

P S O M A S

**LOS ANGELES SPORTS AND
ENTERTAINMENT DISTRICT**

**STORM DRAINAGE
ENVIRONMENTAL IMPACT REPORT**

September 13, 2000

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ENTERTAINMENT DISTRICT**

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ENVIRONMENTAL IMPACT REPORT**

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1.0 INTRODUCTION AND SUMMARY

1.1 Summary and Recommendations

The proposed Los Angeles Sports and Entertainment District (District) is located directly to the north and east of the Staples Center (see Figure 1). The proposed District would include roughly 27 acres and consists of two separate areas. The District is proposed to contain hotels; residential units; medical facilities; retail, dining and entertainment facilities; and office space. A more detailed breakdown is provided below.

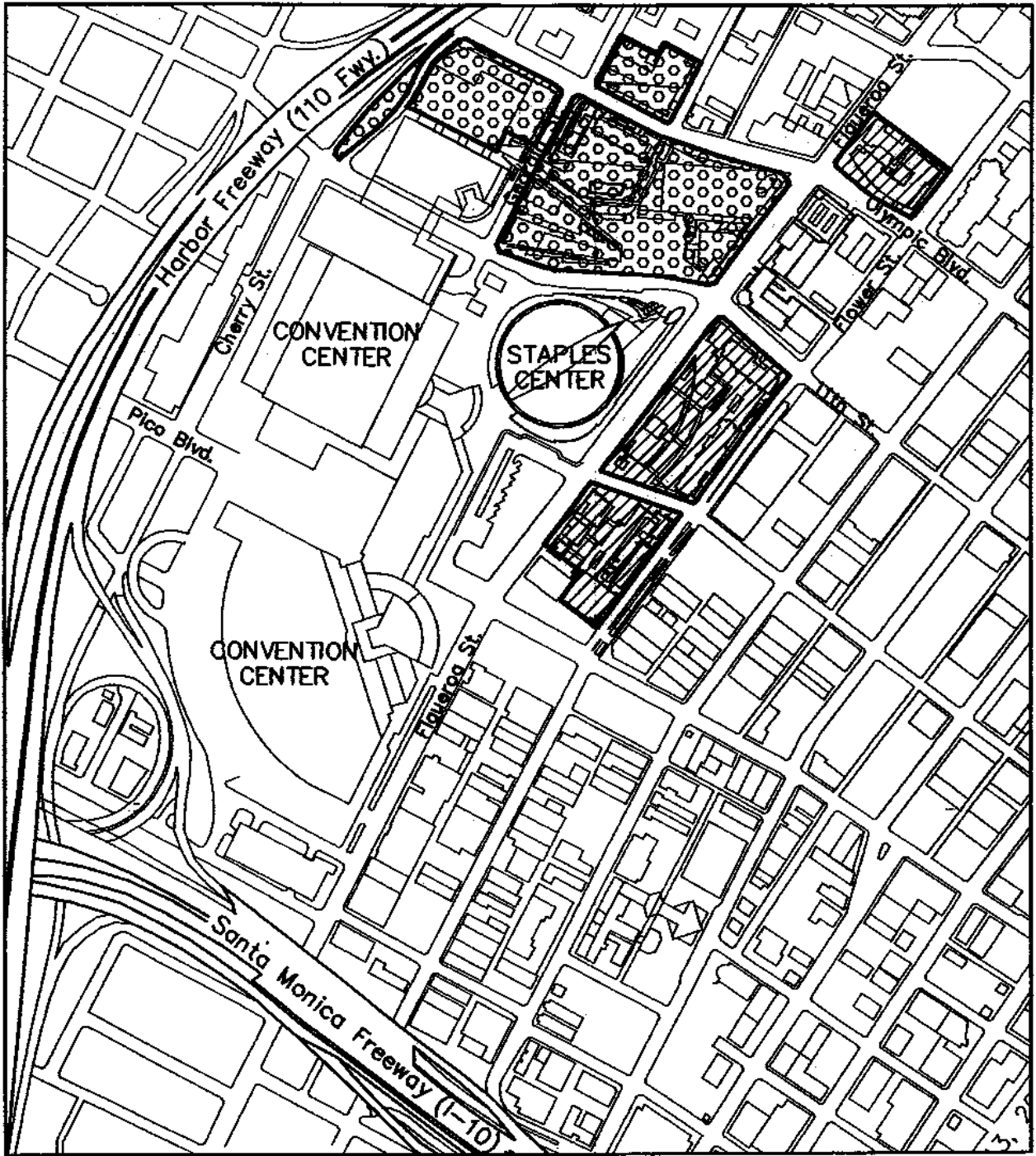
Area A: Olympic Properties

This area is bounded by 11th Street on the south, Cherry Street on the west, Figueroa Street on the east and generally Olympic Boulevard on the north. There is a 1.5-acre portion north of Olympic Boulevard between Georgia Street and Francisco Street. Area A will include a Convention Hotel (1,200 rooms); a Retail/Dining/Entertainment (RDE) Center (580,000 GSF); a Health Club (125,000 GSF), Office space (75,000 GSF); and parking. The development is to include an open-air plaza for outdoor events venue.

Area B: Figueroa Properties



This area consists of parcels located along the east side of Figueroa Boulevard from Pico Boulevard to just north of Olympic Boulevard. Area B will include an additional Hotel (600 rooms), Residential units (800 DUs), a Retail/Entertainment Center (535,000GSF), Office space (90,000 GSF), and a Sports Medicine/Medical Clinic (135,000 GSF), along with parking.

Based upon research and field investigations performed by Psomas, and calculations prepared by the City of Los Angeles Bureau of Engineering (BOE) for the Los Angeles Convention Center (LACC) and approved for the Staples Center, the following has been determined:



VICINITY MAP

KEY

-  A - OLYMPIC PROPERTIES
-  B - FIGUEROA PROPERTIES



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FIGURE 1

- a. Drainage in the vicinity of the LACC is divided between two watersheds (see Appendix 3). The two systems join southwest of the project at the intersection of Budlong Avenue and Jefferson Boulevard and then continue westerly to Ballona Creek.
- b. The design hydrologic conditions before and after development remain unchanged as a result of the project. The area of the proposed development is currently a fully paved parking lot. The BOE design calculations were prepared based on the areas being 100% impervious, which is consistent with a fully developed or paved site. Consequently, no change between the pre and post project design flows will occur. However, in order to maintain existing conditions after development of the project, the existing drainage patterns and flow distribution must be maintained.
- c. Localized flooding occurs downstream of the project site, south of Pico Boulevard. Prior to construction of the LACC, runoff drained in a north-south and east-west direction in a combination of surface flow (street) and underground storm drain systems (see Appendix 3). With construction of the LACC, flow was routed around the project. Construction of the LACC South Hall in 1992 created a physical barrier that results in the diversion of runoff to South Convention Hall Drive. In addition, when the LACC South Hall was constructed in 1992, three north-south streets were replaced with a private drive. Flow from an existing burp basin in Pico Boulevard was concentrated within Pico Boulevard and South Convention Hall Drive, resulting in flooding in Pico Boulevard and South Convention Hall Drive of up to 1.5'± above flow line.
- d. 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 situation locally, but will transfer the flooding to other downstream locations. Consequently, Psomas recommends the existing drainage patterns be maintained.

- e. The current site plan proposes a tunnel under Georgia Street connecting two proposed underground parking structures. The construction of this tunnel may require the relocation of utilities in Georgia Street. The relocation is will maintain the current watersheds.

- f. Some down stream areas currently experience flooding during storm events. This project will not impact this condition. There will be negligible increase/decrees of storm flows leaving the project site.

- g. In order to protect the existing downstream facilities and maintain existing conditions after development, Psomas recommends that a drainage master plan and detailed calculations be prepared during final design to assist in project development.

1.2 Introduction

This report presents a drainage study for the Los Angeles Sports and Entertainment District. The purpose of this study is to establish the pre-development and post-development conditions in the vicinity of the project, identify impacts (if any), and recommend possible mitigation measures. The information presented is based upon research and field investigations performed by Psomas, calculations prepared by the BOE for the LACC and the Staples Center, and discussions with the City of Los Angeles BOE. Calculations by BOE were reviewed by Psomas and are contained in Appendix 1.

The proposed Los Angeles Sports and Entertainment District is located in the City of Los Angeles, California. The project is located to the north and east of the Staples Center property (northeast of the intersection of the 110 Freeway (Harbor Freeway) and Interstate 10 (Santa Monica Freeway)). The project consists of retail shops, restaurants, hotels, medical facilities, offices, and underground parking facilities. All the proposed improvements are located adjacent to the Staples Center (see Figures 1 & 2)

Hydrology studies were previously prepared by BOE staff for the freeway construction in 1953 and the Los Angeles Convention Center West Hall construction in 1968. Psomas reviewed the calculations with current City of Los Angeles Stormwater Management staff and concluded that the calculations are valid for the project. Additional site investigations and research were conducted to provide additional support material for the calculations and recommendations.

2.0 EXISTING CONDITIONS

The existing area tributary to and downstream of the District project is divided into two watersheds. Runoff from the watersheds drain north-south and east-west within the streets and closed 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. For this study, the drains in the project vicinity are identified as the Pico Boulevard Drain and Cherry Street Drain and are described below from downstream to upstream.

Land use within the existing watersheds is of a highly urbanized nature. Very little undeveloped area remains in the watershed upstream of the proposed project. A field investigation and review of aerial photographs revealed that current land use adjoining the project boundary consists of high-density apartments, commercial developments, and parking facilities. The land within the project boundary is currently a paved parking lot.

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

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 LACC 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 110 Freeway. See the Hydrology Map in Appendix 3 for the detailed drainage boundaries and system alignment.

Reach 1, between Venice Boulevard and Pico Boulevard, is located within South Convention Hall Drive, a private street located within the LACC property. The drain is a 54 inch reinforced concrete pipe (RCP) at Venice Boulevard, that 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 LACC South Hall, Pico Boulevard, and South Convention Hall Drive.

Prior to the construction of the LACC South Hall, runoff along Pico Boulevard, from Figueroa Street to Cherry Street, was routed north-south within the streets. With construction of 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 cfs, and is restricted to the northerly half of the street. At South Convention Hall Drive, the peak runoff crosses Pico Boulevard onto the South Convention Hall site, resulting in flooding up to 1.5'± deep above flowline.

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, a 24 inch RCP, draining the areas westerly of Hope Street, conflues with the 60 inch RCP. Reach 2 intercepts runoff from the LACC West Hall and the area easterly of the project to Grand Avenue.

Reach 3, located between the Staples Center and The LACC, extends from Pico Boulevard to Georgia Street as a 6'X6' RCB (reinforced concrete box). At this location it splits into two lines: The main line is a 10.75' wide by 3.25' high reinforced concrete box culvert (RCB) that continues on between the LACC and the Staples Center until it reaches 11th Street. A 33 inch RCP draining from the east combines with the RCB at this

location. Reach 3 intercepts runoff from the Staples Center, the Figueroa Properties, 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. This section will be rerouted as part of the Olympic Properties Development.

Reach 5, the remainder of the system 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 110 Freeway at Twelfth Place and continues southerly to Jefferson Boulevard. From the 110 Freeway - Twelfth 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 capacity of 55 cfs outlets flow onto Cherry Street.

The drainage watershed for the Cherry Street Drain immediately upstream of the site is approximately 35 acres. Prior to construction of the LACC, more 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 LACC, flow in Cherry Street was reduced to 60 cfs, with the remaining flow diverted to Pico Boulevard. See the Hydrology Map in Appendix 3 for the detailed drainage boundaries and system alignment.

Approximately 1.5 acres of the Olympic Properties site tributary to the Cherry Street drain is unpaved parking or previously demolished sites. The soil in the unpaved areas is moderately to highly compacted, yielding a higher effective imperviousness during storm peaks.

3.0 PROPOSED CONDITIONS

The project will maintain the current watersheds and existing flows. The properties within the project currently drain to the southwest and are almost entirely paved. The post development condition will be virtually identical. Care will be taken not to disrupt the current/historical flow patterns.

The construction of the Olympic Properties includes proposed underground parking. This structure will straddle George Street. In order to facilitate traffic flow it has been proposed that the two parking structures be connected by an underground vehicular passage.

As currently proposed, the passage under George Street will cross underneath the existing utilities. If this is possible, the storm drain system will remain as it is today. If the line needs to be relocated the following three alignments were proposed.

3.1 Proposed Alignment

Build the proposed vehicle connection below the level of the existing storm drain/utilities. This would provide the opportunity for the utilities to bridge over the corridor without major relocation. This option would cause the least disruption to both existing and relocated utilities. This alternative could be the most cost-effective depending on the width of the parking lot connection and the design of the parking structure. The box configuration may require modification. In order to accommodate the passage the box may have to become shallow and wide. Further studies need to be completed on the parking structure requirements/layout to determine if this is required. See Figure 3.

Onsite drainage systems must be designed and installed in a way to maintain existing drainage patterns. The Figueroa Properties and the easterly half of the Olympic Properties must drain into the 9.5'W x 6'H RCB. The westerly half of the Olympic Properties must drain to the Cherry Street line.

All the proposed facilities must meet the requirements for Storm Water Best Management Practices (BMP's) and be in compliance with the City of Los Angeles's "National Pollution Discharge Elimination System" (NPDES) and "Standard Urban Storm Water Mitigation Plan" (SUSMP) requirements. The project will be proactive in treating storm water before it enters the city's system.

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