
- Establish maintenance commitments on the post-construction site.

The NPDES general construction permit requires that all developers of land where construction activities will occur over more than five acres do the following:

[33] *Community Redevelopment Agency of Los Angeles, Los Angeles Sports and Entertainment Complex Draft EIR, March 26, 1997.*

- Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the nation;
- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP); and
- Develop and implement a monitoring program and reporting plan in accordance with NPDES requirements.

The NPDES general construction permit prohibits the discharge of materials other than storm water. However, the permit recognizes that certain non-storm water discharges, including pipe flushing and testing, street washing, and dewatering may be necessary. Such discharges are allowed if they are infeasible to eliminate, do not cause or contribute to a violation of water quality standards, and do not require permits from the local RWQCB.

In order to obtain a permit for an individual project under the NPDES construction general permit, a project applicant must submit a Notice of Intent (NOI) together with a SWPPP to the SWRCB. The SWPPP identifies activities that could cause pollutants to enter the storm water system and includes a description of measures to control these pollutants. The SWPPP includes a list of Best Management Practices (BMP) which are typically designed to do all or some of the following:[34]

- Minimize erosion and sedimentation during construction;
- Describe measures which eliminate pollution of storm runoff by any chemicals and materials used during the construction period;
- Contain waste;
- Minimize the amount of area that is disturbed at any one time;
- Stabilize the disturbed area;
- Protect slopes and channels;
- Control the perimeter of the site;
- Control internal erosion;
- Show areas of long-term post-construction control measures.

[34] *Camp Dresser & McKee, California Storm Water Best Management Practices Industrial Handbook, Appendix A, Table 2.*

Project applicants are required to conduct inspections of sites before and after storm events to identify areas contributing to construction-related storm water discharge and to evaluate whether SWPPP control practices are adequate and properly implemented or whether additional control practices are needed.

(2) Operation

The EPA considers street surfaces to be the primary source of storm water pollution in urban areas. The Project site is currently associated with several street-generated pollutants, including: tire wear residue; petroleum products; oil and grease; metals and hydrocarbons washed from the paved areas; fertilizers, pesticides, and dirt from landscaped areas; and litter and animal droppings. The majority of these pollutant loads are usually washed away during the first flush of storm activity occurring after the dry-season period.

As a requirement of the Regional Water Quality Control Board, Los Angeles Region, project applicants are required to implement a Standard Urban Storm Water Mitigation Plan (SUSMP) during the operational life of the project to ensure that storm water pollution is addressed in one of the most effective ways possible, by incorporating Best Management Practices (BMPs) in the design phase of development. This Regional Board requirement provides for numerical design standards (water quality design standards) to ensure that storm water runoff is managed for water quality concerns in addition to flood protection and that pollutants carried by storm water are retained and not delivered to waterways.

2. PROJECT IMPACT

a. Significance Thresholds/Methodologies

A project would have a significant impact to drainage or surface water quality if development of the project were to result in any of the following:

- Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

- Violate any water quality standards or waste discharge requirements; or

- Otherwise substantially degrade water quality.

Impacts to the local drainage system were evaluated by determining whether, via a comparison of anticipated increases in runoff quantities and storm drain capacity, post-Project storm water flows could be accommodated by the local storm drain system with the on-site storm drain improvements proposed as part of the Project site. Impacts on surface water quality were assessed by analyzing the composition of post-Project and construction-related runoff relative to the regulatory requirements described above.

b. Analysis of Project Impacts

(1) Drainage

(a) Construction

Construction of the proposed Project will not result in a significant change to existing hydrologic conditions. The existing downstream storm drain system, as designed by BOE, is flowing at or above capacity. Adding additional storm drain capacity is not recommended since it may improve the flooding situation locally, but would transfer the flooding to other downstream locations. The design hydrologic conditions before and after development will remain unchanged as a result of the Project. The existing drainage patterns and flow distribution shall be maintained. The area of the proposed development currently consists of fully paved parking lots. The BOE design calculations were prepared based on the areas being 100% impervious, which is consistent with a fully developed or paved site. No increase in runoff over existing conditions would occur during Project construction. Consequently, no change between the pre- and post-Project design flows will occur. No significant drainage impacts would occur during the construction of the proposed Project.

During construction, the existing 30-inch RCP located along 12th Street will be abandoned and realigned with a new 30-inch RCP, as shown on Figure 34. This will be accomplished as part of the realignment of 12th Street due to the Project.

The storm drain realignment discussed above could require temporary traffic lane closures and sidewalk closures during construction. Such lane closures could have temporary significant impacts on traffic circulation. The extent of potential impacts should be minimized by the fact that most of the streets in the Project vicinity currently provide substantial traffic carrying capacity and will be able to accommodate traffic management for temporary lane closures.

A full engineering study of the proposed alignment/size will be required to insure that equivalent hydraulic capabilities are maintained. On-site drainage systems must be designed and installed in a way to maintain existing drainage patterns. Upon completion of the final site plan, the exact size, material and location of the proposed storm drains shall be determined.

Although the Project may require the relocation of storm drain facilities, no significant impacts to drainage or water quality would occur. Impacts to air quality, transportation/ circulation and noise from the proposed project, that include potential storm drain relocation, are analyzed in IV.E, Air Quality; IV.F, Transportation/Circulation; and IV.H, Noise, within this document.

Segments of the Pico Boulevard Drain and Cherry Street Drain located upstream and downstream of the Project site area, and other smaller storm drains currently located within the Project site area, would be maintained and would continue to service the Project site as well as off-site properties. Changes in the existing slope gradient would be minimal in order to maintain direction of runoff flows. Furthermore, the distribution of flows between the Pico Boulevard Drain and the Cherry Street Drain would be preserved. Existing properties in the area served by these storm drains would therefore not be adversely affected during construction.

(b) Operation

The operational phase of the Project will not result in a significant change to existing hydrologic conditions. As discussed above for the construction phase of the Project, the existing downstream storm drain system, as designed by BOE, is flowing at or above capacity. Adding additional storm drain capacity is not recommended since it may improve the flooding situation locally, but would transfer the flooding to other downstream locations. Therefore, the proposed Project will be designed to ensure that hydrologic conditions before and after development will remain unchanged as a result of the Project. The Project would also not have any additional effects on the perviousness of the Project site, or the pattern or quantity of storm water runoff beyond those described under construction. The BOE design calculations were prepared based on the Project areas being 100 percent impervious, which is consistent with a fully developed or paved site. The Project would actually slightly decrease the amount of pervious surface by providing landscaped areas, potentially reducing the amount of surface runoff. Also, the existing drainage patterns and flow distribution shall be maintained. Therefore, no significant impact resulting from a change between the pre- and post-Project design flows will occur. In addition, the buildings' drainage facilities and landscaping in comparison with the existing surface parking lots on the Project site, would potentially slow runoff leaving the site. Therefore, no significant drainage impacts would occur during operation of the Project. All future systems will be designed to be in conformance with BOE standards.

(2) Surface Water Quality

(a) Construction

Surface water quality could potentially be significantly affected by construction activities. The primary concerns relating to surface water quality associated with construction of the Project are: (1) sediment transport from construction site runoff; and (2) discharges relating to the storage, handling, use and disposal of chemicals, fertilizers, pesticides, adhesives, coatings, lubricants, fuel, and other potentially hazardous materials.

Grading activities associated with construction would temporarily increase the amount of suspended solids from surface flows derived from the Project site during a concurrent storm event due to sheet erosion of exposed soil. In addition, on-site watering activities (utilized to reduce airborne dust) could contribute marginally to increased sediment loading of surface runoff during dry weather conditions. However, because the proposed Project would involve a construction area of greater than five acres, an NPDES permit under the Countywide general construction permit would be required, and BMPs would be implemented as part of the required SWPPP. BMPs would serve to minimize sedimentation, prevent contamination of hazardous materials, and eliminate non-storm water discharges. Compliance with the County's NPDES permit (No. CAS614001) and all relevant storm water quality management programs of federal, State, County and City agencies would reduce any potential impacts on receiving waters to less than significant levels.

During construction, the proposed Project would not violate any water quality standards or waste discharge requirements, nor would the Project impair the beneficial uses of receiving waters. With the implementation of BMPs, the Project would not result in significant impacts to surface water quality. No significant impacts would occur.

(b) Operation

The Project would cause an increase in automobile traffic and parking, which would likely result in an increased concentration of vehicle-related contaminants in the stormwater runoff. While there is a likely increase of pollutants generated by automobiles, the nature of the pollutants is similar to the existing use and the overall quality of the stormwater runoff is not anticipated to change significantly from the existing conditions.

Stormwater runoff from commercial, residential and industrial areas contains concentrations of petroleum product pollutants, heavy metals, coliform bacteria, oxygen-demanding substances and total suspended solids. During operations, the Project Applicant would be required to select source control and treatment control BMP(s) from the list approved by the Regional Board and included in the SUSMP. For example, these treatment control BMPs may include swales, infiltration basins at

the end of swales, biofilters, green belts, detention basins, and catch-basin basket inserts. In combination, these treatment control BMPs must be sufficiently designed and constructed to treat, infiltrate, or filter the first 0.75 inch of storm water runoff from a storm or a storm event. The SUSMP will specify the treatment control BMPs and other source control BMPs that will be built into the Project.

During operations, the Project would not violate any water quality standards or waste discharge requirements, nor would the Project impair the beneficial uses of receiving waters. With the implementation of BMPs, the Project would not result in significant impacts to surface water quality. Furthermore, by replacing the existing surface parking lots with urban land uses, the quantity of urban contaminants in relation to existing Project uses would be reduced; this is a beneficial effect of Project development. No significant impacts would occur.

3. MITIGATION MEASURES

a. Drainage

(1) Construction

Development of the proposed Project shall comply with all applicable State and local codes and ordinances pertaining to drainage issues. Specifically, all new connections to the existing storm drain system shall be designed and constructed per applicable City of Los Angeles Municipal Code requirements and design standards. All designs shall be subject to review and approval by the City Engineer and the Department of Building and Safety, prior to issuance of building permits.

Although the proposed Project is not expected to result in significant impacts with respect to drainage, the following measure shall further ensure that neither the Project site nor surrounding properties are subject to increased flood hazard:

1. Prior to construction activities on any development area, the Applicant shall prepare a master erosion control plan for that development area, which includes detailed flood control plans, for the City of Los Angeles Department of Public Works, Bureau of Engineering. The plans shall include hydrology/hydraulic calculations and drainage improvement plans, showing quantitatively how projected storm water runoff would not exceed existing design conditions. Such plans shall be reviewed and approved by the City prior to the issuance of building permits.

(2) Operation

Mitigation measures are not required as the proposed Project would not generate additional significant drainage impacts during operation.

b. Surface Water Quality

(1) Construction

As construction of the Project will comply with all applicable requirements associated with NPDES Permit No. CAS614001 and all relevant storm water quality management regulations, no significant impact would occur and no mitigation measures would be required.

(2) Operation

As discussed above, the Project will implement source control and treatment control BMP(s) from the list approved by the Regional Board and included in the Standard Urban Stormwater Mitigation Plan (SUSMP). In addition, the following mitigation measure is recommended to ensure that the Project would not result in significant impacts to surface water quality:

2. The Applicant shall construct catch basins, roof drains, surface parking drains connecting directly to the existing storm drain system, and any other drainage improvements, as may be required by the Bureau of Engineering.

4. ADVERSE EFFECTS

With adherence to all applicable regulations and implementation of the measures outlined above, Project impacts on drainage and surface water quality would be less than significant.

5. CUMULATIVE IMPACTS

Project impacts related to drainage and surface water quality issues are localized on-site and do not affect any off-site areas associated with the related projects or the ambient growth. Cumulative development in the area would, however, increase the overall potential for increases in surface water runoff and a decline in surface water quality. Nevertheless, with adherence to applicable federal, State, County and City regulations and good engineering practices, these impacts will be less than significant. No cumulative impacts would therefore be associated with the proposed project and related projects with respect to drainage and surface water quality issues.