

July 23, 2013

**VIA EMAIL AND HAND DELIVERY**

Los Angeles City Council  
c/o Los Angeles City Council Clerk  
200 N. Spring Street, Room 395  
Los Angeles, California 90012

Re: Objections to Planning and Land Use Management Committee's Approval of the Millennium Hollywood Project; Council File Nos. 13-0593, 13-0593-S1

Dear Honorable City Councilmembers:

This firm represents Millennium Hollywood, LLC (the "Applicant") regarding the proposed Millennium Hollywood Project (the "Project"). The Project involves the construction and operation of a new mixed-use and transit-oriented development anchored by the historic Capitol Records Building. The Project would transform a series of under-utilized parcels into a pedestrian-friendly development located on an approximately 4.47 acre site (the "Project Site") located in the Hollywood area of the City of Los Angeles (the "City").

For background, on February 19, 2013 the City's Advisory Agency held a joint hearing and considered the Vesting Tentative Tract Map (the "VTTM") and entitlements package associated with the Project in Case Nos. VTT-71837-CN-1A and ENV-2011-675-EIR. On March 28, 2013, the City Planning Commission considered the entitlements package for the Project in Case No. CPC-2008-3440-VZC-CUB-CU-ZV-HD; and it considered appeals filed on the VTTM that was approved at the Advisory Agency hearing. On April 27, 2013, the City Planning Commission published its letter of determination on both cases and approved the requested entitlements and denied the appeals lodged on the VTTM approval. On May 7, 2013, The Silverstein Law Firm, APC, on behalf of Communities United for Reasonable Development ("CURD") appealed the City Planning Commission's action on the VTTM. On May 13, 2013, CURD and Jeffer Mangels Butler & Mitchell LLP, on behalf of HEI/GC Hollywood & Vine Condominiums, LLC ("HEI/GC") and Hollywood & Vine Residences Association ("HVRA") appealed the City Planning Commission's approval of the entitlements package in Case No. CPC-2008-3440-VZC-CUB-CU-ZV-HD.

On June 18, 2013, the Planning and Land Use Management Committee ("PLUM Committee") considered the entitlements package for the Project in Council File No. 13-0593 and the appeals filed on Council File No. 13-0593 and 13-0593-S1. At hearing, the PLUM Committee recommended approval of the requested entitlements and denials of the appeals filed on the VTTM and entitlements package approval. On June 18, 2013, The Silverstein Law Firm, APC, on behalf of CURD filed objections to the Project at the PLUM Committee meeting.

On June 4, 2013, Jeffer Mangels Butler & Mitchell LLP, on behalf of HEI/GC and HVRA also filed objections to the Project for consideration at the PLUM Committee hearing.

Below, we address the issues raised in the objections. We respectfully request that this letter be included in the administrative record.

## I. The CURD Objections

As noted above, CURD filed a letter objecting to the Project at the PLUM Committee hearing on June 18, 2013 ("CURD Letter"). The discussion below addresses the substantive issues raised in the CURD Letter.

### A. The Project Description Complies with California Environmental Quality Act Standards.

CURD previously raised the same issues related to the project description in its appeal letter dated May 2, 2013. A response to sections I.a, I.b, and I.c on pages 2 through 4 of the CURD Letter is provided in the Applicant's May 31, 2013 response letter. See Attachment 1, Appeals of City Planning Commission's Approval of the Millennium Hollywood Project Letter (dated May 31, 2013). The issues were also responded to in the Response to Comments in the Final EIR. Please refer to Response to Comments, Nos. 09-3, 59-2, 81-2 and 81-3. See Attachment 2, excerpt of Response to Comments (dated February 2013).

### B. The Draft EIR Adequately Analyzed Land Use Impacts of Parking.

The parking issue raised in section I.d of the CURD Letter was raised by Annie Geoghan and Hollywoodland Homeowners Association in its appeal letter following the Advisory Agency approval. A response to section I.d on pages 4 through 5 of the CURD Letter is provided in the Applicant's March 26, 2013 response letter. See Attachment 3, Appeals of Advisory Agency Determination, section III.C.2.

### C. The Draft EIR Adequately Analyzed Impacts on Emergency Response Times.

This comment erroneously asserts that the EIR is inadequate because it failed to address response times to potential emergencies in the Project's proposed towers. The EIR fully analyzed all of the Project's components and its potential demand for fire services as required by CEQA. In regard to response times, the Will Serve Request Letter was reviewed by the Los Angeles Fire Department ("Fire Department") to assess the adequacy of fire services for the Project ("Will Serve Request Letter"). This letter provided a comprehensive description of the Project. Among the data provided to the Fire Department was detailed information regarding the potential height of the Project's towers and their placement within the Project area. See Attachment 4, Letter from CAJA Environmental Services, LLC to Captain Mark R. Woolf, Los Angeles Fire Department, dated September 8, 2011 and excerpt of Response to Comments, dated February 2013. The Will Serve Request Letter specifically sets forth the maximum height of the towers as 585 feet and identifies where the towers may be located within the Project area. Id. Accordingly, the Fire Department's assessment is based on full disclosure of the Project's height and potential demands for emergency response.



Furthermore, as set forth in the Task Force on Information and Data Analysis Report ("Task Force Report"), cited in the CURD Letter (Exhibit 3), the Fire Department's standard response protocol includes measures to specifically address emergencies in high-rise buildings such as those proposed for the Project. See, Sections A.5.2.4.2 - A.5.2.4.2, A.5.2.4.3.1, NFPA 1710 (2010 Edition) in CURD Letter, Exhibit 3. According to the national standards cited in the Task Force Report, the Fire Department's plans include a comprehensive arrangement of resources and functions to respond to the full spectrum of building types commonly found within its service area including high-rise buildings. As further set forth in the standards, response time relates directly to the physical linear travel distance. Pursuant to the Task Force Report, response times are measured and reported " . . .to be from the time of call receipt by the LAFD to the time of the first unit on scene, according to guidelines set forth by NFPA 1221 and NFPA 1710 (internal citation omitted)." Accordingly, the EIR analyzed response times pursuant to CEQA, the City's experts and applicable standards for determining response time.

In addition, there are multiple mitigation measures to ensure adequate services to the Project Site including Fire Department review and approval, access and fire hydrants (Mitigation Measure J.1-6), and Fire Department review and approval of an emergency response plan (Mitigation Measure J.1-7). Additionally, similar emergency response issues raised by CURD in section I.e of the CURD Letter were previously addressed by the City in the Response to Comments, No. 09-73, in the Final EIR. See Attachment 4, Excerpt of Response to Comments (dated February 2013).

D. The Draft EIR Adequately Disclosed the Potential Health Risks and Reduced Impacts to the Maximum Extent Feasible.

This comment asserts that the 500-foot setback map depicted in the Draft EIR to illustrate the Project's distance from the Hollywood Freeway is incorrect and references exhibits that appear to show disparity between the EIR figure and the commenter's estimations of the setback limits. The figure in the EIR referenced by the commenter is titled "Figure 3, Approximate Limits of the Project Site Within 500 Feet of the 101-Freeway." Thus, the figure title itself notes the delineation is approximate and is primarily intended to provide a general visual depiction of the Project location. The EIR conservatively estimated the 500-foot setback from the freeway as measured from the edge of the nearest freeway on-ramp, as opposed to the edge of the freeway mainline or centerline of the freeway. The Figure presented in the EIR is based on a base map obtained with Google Earth Pro software, which has proven to be accurate in planning applications when verified with field measurements. To illustrate the accuracy of the delineations depicted in Figure 3, a similar exhibit was created using the City's Zone Information and Map Access System (ZIMAS) database to draw a 500-foot radius from the edge of the 101 Freeway. The ZIMAS map exhibits are all drawn to a 500-foot radius from selected segments of the 101 Freeway. As shown in the attached Figures (Figure 3, and ZIMAS exhibits), the 500-foot setback depicted in the Draft EIR is substantially accurate when compared with delineations obtained using the City's GIS system. See Attachment 5, Figure 3 and Zimas exhibits.

It should also be noted that the setback presented in the Draft EIR is based on conservative assumptions with respect to the reference point of the freeway setback. Neither the City's advisory policy nor CARB's advisory specify where the measurement should be



taken from. However, CARB's recommendation is to "avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day."<sup>1</sup> As noted in Table 4, Freeway and Ramp Traffic Volumes, in the HRA prepared for the Project (see Appendix IV.B.3 to the Draft EIR), the 101 Freeway south off-ramp to Gower Street carries approximately 6,700 vehicles per day. This volume does not approach CARB's noted screening criteria of 50,000 or 100,000 vehicles per day for rural and urban locations, respectively. Thus, measuring the Project's setback to the off-ramp rather than the mainline is a very conservative representation. As depicted in the attached ZIMAS map with a 500-foot radius measured from the freeway mainline, the setback would barely encroach onto the Argyle Avenue frontage on the East Site where new development is proposed.

It is also important to note that the 500-foot delineation is not a significance threshold under CEQA nor does it preclude development within 500 feet of a freeway or qualifying roadway. The scientific literature reviewed and referenced by CARB and the CPC includes a southern California study (Zhu, 2002), which showed measured concentrations of vehicle-related pollutants, including ultra-fine particles, decreased dramatically within approximately 300 feet of the 710 and 405 freeways. Another study looked at the validity of using distance from a roadway as a measure of exposure to traffic related air pollution (Knape, 1999). This study showed that concentrations of traffic related pollutants declined with distance from the road, primarily in the first 500 feet. As seen in Figure 1 of CARB's Air Quality And Land Use Handbook, the relative exposure and health hazard risk dropped substantially within the first 300 feet. See Attachment 6, excerpt of the Air Quality and Land Use Handbook. Thus, the recommended Policy to provide a 500-foot setback is conservative.

The commenter asserts that the alleged inaccuracy in the 500-foot setback map makes the EIR inadequate with respect to providing full disclosure of the potential impacts. As noted in Exhibit A to the City's advisory notice<sup>2</sup>, the City's policy directs that the following measures should be taken under advisement for potential in-fill development projects located within 500 feet of freeways: 1) Conduct Site-Specific Health Risk Assessment; 2) Improve Indoor Air Quality with MERV-Rated or HEPA Air Filtration Equipment (MERV 11 or higher); and 3) Further Reducing Exposure through Project Design (building orientation, screening with vegetation, and reduce operable windows). These measures have all been satisfied and the findings were properly disclosed in the Draft EIR.

The Project's EIR included a thorough evaluation and consideration of each of these items. The Project EIR included a detailed HRA (see Appendix IV.B.3 to the Draft EIR) that determined impacts with respect to carcinogenic risk and exposure to elevated levels of NO<sub>2</sub> would be potentially significant. The criteria pollutant concentrations and summary of carcinogenic risks disclosed in Tables 5 and 6 of the HRA respectively bare no relation to the 500 foot setback. The dispersion model depicted in Figure 2 of the HRA extended south of the

---

<sup>1</sup> California Air Resources Board, Air Quality and Land Use Handbook: A Community Health Perspective, (2005).

<sup>2</sup> Exhibit A: Advisory Notice Relative to Sensitive Uses Near Freeways, City of Los Angeles Planning Commission.  
([http://cityplanning.lacity.org/code\\_studies/airquality/StaffRpt\\_AdvisoryNotice\\_ExhibitsA-F.pdf](http://cityplanning.lacity.org/code_studies/airquality/StaffRpt_AdvisoryNotice_ExhibitsA-F.pdf))



Project Site to Hollywood Boulevard. Further, as noted on page V-6 of the Final EIR (Mitigation Monitoring and Reporting Program), the Project has included the following relevant mitigation measures consistent with the City's advisory policy to reduce these impacts to the maximum extent feasible:

B.1-5 The Project shall incorporate residential air filtration systems with filters meeting or exceeding the ASHRAE 52.2 Minimum Efficiency Reporting Value (MERV) of 13, to the satisfaction of the Department of Building and Safety. The CC&Rs recorded for the residential units on the Project Site shall incorporate this measure. High efficiency filters shall be installed and maintained for the life of the Project.

B.1-6 Heating Ventilation and Air Conditioning (HVAC) air intakes shall be located either on the roof of structures or within areas of the Project Site that are distant from the 101 Freeway to the extent that such placement is compatible with final site design.

B.1-7 For portions of new structures that contain sensitive receptors and are located within 500-feet of the 101 Freeway, the project design shall limit the use of operable windows and/or the orientation of outdoor balconies.

Thus, the Project EIR adequately disclosed the potential health risks and included mitigation measures consistent with the City's advisory to disclose the issue and reduce such impacts to the maximum extent feasible.

E. The Project Is Consistent with City Council Approval Precedent.

This comment summarizes the CPC recommendations for a separate project (The Casden Sepulveda Mixed-Use Project) and attempts to establish that project's approval process as a precedent for the rejection of the Project. While the comment is correct in noting that the CPC did recommend a 500-foot setback from the 405 Freeway for the Casden Sepulveda Mixed-Use Project, the Casden Sepulveda Mixed-Use Project was ultimately approved by the City Council on June 28, 2013 with a freeway setback of 350 feet. As noted in Council File No. 13-0523, City Planning correspondence to the City Council notes that the building setback from the 405 Freeway would revert back to 350 feet in lieu of the 500-foot setback conditioned by the City Planning Commission.<sup>3</sup> Thus, the Project's siting within 500 feet of the 101 Freeway is consistent with recent City Council approval precedent. In addition, as noted in response to CURD's June 18 letter section I.f above, the Project EIR has fully complied with the City's advisory and disclosure process for freeway adjacent development projects.

---

<sup>3</sup> The Casden Sepulveda Mixed-Use Project, Council File 13-052, CPC File No. CPC-2008-4604-GPA-ZC-HD-CUB-DB-SPR, Department of City Planning correspondence to City councilmembers, page 2, June 27, 2013. (Note: the motion carried with an 11-0-4 vote and the Ordinance has been held over to July 23, 2013 for second reading so those councilmembers that were absent will have the opportunity to vote).

F. The Project is Consistent with the City's Zoning Information No. 2427.

This comment asserts that the EIR is inconsistent with the City's Zoning Information No. 2427 ("ZI 2427"), which was adopted by the City on November 2012. The response to section I.f of the CURD letter above outlines how the Project has met all of the components outlined in the City's advisory policy for freeway adjacent development projects. Further, it should be noted that, while the information and analysis presented the Draft EIR and Final EIR is consistent with the City's policy as stated in ZI 2427, the policy was adopted a month after the Draft EIR was circulated. Nevertheless, the information in the Draft EIR is consistent with this policy as the EIR included a Site-Specific Health Risk Assessment, and includes mitigation measures to improve indoor air quality through filtration and site design criteria (see mitigation measures B.1-5 through B.1-7).

G. The Project is Consistent with the General Plan Air Quality Element.

This comment asserts that the approval of the Project creates an inconsistency with the General Plan Air Quality Element. Neither the Air Quality Element nor the General Plan Land Use Element preclude residential development within 500 feet of the freeway. As stated in the response above, the Draft EIR is consistent with the policies set forth in ZI 2427 and the adopted Hollywood Community Plan with respect to the fact that an HRA was prepared and the findings were properly disclosed in the Draft EIR.

H. The Public Health and Safety Findings are Supported by Substantial Evidence.

CURD is asserting the Draft EIR has failed to implement all feasible mitigation measures to protect the future occupants of the Project from exposure to carcinogenic air pollution and that the City cannot make the applicable findings under Govt. Code Section 66474.61(d)(f). The specific findings of the Govt. Code Sections referenced in this comment include:

*"(d) That the site is not physically suitable for the proposed density of development." and*

*"(f) That the design of the subdivision or the type of improvements is likely to cause serious public health problems."*

As stated above, mitigation measures B.1-5, B.1-6 and B.1-7 have been recommended to reduce the potential impacts associated with the Project's future occupant's exposure ambient air quality levels. The applicable findings have been prepared by the lead agency and are supported by substantial evidence. As documented in the Draft EIR and the applicable state and local policy papers that address elevated ambient criteria pollutant concentrations near freeways, locating sensitive land uses further than 300 feet and at distances of 500 feet greatly reduce the occupant's exposure to elevated air pollution levels. The Project provides for a 500-foot setback from the freeway and provides additional mitigation measures to provide HVAC filters with a minimum MERV rating of 13, and limiting operable windows within residential units within 500 feet of the 101 Freeway. With respect to the air quality concerns, these measures are supportive of the findings pertaining to public health and safety and the suitability of the site to accommodate the proposed density.



The commenter's reference to recent studies and articles regarding health risks from adjacent freeway pollutants in (provided in Exhibits 10, 11, and 12) is irrelevant to the findings presented in the Draft EIR. The UCLA/CARB Study (published in 2012) and the LA Times Article referencing the same study in 2013 found that air pollution concentrations are higher in the early morning hours as compared to other times of the day. This recent study does not include any data on air pollution concentrations in proximity to the Project Site. The Draft EIR acknowledges that air pollution is higher in close proximity to freeways and included a site-specific HRA to evaluate that risk. The findings of the HRA resulted in project specific mitigation measures that were incorporated into the EIR that are consistent with the recommendations of the referenced exhibits (i.e., close windows in the early morning hours, install HEPA air filters in HVAC units).

Notwithstanding the above, CEQA does not require an EIR to analyze or mitigate the impacts of the environment on a project. The air quality in proximity to the nearby 101 Freeway is part of an existing environmental condition. Although the Project brings people into this existing environmental condition, the existing air quality in the Project vicinity due to the 101 Freeway is not an impact of the Project on the environment. Instead, it is an impact of the environment on the Project. There are many other laws that regulate clean air, but the limited purpose of CEQA is to evaluate and mitigate impacts of a project on the environment. Accordingly, the City imposes the mitigation measures on the Applicant not because they are required in order to make the EIR compliant with CEQA, but out of an abundance of caution pursuant to the City's police powers to regulate land use. As numerous courts have affirmed, the purpose of CEQA is "not to protect proposed projects from the existing environment." *Baird v. County of Contra Costa*, 32 Cal.App.4th 1464 (1995); Pub. Res. Code Sections 21061, 21083(b), and 21060.5. "[C]ourts have recognized that CEQA is not a weapon to be deployed against all possible development ills." *South Orange County Wastewater Authority v. City of Dana Point*, 196 Cal. App. 4th 1604, 1614 (2011). It has a limited role. "The Legislature did not enact CEQA to protect people from the environment." *Id.* at 1617-1618. "We agree with [SOCWA v. County of Orange], that the Guidelines [15126.2]... is not an example of an environmental effect caused by development, but instead is an example of an effect on the project caused by the environment. Contrary to Guidelines section 15126.2, subdivision (a), we hold that an EIR need not identify or analyze such effects.... Although the Guidelines ordinarily are entitled to great weight, a Guidelines provision that is unauthorized under CEQA is invalid." *Ballona Wetlands Land Trust v. City of Los Angeles*, 201 Cal.App.4th 455, 474 (2011). Based on this case law, it is clear that CEQA does not require the Lead Agency to adopt additional measures, as recommended in the comment letter, to mitigate the existing air quality environment around the Project Site.

I. The Project's Traffic Study is Sufficient and Complies with CEQA.

The issues raised by CURD involving Caltrans' objections to the Traffic Study in section I.k on page 11 of the CURD Letter were previously responded to by the City in the Response to Comments, No. 03-1 through 03-15, in the Final EIR. See Attachment 7, excerpt of Response to Comments (Caltrans) (dated February 2013).

CURD also attached a memorandum, referred to as Mr. Basmacian's report, to its June 18, 2013 letter as Exhibit 13, which alleges deficiencies in the Project Traffic Study. Crain and Associates has prepared a response to Mr. Basmacian's report, attached hereto as



Attachment 8. See Attachment 8, Crain & Associates response to Basmaciyar Report (dated July 22, 2013).

J. The Draft EIR Adequately Analyzed Cumulative Impacts.

The cumulative impacts issue raised by CURD in section I.m on pages 12 through 13 of the CURD Letter was responded to by the City in the Response to Comments, Nos. 03-3 and 14-6, in the Final EIR. See Attachment 9, excerpt of Response to Comments (dated February 2013). Response to Comment No. 03-3 addresses CURD arguments that the Draft EIR failed to properly analyze cumulative impacts related to freeway segments. Response to Comment No. 14-6 explains that the cumulative projects list was based on the City Department of Transportation's database of projects in the area, traffic reports for individual projects, and other sources as listed in the notes of the related projects list contain in Section III of the Draft EIR. The list was based on known and foreseeable projects at the time of the Project's Notice of Preparation, which complies with the applicable legal standard under CEQA.

Particularly, CEQA Guidelines Section 15125(a) provides that an EIR must describe the physical environmental conditions in the vicinity of the project, as they exist at the time of the Notice of Preparation. As discussed in the Draft EIR, the related project list was created within the NOP timeframe required by CEQA and is thereby legally sufficient. It should also be noted that the Draft EIR uses a conservative approach to analyze cumulative impacts. It relies on both the list of related projects (*i.e.*, the "list approach") and the summary of projections contained in adopted plans (*i.e.*, the "plan approach") as applicable. Accordingly, CURD argument that the "list" is outdated does not account for the more comprehensive approach to cumulative impact analysis provided in the Draft EIR.

K. The Draft EIR Contains Accurate and Substantial Geotechnical Evidence that Demonstrates the Site is Suitable for Development.

The issues raised by CURD regarding the potential geologic and seismic impacts of the Project are addressed below and in the attached Langan Responses. The CURD arguments are inaccurate. As discussed below, the Applicant has current geotechnical proof – based on subsurface investigation of the Project Site – that the Draft EIR adequately assessed geotechnical impacts. See Attachment 10, Langan Responses (dated July 22, 2013).

1. The EIR Contains Accurate Geotechnical Information Related to Fault Zones.

CURD claims that the EIR falsifies the location of the Project Site in relation to fault zones mapped by the Alquist-Priolo Earthquake Fault Zoning Act (the "AP Act") and the City's Safety Element in the General Plan. As discussed below, these assertions are simply not true for several reasons.

First, regarding the AP Act, Langan Engineering & Environmental Services ("Langan") prepared a Preliminary Geotechnical Engineering Study for the Project in May 2012 (the "Geotechnical Study"), which supports the impact analysis in the Draft EIR and is attached thereto as Appendix D. The Geotechnical Study clearly states that "[t]he Site is not located within an Alquist-Priolo Special Study Zone Area." Langan Report, p. 6. This statement is



confirmed by the Alquist-Priolo Special Study Zone Area map attached hereto as Attachment 11. See Attachment 11, Alquist-Priolo Special Study Zone Map. This statement is also confirmed by City's Graphical Information System ("GIS")-based ZIMAS system, which unequivocally concludes that not a single parcel on the Project Site is located within an Alquist-Priolo fault zone. In addition, the City's Alquist-Priolo Special Study Zones map included in the Exhibit A in the Safety Element of the General Plan illustrates that the Project Site is not within an Alquist-Priolo fault zone. Based on all of these sources, the Project Site is simply not within an Alquist-Priolo Special Study Zone area. Therefore, for purposes of the EIR, CURD's arguments regarding the applicability of the AP Act and its requirements related to the location of the Project Site are incorrect.

Second, regarding the City's Safety Element, CURD claims that the Geotechnical Study intentionally modified the base map of the Safety Element and plotted the Project Site on the Safety Element map to materially mislead the public and somehow bias the analysis in the EIR. Neither of these assertions are true.

The base map used to create Figure 4: Fault Rupture Study Zone Map in the Geotechnical Study is an exact replication of the base map contained in the Safety Element. The full-size base map from the Safety Element used in the Geotechnical Study is attached as Attachment 12. See Attachment 12, Safety Element Base Map. A comparison of the base map from the Safety Element and Figure 4 from the Geotechnical Study make it abundantly clear that the base maps are identical. In other words, Langan did not delete any information whatsoever from the Safety Element base map or otherwise manipulate the Safety Element base map in a way that misleads the public as claimed by CURD.

With respect to placement of the Project Site in relation to the City's Fault Rupture Study Area, the Geotechnical Study acknowledges that "... a portion of the Project Site is adjacent to the to the boundary of a fault rupture study zone included in the Safety Element of the City of Los Angeles General Plan published in 1996 (Safety Element). Figure 4 illustrates the Project Site location in relation to the Fault Rupture Study Zones map as included in the Safety Element." There are several key facts about Figure 4 that must be understood in order to have a competent discussion about it. To start with, Langan clearly titled it as "NTS," which means "Not to Scale" and thereby it cannot be used to (nor was it intended to) illustrate exact placements or for precise measurements. Next, the Draft EIR purposely states that "[f]igure 4 in the Geotechnical Study illustrates the *proximity* [compared to exact location] of the Project Site to the fault rupture study zone" (*emphasis added*). Also, the Safety Element base map notes that the City's Fault Rupture Study Areas are delineated to inform the City's Department of Building and Safety permit process, which does not equate directly to the planning processes associated with preparation of the EIR. The purpose of Figure 4 must be taken within the context of these facts.

CURD has not recognized these key facts. Instead, CURD exaggerates the import of Figure 4, claims that its use is fraudulent, and incorrectly asserts that it somehow biases the impact analysis of the EIR. None of these claims are true, and as further discussed below, the plotting of the Project Site as either within, adjacent to, or outside of the City's Fault Rupture Study Area boundary does not materially affect the environmental impact analysis in the Draft EIR.



Furthermore, the Applicant has already complied with even the most conservative interpretation of the Safety Element as it relates to fault rupture study zones. The Safety Element indicates that local jurisdictions must require, based on the applicable sections of the AP Act, additional studies for development projects in areas identified as potential hazard areas by applicable earthquake hazards maps. As noted above, the Geotechnical Study determined that a portion of the Project Site is adjacent to the boundary of a fault rupture study zone. In addition, the Department of Building and Safety (during its review of the Applicant's tract map) determined that the Hollywood Fault "appears to exist in the vicinity of the subject site." Stated differently, both the Geotechnical Study and the Department of Building and Safety recognized that the Project Site was close enough to the boundary of the City's Fault Rupture Study Zone – regardless of where the Project Site appears on the Figure 4 – to conservatively request a fault investigation report to inform its review of the tract map application. Accordingly, the Department of Building and Safety requested subsurface exploration of the Project Site to determine if active faulting was present. The Applicant prepared a fault investigation report (as part of the tract map review process) and it confirms there is no active faulting on the Project Site within the limits of the investigation.

## 2. The Draft EIR Accurately Identifies the Location of the Hollywood Fault.

CURD wrongly claims the Draft EIR affirmatively misrepresents the location of the Hollywood fault. The Draft EIR states that "[t]he California Geological Survey . . . and the City of Los Angeles ZIMAS system (<http://zimas.la.city.org/map.asp>) show the closet fault to the Site with the potential for fault rupture as the Santa Monica/Hollywood Fault. It is located *approximately* 0.4 miles from the Site (*emphasis added*).” The Geotechnical Study contains similar statements regarding the fault location. As referenced in the quote immediately above, Langan used the City's GIS-based ZIMAS system, among other sources, to identify the location of the Project Site in relation to the Hollywood Fault. The Geotechnical Study specifically cites to the ZIMAS system as the source for the locational data. Geotechnical Study, p. 10. The ZIMAS system is a widely-used and publically-accessible database for land use and zoning information. CURD itself used the ZIMAS system to identify the location of the Hollywood Fault for the arguments presented in its opposition letter. Thus, it is completely illogical that CURD can somehow claim that the Geotechnical Study and the Draft EIR are not supported by valid sources of evidence.

More precisely, while preparing the Geotechnical Study, Langan used the ZIMAS system to identify the parcels on the Project Site that were closest and farthest from the location of the Hollywood Fault. Based on the known locations of the Hollywood Fault north of the Project Site, the northwestern corner of the Project Site is likely closest to the Hollywood Fault while the southeastern portion of the Project Site is likely farthest away. The distances (per ZIMAS) from these parcels to the Hollywood Fault are .48 km and .60 km respectively. Calculated in miles (1 mile=.60 km) the Hollywood Fault is located between .30 to .37 miles from the Project Site, which is consistent with the statement in the Draft EIR that the Project Site is located *approximately* 0.4 miles from the Hollywood Fault. Surely, commonplace mathematical rounding fits within the bounds of an *approximate* distance determination. Maps that identify relevant parcels and the distances to the Hollywood Fault are attached as Attachment 13. See Attachment 13, Zimas Reports. Therefore, the Draft EIR accurately identifies the approximate distance to the Hollywood Fault and correctly concludes that seismic risk at the Project Site are considered less than significant with mitigation incorporated.



3. The Draft EIR Adequately Analyzed Geology Impacts and Properly Informs the Public.

A primary purpose of an EIR is to provide public agencies with sufficient information about the likely impacts a project before it makes a decision to approve or disapprove a project. Section 15151 of the CEQA Guidelines states that “[a]n EIR should be prepared with a sufficient degree of analysis to provide decisionmakers with information which enables them to make a decision which intelligently takes account of environmental consequences.” This section also clearly states that an evaluation of the environmental effects of a proposed project need not be exhaustive; and a disagreement between experts does not make an EIR inadequate.

CURD makes several claims that the Draft EIR is inadequate in meeting the basic informative purposes of CEQA and was incomplete because it did not contain a more exhaustive fault investigation. As discussed below, the Draft EIR analyzed potential geotechnical impacts based on the CEQA thresholds of significance and the City’s CEQA Thresholds Guide, supported its conclusions with substantial evidence in the Geotechnical Study, and proposed mitigation measures that ensure sound development considering the seismic conditions common to the entire Southern California region and the specific geologic conditions on the Project Site. In short, the Draft EIR and the supporting Geotechnical Study (with nothing more) properly inform the decisionmakers regarding the potential geology impacts of the Project.

For example, the CEQA thresholds of significance ask whether the Project could “[e]xpose people or structures to potential substantial adverse effects . . . involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map . . . for the area or based on other substantial evidence of a known fault.” The Geotechnical Study reviewed and referenced numerous sources of information regarding fault locations and the likelihood of surface rupture on the Project Site. The Draft EIR carried forward that information and presented additional analysis of geotechnical issues. The Draft concluded that the Project Site is suitable for development and the potential for surface fault rupture at the Project Site is unlikely. Furthermore, the Draft EIR contains mitigation measures that require a final design-level geotechnical report prepared to the satisfaction of the Department of Building and Safety before the issuance of building or grading permits. This design-level report further assures the City and the public that the building plans for the Project will respect and incorporate all applicable building code (include seismic) requirements to ensure the Project does not expose people to substantial adverse effects related to faulting or earthquakes. In doing so, the Draft EIR complies with the substantive requirements of CEQA to properly inform the decisionmakers about the potential geological hazards associated with the Project before a decision to approve or deny it. Therefore, CURD’s assertions that the Draft EIR is inadequate in its coverage of geology and soils impacts are unfounded.



4. The Fault Investigation Report Merely Clarifies the Conclusions of the Geotechnical Study and Does Not Trigger Recirculation.

CURD claims that the existence of a Fault Investigation Report prepared by Langan in November 2012 (the "Fault Investigation Report") requires the City to recirculate the Draft EIR. As discussed below, this claim is incorrect for several reasons.

First, from a strictly legal standpoint, Section 15088.5(a) of the CEQA Guidelines provides that "[a] lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the Draft EIR for public review under Section 15087 but before certification." The CEQA Guidelines and controlling case law provide that "significant new information" is information that shows either: (a) a new significant environmental impact would result from the project; (b) a substantial increase in the severity of an environmental impact would result; (c) a feasible project alternative or mitigation is available that would lessen impacts, but is rejected by the project proponent; or (c) the draft EIR was so fundamentally inadequate in nature that meaningful public review was precluded. The Fault Investigation Report does not qualify as significant new information under any of these tests.

As background, the City's Department of Building and Safety requested the Fault Investigation Report as part of the Department's review of the Applicant's application for the VTTM. The Fault Investigation Report was not prepared as (nor was it required to be) part of the CEQA process led by the City's Department of Planning. The Department of Building and Safety recognized that that Hollywood Fault is considered active and that it "appears to exist in the vicinity of the subject site." At the Department's request, Langan prepared the Fault Investigation Report, which is based on physical subsurface exploration of the Project Site and radiocarbon dating of geologic materials. The Fault Investigation Report confirmed that the Hollywood Fault is not on the Project Site. On January 31, 2013, the Department issued an approval letter related to the VTTM after reviewing the Fault Investigation Report.

Regarding the test for recirculation under CEQA, the Fault Investigation Report is clearly not "significant new information" that could trigger recirculation. To start with, the Fault Investigation Report does not identify any new significant geotechnical impacts that would result from the Project. The Fault Investigation Report was based on additional borings and subsurface exploration at the Project Site. The geologic material recovered from the Project Site was analyzed by licensed engineers and radiocarbon dated to ensure accuracy. The Fault Investigation Report concludes that active faulting is not present on the Project Site within the limits of the investigation. Similarly, the Geotechnical Study (which supports the Draft EIR) concludes that surface rupture at the Project Site from the Hollywood Fault is considered unlikely because the Hollywood Fault does not appear to be located on the Project Site. These conclusions are consistent. The Fault Investigation Report merely amplified and clarified the information in the Geotechnical Study. The Draft EIR concluded that the potential for earthquake fault rupture at the Project site was unlikely and considered less than significant. Neither the Geotechnical Study nor the Draft EIR conclusions are changed by the results of the Fault Investigation Report. In fact, the additional subsurface investigations only confirmed the findings of the preliminary geotechnical analysis done to support the Draft EIR. Therefore, the Fault Investigation Report does not show a new significant impact from the Project.



Next, the Fault Investigation Report does not show that there would be a substantial increase in the severity of an environmental impact identified in the Draft EIR. The Draft EIR determined that impacts related to fault rupture at the Project Site are less than significant based on documented existing geologic conditions. The Fault Investigation Report confirmed that conclusion is true. Therefore, there is no increase in the severity of environmental impacts already disclosed, and mitigated, in the Draft EIR.

In addition, the Fault Investigation Report does not recommend any new project alternatives or mitigation measures. Instead, it confirms and clarifies the findings of the Geotechnical Study and further bolsters the significance conclusions in the Draft EIR. Therefore, there are no new alternatives or mitigation measures recommended or warranted that the Applicant has declined to adopt to reduce the level of significance already stated in the Draft EIR.

Last, the Draft EIR is not fundamentally inadequate. As mentioned above, Draft EIR analyzed geotechnical impacts based on the State and City thresholds of significance, supported its conclusions with substantial evidence in the Geotechnical Study, and proposed mitigation measures that ensure sound development. The Draft EIR functions to properly inform the decisionmakers regarding the potential geotechnical impacts of the Project.

In summary, the Fault Investigation Report merely clarifies the conclusions set forth in the Geotechnical Study and the Draft EIR. The Fault Investigation Report was prepared at the request of the Department of Building and Safety for its review of the VTTM. It was not intended (or needed) for the analysis in the Draft EIR. The Draft EIR and the Geotechnical Study that supports it adequately inform the decisionmakers and the public pursuant to the requirements of CEQA. The Appellant has now introduced the Fault Investigation Report directly into the CEQA administrative record as part of their opposition to the Project. As demonstrated above, the Fault Investigation Report confirms and clarifies the information, analysis, and significance conclusions presented in the Draft EIR. As discussed, the Fault Investigation Report is clearly not considered significant new information under CEQA. Therefore, recirculation of the Draft EIR is not required.

L. The City Planning Commission Did Not Violate Government Code Section 1090.

CURD argues in part that William Roschen ("Roschen") and the City Planning Commission ("CPC") violated California Government Code section 1090 ("Section 1090") in approving entitlements and Conditions of Approval for the Project. Appellant's conclusion is falsely premised on the argument that because Roschen, as a member of Roschen Van Cleve Architects, was retained by the Applicant for architectural services in connection with an earlier phase of the Project, he is financially interested in a contract made by a body or board of which he is a member. CURD's argument is misguided because no contract exists to implicate Section 1090. Furthermore, because Roschen is not involved in the formation of any contract between the City and the Applicant and Roschen has no financial interest in the formation of any such contract the Project does not involve a Section 1090 violation.

Appellant cites a California Supreme Court case, *Thompson v. Call*, 18 Cal. 3d. 633 (1985) ("Thompson"), analogizing to facts disparate from the current situation. In



*Thompson*, a developer entered into a quid pro quo arrangement with the City to purchase a parcel from a City councilmember for nearly ten times its appraised value, then donated that parcel back to the City in return for entitlement approvals. Here, the Applicant has entered into no such arrangement with the City.

CURD proceeds to analyze a number of questions that are addressed under Section 1090, the most relevant of which are responded to in order of its presentation in the CURD Letter:

(1) The Contract

CURD argues that the Project involves a contract in the form of the proposed Development Agreement and entitlements. The Development Agreement to which CURD refers, however, was withdrawn from the Project prior to the CPC hearing held on March 28, 2013. At the CPC hearing, the Development Agreement was not considered, rather only the VTTM and entitlements package were reviewed by CPC. In the absence of the Development Agreement on which CURD has relied, there is no other evidence that would implicate any potential conflict of interest with respect to the Project. Any argument CURD has advanced on the basis of the Development Agreement is therefore moot because the Development Agreement was withdrawn from the Project.

CURD also suggests that the entitlements for the Project constitute a contract because the granting of entitlements in exchange for Project conditions is enforceable through the execution of a Covenant and Agreement and binding on the parties and successors in interest. CURD alleges that the Applicant and the City have entered into a formal contract because the City issues Letters of Determination accompanied by Conditions of Approval which are attached to the entitlement approvals. However, CURD provides no authority to support this proposition. While CURD references "traditional contract principles," no statutes or case law are offered to explain how these particular devices constitute a contract. Further, entitlements are not contracts, and no case law or other relevant authority was cited by CURD nor could be found to support the argument that the Project entitlements are a contract.

Relevant authority shows that entitlements are not contracts. Rather, entitlements are exercises of a municipality's police power and as such do not constitute contracts. See *Hernandez v. City of Hanford*, 41 Cal. 4th 279, 297 (2007) (holding that a land use action in furtherance of a legitimate public purpose constitutes an "exercise of the municipality's police power"); *Cotta v. City and Cty. of San Francisco*, 157 Cal. App. 4th 1550, 1561 (2007) (holding that a resolution adopted pursuant to the City's police power was not an enforceable contract). Thus, any entitlements granted to the Applicant by the City would be considered an exercise of the City's police power, not enforceable contracts between the parties.

Additionally, that the entitlements are accompanied by Conditions of Approval is of no import because the Conditions of Approval are a legal requisite for the grant of the entitlements. Complying with legal obligations "to perform an act may not constitute consideration for a contract." *O'Byrne v. Santa Monica-UCLA Medical Center*, 94 Cal. App. 4th 797, 808 (2d Dist. 2001) (holding that a contract was not formed where neither party conferred any more than what was required by law). The Applicant's conformance to the Conditions of Approval is required to obtain entitlements from the City, and the Applicant receives no



additional benefit through the execution of the Conditions of Approval. There is therefore no consideration that passes between the City and the Applicant, precluding the existence of a contract between them. Because the entitlement process is an exercise of the City's police power and lacks the requisite consideration between the City and Millennium, no contract exists that could implicate Section 1090.

## (2) The Making

Appellant indicates that Roschen's position as President of the CPC presumes that he was involved in the making of the alleged contract irrespective of whether he actually participated in the making or not. However, the CPC did not execute a contract when it considered, approved and recommended for approval the Project's entitlements and Conditions of Approval at the March 28, 2013 hearing. As explained above, neither Conditions of Approval nor entitlements constitute a contract.

Furthermore, Roschen recused himself and was absent from any deliberations regarding the entitlements and Conditions of Approval related to the Project. Roschen was absent from the March 28, 2013 CPC hearing. Indeed, Roschen recused himself, did not sit as a member of the CPC at that hearing, he did not participate in deliberations at the hearing, and he did not partake in any CPC vote on the Project. Therefore, there is no evidence of Roschen's participation in the making of any contract, as he recused himself was absent for the hearing and because no contract was created.

It should also be noted that the CPC decision on the Project has been appealed. As such, the final approval of the Project entitlements and Conditions of Approval will be made by the City Council.

## (3) Financial Interest

CURD admits that Roschen is not a contracting party with respect to the Project. However, CURD asserts that because Roschen has been paid for services by the Applicant in the past, Roschen has an ongoing "indirect" financial interest in a contract related to the Project<sup>4</sup>. This conclusion is without basis. The Applicant has not entered into any agreement with the City that would involve Roschen or his individual services. No authority supports CURD's assertion that prior dealings are de facto evidence of future financial interest.

CURD speculates that Roschen will be the future preservation architect who will be consulted in the future regarding design of the Project. CURD has asserted no evidence to support this claim and, in fact, Roschen will not be the future preservation architect.

---

<sup>4</sup> CURD mentions that Roschen has a financial interest in the "CPC Entitlement Contract." Throughout the rest of CURD's analysis, however, it mentions that Roschen has a potential conflict of interest in the Development Agreement, and has participated in the creation of a Master Covenant and Agreement. CURD's own inability to consistently make reference to any one agreement is a red flag that no particular contract beyond the withdrawn Development Agreement, in fact, exists.



The entitlement process does not constitute a contract, and therefore does not implicate Section 1090. Furthermore, because Roschen is not involved in the formation of any contract between the City and the Applicant and Roschen has no financial interest in the formation of any such contract the Project does not involve a Section 1090 violation.

M. The City Did Not Violate the Due Process Rights of the Appellant.

CURD previously raised the same issue of due process in its appeal letter dated May 2, 2013. A response to section III on pages 41 through 46 of the CURD Letter is provided in the Applicant's May 31, 2013 response letter. See Attachment 1, Appeals of City Planning Commission's Approval of the Millennium Hollywood Project Letter (dated May 31, 2013).

N. The Entitlements Do Not Rely Solely on the Hollywood Community Plan Update.

CURD previously raised the same issues related to the Hollywood Community Plan in its appeal letter dated May 2, 2013. A response to section IV on page 46 of the CURD Letter is provided in the Applicant's May 31, 2013 response letter. See Attachment 1, Appeals of City Planning Commission's Approval of the Millennium Hollywood Project Letter (dated May 31, 2013). The issues were also responded to in the Response to Comments in the Final EIR. Please refer to Response to Comments, No. 81-9. See Attachment 14, excerpt of Response to Comments (dated February 2013).

O. The Land Use Equivalency Program Does Not Circumvent the CEQA Process.

CURD previously raised the Land Use Equivalency Program issue in its appeal letter dated May 2, 2013. A response to section V on pages 46 through 48 of the CURD Letter is provided in the Applicant's May 31, 2013 response letter. See Attachment 1, Appeals of City Planning Commission's Approval of the Millennium Hollywood Project Letter (dated May 31, 2013).

P. The Development Regulations are Consistent with the Purpose of the Q Conditions.

CURD previously raised the Development Regulations issue in its appeal letter dated May 2, 2013. A response to section VI on pages 48 through 51 of the CURD Letter is provided in the Applicant's May 31, 2013 response letter. See Attachment 1, Appeals of City Planning Commission's Approval of the Millennium Hollywood Project Letter (dated May 31, 2013).

Q. The Q Conditions Do Not Result in Unfettered Discretion.

CURD previously raised the Q conditions issue in its appeal letter dated May 2, 2013. A response to section VII on page 51 of the CURD Letter is provided in the Applicant's May 31, 2013 response letter. See Attachment 1, Appeals of City Planning Commission's Approval of the Millennium Hollywood Project Letter (dated May 31, 2013). Furthermore, the specific language of Q condition No. 2 cited in the CURD Letter has been removed from the Q conditions in the City's proposed ordinance, which was posted to the Council File Management System on July 11, 2013. See Attachment 15, Proposed Ordinance.



R. The Conditional Use Permit And Variance Findings Are Supported by Evidence.

CURD previously raised the same findings issue in its appeal letter dated May 2, 2013. A response to section VIII on page 52 of the CURD Letter is provided in the Applicant's May 31, 2013 response letter. See Attachment 1, Appeals of City Planning Commission's Approval of the Millennium Hollywood Project Letter (dated May 31, 2013).

S. The Community Benefits Offered By The Project Are Enforceable.

CURD indicates that the community benefits are voluntary commitments, and therefore unenforceable. However, there are enforceable mechanisms which legally bind the Applicant to provide the community benefits, including the conditions of approval and third party agreements.

T. The City Did Not Violate The Good Faith Obligations.

CURD indicates that the Applicant is not committed to a particular project. The Applicant has complied with the applicable procedures and regulations of CEQA, which includes the preparation of an adequate EIR project description. See supra Part I.A.

CURD indicates that the City Planning Director did not require the Applicant to seek and obtain a variance from the Advisory Agency's regulation requiring 2.5 parking spaces per condominium unit. The parking deviation for guest spaces is requested through the shared parking provisions of the Development Regulations and City Planning Commission Approval pursuant to LAMC Section 12.21-A, 4(y). As such, approval or denial of the parking deviations will occur at the City Planning Commission and/or at the City Council. See supra Part I.B.

CURD indicates that the City of Los Angeles did not conduct the specific study requested by Caltrans in direct violation of CEQA. The concerns and recommendations of Caltrans were considered during the transportation analysis scoping process, including consideration of Caltrans procedures. The Traffic Study analyzed key freeway ramps utilizing LADOT's signalized intersection LOS methodology and of freeway mainline segments utilizing the Congestion Management Program ("CMP") recommended methodology. See supra Part I.I.

CURD indicates that the City lacks evidence to support the conclusion that the Hollywood Fault is outside of the Project site. CURD also asserts that the City fails to comply with CEQA and State law regarding building in, near or on an earthquake rupture zone. The attached Langan Report responds to these issues. See supra Part I.K.

CURD indicates that the Applicant hired Roschen to work on the Project despite his position as President of the City Planning Commission. As the Development Agreement has been withdrawn, no other contract exists and the fact that Roschen recused himself and was absent from the CPC hearing on the Project, there is no Section 1090 issue. See supra Part I.L.

CURD indicates that the City Planning Department granted itself the power to approve variances from Project conditions imposed by the City Planning Commission in the Q



condition in direct violation of the law. CURD wrongly assumes that language in the proposed Q condition No. 2 provides the City with some otherwise unavailable discretion. See supra Part I.Q. Furthermore, the specific language of Q condition No. 2 cited in the CURD Letter has been removed from the Q conditions in the City's proposed ordinance, which was posted to the Council File Management System on July 11, 2013.

CURD indicates that the Development Regulations once adopted would "prevail" over the City Charter and Municipal Code. The Development Regulations are the type of specified standards contemplated by the LAMC Q condition classification. The purpose of the Development Regulations is to govern new development on the Project Site. Similarly, the purpose of Q conditions is to ensure development of the site conforms to certain specified standards. Consequently, the purpose of the Development Regulations mirrors the purpose of Q conditions. See supra Part I.P.

## **II. The HEI/GC and HVRA Objections**

On June 4, 2013, HEI/GC and HVRA filed a letter objecting to the Project for consideration at the PLUM Committee hearing ("HEI/GC and HVRA Letter"). The objections letter recites the exact same arguments that the HEI/GC and HVRA raised in its appeal letter dated March 27, 2013. Accordingly, the attached response to appeals letter prepared by the Applicant dated May 31, 2013 addresses all of the HEI/GC and HVRA's objections. See Attachment 1, Appeals of City Planning Commission's Approval of the Millennium Hollywood Project Letter (dated May 31, 2013).

## **III. Conclusion**

We respectfully request that the City Council approve the Project. As discussed above, the parties' arguments are unfounded. The administrative record contains substantial evidence to support approval of the Project. The Draft EIR contains exhaustive analysis and the Final EIR provides good-faith reasoned responses. Therefore, we urge the City Council to move the Project to final approval.

Very truly yours,



Alfred Fraijo Jr.  
for SHEPPARD, MULLIN, RICHTER & HAMPTON LLP



## Attachment List

Attachment 1: Letter from Applicant Responding to Appeals of City Planning Commission's Approval of the Millennium Hollywood Project (dated May 31, 2013).

Attachment 2: Final EIR Response to Comments, Nos. 09-3, 59-2, 81-2, and 81-3.

Attachment 3: Letter from Applicant responding to Appeals of Advisory Agency Determination (dated March 26, 2013).

Attachment 4: Letter from CAJA Environmental Services, LLC to Captain Mark R. Woolf, Los Angeles Fire Department, dated September 8, 2011 and Final EIR Response to Comments, No. 09-73.

Attachment 5: Health Risk Assessment Figure 3 and Zimas Exhibits.

Attachment 6: Excerpt of the Air Quality and Land Use Handbook (dated 2005).

Attachment 7: Final EIR Response to Comments, Nos. 03-1 through 3-15.

Attachment 8: Crain & Associates Response to Basmacıyan Report (dated July 22, 2013).

Attachment 9: Final EIR Response to Comments, Nos. 03-3 and 14-6.

Attachment 10: Langan Responses (dated July 22, 2013).

Attachment 11: Alquist-Priolo Special Study Zone Area Map.

Attachment 12: Safety Element Base Map.

Attachment 13: Zimas Reports.

Attachment 14: Final EIR Response to Comments, No. 81-9.

Attachment 15: Proposed Ordinance (dated July 11, 2013).



Attachment 1



May 31, 2013

23LV-161717

## VIA EMAIL AND HAND DELIVERY

Los Angeles City Council  
Planning and Land Use  
Management Committee  
c/o Los Angeles City Council Clerk  
200 N. Spring Street, Room 395  
Los Angeles, California 90012

Re: Appeals of City Planning Commission's Approval of the Millennium Hollywood Project

Dear Honorable City Councilmembers:

This firm represents Millennium Hollywood, LLC (the "Applicant") regarding the proposed Millennium Hollywood Project (the "Project"). The Project involves the construction and operation of a new mixed-use and transit-oriented development anchored by the historic Capitol Records Building. The Project would transform a series of under-utilized parcels into a pedestrian-friendly development located on an approximately 4.47 acre site (the "Project Site") located in the Hollywood area of the City of Los Angeles (the "City").

For background, on February 19, 2013 the City's Advisory Agency held a joint hearing and considered the Vesting Tentative Tract Map (the "VTTM") and entitlements package associated with the Project in Case Nos. VTT-71837-CN-1A and ENV-2011-675-EIR. On March 28, 2013, the City Planning Commission considered the entitlements package for the Project in Case No. CPC-2008-3440-VZC-CUB-CU-ZV-HD; and it considered appeals filed on the VTTM that was approved at the Advisory Agency hearing. On April 27, 2013, the City Planning Commission published its letter of determination on both cases and approved the requested entitlements and denied the appeals lodged on the VTTM approval. On May 7, 2013, The Silverstein Law Firm, APC, on behalf of Communities United for Reasonable Development ("CURD") appealed the City Planning Commission's action on the VTTM. On May 13, 2013, CURD and Jeffer Mangels Butler & Mitchell LLP, on behalf of HEI/GC Hollywood & Vine Condominiums, LLC ("HEI/GC") and Hollywood & Vine Residences Association ("HVRA") appealed the City Planning Commission's approval of the entitlements package in Case No. CPC-2008-3440-VZC-CUB-CU-ZV-HD.

Below, we address the issues raised in the appeals. We respectfully request that this letter be included in the administrative record and be considered by the Planning and Land Use Management Committee ("PLUM Committee") before the public hearing scheduled for June 4, 2013.



## I. The CURD Appeals

As noted above, CURD filed two separate appeals. The first appealing the City Planning Commission's approval of the entitlements for the Project, and the second appealing the City Planning Commission's denial of the VTTM appeals. CURD submitted identical appeals for these two cases. The discussion below addresses the substantive issues raised in CURD's appeal.

### A. The Project Description Complies with California Environmental Quality Act Standards.

CURD raises a series of unsupported arguments about the stability of the project description. Generally, an adequate EIR project description must be "prepared with a sufficient degree of analysis to provide decisionmakers with information which enables them to make a decision which intelligently takes account of environmental consequences." *Dry Creek Citizens Coalition v County of Tulare* (1999) 70 CA4th 20, 26. The court noted, however, that using a conceptual description of project elements was not analogous to a project description that failed to identify the required components of the project. *Id.*, at 70 CA4th, 35.

This means that an adequate project description must describe the main features of a project, but not all of the details or particulars. In addition, case law holds that a stable project description does not mean that the project description must be rigid or inflexible. "The CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights may emerge during the investigation evoking revision of the original proposal." *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 199 (1977).

Here, the Project is presented as a concept plan and several land use scenarios. The concept plan in the Draft EIR identifies the project components including residential units, hotel, office, commercial, food and beverage, fitness center, and parking uses. The Draft EIR presents these principal project components within a maximum development and intensity footprint. The project description is designed to create an impact "envelope" within which a range of development scenarios can occur. The Draft EIR formulates its impact analysis around that envelope and thereby presents the most conservative impact analysis possible. This "worst-case impact envelope" approach complies with CEQA, which allows a lead agency to approve a project that varies from the project described in the EIR, so long as all of the impacts are disclosed. *Dusek v. Redevelopment Agency*, 173 Cal.App.3d 1029, 1041 (1985). In short, we recognize that the project description in the Draft EIR is flexible, but it is also accurate, stable, and legally adequate.

From a technical perspective, the project description must of course also include the contents mandated by CEQA. The project description in the Draft EIR satisfies the requirements of Section 15124 of the CEQA Guidelines. Specifically, Section 15124(a) requires, "[t]he precise location and boundaries of the proposed project shall be shown on a detailed map, preferably topographic." Consistent with this requirement, Figure II-1 in the Draft EIR depicts the regional vicinity of the Project Site, Figure II-5 and Figure II-6 provide Photo Location Maps of the Project Site, Figure II-7 provides a site plan of the Project Site, and Figure II-2 provides an aerial view of the Project Site and its environs. Section 15124(b)



requires, “[a] statement of objectives sought by the proposed project.” Pages II-44 through II-48 in the Draft EIR discuss the project objectives. Section 15124(c) requires, “[a] general description of the project’s technical, economic, and environmental characteristics, considering the principal engineering proposals if any and supporting public service facilities.” Pages II-15 through II-44 in the Draft EIR discuss the Project’s relevant characteristics. Section 15124(d) requires, “[a] statement briefly describing the intended uses of the EIR”. Pages II-49 through II-50 in Draft EIR discuss of the intended uses of the EIR. Based on the above, the project description satisfies the mandatory technical requirements of CEQA.

In summary, the project description is legally adequate from both a conceptual and technical perspective. As a result, the impact analysis, mitigation measures, and project alternatives presented in the Draft EIR remain valid.

B. The City Did Not Violate the Due Process Rights of the Appellant.

Without basis, the appellant claims that the City violated its due process rights by not attaching the Project’s Development Regulations and Land Use Equivalency Program to the City Planning Commission’s letters of determination. The appellant also claims that it did not have ample time to review the Development Regulations and Land Use Equivalency Program before appealing. These assertions are incorrect for several reasons.

To start with, the Land Use Equivalency Program was included in the Draft EIR. See Section II in the Draft EIR, which describes how the Land Use Equivalency Program was designed and can be used. Similarly, the Development Regulations were also included in the Draft EIR. See Appendix II to the Draft EIR for the Development Regulations. In addition, the Land Use Equivalency Program and the Development Regulations were attached to the Staff Report prepared for the City Planning Commission hearing on the Project. The appellant had physical and electronic access to these documents. So, there is no merit in the appellant’s argument that it was deprived by not having this information.

Next, from a timing standpoint, the Draft EIR was properly noticed and publically available on October 25, 2012. The Staff Report for the City Planning Commission was available for the March 28, 2013 hearing. Hard copies were available to the appellant and electronic copies were, and remain, easily accessible on the City Planning Department’s website. The Final EIR available before the expiration of the appeal period did not change either the Development Regulations or the Land Use Equivalency Program. These documents were available to the appellant for over six months before the appeal period expired. The appellant cannot now complain that it did not have ample time to prepare.

Also, the Los Angeles Municipal Code (“LAMC”) is silent on the required contents for letters of determination. The City can use its discretion regarding what information is attached to the letters of determination to properly inform the public, especially as to documents that were previously available. The City applied that discretion and mailed identical determination letters to the Applicant and the members of the public.

Lastly, the City’s standard practice is to not attach previously-circulated and otherwise publicly-available documents to letters of determination. The appellant is experienced in litigating CEQA cases against the City. Thus, the appellant is surely aware of



how to obtain public information and cannot now feign ignorance to support its baseless due process claim.

C. The Entitlements Do Not Rely Solely on the Hollywood Community Plan Update.

The appellant wrongly claims that the entitlements can be nullified because the Hollywood Community Plan Update is being litigated. The appellant misses a key fact, which is that the Draft EIR analyzed impacts based on the 1988 Hollywood Community Plan and the Hollywood Community Plan Update (the “Update”). In other words, the Project entitlements are not based on the Update alone. While a possible outcome of the litigation could include a stay on issuing permits under the newly proposed 4.5:1 FAR pursuant to the Update, the Draft EIR analyzes and discusses potential Project impacts under a 6:1 FAR, whether existing FAR is 3:1 per the “D” Limitation, or the modified FAR of 4.5:1 per the Update. The Draft EIR also evaluates the Project’s consistency with both the 1988 Hollywood Community Plan and the Update. So, if the litigation negates the Update, then the Project has already been evaluated per the 1988 Hollywood Community Plan and no subsequent CEQA review would be required. See pages IV.G.35-48 of the Draft EIR for the analysis of the Project’s consistency with both the 1988 Hollywood Community Plan and the Update.

Further, as discussed in Section II, Project Description and Section IV.G, Land Use Planning, of the Draft EIR, the Applicant is requesting the removal of the “D” Limitation from the Project Site’s zoning designation, thereby resulting in a FAR of 6:1. As such, the Applicant is not relying in any way on the Update for additional FAR. Also, the Regional Center Commercial land use designation allows for the construction of commercial, parking, and high-density multi-family residential uses. Development of the Project would include a combination of multi-family residential, retail, restaurant and commercial land uses, in addition to the Capitol Records Complex, which would be retained as part of the Project. This type of development would be consistent with the Regional Center Commercial land use designation of the 1988 Hollywood Community Plan and the Update.

D. The Land Use Equivalency Program Does Not Circumvent the CEQA Process.

The appellant complains that use of the Land Use Equivalency Program allows the Project to evade CEQA compliance. That is not true. It should also be noted that equivalency programs are not uncommon planning tools and have been used successfully in the City and surrounding jurisdictions.

The Draft EIR explains the Land Use Equivalency Program as follows:

“The Equivalency Program would provide development flexibility so that the Project could respond to the growth of Hollywood and market conditions over the build-out duration of the development. Land uses to be developed would be allowed to be exchanged among the permitted land uses so long as the limitations of the Equivalency Program are satisfied and do not exceed the analyzed upper levels of environmental impacts that are identified in this Draft EIR or exceed the maximum FAR. All permitted land use increases can be exchanged for corresponding decreases of other permitted land uses under the proposed Equivalency Program once the maximum FAR is reached. While it is



the intent of the Equivalency Program to allow flexibility with respect to the buildout of the Project, there are a number of controlling factors, such as the vehicle trip cap and the guidelines and regulations within the Development Regulations, that ensure this Draft EIR has properly analyzed and disclosed the full range of environmental impacts that could occur as a result of the Project.

Through the analysis of the Concept Plan and two additional scenarios, the Commercial Scenario and the Residential Scenario, further described below, this Draft EIR analyzes the greatest potential impact on each environmental issue area. The most intense impacts from each scenario represent the greatest environmental impacts permitted for any development scenario for the Project. The Project may not exceed any of the maximum impacts identified for each issue area from either the Concept Plan, the Residential Scenario, or the Commercial Scenario.

With respect to CEQA compliance, this Draft EIR studies the maximum level of environmental impacts and mitigation measures that could occur under the Equivalency Program. These maximum levels of impacts were derived through the study of the Concept Plan, Commercial Scenario and Residential Scenario. The Development Regulations, including the use, bulk, and massing controls, also were used to study the maximum levels of impacts. Ultimately, the final development scenario or phase of the Project must comply with the mitigation measures in this Draft EIR and the development limitations established in the proposed Equivalency Program.”

Draft EIR, pages II-21 through II-23. Emphasis added.

This narrative alone, let alone its application throughout the Draft EIR, demonstrates that the Land Use Equivalency Program does not evade CEQA review as the appellant falsely claims.

E. The Development Regulations are Consistent with the Purpose of the Q Conditions.

The appellant obscures the purpose of Q conditions, and concurrently claims that the City violates law by imposing the Development Regulations as Q condition constraints. That reasoning is nonsensical. Section 12.32.G.2(a) (the entirety of which we incorporate by reference herein) of the LAMC establishes the purpose of Q conditions. It states in part that “...provision may be made in a zoning ordinance that the development of the site shall conform to certain specified standards if the limitations are deemed necessary to ...secure an appropriate development in harmony with the objectives of the General Plan.” In its April 27, 2013 letter of determination, the City made a series of findings that substantially demonstrate the Project is in harmony with the objectives of the General Plan among other City objectives set forth in Section 12.32.G.2(a). For example, pages F-1 through F-5 in the letter of determination contain General Plan findings related to 1988 Hollywood Community Plan, the Update, and the transportation, housing, and framework elements of the General Plan. These findings recognize that securing the Project will revitalize an otherwise underutilized area and is therefore appropriate for the Project Site. In addition, the findings (and analysis in the EIR)



indicate that implementation of the Development Regulations are a necessary component to control development on the Project Site and thereby ensure harmony with the General Plan.

Moreover, the Draft EIR provides a comprehensive analysis of the Project's land use consistency with the General Plan. The Draft EIR concludes that the Project is consistent with the applicable sections and objectives of the General Plan.

In addition, the Development Regulations are the type of specified standards contemplated by the LAMC Q condition classification. The Development Regulations contain precise standards regarding density, height zones, building and street experience, towers, open space, land scape, parking, signage, and sustainability. The purpose of the Development Regulations (as stated in Section 1.1 of the Development Regulations) is to govern new development on the Project Site. Similarly, the purpose of Q conditions (as stated in 12.32.G.2(a) of the LAMC) is to ensure development of the site conforms to certain specified standards. Consequently, the purpose of the Development Regulations mirrors the purpose of Q conditions.

Together, these factors among others, evidence a sufficient nexus between the purpose of the LAMC Q conditions and the elements of the Project. Therefore, the City has not violated law or its charter by adopting the Development Regulations as Q conditions for the Project Site.

F. The Conditional Use Permit and Variance Findings are Supported by Evidence.

There is substantial evidence to support the findings for the various Project entitlements. As discussed above, the project description is designed to allow the EIR to create an impact "envelope" that includes the most significant impacts that could be generated by the Project as finally configured. As such, the EIR presents an analysis that provides substantial evidence to support the findings for the Project.

Contrary to the appellant's contentions, the precise location of the hotel on the Project Site, for example, is not required to make the necessary findings for a conditional use permit for a hotel. The conditional use permit findings are as follows: (1) that the project will enhance the built environment in the surrounding neighborhood or will perform a function or provide a service that is essential or beneficial to the community, city, or region; (2) that the project's location, size, height, operations and other significant features will be compatible with and will not adversely affect or further degrade adjacent properties, the surrounding neighborhood, or the public health, welfare, and safety; and (3) that the project substantially conforms with the purpose, intent and provisions of the General Plan, the applicable community plan, and any applicable specific plan. The information provided for the hotel is adequate to make all of these findings even if more than one location within a defined site area is possible.

Further, the appellant wrongly argues that the hardship and other variance findings cannot be made based on the project description. The variance findings include findings such as: 1) special circumstances applicable to the subject property, 2) hardship, and 3) the granting of the variance will not be materially detrimental to the public welfare. Many of the findings are related to the Project Site itself for which ample information and evidence is



provided. Also, the project description and other sections of the EIR, including Section IV.K.2, Transportation-Parking, provide ample information on which to base the findings.

G. The Q Conditions Do Not Result in Unfettered Discretion.

The appellant wrongly assumes that language in proposed Q condition No. 2 provides the City with some otherwise unavailable discretion. Specifically, the appellant points to the phrase “[m]inor deviations may be allowed in order to comply with the provisions of the Municipal Code, the subject conditions, and the intent of the subject permit authorization.” The appellant translates “minor deviations” into an unfettered discretion argument. The import of the language is much less grandiose. As is typical in complex land development, unforeseen building design and construction-level issues may arise that require minor modifications. This is commonplace during plan check for building permits when multiple agencies balance competing requirements to ensure solid and safe development. The language in Q condition 2 allows the type of minor deviations necessary to complete building plans. It does not create unfettered discretion.

## II.

### **The HEI/GC and HVRA Appeal**

On May 13, 2013, HEI/GC and HVRA appealed of the City Planning Commission’s action to approve the Project. The appeal recites mostly the same arguments that the appellant raised in its comment letter on the Draft EIR. Accordingly, the Final EIR contains detailed responses that address most of the appellant’s arguments on appeal. The discussion below summarizes the responses in the Final EIR and addresses the new issues raised in the appeal.

A. The Draft EIR and Final EIR are Adequate.

From the start, the appellant confuses the purpose of the Final EIR by claiming that it fails to fully evaluate several significant impacts caused by the Project. Pursuant to CEQA Guidelines Section 15132, the Final EIR is not the place to evaluate significant impacts. Instead, the Final EIR must contain revisions to the Draft EIR, responses to comments, and any information added to the Draft EIR by the Lead Agency. The Final EIR complies exactly with these legal requirements.

To be clear, the Draft EIR is the appropriate document for impact analysis. As discussed below, the Draft EIR comprehensively analyzes Project impacts and complies with all applicable legal requirements. In its grounds for appeal, the appellant raises numerous environmental issues that were already analyzed in the Draft EIR and responded to in the Final EIR.

First, the appellant restates its argument that the project description is inadequate. The Final EIR specifically addressed that argument in Response to Comment No. 81-2, which was in the appellant’s comment letter. To summarize, an EIR does of course require an accurate and stable project description. This does not mean, however, that the project description must be inflexible. As noted above, “[t]he CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project” and “an



elastic project description is not per se violation of CEQA, provided the analysis comprehends all potential impacts.” *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 199 (1977). Here, the project description creates an impact “envelope” that presents a range of development scenarios. The Draft EIR analyzes the scenarios using a worst-case analysis methodology. This “envelope” approach clearly complies with CEQA because the law allows a lead agency to approve projects that vary from the project described in the EIR, so long as all of the impacts are disclosed. Therefore, the appellant’s claim that the project description is faulty does not have merit.

Second, the appellant restates its argument that the Draft EIR fails to analyze the impacts of the CUP for alcohol service. The Final EIR also specifically addressed that argument in Response to Comment No. 81-7. To restate, the Applicant requested a master CUP (compared to a user-specific permit) to allow alcohol services. Specificity in this instance is not required because the end user (*i.e.* the name or type of retail establishment or restaurant) would not implicate new or different environmental effects other than those already addressed in the Draft EIR. See *Maintain Our Desert Environment v. Town of Apple Valley*, 120 Cal. App. 4th 396 (2004). Here, the specific operators of the alcohol-serving establishments will not be known until after they sign leases, which may occur before or after the Project is built. Thus, a master CUP is particularly appropriate here because, pursuant to Condition 3 on page C-1 of Case No. CPC-2008-3440-ZC-CUB-ZV-HD, each operator will obtain plan approval before the City authorizes alcohol services. The Draft EIR studies all impacts of the potential uses of the Project including alcohol-related uses. Therefore, the appellant’s argument is baseless.

Third, the appellant restates the argument that the Draft EIR fails to analyze impacts associated with removing zoning restrictions and amending the Hollywood Community Plan. The Final EIR responded to that argument in Response to Comment No. 81-9. It is critical to recognize that the Draft EIR analyzes impacts considering both the existing FAR of 3:1 per the “D” Limitation and the modified FAR of 4.5:1 per the Hollywood Community Plan Update. Similarly, the Draft EIR fully evaluates land use consistency with the 1988 Hollywood Community Plan and the Update. This dual-pronged approach ensures adequate impact analysis even if the Update fails due to pending litigation. The Draft EIR has covered zoning considerations under applicable land use plans. Therefore, the appellant’s claim is misplaced.

Fourth, the appellant is simply mistaken that the Draft EIR does not analyze growth inducing impacts. The Draft EIR dedicates an entire section (Section V.D) to the assessment of potential growth inducing impacts associated with the Project.

Fifth, the appellant bunches together in a single paragraph claims that the Draft fails to properly analyze traffic and parking, air quality, schools and libraries, historic resources, and noise impacts. None of these claims are new. The Draft EIR provides extensive analysis of all these issues and contains detailed technical reports and other substantial evidence to support the impact conclusions on these environmental issues. The Final EIR Responses to Comment Nos. 81-11 through 81-17 and 81-24 through 81-28 provide a detailed discussion on all of these issues.

Finally, the appellant claims that the Final EIR failed to address all of the issues raised above. That claim is obviously not true. The Final EIR sections and responses we cite



above provide clear evidence that the Final EIR did in fact respond to every substantive issue raised by the appellant.

B. The Findings of Fact are Adequate.

The appellant wrongly asserts that the CEQA and entitlement findings prepared by the City are flawed. The appellant notes certain code and case law, but does not demonstrate how the Project findings are inadequate. We point out that CEQA is silent on a mandatory standard or form for findings. We understand that the CEQA Guidelines require findings be supported by substantial evidence (14 Cal Code Regs §15091(b)) and be accompanied by a brief explanation of the rationale for the finding (14 Cal Code Regs §15091(a)). Accordingly, the City prepared the findings for the Project to satisfy these requirements.

For example, pages F-25 through F-85 in the City's April 27, 2013 determination letter contain 60 pages of well-supported CEQA findings. Also note that the findings for potentially significant and significant and unavoidable impacts are accompanied by a discussion of the rationale for each finding required by CEQA. In addition, see pages F-85 through F-93 for the project alternatives findings, which are also supported by evidence and a discussion of the rationale for each finding. Therefore, the appellant's attack on the findings is not warranted.

### III. Conclusion

We respectfully request that the PLUM Committee recommend denial of the appeals and approval of the Project. As discussed above, the appellants' arguments are unfounded. The administrative record contains substantial evidence to support approval of the Project and denial of the appeals. The Draft EIR contains exhaustive analysis and the Final EIR provides good-faith reasoned responses. Therefore, we urge the PLUM Committee, and ultimately the City Council, to move the Project to final approval.

Very truly yours,



Alfred Fraijo Jr.  
for SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

Attachment 2



acknowledges that schools are sensitive receptors, it does not identify AMDA as a sensitive receptor. This is unacceptable; all of the Project's potentially significant impacts to AMDA must be disclosed, analyzed, and mitigated to the maximum extent feasible.

**Response to Comment No. 09-2**

This comment contends that AMDA should have been identified as a noise and vibration sensitive receptor in the Draft EIR. Please see Response to Comment No. 09-11 (AMDA) for a detailed response to this issue. To summarize, AMDA operations currently occur in commercial office buildings that are not designed to accommodate nor shield noise and vibration sensitive operations. Furthermore, the AMDA facility is located in a heavily urbanized submarket that has an inherent expectation for redevelopment, infill development, and general development construction activities. While the Draft EIR did not identify AMDA as a noise and vibration sensitive receptor, this designation would not change the impact determinations disclosed in the Draft EIR. Regardless of the land use designations, the Draft EIR provides an analysis of temporary construction related noise and vibration increases occurring within an approximate 500-foot radius of the Project Site.

**Comment No. 09-3**

Likewise, CEQA requires an accurate, stable, and finite project description, yet the DEIR's equivalency program would allow virtually any type of development to be built, irrespective of what the DEIR renderings and vague development regulations (the "Development Regulations") might indicate. Greater specificity about the project is necessary for the public to meaningfully participate in the approval process for the Project.

In short, the DEIR fails to comply with CEQA's minimum legal requirements in several respects and must be revised and re-circulated.

**Response to Comment No. 09-3**

The Project Description is designed to allow the Draft EIR to create a Project impact "envelope" that comprehends all of the impacts of a range of Project build-out combinations. As such, the Project Description is stable and presents the information required by CEQA to provide a meaningful basis for environmental review.

The Project Description, provided in Section II, Project Description, of the Draft EIR, contains the required contents set forth in Section 15124 of the CEQA Guidelines, which was cited by the Commenter. Specifically, Section 15124(a) of the CEQA Guidelines requires, "The precise location and boundaries of the proposed project shall be shown on a detailed map, preferably topographic. The location of the project shall also appear on a regional map." Consistent with these requirements, Figure II-1 on page II-3 of Section II, Project Description, of the Draft EIR depicts the regional vicinity of the Project Site, Figure II-5 on page II-17 and Figure II-6 on page II-19 provide Photo Location Maps of the Project Site, Figure

II-7 on page II-25 provides a site plan of the Project Site, and Figure II-2 on page II-2 provides an aerial view of the Project Site and its environs.

Section 15124(b) of the CEQA Guidelines requires, “A statement of objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project.” Pages II-44 through II-48 of Subsection D, in Section II, Project Description, of the Draft EIR discusses the Project Objectives. In addition, as stated on page II-44, “The underlying purpose of the Project is to revitalize the Project Site from its existing use to a vibrant and modern mixed-use development that retains the iconic Capitol Records Complex while maximizing the opportunity for creative development consistent with the priorities of the City's urban land use policies for Hollywood and those expressed by various stakeholders.”

Section 15124(c) of the CEQA Guidelines requires, “A general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals if any and supporting public service facilities.” Pages II-15 through II-44 of Section II, Project Description, provides a discussion of the project's characteristics.

Section 15124(d) of the CEQA Guidelines requires, “A statement briefly describing the intended uses of the EIR”. Pages II-49 through II-50 of Subsection E, in Section II, Project Description, of the Draft EIR provides a discussion of the “Intended Uses of the EIR.”

Based on the above, the Project Description in the Draft EIR meets the requirements of CEQA and accurately describes the Proposed Project in an appropriate level of detail for evaluation and review of environmental impacts.

Further, CEQA does not require that detailed engineering design be presented in the EIR. To the contrary, CEQA Guideline Section 15124 provides: “The description of the project . . . should not supply extensive detail beyond that needed for evaluation and review of environmental impact.” See also, *Dry Creek Citizens Coalition v. County of Tulare*, 70 Cal. App. 4th 20, 27 - 28 (1990) (conceptual design satisfies CEQA's requirement for a general description of the project, and precise engineering design is not required). Therefore, the Project Description in the EIR includes a range of options that could result from the Project. CEQA does not prohibit an EIR from analyzing a range of potential options for a single project.

With regards to the adequacy of the Project Description, please refer to Response to Comments Nos. 81-2 and 81-3 (Reznik, Benjamin (#2)) for additional information.

#### **Comment No. 09-4**

### **I. AMDA AND ITS HOLLYWOOD CAMPUS**



**LETTER NO. 59 - JORDON, DAVID**

David Jordon  
6230 Yucca LLC

December 10, 2012

**Comment No. 59-1**

We are the owner of the property located at 6320 Yucca Avenue which is immediately adjacent to the proposed Millennium Hollywood project and would be one the properties most impacted by this massive project. Based on our preliminary evaluation, we are concerned that the DEIR does not adequately analyze the potential environmental impacts of the project and contains a number of inaccuracies and false assumptions that does not fully disclose all impacts. Moreover, we are concerned that the proposed project sets a dangerous precedent by proposing significantly more development than allowed for the project site under the updated Hollywood Community Plan which created maximum floor area parameters for the project site that are consistent with adjacent properties. Our concerns include, but are not limited to, the following:

**Response to Comment No. 59-1**

The comment is an introduction and states that the Draft EIR does not adequately analyze the potential environmental impacts of the Project and contains a number of inaccuracies and false assumptions that does not fully disclose all impacts. As such, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

With regard to the concern stated in the comment regarding more development than allowed in the Hollywood Community Plan Update, please see Section IV.G Land Use and Planning of the Draft EIR for information regarding the Project's consistency with the Hollywood Community Plan Update. See Response to Comment 59-14 (Jordon, David) below for additional information regarding FAR and the Hollywood Community Plan Update.

The subsequent comments in the letter go into more detail as to the concerns and perceived inadequacies of the Draft EIR. Each of these has a Response to Comment, below.

**Comment No. 59-2****1. General Comments**

- The project description is unclear and seems intentionally nebulous. The DEIR is more akin to a programmatic EIR than a project EIR, in that it allows for an almost infinite number of use and square footage permutations, as well as different use distribution and site access schemes. It is impossible to understand the maximum build out scenario and how it impacts the community. An

accurate project description is fundamental to fulfilling the purpose of CEQA to inform the public. This project description fails in that regard. It should be redone and recirculated for public comment.

- It is unclear whether the equivalence formula really considers all impact parameters. This lack of clarity disguises potentially significant impacts and obscures full and accurate public information about the project.

### **Response to Comment No. 59-2**

The commenter asserts that the Project is not clear and seems intentionally nebulous. The Project Description in the Draft EIR includes a range of options that could result from the Project. The proposed Project presents several scenarios with the provision that the final development may be any combination of the uses analyzed in the Draft EIR. The Project Description is stable and presents the information required by CEQA to provide a meaningful basis for environmental review. It does not intend to be nebulous.

As described in Section II, Project Description, of the Draft EIR on Page II-21, “[t]hrough the analysis of the Concept Plan and two additional scenarios, the Commercial Scenario and the Residential Scenario, further described below, this Draft EIR analyzes the greatest potential impact on each environmental issue area...” Thus, the most intense impacts from each scenario represent the greatest environmental impacts permitted for any development scenario for the Project. This “worst-case impact envelope” approach complies with CEQA, which allows a lead agency to approve a project that varies from the project described in the EIR, so long as all of the impacts are disclosed. *Dusek v. Redevelopment Agency*, 173 Cal. App. 3d 1029, 1041 (1985); *County of Inyo v. City of Los Angeles*, 71 Cal. App. 3d 185, 190 (1977) (elastic project description not per se violation of CEQA, provided impacts analysis comprehends all potential impacts, lead agency may describe a project more broadly than the project actually approved). Therefore, the Project Description in the EIR includes a range of options that could result from the Project. CEQA does not prohibit an EIR from analyzing a range of potential options for a single project.

With regard to the portion of the comment that states that it is impossible to understand the maximum buildout and impacts, CEQA and the City of Los Angeles provide essential flexibility tools to applicants so that projects can respond to the ever-changing real estate market and needs of the Hollywood area. While flexibility is contemplated in the Development Agreement with regard to particular land uses, siting, and massing characteristics, the Draft EIR analyzes and discloses all potential land uses, the maximum FAR (6:1), and all potential environmental impacts. In addition to the identified development scenarios listed in the Draft EIR, the proposed Equivalency Program would provide development flexibility so that the Project could respond to the growth of Hollywood and market conditions over the build-out duration of the development. Land uses to be developed would be allowed to be exchanged among the permitted land uses so long as the limitations of the Equivalency Program are satisfied and do not exceed the analyzed upper levels of environmental impacts that are identified in the Draft EIR or exceed the maximum FAR.



It is the intent of the Equivalency Program to allow development flexibility with respect to the buildout of the Project. Specifically, the Equivalency Program would provide development flexibility so that the Project could respond to the growth of Hollywood and market conditions over the build-out duration of the development. The City of Los Angeles has given developers a tool to allow the exchange of land uses among the permitted uses, so long as the limitations of the Equivalency Program are satisfied and do not exceed the analyzed upper levels of environmental impacts identified in the Draft EIR or exceed the maximum Floor Area Ratio (FAR).

Development proposed through the Equivalency Program allows the Applicant to construct land uses and structures that are consistent with the growth of Hollywood and local economy at the time of construction. It does not allow the Applicant to propose land uses that are not identified and studied in the Draft EIR nor does it allow any use to be proposed in excess of the studied impacts. Through the analysis of the Concept Plan and two additional scenarios, the Commercial Scenario and the Residential Scenario, the Draft EIR analyzes the greatest potential impact on each environmental issue area.

**Comment No. 59-3**

- The Development Agreement is key information that is excluded from the DEIR. The applicant proposes that the development standards and regulations for the project are established in the Development Agreement which would serve as the regulatory document for future development. A Development Agreement is not a tool to create special development standards that in certain instances propose more lenient standards than the City's zoning code. What the applicant really wants is a Specific Plan approved via a Development Agreement which is not typically used for such purposes. If the applicant wants special regulations, the appropriate vehicle should be a Specific Plan which must be analyzed in the DEIR and available to the public for full review and comment. Failing to include the draft Development Agreement deprives the public of a meaningful opportunity to comment on the DEIR.

**Response to Comment No. 59-3**

The purpose of an EIR is to disclose, analyze and propose mitigation for the significant environmental impacts of a project, and alternatives to the project. Public Resources Code Section 21002.1(a). The impacts that must be assessed are those that alter the physical environment. Public Resources Code Section 21060.5.

The CEQA Guidelines authorize an EIR to “incorporate by reference all or portions of another document which is a matter of public record or is generally available to the public.” 14 Cal. Code Regs. § 15150(a). The Guidelines provide that “incorporation by reference is most appropriate for including long, descriptive or technical materials that provide general background but do not contribute directly to the analysis of the problem at hand.” 14 Cal. Code Regs. § 15150(f)

**LETTER NO. 81 - REZNIK, BENJAMIN (#2)**

Benjamin M. Reznik  
Jeffer Mangels Butler & Mitchell LLP  
1900 Avenue of the Stars, 7<sup>th</sup> Floor, Los Angeles, CA 90067

December 10, 2012

**Comment No. 81-1**

On behalf of the HEI/GC Hollywood & Vine Condominiums, LLC ("HEI/GC") and the Hollywood & Vine Residences Association ("HVRA"), the owner and homeowners association, respectively, of the W Hollywood Hotel & Residences at 6250 Hollywood Boulevard, Los Angeles, California 90028 (the "W Residences"), we provide the following public comment regarding the Draft Environmental Impact Report ("DEIR") for the Millennium Hollywood Project (the "Project"), prepared by the City of Los Angeles (the "City").

On May 31, 2011, HEI/GC submitted a public comment letter regarding the scoping of the EIR for the Project. After review of the DEIR, we have several concerns about the Project and the accompanying environmental analysis, because the DEIR fails to fully evaluate the issues identified in this letter, and fails to properly analyze several additional issues relating to: project description, land use, aesthetics, parking, air quality, school and library services, parkland, historic resources, noise, landfill capacity and growth inducing impacts.

**Response to Comment No. 81-1**

The comment is an introduction and does not state a specific concern or question regarding the adequacy of the Draft EIR in identifying and analyzing the environmental impacts of the Project. As such, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

The comment states that the Draft EIR does not adequately analyze the potential environmental impacts of the Project and contains a number of inaccuracies and false assumptions that does not fully disclose all impacts. The subsequent comments in the letter go into more detail as to the concerns and perceived inadequacies of the Draft EIR. Each of these has a Response to Comment, below.

**Comment No. 81-2****I. The DEIR Does Not Contain a Stable, Accurate, and Finite Project Description, Precluding an Understanding of What the Project Actually Contains.**

The DEIR contains an amorphous, confusing, and wholly unstable Project Description, which amounts in essence to a zone change with no definite proposal to accompany it. An "accurate, stable, and finite



project description is the *sine qua non* of an informative and legally sufficient EIR." *San Joaquin Raptor Rescue Center v. County of Merced*, 149 Cal. App. 4th 645, 655 (2007) ("*San Joaquin Raptor II*"), quoting *County of Inyo v. City of Los Angeles*, 71 Cal App. 3d 185, 193 (1977). Furthermore, "[a]n accurate Project Description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity." *Silveira v. Las Gallinas Valley Sanitary Dist.*, 54 Cal. App. 4th 980, 990 (1997). Therefore, an inaccurate or incomplete project description renders the analysis of environmental effects inherently unreliable, in turn rendering impossible any evaluation of the benefits of the Project in light of its significant effects. Although extensive detail is not necessarily required, a DEIR must describe a project not only with sufficient detail, but also with sufficient accuracy, to permit informed decision-making. See CEQA Guidelines § 15124.

### **Response to Comment No. 81-2**

The comment states case law regarding the adequacy of project descriptions cites the CEQA Guidelines and contends that the project description is unstable and "amounts in essence to a zone change with no definite proposal to accompany it." An EIR requires an accurate and stable project description as described by the Commenter. This does not mean, however, that the project description must be rigid or inflexible. "The CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights may emerge during the investigation evoking revision of the original proposal." *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 199 (1977). While the proposed Project presents several design scenarios with the provision that the final development may be any combination of the designs analyzed in the Draft EIR, the Project Description is stable and presents the information required by CEQA to provide a meaningful basis for environmental review. The Project Description, provided in Section II, Project Description, of the Draft EIR, contains the required contents set forth in Section 15124 of the CEQA Guidelines, which was cited by the Commenter.

Specifically, Section 15124(a) of the CEQA Guidelines requires, "The precise location and boundaries of the proposed project shall be shown on a detailed map, preferably topographic. The location of the project shall also appear on a regional map." Consistent with these requirements, Figure II-1 on page II-3 of Section II, Project Description, of the Draft EIR depicts the regional vicinity of the Project Site, Figure II-5 on page II-17 and Figure II-6 on page II-19 provide Photo Location Maps of the Project Site, Figure II-7 on page II-25 provides a site plan of the Project Site, and Figure II-2 on page II-2 provides an aerial view of the Project Site and its environs.

Section 15124(b) of the CEQA Guidelines requires, "A statement of objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project." Pages II-44 through II-48 of Subsection D, in Section II, Project Description, of the Draft EIR discusses the Project Objectives. In addition, as stated on page II-44, "The underlying purpose of the Project is to revitalize the Project Site from its existing use to a vibrant and modern mixed-

use development that retains the iconic Capitol Records Complex while maximizing the opportunity for creative development consistent with the priorities of the City's urban land use policies for Hollywood and those expressed by various stakeholders.”

Section 15124(c) of the CEQA Guidelines requires, “A general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals if any and supporting public service facilities.” Pages II-15 through II-44 of Section II, Project Description, provides a discussion of the project’s characteristics.

Section 15124(d) of the CEQA Guidelines requires, “A statement briefly describing the intended uses of the EIR”. Pages II-49 through II-50 of Subsection E, in Section II, Project Description, of the Draft EIR provides a discussion of the “Intended Uses of the EIR.”

Based on the above, the Project Description in the Draft EIR meets the requirements of CEQA and accurately describes the Proposed Project in an appropriate level of detail for evaluation and review of environmental impacts. Specifically, the EIR provides a reasonable worst case impact analysis for each category of impact. For each category, the EIR uses the scenario that would produce the greatest impact. Thus, the Project Description is designed to allow the EIR to create a Project impact “envelope” that comprehends all of the impacts of the range of Project build-out combinations. For a given environmental category, the EIR analyzes the scenario most likely to cause the greatest impact for that category.

This “worst-case impact envelope” approach complies with CEQA, which allows a lead agency to approve a project that varies from the project described in the EIR, so long as all of the impacts are disclosed. *Dusek v. Redevelopment Agency*, 173 Cal.App.3d 1029, 1041 (1985); *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 190 (1977) (elastic project description not per se violation of CEQA, provided impacts analysis comprehends all potential impacts, lead agency may describe a project more broadly than the project actually approved).

Further, CEQA does not require that detailed engineering design be presented in the EIR. To the contrary, CEQA Guideline Section 15124 provides: “The description of the project . . . should not supply extensive detail beyond that needed for evaluation and review of environmental impact.” See also, *Dry Creek Citizens Coalition v. County of Tulare*, 70 Cal.App.4<sup>th</sup> 20, 27-28 (1990) (conceptual design satisfies CEQA’s requirement for a general description of the project, and precise engineering design is not required). Therefore, the Project Description in the Draft EIR includes a range of options that could result from the Project. CEQA does not prohibit an EIR from analyzing a range of potential options for a single project.

### **Comment No. 81-3**

The DEIR fails to meet this foundational requirement and, ultimately, provides only the most basic understanding of what the Project entails. In fact, the only clear aspects of the Project are the doubling of



the currently permitted floor area ratio to allow development of about 1.2 million square feet ("s.f.") of some combination of uses, of which about 1.1 million s.f. an amount approximately equivalent to the Staples Center--comprises new development. Also, development of the Project would presumably occur sometime before the 2035 horizon year of the requested development agreement ("D.A."). The purported equivalency program and development regulations represent little more than a jumbled amalgam of different Project characteristics, different aspects of which are evaluated depending on the environmental issue area. A project description that allows anything is a project description that clarifies nothing.

### **Response to Comment No. 81-3**

The comment is in regard to the adequacy of the Project Description under CEQA. The Project Description, provided in Section II, Project Description, of the Draft EIR contains the required contents set forth in Section 15124 of the CEQA Guidelines. See Response to Comment No. 81-2 (Reznik, Benjamin (#2)) above for a detailed assessment of the adequacy of the Project Description under CEQA.

Further, as described in Section II, Project Description, of the Draft EIR on Page II-21, "[t]hrough the analysis of the Concept Plan and two additional scenarios, the Commercial Scenario and the Residential Scenario, further described below, this Draft EIR analyzes the greatest potential impact on each environmental issue area..." Thus, the most intense impacts from each scenario represent the greatest environmental impacts permitted for any development scenario for the Project. This "worst-case impact envelope" approach complies with CEQA, which allows a lead agency to approve a project that varies from the project described in the EIR, so long as all of the impacts are disclosed. *Dusek v. Redevelopment Agency*, 173 Cal. App. 3d 1029, 1041 (1985); *County of Inyo v. City of Los Angeles*, 71 Cal. App. 3d 185, 190 (1977) (elastic project description not per se violation of CEQA, provided impacts analysis comprehends all potential impacts, lead agency may describe a project more broadly than the project actually approved).

With respect to the Equivalency Program, as described in Section II, Project Description, of the Draft EIR, it does not allow the Project Applicant to propose land uses that are not identified and studied in the Draft EIR. Further, it does not allow for development beyond the maximum impacts disclosed in the Draft EIR. The Project may not exceed any of the maximum impacts identified for each issue area from the Concept Plan, the Residential Scenario, or the Commercial Scenario.

The Equivalency Program would be implemented pursuant to the administrative procedures set forth in the Development Agreement. The process to initiate an exchange under the Equivalency Program would begin with the Project Applicant filing a request with the Department of City Planning. This request shall include detailed information identifying the land use transfer/exchange that is being proposed. The supporting documentation would also provide sufficient information to demonstrate that the proposed Equivalency Program would not exceed the maximum environmental impacts identified in the Draft EIR.

Attachment 3



March 26, 2013

File Number: 23LV-161717

**VIA EMAIL AND HAND DELIVERY**

Ms. Luciralia Ibarra  
Hearing Officer  
Major Projects  
Department of City Planning  
200 N. Spring Street, Room 750  
Los Angeles, California 90012

Re: Appeals of Advisory Agency Determination for Case No. VTTM 71837-CN

Dear Ms. Ibarra:

As you know, this firm represents Millennium Partners, LLC (the "Applicant" or "Millennium") regarding the proposed Millennium Hollywood Project (the "Project"). The Project would involve the construction and operation of a new mixed-use and transit-oriented development anchored by the historic Capitol Records Building. The Project would transform a series of under-utilized parcels into a pedestrian-friendly development located on an approximately 4.47 acre site (the "Project Site") located in the Hollywood area of the City of Los Angeles (the "City").

On February 19, 2013, the City's Advisory Agency held a properly-noticed public hearing regarding Case No. VTTM 71837-CN and its related environmental documents. The Advisory Agency considered evidence in the administrative record, the staff report prepared for the hearing, and public testimony provided at the hearing. On February 22, 2013, after due consideration of all the evidence before it, the Advisory Agency issued a letter of determination approving the Vesting Tentative Tract Map (the "VTTM") for the Project.

Following the Advisory Agency's approval, the City Planning Commission received several appeals from: (1) the American Musical and Dramatic Academy College and Conservancy of Performing Arts ("AMDA"); (2) Annie Geoghan; (3) the Argyle Civic Association; (4) Beachwood Canyon Neighborhood Association; (5) Hollywood Dell Civic Association; and (6) Hollywoodland Homeowners Association, which collectively are the Appellants. We recognize that the City prepared a response to the Appellants' claims and included that in the Appeals Report to the City Planning Commission. We prepared this letter to further respond to the issues raised in the appeals and to provide additional analysis for the City Planning Commission's consideration.

We respectfully request that you provide this letter to the City Planning Commission before the hearing on the Project scheduled for March 28, 2013. The letter provides factual evidence regarding the validity of the appeals and summarizes the

environmental issues raised in the appeals. We have generally organized this letter to respond to each appeal letter and the relevant issues raised therein. In certain instances, the Appellants appear to have submitted duplicate appeals, which we address below with combined responses for brevity.

## **I. The AMDA Appeal**

AMDA acknowledges that its appeal (the “AMDA Appeal”) hinges on a single issue. AMDA argues that the City’s approval of the VTTM is legally deficient under CEQA because the Draft EIR did not identify AMDA’s commercial buildings as sensitive receptors for noise. As discussed below, the Draft and Final EIR analyzed noise impacts on adjacent land uses (including AMDA), incorporated feasible noise mitigation for all adjacent land uses, and disclosed significant unavoidable impacts related to construction noise. CEQA does not require more to be legally adequate. Therefore, AMDA’s single-issue appeal is unsupported.

AMDA starts its appeal with several flawed statements. First, AMDA asserts that Millennium’s “failure to protect AMDA is astounding.” CEQA requires that an EIR identify and describe the project’s significant environmental effects, including direct, indirect, and long-term effects. 14 Cal Code Regs §15126.2(a). CEQA also requires that an EIR must identify and describe any feasible measures that can be implemented to reduce or avoid each potentially significant environmental effect of the project. *Id.* at §15126.4(a)(1). The Draft EIR complies exactly with these requirements by analyzing the noise impacts associated with the Project and proposing numerous mitigation measures to reduce noise impacts on all adjacent land uses. CEQA does not require Millennium to protect AMDA as it asserts in the appeal. The Draft and Final EIR include all feasible noise mitigation measures that reduce impacts to the extent feasible. Second, AMDA claims that temporary construction activities will force AMDA to close its campus. To date, however, AMDA has not produced any evidence to support its claim that temporary construction activities on the Project Site would preclude AMDA’s operations. Third, AMDA requests recirculation of the Draft EIR because it claims that the City did not provide AMDA with sufficient opportunity to comment on the Project’s proposed noise mitigation measures. The Draft EIR and Final EIR were properly noticed and circulated for the statutory review times required by CEQA. In addition, the Final EIR was available for AMDA to review before the Advisory Agency hearing and included a feasibility analysis of every noise mitigation measure that AMDA suggested in its comment letter. Thus, there is no basis for AMDA to complain that it did not have an opportunity to comment on the Project’s noise impacts or associated mitigation measures. Therefore, AMDA’s opening claims are questionable and appear to undermine the grounds of its appeal.

### **A. AMDA’s Claims Regarding the Project’s Noise Impacts are Unfounded**

The AMDA Appeal claims that the Applicant completely disregarded AMDA’s required mitigation and did not provide a single mitigation measure tailored specifically to AMDA’s operations. That is not true. In response to AMDA’s comment letter on the Draft EIR, the City modified Mitigation Measure H-3 to encompass AMDA. Initially, the measure only applied to “sensitive” land uses designated in the Draft EIR. The City expanded the mitigation measure to accommodate AMDA’s concern that its adjacent commercial building was not labeled a sensitive receptor in the Draft EIR. The revised Mitigation Measure H-3 requires



noise and vibration activities be conducted as far away as possible from all adjacent land uses, which includes AMDA's commercial building adjacent to the Project Site. Accordingly, any designation as a "sensitive receptor" is irrelevant for purposes of mitigation measure applicability for adjacent uses.

In addition, the Final EIR contains a 23-page feasibility assessment for noise and vibration mitigation measures. The report is dedicated almost exclusively to the mitigation measures that AMDA suggested the Applicant consider. In particular, AMDA included a long list of mitigation measures from another project and said those measures needed to be reflected in the Project. See AMDA's Draft EIR Comment Letter, p. 9. In response, Parker Environmental Consultants prepared a feasibility assessment that considered each noise mitigation measure suggested by AMDA. Numerous measures were adjusted, some new measures were added, and other measures were determined infeasible based on technical limitations or Project Site constraints. Therefore, AMDA's assertion that the Applicant completely disregarded AMDA's position is baseless.

**B. AMDA's Argument Regarding the Importance of Being Designated a Sensitive Receptor is Misguided**

The AMDA Appeal harps on the issue of whether the Draft EIR listed AMDA's commercial building as a sensitive receptor. As noted above, and explained in the Final EIR, that designation would not change the level of noise impacts (or proposed mitigation measures) disclosed in the Draft or Final EIR. In other words, the EIR is not fatally flawed (as AMDA claims) because it did not identify AMDA's commercial building as a sensitive receptor. The City has the discretion to assess receptors surrounding a project and determine which receptors are considered sensitive. During preparation of the noise studies that support the Draft EIR, the City's environmental consultants acknowledged that AMDA had facilities around the Project Site and identified certain facilities as sensitive and others as not. Importantly, the Draft EIR provides an analysis of temporary construction related noise and vibration impacts occurring within an approximately 500-foot radius of the Project Site. As a result the Draft EIR studied potential noise impacts on AMDA's facilities and disclosed the level of significance. Likewise, the Final EIR contains noise mitigation measures that apply to all adjacent land uses, which includes AMDA's commercial building next to the Project Site. Therefore, notwithstanding the sensitive receptor designations in the Draft EIR, the impact analysis and applicable mitigation measures in the Draft and Final EIR apply equally to AMDA as they do to other land uses in the vicinity.

More particularly, the AMDA Appeal asserts that acknowledging AMDA's commercial building as a noise sensitive use would require recirculation of the Draft EIR. The rules regarding recirculation, however, do not support this position. Generally, recirculation is not required unless the addition of new information deprives the public of a meaningful opportunity to comment on substantial adverse project impacts or feasible mitigation measures or alternatives that are not adopted. Here, the Draft EIR disclosed the fact that the Project would result in significant noise impacts associated with construction the Project. In addition, the Statement of Overriding Considerations that accompanies the Final EIR clearly indicates that noise impacts are not mitigated to a level considered less than significant. By its review of the Draft EIR, Final EIR, and other information in the administrative record, AMDA was not deprived of the opportunity to comment on the noise impacts and proposed mitigation

measures associated with the Project. Furthermore, the noise mitigation included in the Final EIR applies to all land uses adjacent to the Project Site (including AMDA) regardless of whether those land uses are considered sensitive receptors. In addition, the noise mitigation feasibility assessment is the only new information added to the Final EIR on this issue and it serves to further mitigate noise impacts on AMDA and surrounding uses. That new information enhances the noise mitigation associated with the Project and does not in any way deprive the public of an opportunity to comment on substantial adverse impacts or feasible mitigation that was not adopted. Therefore, the City is not required to recirculate the EIR merely because the Draft EIR did not identify AMDA's commercial buildings as sensitive receptors as AMDA desires.

**C. The Final EIR Includes Good-Faith Reasoned Responses to AMDA's Comments**

The AMDA Appeal concludes by claiming that "the Final EIR has offered only excuses" regarding impacts on AMDA. That rhetoric is not true. The Final EIR contains an 80-page letter that responds to all of AMDA's comments on the Draft EIR. Please refer to Responses to Comment No. 09 in Section III of the Final EIR for detailed information. In addition, the Final EIR included Appendix J, Feasibility Assessment, Noise and Vibration Mitigation Measures for the Millennium Hollywood Project, which analyzes the feasibility of every noise mitigation measure that AMDA suggested. It should be noted that AMDA has not produced any other suggested mitigation measures or technical evidence that demonstrates the noise analysis in the Draft or Final EIR is inadequate. In contrast, the Draft EIR contains quantitative noise modeling for temporary construction related noise and vibration impacts occurring within an approximately 500-foot radius of the Project Site. This zone of study includes AMDA's facilities. Similarly, the Final EIR includes numerous noise mitigation measures that apply equally to AMDA's facilities as they do to other adjacent uses and sensitive receptors. Therefore, the responses in the Final EIR, coupled with the substantial evidence in the Draft EIR, adequately disclose noise impacts on all uses surrounding the Project Site and propose mitigation to reduce noise impacts to the extent feasible.

**II.**

**Argyle Civic Association and Beachwood Canyon Appeals**

**A. The Administrative Record Contains Adequate Economic Feasibility Information Regarding Project Alternatives**

The Appellants claim that financial feasibility information regarding project alternatives must be included in the Draft EIR before the close of the public comment period. CEQA has no such requirement. This same issue was raised during the Draft EIR comment period and the City responded to it in the Final EIR. Response to Comment No. 09-79 in the Final EIR sets forth the controlling law on this issue. Specifically, the courts have held that there is no requirement that economic feasibility analysis be included in either the Draft EIR or Final EIR so long as it was included in the administrative record and available for review before final consideration of the project. Here, RCLCO performed an economic analysis (the "Economic Feasibility Analysis") of the Project and the alternatives proposed in the Draft EIR. The Economic Feasibility Analysis was submitted to the City for the administrative record, and was thereby available for public review, prior to the Advisory Agency hearing. In addition, the City has included the Economic Feasibility Analysis as an exhibit to the Appeal Staff Report for



the City Planning Commission hearing. Accordingly, the economic feasibility information has been included in the administrative record far in advance of the final consideration of the Project. Nothing more is required to satisfy CEQA's requirement related to the inclusion of economic feasibility information in the administrative record.

**B. The Draft EIR Contains a Reasonable Range of Alternatives**

The Appellants claim that the Draft EIR should have included an alternative that proposed development at less than a 3:1 Floor Area Ratio ("FAR"). This same issue was raised during the public comment period and the City responded to it in the Final EIR. Please refer to Response to Comment No. 09-79 for a detailed response. To summarize, Section 15126.6(a) of the CEQA Guidelines clearly states that an EIR need not consider every conceivable alternative to the project. The Draft EIR analyzed a full range of alternatives, including two reduced-density alternatives, and explained why certain alternatives were rejected from detailed review. The "less-than-3:1 FAR" alternative that the Appellants propose was rejected from further review because it does not meet the project objectives and is substantially less development than is permitted by right on the Project Site. There is no ironclad rule in CEQA that dictates the City must provide a detailed analysis of the Appellants' suggested alternative, especially considering that the Appellants have provided no evidence that such an alternative could reduce any of the Project's significant impacts.

**C. The Trip Generation Rates Utilized in the EIR are Appropriate for the Project**

As discussed in detail in the Final EIR, the Los Angeles Department of Transportation ("LADOT") is the responsible department within the City and verified that the rates, equations, and calculations used in the Traffic Study were appropriate for the Project. All but one of the base generation estimates were prepared using the information and procedures in Trip Generation, 8th Edition, 2008 Manual, Institute of Transportation Engineers ("ITE"). Information for the rental car facility use was not available from that source, so rates incorporated into the West Los Angeles Transportation and Mitigation Specific Plan, rates previously used by the City, were utilized. Likewise, the pass-by trip adjustment is specified in the LADOT Policies and Procedures, May 2012 and was in turn based on a conservative implementation of the procedures in the ITE Trip Generation Manual. The data and procedures in the ITE Trip Generation Manual are nationally-accepted guidelines utilized by most agencies in Los Angeles County and are the most appropriate source for the trip generation estimates for the Project. Also, it should be noted that the trip generation rates identified in the ITE Trip Generation Manual are based on surveys of sites in suburban areas with little to no transit use, so it is common practice to allow for trip reduction credits to allow for potential transit trips, pass-by trips, and internal trips associated with mixed-use projects.

Further, the adjusted generation values used for the calculations reflect that different uses are more or less able to take advantage of the transit, walk-in, mixed-use and other opportunities at the Project Site. LADOT has determined that there is substantial evidence to support these adjustments and approved their use in the Draft EIR. For instance, in the ITE Trip Generation Manual the peak hour rates for High-Rise Apartments (Land Use 222) are 30-35% lower than the standard Apartment rates (Land Use 220). Further, it should be noted that the adjustments utilized in the Traffic Study are not unique in that LADOT has approved adjustments for transit use, walk-in factors and internal trips for other mixed-use

projects in the immediate vicinity of a transit station. The LADOT adjustments reflect that the observed trips per residential unit are lower for mixed use, high density, transit served areas of Los Angeles (e.g. Downtown Los Angeles and Hollywood) than in the low-density outlying areas of Los Angeles. Response to Comment Nos. 03-07, 09-30, 59-28, and 81-11 in the Final EIR discuss trip generation in detail.

**D. The Traffic Mitigation Measures Address Existing, Future, and Horizon Year Conditions and the Study Area for Traffic Impacts is Adequate**

The Appellants wrongly assert that the mitigation measures are inadequate because they are relative to existing conditions. The traffic mitigation measures address traffic under Existing (2011), Future (2020), and Horizon Year (2035) conditions. Pertaining to the development of the mitigation measures, the traffic analysis in the EIR not only considered Project impacts under the Existing (2011) conditions, but considered Project impacts under the anticipated Future (2020), and the Development Agreement Horizon Year (2035) conditions.

As far as cut-through traffic is concerned, the Project will not significantly impact the regional Freeway system or any surface intersections north of the Hollywood Freeway interchanges. Therefore, it will not add to any diversion of non-Project trips to the local streets in the area to the north. Any Project-related trips on local streets are anticipated to be made by persons living in the neighborhood traveling to/from the Project Site (e.g., resident working at the Project, or visiting Project residents). Thus, no significant Project impacts related to an increase in cut-through traffic volumes on local streets are anticipated. Additional information on the Study Area for the Traffic Study and traffic on residential street segments, see Response No. 3 to the Dell Response Letter (defined below) attached hereto.

**E. The Draft EIR Analyzed the Appropriate Project Development Scenarios for Impacts on Infrastructure**

The Appellants claim that emergency services and infrastructure impacts “should all be studied relative to the maximum build-out rather than the current build out.” First of all, this assertion confuses the terms of art used in CEQA. The Draft EIR established baseline conditions (i.e., current build out) for all impact analyses. Then, the Draft EIR analyzed the Concept Plan for the Project and the maximum build out scenario for each environmental issue area. In doing so the Draft EIR established the maximum potential scope of environmental impacts associated with development of the Project. For example, Section IV.J, Public Services in the Draft EIR analyzed the Concept Plan, the Residential Scenario, and the Commercial Scenario with respect to impacts on public services. This analytical approach ensured that the Draft EIR did in fact study the maximum build out of the Project and all related impacts. Similarly, Section IV, L, Utilities and Service Systems in the Draft EIR analyzed the Concept Plan and either the Commercial Scenario or the Residential (depending on which scenario created the most impacts on infrastructure) to assess infrastructure capacity and required mitigation measures. Therefore, the Draft EIR does in fact contain the type of “maximum build out” analysis that the Appellants prefer.



**III.**

**Geoghan and Hollywoodland Homeowners Association Appeal**

**A. The Appellants' Introduction is Misleading**

The Appellants claim that the Advisory Agency determination is unclear and premature. As discussed below, the approval language is satisfactory and the approval determination was timely. The City filed a Notice of Completion and Availability for the Final EIR on February 8, 2012, which indicates that the Advisory Agency had at least ten days before the February 19th hearing to consider issues associated with the case. In addition, most of the issues raised at the hearing are similar to the issues raised during the public comment period on the Draft EIR. The Advisory Agency hearing occurred on February 18, 2012 and the Advisory Agency issued its determination letter on February 22, 2012. The simple fact that the Advisory Agency issued its determination letter within a week of the hearing does not equate to an abuse of discretion.

**1. *The Advisory Agency Letter of Determination Clearly States that the Advisory Agency has in Fact Approved the VTTM***

The Advisory Agency's Letter of Determination does clearly state that it approved the VTTM on the bottom of page 1, which asserts "[t]he Advisory Agency approval is subject to the following conditions". Further, the Letter of Determination has a Decision Date of February 22, 2013 and an Appeal Period Ends date of March 4, 2013, also on the first page.

**2. *The Draft EIR and Letter of Determination Adequately Describe the Project***

The Letter of Determination for the VTTM discusses both the Concept Plan and the Land Use Equivalency Program, as described in detail in Section II, Project Description, of the Draft EIR. As fully disclosed and analyzed in the Project EIR, the Project is subject to a Land Use Equivalency Program that provides flexibility to adjust the type and density of land uses associated with the Project. The Land Use Equivalency Program ensures that the mix of land uses developed does not result in new significant environmental impacts or a substantial increase in the severity of significant environmental impacts identified in Project EIR. The developer may request a transfer or exchange of land uses, but that request can only be approved if such request reasonably demonstrates that the development is consistent with the overall AM and PM peak hour trip cap identified in the EIR and would not otherwise exceed the maximum environmental impacts identified in the EIR.

**3. *The Advisory Agency Determination on the Map Does Not Violate Section 66418.1 of the Map Act and the Project Description is Compliant With CEQA.***

The Appellants cite Section 66418.1 of the Map Act, which is the definition of "development". The definition states that "[d]evelopment' means the uses to which the land which is the subject of a map shall be put, the buildings to be constructed on it, and all alterations of the land and construction incident thereto." This definition of development does not prohibit flexibility or the use of a Land Use Equivalency Program that allows for a prescribed range of uses of the Project. As the Project is limited to what was described and analyzed in the EIR, and is subject to the detailed Development Regulations that are part of the

Development Agreement, the approved VTTM is consistent with Section 66418.1 of the Map Act.

Further, with regard to the Project Description, while the Project Description in the Draft EIR presents multiple design scenarios with the provision that the final development may be any combination of the designs analyzed in the Draft EIR, the Project Description is stable and presents the information required by CEQA to provide a meaningful basis for environmental review. Specifically, the EIR provides a reasonable worst case impact analysis for each category of impact. For each category, the EIR uses the scenario that would produce the greatest impact. Thus, the Project Description is designed to allow the EIR to create a Project impact "envelope" that comprehends all of the impacts of the range of Project build-out combinations. For a given environmental category, the EIR analyzes the scenario most likely to cause the greatest impact for that category.

This "worst-case impact envelope" approach complies with CEQA, which allows a lead agency to approve a project that varies from the project described in the EIR, so long as all of the impacts are disclosed. *Dusek v. Redevelopment Agency*, 173 Cal.App.3d 1029, 1041 (1985); *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 190 (1977) (elastic project description not per se violation of CEQA, provided impacts analysis comprehends all potential impacts, lead agency may describe a project more broadly than the project actually approved).

The Project Description issues raised by the Appellant are also discussed in detail in the Final EIR. For example, Response to Comment Nos. 812, 81-3, 81-5, 81-6, and 81-8, provide additional information on this issue.

## B. The Appellants' Objections are Not Valid

### 1. *The Advisory Agency has the Legal Authority to Certify the EIR and Statement of Overriding Considerations*

The Appellants argue that the Advisory Agency is not a legislative body and is without legal authorization to adopt the EIR. That is incorrect and, in fact, the Advisory Agency is mandated by CEQA to certify the EIR prior to approving the project, or any activity which is part of the project. CEQA Guidelines Section 15090. Section 15090(a)(2) requires the decisionmaking body to certify the EIR before approval. "Decisionmaking body" is defined in Section 15356 of the CEQA Guidelines as meaning "any person or group of people within a public agency permitted by law to approve or disapprove the project at issue." The Advisory Agency is the decisionmaking body of the City that is permitted to approve, conditionally approve, or disapprove a vesting tentative tract map. Section 17.03A of the LAMC states that the Advisory Agency is "... hereby authorized to approve, conditionally approve, or disapprove Tentative Maps of proposed subdivisions, private streets and such maps as are provided for herein. . ." As such, the Advisory Agency had the authority to certify the EIR prior to its approval of the VTTM. As cited by the Appellants, the Advisory Agency certified the EIR and adopted the Statement of Overriding Considerations.

Alternatively, CEQA requires certification of the EIR prior to approval of a project. A project is defined by CEQA as, "the whole of an action" and "does not mean each separate government approval". CEQA Guidelines Section 15378(a) and (c). As the Advisory



Agency was not approving the "whole" of the Project, it may not have had to certify the EIR prior to its decision on the VTTM. Further, the VTTM was appealed to the City Planning Commission. The City Planning Commission will also certify the EIR and adopt the Statement of Overriding Considerations, prior to hearing the appeal and prior to rendering its decision and/or recommendations regarding the other requested entitlements. The Project must also be heard by the City Council, which will take the final action on the Project and the EIR must be considered by the City Council as well.

2. *Pursuant to the LAMC Subdivision Regulations, the Advisory Agency May Conditionally Approve the VTTM Prior to City Planning Commission Review and Consideration of the Requested Entitlements*

As discussed in detail below, pursuant to the subdivision regulations in the Los Angeles Municipal Code ("LAMC"), the Advisory Agency may conditionally approve a tract map that is inconsistent with existing zoning provided that the map is conditioned on complying with the zoning prior to recordation of the final map. That is exactly what the Advisory Agency did in the Letter of Determination. Conditions 15 and 16 on page 9 of the Letter of Determination assert that if the requested entitlements are not approved, the map shall be modified. The modification would have to comply with existing zoning. Therefore, additional approvals are not a foregone conclusion and if the approvals are not received the VTTM would be required to be modified.

C. *The Advisory Agency Conditioned Approval of the VTTM on Complying With Zoning Prior to Recordation of the Final Map as Required by the Subdivision Regulations of the LAMC*

The Appellants argue that the Advisory Agency's approval of the VTTM violates the Map Act because it is inconsistent with the zoning of the Project Site. Pursuant to the subdivision regulations in the LAMC, a VTTM may be approved even if it is inconsistent with the zoning, provided that the map is conditioned on complying with the zoning prior to recordation of the final map. Section 17.15D of the LAMC, titled "Development Inconsistent With Zoning – Conditional Approval," states in part that the City may approve ". . . a vesting tentative map for a subdivision whose intended development is inconsistent with the zoning ordinance in existence at that time . . . [if] it [is] conditioned on the subdivider, or his or her designee, obtaining the necessary change in the zoning ordinance to eliminate the inconsistency." See also Section 17.05C of the LAMC.

The Department of City Planning site specific conditions 15 and 16 on page 9 of the Letter of Determination state the following:

"15. Prior to the issuance of the building permit or the recordation of the final map, a copy of the CPC-2008-3440-ZC-CUB-CU-ZV-HD shall be submitted to the satisfaction of the Advisory Agency. In the event CPC-2008-3440-ZC-CUB-CU-ZV-HD is not approved, the subdivider shall submit a tract modification.

16. Prior to the issuance of the building permit or the recordation of the final map, a copy of the CPC-2013-103-DA shall be submitted to the

satisfaction of the Advisory Agency. In the event CPC-2013-103-DA is not approved, the subdivider shall submit a tract modification."

As such, the Advisory Agency conditioned the approval of the VTTM on complying with the zoning prior to recordation of the final map as required by the subdivision regulations of the LAMC and the approval has not violated the Map Act.

1. *The Approval of the VTTM does not Violate the Map Act With Regard to Consistency with the General Plan*

The Appellants argue that the Advisory Agency's approval of the VTTM violates the Map Act because it is inconsistent with the zoning of the Hollywood Community Plan and the Hollywood Redevelopment Plan. Pursuant to the subdivision regulations in the LAMC, a VTTM may be approved even if it is inconsistent with the zoning, provided that the map is conditioned on complying with the zoning prior to recordation of the final map. Section 17.05C of the LAMC, titled "Conformance To General Plan," states that "[e]ach Tentative Map shall be designed in compliance with the zoning applying to the property or approved by the City Council for change or shall be subject to a condition requiring compliance with such zoning prior to the recordation of the final map." See also, Section 17.05.C of the LAMC.

The Department of City Planning site specific conditions 15 and 16 on page 9 of the Letter of Determination state the following:

"15. Prior to the issuance of the building permit or the recordation of the final map, a copy of the CPC-2008-3440-ZC-CUB-CU-ZV-HD shall be submitted to the satisfaction of the Advisory Agency. In the event CPC-2008-3440-ZC-CUB-CU-ZV-HD is not approved, the subdivider shall submit a tract modification.

16. Prior to the issuance of the building permit or the recordation of the final map, a copy of the CPC-2013-103-DA shall be submitted to the satisfaction of the Advisory Agency. In the event CPC-2013-103-DA is not approved, the subdivider shall submit a tract modification."

As such, the Advisory Agency conditioned the approval of the VTTM on complying with the zoning prior to recordation of the final map as required by the subdivision regulations of the LAMC and the approval has not violated the Map Act.

2. *Parking*

The Appellants argue that the Letter of Determination does not acknowledge granting a deviation in parking. The Advisory Agency was not approving any such deviation because the parking deviation for guest spaces is requested through the shared parking provisions of the Development Agreement, Development Regulations, and City Planning Commission Approval pursuant to LAMC Section 12.21-A, 4(y). As such, approval or denial of the parking deviations will occur at the City Planning Commission and/or at the City Council.



City policy is to have one-half (0.5) parking spaces per dwelling unit for residential guests for condominiums in a parking congested area. The Applicant has requested a reduction in the guest parking rate from one-half (0.5) to one-quarter (0.25) per dwelling unit through the Development Agreement/Development Regulations and City Planning Commission Approval pursuant to LAMC Section 12.21-A, 4(y). The one-quarter (0.25) space per unit is being requested and was used as a base ratio in the shared parking analysis for the Project as it exceeds the ULI recommended base ratio, the Project is located within 1,500 feet of transit, and the Project is providing a number of measures that will reduce parking demand due to the TDM Program (Mitigation Measure K.1-3 of the EIR) and other transportation mitigation measures.

The ULI methodology includes guest parking in the shared parking calculations and recommends a rate of 0.15 spaces per unit be used as a base ratio. (See Shared Parking, 2nd Edition, Urban Land Institute, 2005, Table 2-2, Page 11.) The Project is exceeding that recommended rate and providing one-quarter (0.25) guest spaces.

The Community Plan Update recommends considering parking reductions for projects located within 1,500 feet of a Metro rail station. The Project is within a quarter mile (less than 1,500 feet) of the Hollywood/Vine Metro Red Line Transit Station. As such, the reduction from one-half (0.5) to one-quarter (0.25) guest space is consistent with Policy M.102 and the intent of the parking policies in the newly adopted Community Plan Update. Further, it should be noted that, as reflected in the LAMC, the parking requirements for the Hollywood Redevelopment Area are reduced due to the mixed-use nature and transit and other alternative mode options available in the Hollywood area.

Further, the Project will be providing a number of measures that will further reduce parking demand, but that have not been taken into account in the shared parking methodology. For example, the TDM Program, Mitigation Measure K.1-3 of the EIR, and associated transportation mitigation measures will include:

- Development of the Project Site in a pedestrian/bicycle/transit rider friendly manner;
- Provide car share amenities (including a minimum of five (5) parking spaces for shared car program);
- Provision of a self-service bicycle repair area and shared tools;
- Distribution of information to all residents and employees of the onsite pedestrian, bicycle and transit rider services, including shared car and shared bicycle services;
- Helping to establish a Hollywood Area Transportation Management Organization;
- Improvement of the pedestrian sidewalk linkage to the Hollywood/Vine Metro Red Line Transit Station between the Project Site and Vine Street; and

- Contributing to the City's Bicycle Plan Trust Fund.

## D. The Site Is Physically Suitable for the Proposed Type of Development

The Project is a mixed-use and transit-oriented development anchored by the historic Capitol Records Building that would transform a series of under-utilized parcels into a pedestrian-friendly development. The Project Site is located in an area undergoing significant transition as underutilized properties are transformed into uses consistent with the Hollywood Community Plan's vision of Hollywood as "a major center of population, employment, retail services, and entertainment." The area surrounding the Project Site is predominately zoned for commercial uses and is increasingly well developed for this purpose as it approaches Hollywood Boulevard. In addition, the Project Site is located within close proximity to local and regional employment and public transportation opportunities. Creating livable and sustainable neighborhoods with a range of housing in mutual proximity to jobs, infrastructure and services is one of the goals of the City's Housing Element. The proposed mix of residential and commercial uses will allow residents and employees to live, work, shop and dine within their community without the need for a private vehicle while contributing to the economic revitalization of the area.

Further, the Project Site has no height limitations under the existing or proposed zoning or the Hollywood Community Plan or Community Plan Update. As such, the Appellants' argument regarding the Project Site not being suitable for the height of the Project is unfounded.

The Appellants also claim that the Project would overwhelm the onsite Capitol Records Building. The Draft EIR analyzed that issue from both a design and historical resources perspective. The Development Regulations were carefully crafted to provide appropriate setbacks and building articulation that respect the Capitol Records Building and other surrounding historic resources. In addition, the Draft EIR contains a Historic Resources Technical Report prepared by Historic Resources Group, which analyzed the potential impacts of the Project on the Capitol Records Building. The report assessed the Project Site constraints, height, density, and design features of the Project. The report is substantial evidence and concluded that the Project will not have a significant impact on the Capitol Records Building or any other historic resource. The Appellants have not produced any evidence to the contrary.

## E. The Site Is Physically Suitable for the Proposed Density of Development

The Appellants mistakenly argues that the Project Site is limited to an FAR of 3:1 and that the Project Site is not suitable for the proposed density of the Project. First, under the Community Plan Update, the allowable FAR for the Project Site is 4.5:1 and a 6:1 FAR is allowed with approval from the City Planning Commission. Accordingly, the Project Site is not limited to a 3:1 FAR and the FAR proposed for the Project, 6:1, is allowed in the Project Site. However, even if the Project Site was limited to a 3:1 FAR (as it was before the Community Plan Update was adopted), projects were allowed to exceed the 3:1 FAR with approval from the Community Redevelopment Agency.

Further, in the C4 zone (and the proposed C2 Zone), one dwelling unit is allowed per every 400 square feet of lot area. However, pursuant to Section 12.22A18(a) of the LAMC, a development combining residential and commercial uses, such as the Project, can utilize the density allowed in the R5 zone; one dwelling unit per 200 square feet of lot area. As the Project Site totals approximately 194,495 square feet, 972 by-right dwelling units (194,495 square feet/200 square feet per unit = 972) could be developed on the Project Site. Any amount of residential units that would be permitted to be developed on the Project Site would be well under the permitted amount of dwelling units for the Project Site. As such, the Project would be consistent with the lot area and density requirements in the LAMC and the Project Site would be suitable for the proposed density of development.

**F. The Design of the Project Does Not Create Significant Impacts on Cultural Resources or Public Health**

The Appellants contend that the Map Act precludes approval of the VTTM because the Project could have public health and cultural resource impacts. Regarding public health, the Draft EIR includes a Health Risk Assessment that discloses the health risks associated with the Project Site. It concludes, from an air quality perspective, that the health risks on the Project Site are generally no greater than other locations in the south coast air basin. It should be noted that the primary health risk associated with the Project Site is due to its location near the 101 Freeway. The Project itself does not pose a public health concern. In addition, CEQA does not require an EIR to analyze the impacts of the environment (the 101 Freeway in this case) on the Project. Nonetheless, the City decided to present a conservative analysis in the Draft EIR and included a Health Risk Assessment that fully discloses the potential health risks associated with the existing environmental conditions at and around the Project Site. Regarding cultural resources, the Historic Resources Report clearly concludes that the Project will not result in a significant environmental impact on any onsite or offsite historic resource. Therefore, the Appellants' claims regarding the Map Act and environmental impacts are unfounded.

**IV.  
Hollywood Dell Civic Association**

The Hollywood Dell Civic Association submitted a late comment letter (the "Dell Comment Letter") on the Draft EIR. Many of the issues presented in this appeal are similar to the issues raised in the Dell Comment Letter. The City prepared responses (the "Dell Letter Responses") to the late comment letter. The responses are attached as Exhibit 1: Dell Letter Responses.

**A. The Advisory Agency Did Not Abuse Its Discretion**

The Dell Appeal claims that the Advisory Agency abused its discretion by issuing a determination letter too soon after the Advisory Agency hearing. Specifically, the Dell Appeal claims that the Advisory Agency did not have adequate time to consider the issues raised at the hearing and in the administrative record. This claim is simply wrong. The City filed a Notice of Completion and Availability for the Final EIR on February 8, 2012, which indicates that the Advisory Agency had at least ten days before the February 19th hearing to consider issues raised in the Draft and Final EIR. The issues raised in the Dell Appeal, and by



the public at the Advisory Agency hearing, are very similar to the issues raised during the public comment period on the Draft EIR. In other words, the Advisory Agency was not hearing most of the issues raised at the hearing as a matter of first impression. Furthermore, the City prepared a Staff Report before the hearing, which informed the Advisory Agency and the public regarding the relevant issues. The Advisory Agency hearing occurred February 18, 2012 and the Advisory Agency issued its determination letter on February 22, 2012. The simple fact that the Advisory Agency issued its determination letter within a week of the hearing does not equate to an abuse of discretion. The Advisory Agency was properly informed regarding the issues of concern, focused its attention on the VTTM approval before it, and rendered a timely decision considering all evidence on the record at that time. Therefore, the Dell Appeal does not, and cannot, support its claim regarding an abuse of discretion.

**B. The General Reasons for the Appeal are Unfounded**

**1. *The Development Agreement Adequately Reflects the Project and Its Term is Appropriate***

The Dell Appeal questions the Development Agreement regarding project description and size, consistency with land use policies, and the term length. These points are misplaced for several reasons. To start with, the Development Agreement is a discretionary contract between the City and the Applicant. It is not the primary vehicle that describes the Project or analyzes impacts. The Draft EIR contains a detailed description of the Project and the Final EIR contains several responses that demonstrate why the project description is stable pursuant to CEQA. In addition, the Draft EIR contains a lengthy land use section that analyzes the Project's consistency with all relevant land use policies. Lastly, the term of the development agreement is a point of negotiation between the City and the Applicant. Neither the California Government Code nor the City's municipal code prohibits long term development agreements. Therefore, the Appellant's assertion that the Development Agreement should be limited to five years is not justified.

**2. *Community Redevelopment Agency or Successor Agency Review***

This issue appears in the Dell Comment Letter on the Draft EIR. The comment letter was received after the close of the comment period and as such, responses to these comments do not appear in the Final EIR. However, the Dell Letter Responses were prepared and are part of the administrative record. Please refer to Response No. 12 of the Dell Letter Responses attached hereto for information regarding Community Redevelopment Agency/Designated Local Authority ("CRA/DLA") review of the Project. Additionally, CRA/DLA review is no longer required to increase the FAR on the Project Site. According to the updated "D" limitation on the Project Site, FAR may be increased from 4.5:1 to 6:1 with City Planning Commission approval.

**3. *The Draft EIR Adequately Analyzed Cumulative Impacts***

On this point, the Dell Appeal confuses the issues germane to the Advisory Agency approval of the VTTM with issues related to the Draft and Final EIR. For instance, cumulative impacts of the Project are not an issue affecting the approval of the VTTM. In addition, even the Dell Appeal's argument regarding cumulative impacts, as it relates to the

Draft EIR, does not make sense. It claims that the City failed to comply with CEQA because it did not “prepare and file a study on the cumulative analysis of the impacts of the Project and the 57 known projects” in the area. That is factually incorrect. Section IV of the Draft EIR includes a detailed cumulative impact analysis for all of the environmental issues analyzed in the Draft EIR. Accordingly, the reasoning in the Dell Appeal is not valid.

4. *The Project Height is Permitted on the Project Site*

The Dell Comment Letter raised the height issue. Simply put, the Project Site does not have a height limitation under the current zoning and land use designation. Please see Dell Letter Responses Nos. 2, 8, 12, and 13 for further discussion of height and land use compatibility. In addition, it should be noted that the Draft EIR contained an Aesthetics Impact Report with illustrations of how the Project aesthetically blends into the existing urban skyline and is compared to built and approved cumulative projects in the vicinity. The Draft EIR concluded, based on substantial evidence in the report, that the Project did not have significant impacts with respect to building heights.

5. *The Traffic Reports are Accurate*

The traffic issues raised in the Dell Appeal (which question methodology) are also raised in the Dell Comment Letter. Please refer to Response Nos. 2, 3, and 9 of the Dell Letter Responses attached hereto for information regarding traffic. Further, multiple responses to comments in the Final EIR deal with these traffic issues.

6. *Traffic, Air Quality, and Health Risk Data are Accurate*

The Appellant claims that air quality and health risk data in the Draft EIR is underestimated because of inaccurate traffic data. As noted above, the traffic data in the Draft and Final EIR is extensive and accurate. The Appellant has provided no evidence that demonstrates otherwise. In addition, the South Coast Air Quality Management District submitted a comment letter on the Draft EIR, which recognized the potential regional air quality benefits of the Project and did not materially question the data used to analyze air quality or health risk impacts.

7. *Project Height Will Not Create Significant Impacts on the Capitol Records Building*

The Appellant claims the 585-foot development scenario is inconsistent with other commercially zoned properties and would result in significant impacts on the Capitol Records Building. The Appellant raised these issues in the Dell Comment Letter and responses are provided in Dell Letter Responses Nos. 2, 8, 12, and 13. In addition, please refer to Topical Response No.4 in the Final EIR for a detailed discussion regarding the Project's compatibility with historic resources.

8. *The EIR Contains Adequate Mitigation and the Development Agreement Includes Appropriate Community Benefits*

The Dell Appeal claims that there are inadequate public benefits and mitigations. Regarding public benefits, the Development Agreement indicates that the Project will provide local and regional public benefits to the City, including, but not limited to: (1) promoting Hollywood and its commercial corridor; (2) increased sales tax, property tax and future transient occupancy tax; (3) promoting tourism and business expansion; (4) providing temporary and permanent jobs to improve the local and regional economy; (5) developing community organization meeting space; (6) providing transportation improvements; (7) providing pedestrian improvements; (8) establishing arts and music appreciation programming and exhibit; and (9) contributing funds to facilitate affordable housing. Regarding mitigation measures, the Draft EIR complies with CEQA and includes all feasible mitigation measures for the Project's significant impacts. The Dell Appeal contains a long list of other requested public benefits and mitigation measures. To date, however, the Appellant has not demonstrated a nexus between the Project impacts and its requested mitigation measures and public benefits. Therefore, CEQA does not require the Project to implement additional mitigation measures based purely on the unsupported request of the Appellant.

9. *The Applicant Will Provide Necessary Development Fees*

The Dell Appeal claims that the City has failed to adequately assess development impact fees. This position is not true and is inconsistent with the Draft EIR. From a timing perspective, the City does not request development impact fees before project approvals. As noted in the Draft EIR, the Applicant is required to pay fees associated with building permits and development impact fees that help mitigate identified impacts. Development impact fees will be assessed at City rates, timely paid by the Applicant, and measured according to the level of impacts analyzed in the Draft EIR and the ultimate build out of the Project.

10. *Parking Variance*

The objections to the parking variance related to the sports club in the Dell Appeal also appear in the Dell Comment Letter. Please refer to Response No. 7 of the Dell Letter Responses attached hereto for information regarding the parking variance for the sports club.

With respect to the Appellant's comments regarding reduced parking, the Appellant argues that the Applicant did not request reduced parking or guest parking. First, the parking deviation for guest spaces is requested through the shared parking provisions of the Development Agreement, Development Regulations, and City Planning Commission Approval pursuant to LAMC Section 12.21-A, 4(y). Further, other parking reduction/share parking is requested pursuant to LAMC Section 12.21-A, 4(y). For additional information regarding the reduction in guest parking, please see Section III.D.2 (Geoghan and Hollywood Land Homeowners Appeal) above.



11. *Traffic and Trip Generation Data are Accurate*

The Appellant argues that the City failed to provide accurate traffic data and trip generation estimates. The Traffic Study, Appendix K.1 to the Draft EIR, adequately analyzed Project traffic impacts. Further, additional analyses were prepared regarding construction impacts, the Concept Plan and the Residential Scenario impacts, pedestrian conflicts, and additional intersections to the north of the study area for further clarification in the Final EIR. See Appendices D (Updated Construction Traffic Impacts Including Individual Intersection Impact Analyses), E (Final EIR Added Intersection Analysis), F (Concept Plan and Residential Scenario Traffic Impact Analysis), and G (Site Access Impact and Pedestrian/Bicycle Safety Analysis) of the Final EIR. Also, Response to Comment Nos. 03-01 through 03-15 and 09-29 through 09-52 of the Final EIR address these issues.

Further, as discussed in detail in the Final EIR, LADOT, the responsible department within the City verified that the rates, equations, and calculations used in the Traffic Study were appropriate for the Project. All but one of the base generation estimates were prepared using the information and procedures in Trip Generation, 8th Edition, 2008 Manual, Institute of Transportation Engineers ("ITE"). (Information for the rental car facility use was not available from that source, so rates incorporated into the West Los Angeles Transportation and Mitigation Specific Plan, rates previously used by the City, were utilized.) Likewise, the pass-by trip adjustment is specified in the LADOT Policies and Procedures, May 2012 and was in turn based on a conservative implementation of the procedures in the ITE Trip Generation Manual. The data and procedures in the ITE Trip Generation Manual are nationally-accepted guidelines utilized by most agencies in Los Angeles County and are the most appropriate source for the trip generation estimates for the Project. Also, it should be noted that the trip generation rates identified in the ITE Trip Generation Manual are based on surveys of sites in suburban areas with little to no transit use, so it is common practice to allow for trip reduction credits to allow for potential transit trips, pass-by trips, and internal trips associated with mixed-use projects. Response to Comment Nos. 03-07, 09-30, 59-28, and 81-11 in the Final EIR discuss trip generation in detail.

12. *The Draft and Final EIR are Not Based on Conclusory Statements*

The Dell Appeal makes an unfounded claim that the Final EIR is based merely on conclusory statements and no evidence. That is not true. The Final EIR contains detailed good-faith responses to all comment letters received during the statutory review time. In addition, the Final EIR contains traffic analyses and a mitigation feasibility assessment that further clarify the impact analysis in the Draft EIR.

13. *The Draft EIR Contains Substantial Evidence Regarding Adequate Infrastructure to Support the Project*

The Dell Appeal claims that the City failed to demonstrate that there is adequate infrastructure for the Project. The Draft EIR, however, contains substantial evidence from numerous City departments that proves otherwise. For example, the Fire Department, Police Department, Parks and Recreation Department, Department of Water and Power, Sanitation Department, and the Southern California Gas company all submitted services letters that

indicate the City infrastructure is capable of supporting the Project. Therefore, the Appellant's claim is unsupportable.

**C. The Advisory Agency Did Not Approve Any of the Project's Requested Entitlements Except the VTTM**

The Appellant argues that each variance granted does not meet the threshold to grant variances, however, the Advisory Agency only granted approval of the VTTM. The other requested entitlements, including a vesting zone change, height district change to remove the "D" Limitation, conditional use permits for FAR averaging, alcohol, live entertainment, a hotel within 500 feet of an R zone, variances for reduced sports club parking and outdoor dining areas above the ground floor, City Planning Commission Approval of Reduced/Share Parking, and the Development Agreement require approval by the City Planning Commission and/or City Council. No variances or other requested entitlements have yet been approved, except the VTTM.

Further, the findings cited by the Appellant are the findings required for the two requested variances and the reduced/shared parking approval. The required findings for all other requested entitlements (vesting zone change, height district change to remove the "D" Limitation, conditional use permits for FAR averaging, alcohol, live entertainment, and a hotel within 500 feet of an R zone, and the Development Agreement) differ from the variance findings as specified in the LAMC. The City Planning Commission and/or City Council will have to adopt such findings for all of the requested approvals before approval, or conditional approval of the entitlements.

Accordingly, since no variances or other requested entitlements have yet been approved, except the VTTM, there can be no appeal of the variances or other requested entitlements at this time.

**D. There Can Be No Appeal of the Variances or Other Requested Entitlements Because the Advisory Agency Only Approved the VTTM**

The Appellant's letter explains the reasons why it objects to and is appealing each requested entitlement; however, as discussed in detail above, those approvals have not been granted. As such, there can be no appeal of the variances or other requested entitlements at this time.

**E. An Appeal of the Development Agreement is Premature**

The Appellant provides a list of reasons why it objects to the Development Agreement. Similar to the variance discussion above, the City has not approved the Development Agreement at this time. Thus, appealing the Development Agreement is premature. The Dell Appeal, however, is part of the administrative record and will be considered by the City Planning Commission. In addition, the Appellant will have an opportunity to timely appeal the Development Agreement if the City Council approves it. The City will consider the Appellants objections, and suggested provisions, related to the Development Agreement as the hearing and approval process proceeds.

F. The City Will Consider How the Hollywood Dell Civic Association is Aggrieved by Approval of the VTTM

1. *Traffic*

The traffic issues and recommended mitigation measures in the Dell Appeal also appear in the Dell Comment Letter. Please refer to Response Nos. 3 and 9 of the Dell Letter Responses attached hereto for additional information.

2. *Parking*

The Appellant argues that the Project is under-parked, does not include guest parking, and offers an unnamed, undesignated, off-site parking location. As shown in Section IV.K.2, Transportation - Parking, and the Shared Parking Analysis provided in Appendix E of the Traffic Study (Appendix IV.K.1 of the Draft EIR), the Project will provide sufficient parking supply for all uses within the Project Site, including the existing uses that will remain as part of the Project. As a mixed-use Project, different users will share a portion of the parking spaces during a 24-hour period. For example, spaces that are vacant on weekends when office employees are not at work will be available for use and used by retail, restaurant, or other Project users. The parking demand of different uses would peak at different times and the Shared Parking Analysis takes these different user demand cycles into account. Further, the shared parking analysis does take into account visitor parking for residential uses and the Project does not include any off-site parking. See, for example, Response to Comment Nos. 09-47, 09-51, 09-52, and 81-12, for an additional discussion of parking.

G. Public Benefits and Mitigations

The Dell Appeal contains a list of 13 items that the Hollywood Dell Civic Association believes would benefit its neighborhood. It should be noted that the Appellant previously presented this same list to the Applicant. The Applicant responded with a set of counter measures that the Appellant refused to accept. Also as noted above, the Draft and Final EIR contain numerous mitigation measures that minimize the Project's impact to the extent necessary pursuant to CEQA. In addition, the Development Agreement requires the Applicant to provide substantial public benefits before development of the Project can commence.

H. Advisory Agency Abuse of Discretion

The Appellant concludes its appeal by reiterating arguments regarding CRA review, the size of the Project, traffic concerns, and the timing of the Advisory Agency appeal. As discussed above, none of these points are supported with evidence. To summarize the discussions above: the CRA or Successor Agency review is no longer required to increase the FAR on the Project Site; the Project is compatible with the land use and zoning requirements for the Project Site considering the requested entitlements; there is a tremendous body of evidence that supports the Draft and Final EIR conclusions regarding traffic impacts; and the approval of the VTTM is not flawed simply because the Advisory Agency was efficient and issued a timely approval.



**V.  
Conclusion**

We respectfully request that the City Planning Commission deny the appeals based on the evidence in the record and the justifications provided in the City's Appeal Staff Report and this letter. As discussed above, the Appellants' arguments are not supported with evidence and are factually incorrect in several instances. In contrast, the administrative record contains substantial evidence to support approval of the VTTM. In addition, the Draft EIR contains exhaustive analysis regarding the Project's potential impacts, and the Final EIR provides good-faith reasoned responses to all of the comments submitted by the Appellants during the statutory review period. Collectively, the body of evidence before the City Planning Commission supports denial of the appeals. Therefore, we agree with the Appeal Staff Report's recommended action to deny the appeals in whole and sustain the Advisory Agency's approval.

Very truly yours,



Alfred Fraijo Jr.  
for SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

**Exhibit 1**  
**Dell Letter Responses**

## **HOLLYWOOD DELL CIVIC ASSOCIATION**

Hollywood Dell Civic Association  
Patti Negri, President  
4928 West Melrose Hill, Los Angeles, CA 90029  
P.O. Box 93094, Hollywood CA 90093

December 10, 2012 (letter as dated by Hollywood Dell Civic Association)

It should be noted that this letter was not received by the City of Los Angeles during the Draft Environmental Impact Report public review period for the Millennium Hollywood Project.

### **Comment No. 1**

The Hollywood Dell Civic Association (“HDCA”) wishes to provide the following comments on the Millennium Hollywood Project DEIR. Given the substantial impact this Project will have on adjacent commercial and residential communities, we have previously requested the Planning Department extend the public comment period for an additional 45-days to allow the HDCA and other surrounding residential communities to comment in greater detail on the DEIR. To date the Planning Department has not notified us of an extension to the public comment period so lacking more time the following comments are made with reservations.

### **Response No. 1**

For information on extending the comment period, please see Topical Response 1, Draft EIR Review Period Extension Request, in the Final EIR

The comment asserts that the Project will have a substantial impact on adjacent commercial and residential communities. It should be noted that Section IV.G, Land Use Planning of the Draft EIR analyzed potential land use compatibility impacts on surrounding commercial and residential land uses and concluded that the Project does not have significant unavoidable land use impacts. The remainder of this comment is an introduction and does not state a specific concern or question regarding the adequacy of the Draft EIR in identifying and analyzing the environmental impacts of the Project. As such, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

### **Comment No. 2**

We believe development of the Millennium site represents a proactive step in the renovation and reutilization of Hollywood’s Historic core, however, we do not consider a 1.1 million net square foot project with the proposed size, bulk, massing and height indicated by Millennium in the DEIR as appropriate for the location. A Project of this size significantly increases traffic on all major streets adjacent Hollywood Hills communities and in the Hollywood area during AM/PM Peak Hours. This increased congestion severely limits ingress/egress from our neighborhoods. The proposed 2-towers of



558' in height dwarf and minimize the historic Capitol Records building, will top out at approximately 20-25 stories taller than any current structure in Hollywood, and would obstruct existing views to and from the Hollywood Hills and the Hollywood sign from many vantage points in the City. Additionally, the excessive height will block existing views of Hollywood Hills residents impacting property values, security and privacy. Occupants of the towers and observation decks will have unrestricted eye level views of homeowner's possessions and activities. We believe a scaled down project would offer far fewer impacts to our community, but retain the many benefits the larger project intends to promote such as increased housing, retail facilities and pedestrian space. A smaller Project may also more effectively enhance, protect and highlight the Capitol Records building and significantly reduce traffic and infrastructure impacts to the surrounding area.

The following identifies deficiencies or inadequacies we believe exist in the DEIR and outlines why proposed mitigations do not appear to be sufficient or appropriate. Our recommendations are also included.

### **Response No. 2**

It is acknowledged that the comment believes the Project is a proactive step in the revitalization of the Hollywood's historic core.

Regarding the location of the Project Site, as discussed in Section IV. G, Land Use Planning, the Project Site is located in a highly urbanized area surrounded by high density residential and commercial uses as well as a major public transit station. The surrounding area is populated with a mix of residential and commercial uses similar to those proposed in the Project, including multi-family housing, restaurants and bars, commercial retail, hotel and office uses. The Project Site does not have any height limits under the existing zoning, and with approval of a conditional use permit for FAR averaging, FAR would be average across the Project Site, with a total FAR of 6:1. Please see Section IV.G, Land Use Planning of the Draft EIR for a detailed analysis of the Project's consistency with the Redevelopment Plan, Hollywood Community Plan and Update, and the compatibility of the Project with surrounding land uses.

Regarding potential traffic impacts, the Draft EIR analyzed traffic patterns during AM and PM peak hours, as discussed in Section IV.K.1, Transportation – Traffic, of the Draft EIR. That section is supported with detailed traffic modeling and reports contained in the traffic appendices circulated with the Draft EIR. Otherwise, the comment does not state a specific concern or question regarding the adequacy of the Draft EIR in identifying and analyzing the environmental impacts of the Project. Please refer to Appendix IV.K.1 of the Draft EIR for a detailed Traffic Study. The comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please see Responses to Comments Nos. 19-2, 19-3, and 19-4 (Los Angeles Conservancy), Responses to Comments No. 14-2 and 14-3 (Hollywood Heritage), and Topical Response 4, Cultural Resources for a discussion of the Project's compatibility with adjacent historic resources, including the Capitol Records Building, in the Final EIR. As analyzed in Section IV.C, Cultural Resources, of the Draft EIR and as

demonstrated in the responses listed above, the Project does not have a significant impact on the Capitol Records Building or any other adjacent historic resource.

Please refer to Topical Response 2, Aesthetics, in the Final EIR for additional information regarding views corridors and potential view obstruction associated with the Project, including views of Hollywood from the Hollywood Hills. With respect to heights, it should be noted that the Project Site does not have a height limitation pursuant to the existing zoning. As discussed in the Draft EIR, the Project would implement a mixed-use development consisting of modern, yet architecturally varied, urban structures that are consistent in use and character to the surrounding urban aesthetics environment. Regarding a smaller size project, it should be noted that Section VI, Alternatives to the Proposed Project, of the Draft EIR analyzes a range of alternatives that includes two reduced size alternatives (i.e., Alternative 2 Reduced Density Mixed Use Alternative 4.5:1 FAR and Alternative 3 Reduced Density Mixed Use Alternative 3:1 FAR) and a reduced height alternative (*i.e.*, Alternative 4 Reduced Height Alternative). The alternatives analysis assesses the level of impacts associated with smaller projects. The decision makers will consider these smaller project alternatives in light of the entire record.

The comment concludes by stating that the following parts of the letter will provide more detail as to the deficiencies or inadequacies of the Draft EIR and why the proposed mitigation measures do not appear sufficient or appropriate. Responses to each comment are provided below.

### **Comment No. 3**

#### **Transportation and Traffic Studies**

Section IV .K.1, 1-1 through 1-31:

The DEIR does not present any Environmental Impact Analysis reflecting the Project's impacts on residential ingress/egress from their communities north of Franklin Avenue. In fact there are no traffic studies of intersections north of Franklin Avenue yet there are hundreds of residents that transit those intersections daily. For example, the analysis anticipates that traffic congestion at the Cahuenga/Franklin intersection is unmitigateable, however the study does not consider the traffic impacts at the intersections of Dix/Cahuenga, Cahuenga Terrace/Cahuenga, Odin/Cahuenga, Ivar/Franklin all of which are within 500' of the Cahuenga/Franklin intersection and will experience similar traffic congestion impacting ingress/egress during peak AM/PM hours.

**Mitigation Suggestion:** Order additional traffic studies of the intersections at Dix/Cahuenga, Cahuenga Terrace/Cahuenga, Odin/Cahuenga, Ivar/Franklin and Argyle and Franklin to determine if the additional AM/PM traffic will impact ingress and egress to the Hollywood Dell. Have signals installed at each of the designated intersections to allow for controlled access and left hand turns.

### **Response No. 3**

The comment asserts that the traffic study should be revised to a larger geographic area. As per standard City of Los Angeles procedures, the study area for the Traffic Study was selected in consultation with

LADOT. The Traffic Study locations selected were those locations at which the Project traffic impacts may be significant and substantial. The locations at which traffic impacts may be significant are the critical capacity constraints of the area roadway system. For the Hollywood area roadway system the capacity constraints are the freeway links and the signalized intersections. The more minor (STOP controlled) intersections were determined not to constrain the system capacity. In general, the northbound US-101 Freeway ramps (or an associated intersection) form the northern boundary of the agreed-to study area. The Hollywood Freeway was selected as the northern boundary because most of the Project trips directed northward would utilize this facility, especially with limited surface routes to the north. The Project trips remaining on surface streets will be intercepted trips to and from the neighborhood areas rather than added trips.

The intersection of Franklin Avenue and Argyle Avenue/US-101 Freeway Northbound On-Ramp and the intersection of Franklin Avenue and Highland Avenue (north) are the two significantly impacted intersections located on the northern edge of the study area. An analysis of Project impacts at two additional intersections, Highland Avenue/Camrose Drive/Milner Road, and Argyle Avenue/Vine Street/Dix Street, was conducted for the Final EIR. (See Appendix E, Final EIR Added Intersection Analysis, of the Final EIR). These intersections were selected because they are the intersections (outside the study area) to the north of intersections found to be significantly impacted by Project traffic in the Traffic Study and the Draft EIR. This analysis concluded that the Project impacts would be less than significant at these locations. As such, there would not be significant impacts beyond the study area.

The comment recommends studying intersections at Dix/Cahuenga, Cahuenga Terrace/Cahuenga, Odin/Cahuenga, Ivar/Franklin and Argyle and Franklin. All of these intersections, except Dix/Cahuenga, are to the north of the study area and as such there would not be significant impacts at these intersections. The intersection of Dix/Cahuenga is a STOP controlled intersection and thus is not a proper intersection for study because locations at which traffic impacts may be significant are the critical capacity constraints of the area roadway system.

Please also note that conditions at the intersections to the north of the study area are addressed by the Project mitigation. The Signal System Upgrades and TDM measures will improve conditions throughout the area, including for the intersections to the north. Those measures will reduce the impacts at the intersection of Franklin Avenue and Highland Avenue (north) to less than significant and would have similar benefits at the intersections further north.

The comment also includes a recommendation to have signals installed at each of the designated intersections to allow for controlled access and left hand turns. However, the Traffic Study and Appendix E analyses concluded that the Project impacts would be less than significant at the study intersections to the north, such as those cited by the commenter. There would not be significant impacts beyond the study area or at any intersections cited in the comment and thus, no additional mitigation is required. See the Final EIR Response to Comment No. 16-10 (Hollywood United Neighborhood Council (#2)), for information regarding signals and see Response to Comment No. 59-34 (Jordon, David) for additional information regarding the study at additional intersections.



**Comment No. 4****Floor Area Ratio (FAR)**

Section II Project Description, Page 11-8.

The Hollywood Redevelopment Plan limits the maximum FAR allowable on the site to 4.5:1FAR, this is further limited by the D-Development Limitation (Ordinance No. 165659) which restricts the development to 3:1FAR. Millennium is requesting a Variance to increase the FAR to a 6:1FAR which would allow an increase in the total development square footage from 3:1FAR (approx. 291,735SF development) to 6:1FAR (approx. 1,100,000SF). A 1.1Million square foot project would be larger than any existing structure in Hollywood and larger than many other significant projects previously developed in the City of Los Angeles (i.e.: Hollywood & Highland Shopping Ctr.: 375,000SF; Staples Center: 950,000SF; and the Los Angeles Convention Center: 756,000SF).

**Mitigation Suggestion:** To reduce traffic congestion, view impacts and infrastructure demands we request the City limit the size of the Project to a 4.5:1 FAR which would allow full utilization of the site as a mixed use development proposed by the Developer while controlling the size, bulk and scale of the Project in a manner consistent and complimentary to other developments in the Hollywood area.

**Response No. 4**

With respect to FAR, the C4-2D-SN zone corresponds with Height District No. 2. Pursuant to LAMC Section 12.21.1(A)(2), Height District No. 2 allows a maximum FAR of 6:1 and does not specify a height restriction. However, the Height District No. 2 classification for the Project Site is further regulated by a “D” Development Limitation, imposed by Ordinance No. 165,659, effective May 6, 1990. The “D” Development Limitation restricted the floor area on the Project Site to three times the buildable area of the lot, or a FAR of 3:1. The Hollywood Community Plan Update (the Update) modified the “D” Development Limitation for the Project Site to increase the FAR from 3:1 to 4.5:1. The modified “D” limitation in the Update also allows for a 6:1 FAR on the Project Site, provided that a project complies with a few conditions. While the Project Applicant is requesting that the City remove the “D” limitation from the Project Site, thereby resulting in a FAR of 6:1, this is not inconsistent with the Update because the Update allows for a 6:1 FAR on the Project Site.

See Response to Comment Nos. 09-79 (AMDA) and 59-14 (Jordon, David) in the Final EIR for a discussion on reduced FAR alternatives and additional information regarding FAR. In addition, and as discussed above, the Draft EIR does in fact analyze a reduced density mixed use alternative at 4.5:1 FAR, which is what the commenter is suggesting. The decision makers will consider this project alternative in light of the entire record.

**Comment No. 5**

**Quimby Fees:** The Developer will pay Quimby Fees to the City for the development and maintenance of green space throughout the City.

**Mitigation Suggestion:** We request that those funds be specifically earmarked for parks and green spaces in the Hollywood area with a priority on parks and green spaces within walking distance of the Project.

**Response No. 5**

According to Section IV.J.4, Public Services - Parks and Recreation, of the Draft EIR, the City imposes Quimby fees and Park and Recreation fees pursuant to LAMC Section 17.12 and LAMC Section 21.10.3, respectively, based on the number of units proposed within a project to help offset potential project and cumulative environmental impacts on parkland.

As noted in the Draft EIR, the Project would comply with the requirements identified in Mitigation Measures J.4-2 and J.4-3 regarding payment of fees for the acquisition and development of park and recreational sites. The Draft EIR concludes the Project does not result in a significant unavoidable impact to parks. Moreover, it should be noted that the fees that are paid would be allocated according to the budget and planning purposes of the Los Angeles Department of Recreation and Parks (LADRP) because use of the fees is pursuant to the LAMC and is determined by the LADRP. The Project Applicant does not determine how the City uses these fees.

This comment is noted and will be provided to the decision makers for consideration.

**Comment No. 6**

**Infrastructure Improvements:**

Section IV.G, Section IV.J and Section IV. L:

The DEIR does not mention any studies undertaken to consider repairs or expansion of existing sidewalks, street lighting, crosswalks, or pedestrian bridges to facilitate pedestrian access to areas immediately adjacent to the Project. Nor does it mention infrastructure studies or mitigations related to water, wastewater or electricity demand. Given the uncertainties in the water supply horizon and in capacities of local delivery systems, impacts to water are considered potentially significant. There is no mitigation measure offered beyond the promise to work with LADWP and to contribute a calculated amount in fees to the City as part of the permit process.

**Mitigation Suggestions:** Undertake a study to review and upgrade existing lighting, sidewalk access and crosswalks and the potential of installing signals at/near the intersections of Franklin/Vine, Franklin/Yucca and Franklin and Argyle. A portion of the estimated \$5 Million the Project will pay into the City's General Fund should be designated/returned to the Hollywood Community to pay for additional Fire and Police services that the Project will demand. Though the DEIR suggest on one additional police officer will be required to meet the present standard of 1 officer per every 833 residents for the Project (Section IV.J.2, page 2-4), however, the Project proposes a total population for the Project of 3,970 (Residents + Daily Workforce+ Business Users, Section IV.I, pages 17, 24 & 27) which would suggest the increase population on created by the Project requires an additional 3-full time officers be

added to the Hollywood precinct. In general Developer Fees from the Project should be specifically designated to update the surrounding Hollywood utility delivery systems and infrastructure rather than going to the City's General Fund.

#### **Response No. 6**

Regarding pedestrian amenities such as sidewalks, lighting, crosswalks, and pedestrian bridges, the Project would be consistent with the Hollywood Community Plan Update's Goal LU.3: Make Streets Walkable, as well as multiple policies to implement that goal including Policies LU. 3.3, 3.4, 3.8, 3.9-12, 3.15, 3.17, 3.21-24, and 3.27. See Response to Comment No. 09-69 (AMDA) in the Final EIR for more information. See also Final EIR Response to Comment No. 14-3 (Hollywood Heritage), which discusses how the Project will transform existing parking lots into a mixed-use development that incorporates grade-level public plazas, pedestrian passage ways, amenities, and commercial uses (where none currently exist) that enliven the street scene and pedestrian environment at the Project Site. The Project is designed to provide uses and activity that will attract pedestrians into the area, especially along Hollywood Boulevard and Vine Street.

Regarding water supply, Section IV.L.1, Utilities and Services Systems, Water, of the Draft EIR, the LADWP confirmed that the Project Site can be supplied with water from the municipal system. LADWP prepared and approved a Water Supply Assessment (WSA) according to the legal requirements of State of California Senate Bill 610 and 221, which is included in the Draft EIR as Appendix IV.L.1, Water Supply Assessment. The WSA confirmed sufficient water supply for the Project.

Regarding wastewater, Section IV.L.2, Utilities and Services Systems, Wastewater, of the Draft EIR analyzes infrastructure capacity to handle wastewater generated by the Project. Specifically, the Draft EIR quantifies (see Table IV.L.2-2 through Table IV.L.2-4) potential wastewater volumes associated with the Project and confirms the applicable treatment systems have adequate capacity for the Project and all cumulative projects. In addition, the City of Los Angeles Bureau of Sanitation reviewed the Project and concluded that the sewer system will accommodate total flows from the Project. See page IV.L.2-14 of the Draft EIR. These conclusions are based on quantified evaluations of the existing sewer system and anticipated Project wastewater flow rates. The Draft EIR also confirms that all infrastructure improvements would be built to the LADWP and Los Angeles City Plumbing Code standards. See Response to Comment Nos. 18-5 (Hollywoodland Homeowners Association (#2)), and 27-1 (Brackett, Alan) in the Final EIR for information on utility infrastructure.

Regarding electricity, the Draft EIR dedicates section IV.L.4, Utilities and Services Systems, Energy Conservation, to analyzing electricity issues. To summarize, the Draft EIR provides a quantitative assessment of whether the Project's electricity demand falls within overall demand anticipated by LADWP. The Draft EIR concludes that there is adequate energy supply, which is supported by written correspondence from LADWP.

The comment also includes suggested mitigation for lighting, sidewalks and crosswalks, intersections, and police and fire systems. It should be noted that the Project does not have significant unavoidable



impacts related to lighting, sidewalks and crosswalks, or public services systems. Also, it should be noted that the officer-to-resident ratio is explicitly calculated with permanent residents, not daily workforce or business users. The suggestion to designate the developer fees to surrounding utility systems and infrastructures rather than the City's General Fund is beyond the scope of the Draft EIR. The Project Applicant does not determine how the City uses these fees.

Please see Responses to Comments No. 3 and 9 regarding traffic and mitigation issues.

This comment is noted and will be provided to the decision makers for consideration.

#### **Comment No. 7**

##### **Parking Variance**

Section II Project Description, Page II-31

The Developer has asked for a Variance to reduce the City's standard parking allocation for health club use at the facility from 10:1,000 to 2:1,000 on the assumption that a significant portion of health club users would come from internal use, travel by public transport or be considered a "pass-by" user that would not significantly add to parking demands of the Project. This assumption is flawed as health club generated traffic increases substantially during peak PM traffic and most health club users do not typically take public transport or go to a health club on their way to dinner or other activities \*("pass-by trips". The key reason the City has a high requirement for health club parking is historically health clubs generate parking requirements in excess of most other retail uses.

**Mitigation Suggestion:** The parking requirement should not be reduced from 10:1,000 as those individuals that drive to the Project to use the health club who cannot park in the facility will look for on street parking and reduce available public parking and generate additional traffic congestion on surrounding streets.

#### **Response No. 7**

This comment expresses opposition to a variance for reduced parking for the proposed health club. Section IV.K.2, Transportation – Parking, of the Draft EIR, discusses and analyzes the variance for fitness center/sports club use. For example, see pages IV.K.2-23 through IV.K.2-24 of the Draft EIR. Further, pass-by trips are not assumed to be a reason for reductions in the parking demand.

Under the Los Angeles Municipal Code (the LAMC), if the fitness center/sports club use is located within a building that contains at least 50,000 square feet of office space, the parking requirement is the requested two spaces per 1,000 square feet of area. The Project is a mixed-use development that may include additional office space, but programming considerations may require the fitness center/sports club to be physically located in the development, although in a different building than the office. The Project also already includes approximately 114,000 square feet of office use that will remain, and although the

fitness center/sports club will not be in the existing office building, the intent of the LAMC is met by having a sports club and office use as part of the same project.

The comment also suggests a mitigation measure, however, Section IV.K.2, Transportation – Parking, of the Draft EIR found parking impacts to be less than significant and as such no mitigation is required.

### **Comment No. 8**

#### **Building Height:**

Section IV .A.1, Aesthetics, Page IV.A.1-13 through 1-56

Height Zones for the project are identified to be within 220' to 585 feet in height. Existing views from and to the Hollywood Hills are not significantly impacted by the Project at 220' of height, however at 500' and 585' feet the Project significantly impacts views to and from the Hollywood Hills, the Hollywood Sign and surrounding commercial area of Hollywood. The 2-proposed 585' tall towers combined with the site locations elevation would make the towers approximately the 6<sup>th</sup> and 7<sup>th</sup> tallest buildings in Los Angeles. Totally out of scale with the Hollywood commercial district. The extreme height would also be between 20-25 stories taller than any existing development in the Hollywood commercial area. The lack of scale to surrounding commercial development adjacent to the Project is significant and the negative impact to view site lines from the Hollywood Hills is detrimental to residential property values, quality of life and privacy. From many points of view around Los Angeles the towers will appear taller than Mt. Hollywood located behind the project, obscure the view of the iconic Hollywood sign and dwarf the adjacent Capitol Records building and other structures in the Hollywood area.

#### **Suggested Mitigations:**

Cap the Project's height at a maximum of 30-stories (between 220' - 400'); this maintains most of the existing views to and from the Hollywood Hills, to the Hollywood sign and of Mt. Hollywood. Reduced height of the Project maintains reasonable continuity between existing Hollywood building heights and with the size and scale of the Capitol Records building. The resulting reduction in height may increase massing at lower elevations, but this will not significantly impact the view site lines to and from the Capitol Records building (Figure IV.A.1-10). Additional photographic studies should be made showing the impact of the Project on views from other locations in the City and from other vantage points in the Hollywood Hills as the Project will be located less than 500' from many single family and multi-tenant residences.

### **Response No. 8**

Please refer to Response to Comment No. 16-3 (Hollywood United Neighborhood Council (#2)) in the Final EIR for a discussion on the Project's overall height.

Please refer to Topical Response 2, Aesthetics, in the Final EIR for additional information regarding views and overall visual character of the Project in Hollywood.

Please see Response to Comment Nos. 19-2, 19-3, and 19-4 (Los Angeles Conservancy), and Topical Response 4, Cultural Resources, in the Final EIR for a discussion on the compatibility of the Project with the adjacent historic Capitol Records Building.

The comment includes a suggested mitigation measure to reduce the height and increase the massing at lower elevations. It should be noted that the Project Site does not contain a height limitation under current zoning. Also, the Draft EIR analyzed height and massing issues related to surrounding properties in Sections IV.A, Aesthetics, IV.C, Cultural Resources, and IV.G, Land Use Planning. The Draft EIR discloses that the Project allows for a scale and massing of new development that is significantly larger than other structures in the immediately surrounding area. To maintain certain view corridors, certain height and massing criteria are listed in the Development Regulations of the Draft EIR. It should also be noted that the Draft EIR includes Alternative 4, Reduced Height Alternative and assesses the level of impacts associated with project capped at 220-feet high, which is similar to the 220-400-foot height cap proposed by the comment. The decision makers will consider this project alternative in light of the entire record.

Regarding additional photographic studies, the Draft EIR includes several view simulations that relate to the identified view corridors and are considered prominent view locations. See Draft EIR Figures IV.A.1-11 through IV.A.1-14.

#### **Comment No. 9**

##### **Transportation & Traffic:**

Section: IV.K.1s, pages 1-1 to 1-131

The Projects proposes certain transportation and traffic mitigations to offset the anticipated significant increase in traffic on adjacent streets. We believe this increase in traffic has been significantly underrepresented in the DEIR. We suggest the following additional mitigations be funded by the Developer.

##### **Suggested Mitigations:**

- Cahuenga/Franklin: Add a right turn lane for northbound traffic.

Argyle/Franklin: In addition to proposed mitigations add a 4<sup>th</sup> north bound lane on Argyle to allow for 2-left turn lanes, one thru lane and one right turn lane. Through traffic from a right lane would be significantly hampered by cars turning right being stopped by pedestrian traffic crossing Franklin. Further, representatives of the Hollywood Hills communities should be included in all conversations regarding traffic mitigations to intersections immediately adjacent to their communities.

##### **Additional mitigations suggestions:**



- 1) Synchronization of traffic signal light at Franklin and Argyle with the traffic calming light on the 101 Northbound onramp at Franklin and Argyle
  - 2) Extending the 101 Northbound onramp at Franklin and Argyle to stack more northbound cars trying to enter the freeway at peak traffic hours
  - 3) Eliminate the U-Turn onto the 101 Northbound onramp at Franklin and Argyle as you drive east on Franklin to the intersection of Franklin and Argyle
  - 4) Widen Franklin eastbound under the Vine Street off ramp as you travel eastbound to the Franklin and Argyle intersection so there room for more cars to stack in the left turn lane. The two straight eastbound lanes essentially become one eastbound lane at peak traffic hours as too many cars queue for the left turn lane in the through lane and stop traffic.
  - 5) Signaled traffic light with crosswalk at Franklin and Ivar so that the residential traffic north of Franklin have an alternative intersection to exit onto Franklin (a secondary highway)
- Hollywood/Vine: Left turn signals should be added for all intersection directions.
  - Signals should be added to the intersections of Odin/Cahuenga, Cahuenga Terrace/Cahuenga, Dix/Cahuenga, and Ivar/Franklin.

#### **Response No. 9**

The comment states that this increase in traffic has been significantly underrepresented in the Draft EIR. A manual approach was selected as the most appropriate method to be used for the Traffic Study, and that approach used standard, nationally accepted procedures and was in conformance with the LADOT Traffic Study Policies and Procedures manual. The manual procedures utilized trip generation estimates based on Trip Generation, ITE, 8<sup>TH</sup> Edition, separated the Project into components by land uses, and separately assigned the trips to and from those components. The assignments considered the types of land uses in the surrounding area to which the component's trips would be linked. The Traffic Study was reviewed and approved by LADOT and is detailed in Appendix K.1 of the Draft EIR. Additional analyses were prepared for the Final EIR to support and clarify the conclusions in the Traffic Study and the Draft EIR. Please see Appendices B (Transportation Modeling Procedures and Results), C (Saturday Project Trip Generation, Crain & Associates, January 11, 2013), D (Updated Construction Traffic Impacts Including Individual Intersection Impact Analyses, Crain & Associates, January 15, 2013), E (Final EIR Added Intersection Analysis, Crain & Associates, January 15, 2013), F (Concept Plan and Residential Scenario Traffic Impact Analysis, Crain & Associates, January 15, 2013), G (Site Access Impact and Pedestrian/Bicycle Safety Analysis, Crain & Associates, January 15, 2013), and H (Millennium Hollywood Project Trip Cap and Mitigation Triggers) of the Final EIR for additional traffic information.

The comment also suggests additional mitigation measures. The recommended mitigation measures are not required, do not reduce impacts, or are infeasible as follows:

Cahuenga/Franklin: Add a right turn lane for northbound traffic.	The intersection of Cahuenga Boulevard and Franklin Avenue already has a northbound right-turn lane marked. Additionally, an increase in the number of lanes at this intersection was evaluated, but rejected due to unacceptable associated parking restriction and removal.
Argyle/Franklin: In addition to proposed mitigations add a 4 <sup>th</sup> north bound lane on Argyle to allow for 2-left turn lanes, one thru lane and one right turn lane.	There is insufficient right-of-way and the recommendation does not increase the capacity of the intersection.
Synchronization of traffic signal light at Franklin and Argyle with the traffic calming light on the 101 Northbound onramp at Franklin and Argyle	This measure was discussed in a meeting with Caltrans, but no interest was expressed by Caltrans regarding such a measure.
Extending the 101 Northbound onramp at Franklin and Argyle to stack more northbound cars trying to enter the freeway at peak traffic hours	The capacity constraint for the ramp is the meeting reflecting the main line congestion, rather than the queue area. Further, due to the need for sufficient acceleration prior to the weave section at the end of the ramp, extension of the queue area is not feasible.
Eliminate the U-Turn onto the 101 Northbound onramp at Franklin and Argyle as you drive east on Franklin to the intersection of Franklin and Argyle	The U-turn is designated by Caltrans as a preferred route by the signing they installed directing vehicles to access the Northbound 101 Freeway through making that turn.
Widen Franklin eastbound under the Vine Street off ramp as you travel eastbound to the Franklin and Argyle intersection	Bridge columns obstruct the turn pocket lengthening making this measure infeasible.
Signaled traffic light with crosswalk at Franklin and Ivar	Sufficient pedestrian volumes to warrant a signal have not been demonstrated.
Hollywood/Vine: Left turn signals should be added for all intersection directions.	This would not address Project traffic impacts. The left-turn phases would require signal time and thereby decrease the phase length and capacity for other movements. Signal System Upgrades, the funding or implementation of which is recommended as Mitigation Measure K.1-9 on page IV.K.1-58 of the Draft EIR (and revised to Mitigation Measure K.1-10 to accommodate a new Mitigation Measure K.1-4, as described in Section IV, Corrections and Additions to the Draft EIR of the Final EIR) will increase the capacity for all intersection users.
Signals should be added to the intersections of Odin/Cahuenga, Cahuenga Terrace/Cahuenga, Dix/Cahuenga, and Ivar/Franklin	See Response to Comment No. 3 above. There would not be any significant impacts at these intersections and as such no mitigation measures required. Further, these signals have not been demonstrated to be warranted, and their proximity to signalized intersections would reduce the overall systems ability to efficiently allow for traffic flows.

However, it should be noted that the Project Applicant is working with the Hollywood Dell Civic Association outside of the EIR on requests that will not be included as mitigation measures, but may involve additional traffic-related and other community benefits.

#### **Comment No. 10**

**Open Space:**

**Public Assemblies, Planned Gatherings and Concerts**

II.H., pages 32.

The Project proposes holding concerts and public gatherings in the common plazas with no mention of controls or scheduling.

**Suggested Mitigations:** The number of concerts and scheduled public gatherings at the Project should be limited and coordinated through CD13 Hollywood Boulevard Street Closure Committee.

**Response No. 10**

This comment is similar to Comment No. 16-9 (Hollywood United Neighborhood Council (#2)) in the Final EIR, which asks to limit the number concerts and coordinate all proposed events through CD13 Hollywood Boulevard Street Closure Committee. Otherwise, this comment does not challenge the adequacy of the impact analysis of the Draft EIR, but rather suggests the overall size of concerts to be held at the Project Site. These comments will be forwarded to the decision makers for their consideration and no further response is required.

**Comment No. 11**

**Assessment:**

Open Space – page 794

The DEIR provides an economic trigger for open space funds but does not specifically designate the allocation of those funds. The Franklin Ivar Park is a  $\frac{3}{4}$  acre park under development within .18 miles or 2 blocks north and 1 block east of the Project.

Additionally, the Community Plan Update adopted as a designated open space the Franklin Ivar Park. The creation of the Franklin Ivar Park would provide the establishment of open space linkages, including the “healing” of neighborhoods divided by freeways.

**Suggested Mitigations:**

The recently adopted Hollywood Community Plan included a designation of the Franklin Ivar Park for Open Space. A portion of the funds for Park Acquisition and Development through the “Park and Recreational Site and Facilities Fund” and/or the Quimby Fees should be specifically allocated to the Franklin Ivar Park as it is the closest park (.18 miles – two blocks up and one block over) to the Project.

The specific funds to be allocated to the Franklin Ivar Park include:

- 1) Funds for a fly-over pedestrian bridge from Ivar on the south side of Franklin to the park on the north side of Franklin



- 2) A signaled traffic light at Franklin and Ivar with a pedestrian crosswalk
- 3) Landscaping on the south side of Franklin between Cahuenga and Ivar in a manner compatible with the landscaping in the Park

\$75,000 annual contribution to the Friends of Franklin Ivar Park (501C(3)) for the ongoing maintenance of the Park

**Response No. 11**

According to Section IV.J.4, Public Services - Parks and Recreation, of the Draft EIR, the City imposes Quimby fees and Park and Recreation fees pursuant to LAMC Section 17.12 and LAMC Section 21.10.3, respectively, based on the number of units proposed within a project to help offset potential project and cumulative environmental impacts on parkland.

As noted in the Draft EIR, the Project would comply with the requirements identified in Mitigation Measures J.4-2 and J.4-3 regarding payment of fees for the acquisition and development of park and recreational sites. It should be noted that the fees that are paid would be allocated according to the budget and planning purposes of the Los Angeles Department of Recreation and Parks (LADRP) because use of the fees is pursuant to the LAMC and is determined by the LADRP. The Project Applicant does not determine how the City uses these fees.

This comment is noted and will be provided to the decision makers for consideration.

**Comment No. 12**

**DEIR Compatibility with CRA Redevelopment Plan:**

The DEIR does not adequately discuss the need for the CRA or DLA to review, comment and oversee projects within the Redevelopment Area. As stated on the CRA/LA's website:

Notice: ABx1-26 does not abolish the City's 31 existing Redevelopment Plans, which will continue to be administered by a Designated Local Authority ("DLA") that oversees projects of the former Community Redevelopment Agency of the City of Los Angeles. The land-use authorities granted in the Redevelopment Plans remain effective and will continue to be administered by the DLA starting on February 1, 2012.

Following are the relevant Redevelopment Plan Sections which must be considered:

From the CRA Hollywood Redevelopment Plan Amended May 20, 2003 and Effective July 12, 2003, Ordinance No. 175236:

Section 407.1.4 Development Plans – All development plans (whether public or private) shall be subject to the review and approval by the Agency. All development in the Project area must conform to this Redevelopment Plan.

*The Millennium Project has not been reviewed and approved by the Agency*

Section V. 501 ....No real property in the Project Area shall be subdivided, developed, rehabilitated or otherwise changed after the date of adoption of this Redevelopment Plan, except in conformance with the provisions of this Plan or applicable Designs for Development adopted pursuant to this Plan.

*The DEIR does not address the Project's conformity with applicable Designs for Development*

Section V. 505.2 ....The Agency shall review all new development with this District to ensure that views to and from the Hollywood Hills are, to the extent practical, preserved. This review shall include an examination of the following:

..... The topography in the area and the existing building scale in the immediate vicinity;

The views to and from the Hollywood Hills which will be affected

The development plans including the building massing, orientation, height and bulk

The Project, as described in the DEIR, does not comply with this Section of the Redevelopment Plan as the height of the proposed buildings, by definition, will impact the views to and from the Hollywood Hills and not “preserve” current views.

Section V 506.2.1 Hollywood Boulevard District....The objectives of the District are to: .....2) Assure that new development is sympathetic to and complements the existing scale of development.

As previously stated, the proposed Project is of a magnitude that far exceeds any other buildings developed in the Hollywood Redevelopment area. This Project is uncomplimentary to the existing scale of proposed development in the Hollywood area and is also not sympathetic to existing developments in size, bulk or scale. The Project, as proposed, shows 2 towers roughly 4x's the height of the iconic Capitol Records building, which is immediately adjacent to both Project towers.

Additionally, given the recent revisions to the Hollywood Community Plan, there isn't the ability to develop future buildings to the height, size or scale of this Project as there is neither the aggregate land available to acquire a large enough contiguous parcel develop a similar sized project nor do the height limits in the HCP allow for any commercial or residential structures close to this height. Thus, this Project will be the lone white elephant in the Regional Corridor with nothing complimentary to it.

Please note that Section V 506.2.2 Hollywood Core Transition District...shall be given special consideration due to the low density of the adjacent residential areas. The objective of this District is to provide for a transition in the scale and intensity of development between Regional Center Commercial

uses and residential neighborhoods. The Agency shall review all building permits in this District to ensure that circulation patterns, landscaping, parking and scale of new construction is not detrimental to the adjacent residential neighborhoods. Development guidelines shall be prepared for this District to ensure that new development is compatible with adjacent residential areas.

### **Response No. 12**

First, Sections II, Project Description, and IV.G, Land Use Planning, of the Draft EIR discuss the need for DLA review and approval of the Project. For example, see page II-50 of the Draft EIR. Further, page IV.G-15 of the Land Use Planning section of the Draft EIR states “[g]iven that the City may elect to adopt or continue CRA/LA approval authority through the DLA or through transfer of that authority to the City Planning Department, including adoption and implementation of the Design District Plan, this Draft EIR will set forth the Project’s consistency with CRA/LA plans and design district guidelines, and assume their applicability until such time any action from the City renders the Redevelopment Plan or Design District Plan no longer applicable to the Project Site.”

Second, the Draft EIR sets forth the Project’s consistency with applicable goals and objectives of the Redevelopment Plan on pages IV.G-48 through IV.G-52. For example, the objective to “[a]ssure that new development is sympathetic to and complements the existing scale of development” cited in the comment, is analyzed on page IV.G-50. Further, pages IV.G-52 through IV.G-54 of the Draft EIR analyze the Project’s compatibility with the goals of the Draft Hollywood Boulevard District and Franklin Avenue Design District Urban Design Standards. It is important to note the Draft Design District Urban Design Standards have not been adopted and thus are not enforceable. However, they were analyzed in the Draft EIR to be conservative and to demonstrate the Project’s consistency with the standards.

Please refer to Topical Response 2, Aesthetics, in the Final EIR for additional information regarding views and overall visual character of the Project in Hollywood. Additionally, it should be noted that the Project Site does not contain a height limitation under current zoning. Also, the Draft EIR analyzed height and massing issues related to surrounding properties in Sections IV.A, Aesthetics, IV.C, Cultural Resources, and IV.G, Land Use Planning. The Draft EIR discloses that the Project allows for a scale and massing of new development that is significantly larger than other structures in the immediately surrounding area. To maintain certain view corridors, certain height and massing criteria are listed in the Development Regulations of the Draft EIR.

As discussed in the Draft EIR, the Project would implement a modern mixed-use development consisting of modern, yet architecturally varied, urban structures that are consistent in use and character to the surrounding urban aesthetics environment. As illustrated in the urban silhouette figures in the Aesthetics Technical Report, the Project would become a prominent visual feature in the vicinity due to its proposed maximum heights. Also, the zoning on the Project Site allows for tall urban structures and the surrounding urban vicinity is populated with existing mid-rise towers and a variety of structures at different heights that present an erratic urban skyline.



With regards to Capitol Records Building mentioned by the commenter, Section IV.C, Cultural Resources of the Draft EIR, shows that the mitigation measures included in the Draft EIR will mitigate potential impacts to historic resources to a less-than-significant level under all development scenarios. These conclusions are supported by substantial evidence in the form of the Historic Resources Report circulated as an appendix to the Draft EIR.

**Comment No. 13**

Finally, no consideration has been given to the Franklin Transition Corridor and ensuring that the development is compatible with adjacent residential areas. These residential areas include the Hollywood Dell, Argyle, Outpost, Whitley Heights, Beachwood Canyon, Hollywoodland, The Oaks, Lake Hollywood, Los Feliz, and the residential community directly east on Yucca and Carlos between Argyle and Gower.

**Response No. 13**

Pages IV.G-52 through IV.G-54 of the Land Use and Planning section of the Draft EIR analyze the Project's compatibility with the goals of the Draft Hollywood Boulevard District and Franklin Avenue Design District Urban Design Standards. It is important to note the Draft Design District Urban Design Standards have not been adopted and thus are not enforceable. However, they were analyzed in the Draft EIR to be conservative and to demonstrate the Project's consistency with the standards.

Further, the Project's compatibility with surrounding land uses is analyzed on pages IV.G-61 through IV.G-62 of the Land Use section of the Draft EIR.

**Comment No. 14**

The HDCA Board of Directors voted unanimously to accept and approve this letters comments and recommendations.

**Response No. 14**

The comment is a conclusion statement and does not state a specific concern or question regarding the adequacy of the Draft EIR in identifying and analyzing the environmental impacts of the Project. As such, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Attachment 4



11990 West San Vicente Boulevard, Suite 200  
Los Angeles, CA 90049  
Phone 310-469-6700 Fax 310-806-9801

September 8, 2011

Captain Mark R. Woolf  
**LOS ANGELES FIRE DEPARTMENT**  
200 N. Main Street, Suite 1800  
Los Angeles, CA 90012

Sent via email: [mark.woolf@lacity.org](mailto:mark.woolf@lacity.org)

**RE: Millennium Hollywood Project - Request for Fire Services Information**

Dear Captain Woolf,

**CAJA Environmental Services** is preparing an Environmental Impact Report ("EIR") for the Millennium Hollywood Project (the "Project") in accordance with the California Environmental Quality Act ("CEQA"). Potential impacts to public services are an important element of our environmental review. The EIR will identify potential impacts to the Los Angeles Fire Department ("LAFD") that may occur as a result of the Project. The EIR will also propose mitigation measures that may reduce or eliminate any identified public service impacts. Obtaining current information from the LAFD is necessary for the EIR. Accordingly, we respectfully request that LAFD review project information below and answer the questions presented. We greatly appreciate your assistance.

**Project Location**

The Project is located within the Hollywood Community Planning Area of the City of Los Angeles and consists of eight parcels on approximately 4.47 acres of land (the "Site"). The Site is generally bounded by Yucca Street, Ivar Avenue, Argyle Avenue and Hollywood Boulevard and bisected by Vine Street, which thereby creates two development sub-areas referred to as the West Site and the East Site. Please refer to Figures 1 and 2. The following addresses are associated with the Project:

1720, 1722, 1724, 1730, 1740, 1745, 1749, 1750, 1751, 1753, 1760, 1762, 1764, 1766, 1768, 1770 N. Vine Street

6236, 6270, 6334 W. Yucca Street

1733, 1741 N. Argyle Avenue

1746, 1748, 1754, 1760, 1764 N. Ivar Avenue

**Project Description**

The Project would involve the construction and operation of a new mixed-use and transit-oriented development anchored by the historic Capitol Records Tower building that would transform a series of under-utilized parcels into a pedestrian-friendly development. As described below, the Project is presented as a development Concept Plan (the "Concept Plan") that incorporates a flexible Land Use Equivalency Program (the "Equivalency Program"), which allows for varying development scenarios.

---



### *Existing Uses*

The East Site currently contains the 13-story Capitol Records building, along with its ancillary studio recording uses, and the existing two-story Gogerty Building (the “Capitol Records Complex”). The Gogerty Building was renovated in 2003, leaving portions of the interior and the façade from the original circa 1930 construction, while completely demolishing and remodeling the remainder of the structure. The remainder of the East Site contains surface parking lots and temporary structures, including a partially enclosed garbage area and a parking lot attendant kiosk. There are fewer than 50 ornamental trees on the East Site.

The West Site currently contains a one-story approximately 1,800 square-foot Enterprise Rent-A-Car structure and adjoining surface parking lot. The Enterprise Rent-A-Car structure fronts Yucca Street near the northwest corner of the West Site. There is no vegetation on the West Site, as the remainder of the Site consists of surface parking lots.

### *Proposed Uses*

The historic Capitol Records Complex is within the boundaries of the Site and will be preserved and maintained. Including the retention of the Capitol Records Complex, which includes 114,303 square feet of office space, the Concept Plan includes up to 1,166,970 net square feet of total floor area, resulting in approximately 1,052,667 square feet of new construction. The Concept Plan would also include the demolition and/or removal of the Enterprise Rent-a-Car structures on the West Site (approximately 1,800 square feet). Listed below are the details of the Concept Plan.

**Table 1**  
**Millennium Hollywood Development**  
**Proposed Concept Plan Land Use and Square Footage Summary**

<b>Land Use</b>	<b>Total Units/Rooms</b>	<b>Proposed Net Developed Floor Area (sf)<sup>a</sup></b>	<b>Proposed Gross Construction (GSF)<sup>b</sup></b>
Residential Units	492	679,562	781,496
Hotel (including conference and lobby)	200	151,958	174,752
Office	--	214,774 <sup>c</sup>	115,542 <sup>d</sup>
Commercial Retail		11,512	13,239
Food & Beverage	--	33,948	39,040
Fitness/Sports Club	--	35,154	40,427
<b>Subtotal</b>		<b>1,126,908</b>	<b>1,164,496</b>
Structured Parking		NA	656,460
<b>TOTAL</b>		<b>1,126,908</b>	<b>1,820,956</b>
<sup>a</sup> The total proposed development will include up to 1,166,970 square feet of floor area based on a 6:1 FAR average across the entire project site. The exact square footage for each land use is subject to change in accordance with the proposed Land Use Equivalency Program. <sup>b</sup> GSF=Gross Square Feet. For purposes of analyzing the volume of new construction, the total GSF was assumes to be 15% above the “Net Developed Floor Area” as defined by the LAMC. <sup>c</sup> The total office square footage included under the “Net Developed Floor Area” column includes the existing 114,303 sf of office space occupied by the Capitol Records Complex which will be retained. <sup>d</sup> The amount of Gross Square Feet of office space excludes the existing Capitol Records Complex, as it is not new construction. Source: Millennium Hollywood, 2011.			

### *Land Use Equivalency Program*

The Equivalency Program would provide development flexibility so the Project could respond to changing community needs and market conditions over the build-out duration of the development. Within a pre-established framework, certain land uses would be allowed to be exchanged for certain other permitted land uses so long as the limitations of the Equivalency Program are satisfied and do not exceed the anticipated upper levels of environmental impacts. While it is the intent of the Equivalency Program to allow flexibility with respect to the buildout of the Project, there are a number of controlling factors that must be taken into consideration in order to ensure that the EIR has been properly analyzed and discloses the full range of environmental impacts that could occur.

As a result, this letter requests LAFD services information based on the Proposed Commercial Scenario listed below, which we have identified as the development plan that could have the maximum potential impacts on fire services.

**Table 2**  
**Millennium Hollywood Development**  
**Proposed Commercial Scenario Under the Land Use Equivalency Scenario**

Land Use	Total Units/Rooms	Proposed Net Developed Floor Area (sf) <sup>a</sup>	Proposed Gross Construction (GSF) <sup>b</sup>
Residential Units	461	507,100	583,165
Hotel (including conference and lobby)	254	190,500	219,075
Office	--	264,303 <sup>c</sup>	172,500 <sup>d</sup>
Commercial Retail		100,000	115,000
Food & Beverage	--	25,000	28,750
Fitness/Sports Club	--	80,000	92,000
<b>Subtotal</b>		<b>1,166,903</b>	<b>1,210,490</b>
Structured Parking		NA	794,700
<b>TOTAL</b>		<b>1,166,903</b>	<b>2,005,190</b>
<sup>a</sup> The total proposed development could include up to 1,166,970 square feet of floor area based on a 6:1 FAR average across the entire project site. <sup>b</sup> GSF=Gross Square Feet. For purposes of analyzing the volume of new construction, the total GSF was assumed to be 15% above the "Net Developed Floor Area" as defined by the LAMC. <sup>c</sup> The total office square footage included under the "Net Developed Floor Area" column includes the existing 114,303 sf of office space occupied by the Capitol Records Complex which will be retained as part of the Project. <sup>d</sup> The amount of Gross Square Feet of office space excludes the existing Capitol Records Complex, as it is not new construction. Source: Millennium Hollywood, 2011.			

### **Questions**

1. Which fire station(s) would serve the proposed project? For each station, please provide:
    - a. The numbers and rank of staff
    - b. The equipment types (engines, trucks, rescue ambulances, etc.)
    - c. The distance and estimated response times to the project location
-

- d. The call types and volumes within a given time frame (month, year-to-date, etc.)
  - e. Any other unique or distinct function (USAR, helicopters, boats, etc)
- 2. What is the current average response within the LAFD system? What is the desired response time? Do the fire stations meet the desired response times of the LAFD?
  - 3. What is the current average types and volume of calls within the LAFD system? Are the fire stations that would serve the project above or below average for calls?

Thank you for your assistance, which will help us ensure that our analysis of the proposed project's impacts on fire service is accurate and complete. In order to ensure a timely completion of our analysis, please provide your response (via mail, email, or fax) no later than October 8, 2011.

Sincerely,

Seth Wulkan  
Assistant Environmental Planner

**CAJA Environmental Services, LLC**  
11990 West San Vicente Blvd, Suite 200  
Los Angeles, CA 90049  
[Seth@ceqa-nepa.com](mailto:Seth@ceqa-nepa.com)  
310-469-6704 (direct)  
310-469-6700 (office)  
310-806-9801 (fax)

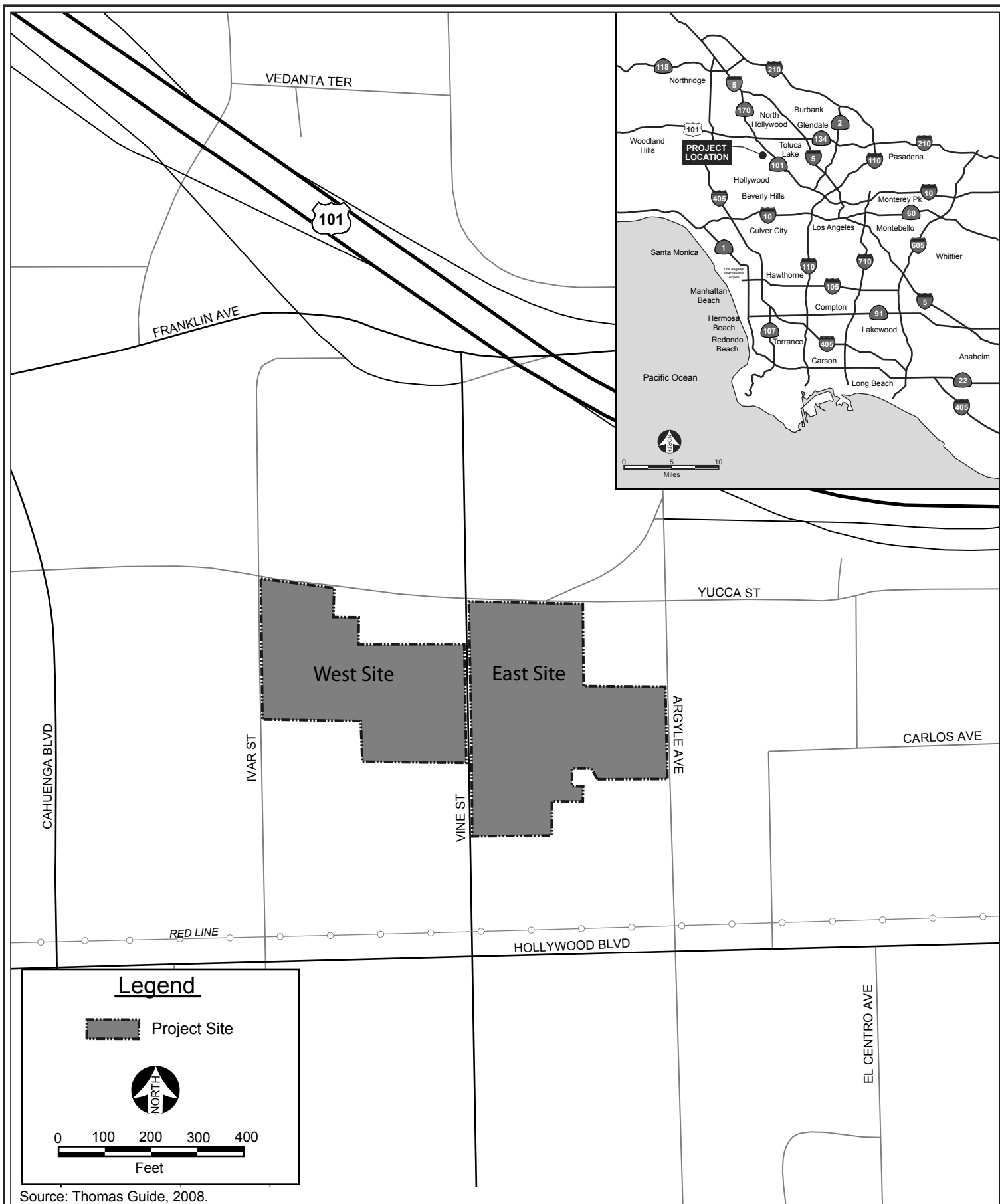
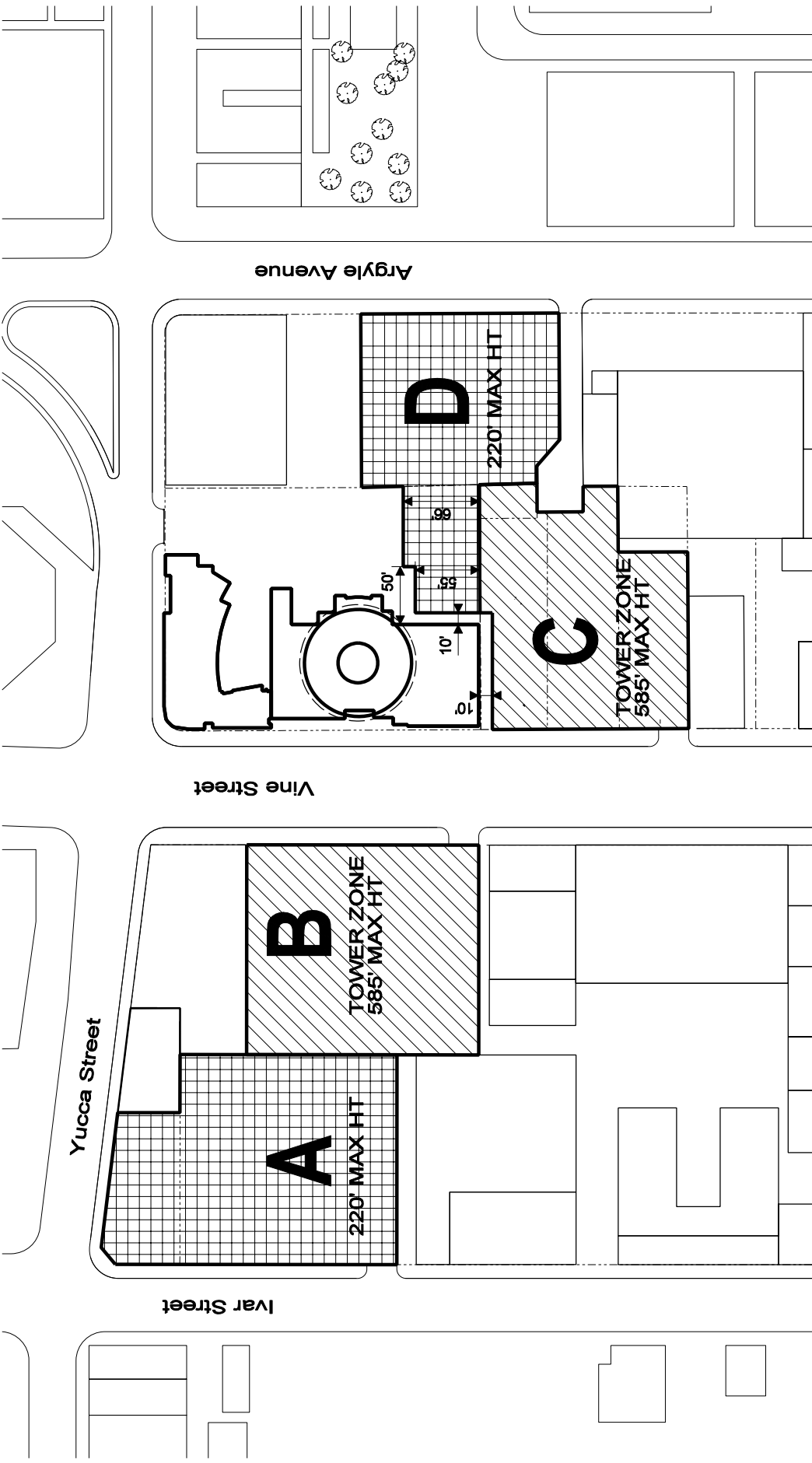


Figure 1  
Regional and Project Vicinity Map





COPYRIGHT © 2007 HANDEL ARCHITECTS, LLP

**Millennium  
Hollywood Towers**  
L O O A N G I L L O C A

HANDEL ARCHITECTS LLP. &  
ROSCHEN VAN CLEVE ARCHITECTS

Note: Plot Plan is conceptual and subject to change based on the proposed land use equivalency program.



**Figure 2**  
Millennium Hollywood Site Plan

**Response to Comment No. 09-72**

According to a written correspondence with the LAFD that is cited on page IV.J.1-11 and attached as Appendix J.1 of the Draft EIR, the required fire flow for the Project would be 6,000 to 9,000 gpm from four to six hydrants flowing simultaneously. As such, the Project is properly analyzed based on information directly from the Fire Department and was not arbitrarily assigned to an inappropriate land use category. Further, if the Project were to be categorized as Industrial/Commercial per Table 9-C, a response distance of 1 mile for an engine and 1.5 miles for a truck company would be required. The Project would also satisfy those requirements as the Project Site is 0.7 miles from LAFD Station No. 27, which has both a truck and engine company and is 0.8 miles from Station No. 82, which has an engine company.

Further, as discussed in Section IV.J.1, Public Services-Fire Protection, of the Draft EIR, the Project would replace the existing on-site water system (which now currently serves above grade parking and storage kiosk areas) with new water lines configured in a system that would be maintained and supplied by the LADWP via connection points to an existing LADWP water main. The Water Operations Division of the LADWP would perform a detailed fire flow study at the time of permit review in order to ascertain whether further on-site water system or other site-specific improvements would be necessary. Hydrants, water lines, and water tanks would be installed per Fire Code requirements for the Project. In addition, the Project Applicant would be required to submit the proposed plot plan for the Project to the LAFD for review for compliance with applicable Fire Code, California Fire Code, City Building Code, and National Fire Protection Association standards, thereby further ensuring that the Project would not create any undue fire hazard.

**Comment No. 09-73****2. The DEIR Completely Fails to Properly Analyze Fire Department Response Times.**

The DEIR contains a cursory, and inaccurate, analysis of average Fire Department response times. The DEIR states that the Fire Department "prefers" to arrive on the scene of *all* types of emergencies (fire and/or medical) within 5 minutes in 90 percent of cases, and to have an advanced life support unit arrive to all high risk medical incidents within 8 minutes in 90 percent of cases. (DEIR, p. IV.J.1-4.) The DEIR then reports that average response times for Station Nos. 27 and 82 are 4:43 and 4:18, respectively, while the average response time for the slightly more distant Station No. 41 is 5:09. (DEIR, Table IV.J.1-3, p. IV.J.1-7.) Given the fact that two of the three discussed fire stations appear to meet the Fire Department's response time goal of 5 minutes, the DEIR concludes that the impact of the Project upon emergency response times would be less than significant.

However, the DEIR's stated response times, which were reported by the Fire Department to the Applicant's CEQA consultant, cover responses to *structure fires only*, and do not include response times to medical emergencies. This presents an inaccurate picture of what the true Fire Department response times are today, and what they might be in the future if the Project is constructed. In addition, the DEIR

itself contains a reference to a broader problem with its analysis of Fire Department response times- in May 2012, the City Controller issued an audit of the Fire Department's claimed response times, and found that the Department had produced inaccurate response time data for a number of years, making it impossible to determine proper emergency response times, as measured against national standards. (City Controller, *Analysis of the Los Angeles Fire Department's Response Times*, May 18, 2012, p. 3.) Furthermore, this audit stated that, to the extent that the Department's data could be properly analyzed, it showed that medical response times had been increasing. (*Id*)

The DEIR itself refers to the Controller's audit of Fire Department response times- in a footnote, the audit's finding that medical response times had increased is acknowledged. But the footnote goes on to state: "Nevertheless, this audit is presented for informational purposes only, and the written response from the LAFD (dated December 14, 2011) regarding response times is used in the analysis presented in this DEIR." (DEIR, p. IV.J.1-4, fn. 7.) This is completely inadequate analysis- the Controller's audit noted that the Fire Department had been keeping inaccurate response time data for years, which means that any "written response" issued by the Department *prior* to the audit is extremely suspect. Furthermore, even if the response time data provided by the Fire Department could be treated as accurate, it would only be accurate for responses to *structure fires only*, and not for medical responses. And, as the audit demonstrates, recent medical response times have been increasing. The DEIR completely fails to provide any context or analysis of this issue, and this cannot be allowed to occur- any proposal to add over one million square feet of residential and commercial uses in the heart of Hollywood will have a dramatic impact on the demand for fire and medical services. If the DEIR cannot provide an accurate analysis of the Fire Department's ability to meet current demand, there is no substantial evidence for its assertion that the Project will not result in any new significant impacts. This analysis must be completely redone to reflect the current state of affairs regarding the City's Fire Department.

#### **Response to Comment No. 09-73**

The LAFD provided a written response on December 14, 2011, for the Draft EIR for the Millennium Hollywood Project. That response, by Captain Mark Woolf, included information about medical emergency services, stated, in part: "The response times to the proposed site would be within 5 minutes from Fire Station 27. These response times meet the desired response distance standards of the LAFD." This response time is not limited to structure fires and as such medical response times are adequate as well. As noted in the letter, Fire Station 27 also houses a Paramedic Ambulance and a Basic Life Support Ambulance. See Appendix J.1 of the Draft EIR.

The current challenges facing the City in light of recent budget cuts are complex and continue to evolve. City officials are committed to developing interim solutions to ensure that the LAFD is able to meet mandated performance standards set forth in the Los Angeles Fire Code. CEQA does not shift financial responsibility for the provision of adequate fire and emergency response services to the Project Applicant. The City has a constitutional obligation to provide adequate fire protection services. As such, the City must continue to perform its obligations. However, it should also be noted, as discussed in greater detail in Section IV.J.1 Public Services-Fire Protection of the Draft EIR, that the Project would generate a

significant amount of General Fund revenues to the City in the form of sales and property taxes. The City could use these added revenues to help offset the LAFD budget cuts, although the ultimate use of these revenues cannot be predicted with certainty at this time.

As discussed in Section IV.J.1 Public Services-Fire Protection of the Draft EIR, response times are not the only factor involved in evaluating impacts to fire protection services. For example, the Project is consistent with Fire Code Section 57.09.06, regarding distance to fire stations. As shown in Table IV.J.1-1, Existing Fire Stations Serving the Project Site, the Project Site is 0.7 miles from LAFD Fire Station 27, which houses a truck company and an engine company. The Project Site is 0.8 miles from LAFD Fire Station 82, which houses an engine company. That is within a 1.5-mile radius and is thereby consistent with Fire Code Section 57.09.06.

The Project also incorporates a number of mitigation measures designed to ensure that impacts related to fire protection services would be less than significant. These measures include submittal of the proposed plot plan for the Project to the LAFD for review for compliance with applicable Fire Code, California Fire Code, City Building Code, and National Fire Protection Association standards and submittal of an emergency response plan for approval by the LAFD that would include but not be limited to the following: mapping of emergency exits, evacuation routes for vehicles and pedestrians, location of nearest hospitals, and fire departments. The mitigation measures would apply to medical emergencies as well. (See Mitigation Measures J.1-1 through J.1-7 on page IV.J.1-18 of the Draft EIR for a complete list of fire protection services mitigation measures). As such, the Draft EIR adequately analyses the Project's impacts to fire protection services.

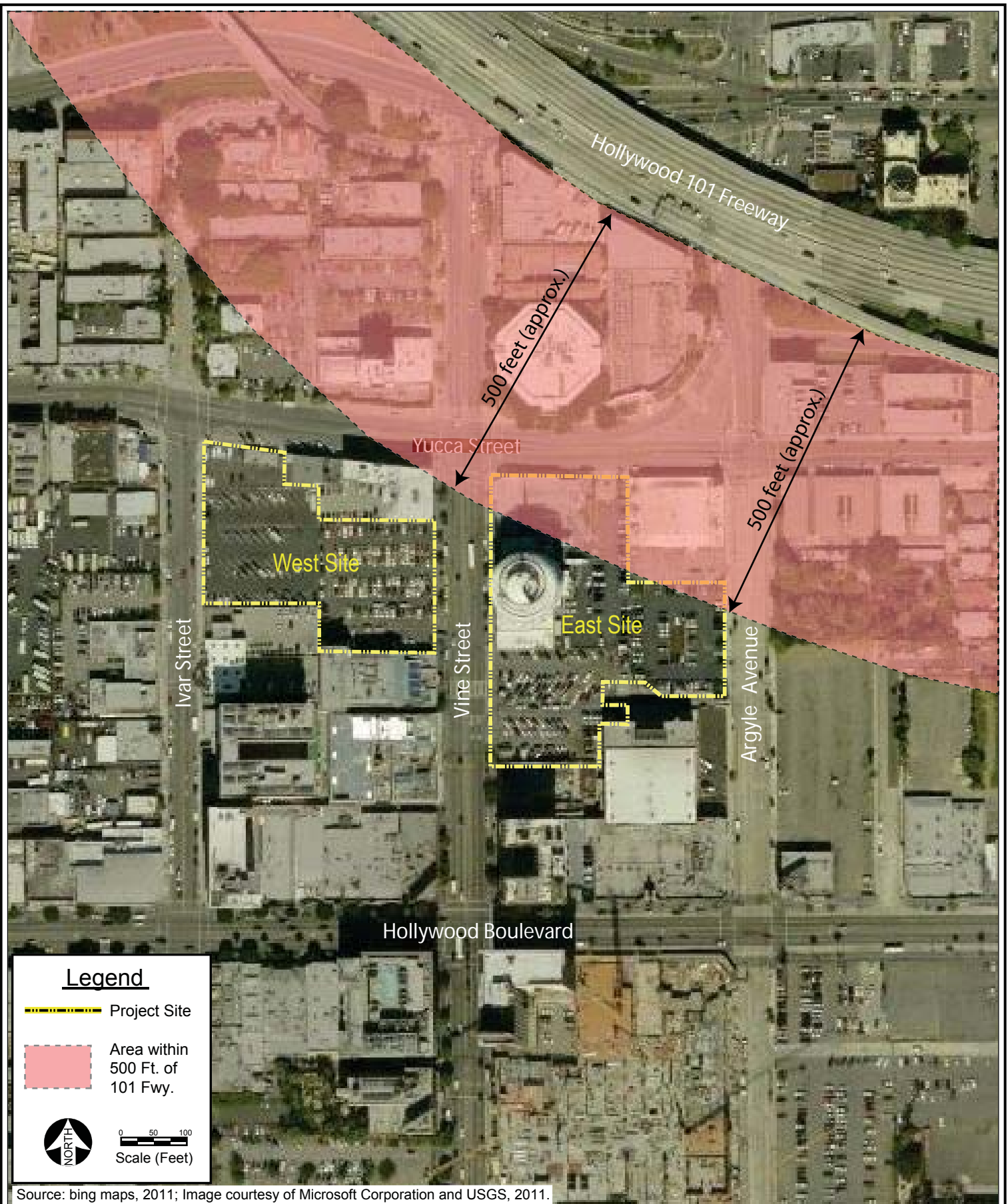
**Comment No. 09-74**

3. The DEIR's Analysis of Police Services Impacts Fails to Acknowledge the Project's Alcohol-Serving and Entertainment Uses.

The DEIR briefly discusses the Project's potential impacts on existing police protection services, proposes minimal mitigation measures to be implemented during the construction and operation of the Project, and concludes that the Project would not create any significant environmental impacts. However, this analysis fails to accurately portray the uses proposed for the Project, some of which will produce additional impacts which must be analyzed in the DEIR. Specifically, the DEIR's Project Description notes that the Applicant will be seeking conditional use approvals for on-site consumption of alcohol *and* live entertainment at the Project, including a night-club. However, despite being included in the Project Description, these proposed uses are not discussed anywhere else in the DEIR. Moreover, given the Project's proposed equivalency program, there is no way of knowing if one bar/restaurant will be developed, or if ten will be proposed. The proposed live entertainment use could include a small jazz club, or a sprawling nightclub with events seven nights a week. Regardless of the specific mix of uses that the Applicant eventually decides upon, alcohol and entertainment uses will have a direct impact on police services in the community, and without providing more information and analysis regarding these



Attachment 5



**Figure 3**  
**Approximate Limits of the Project Site**  
**Within 500 Feet of the 101-Freeway**

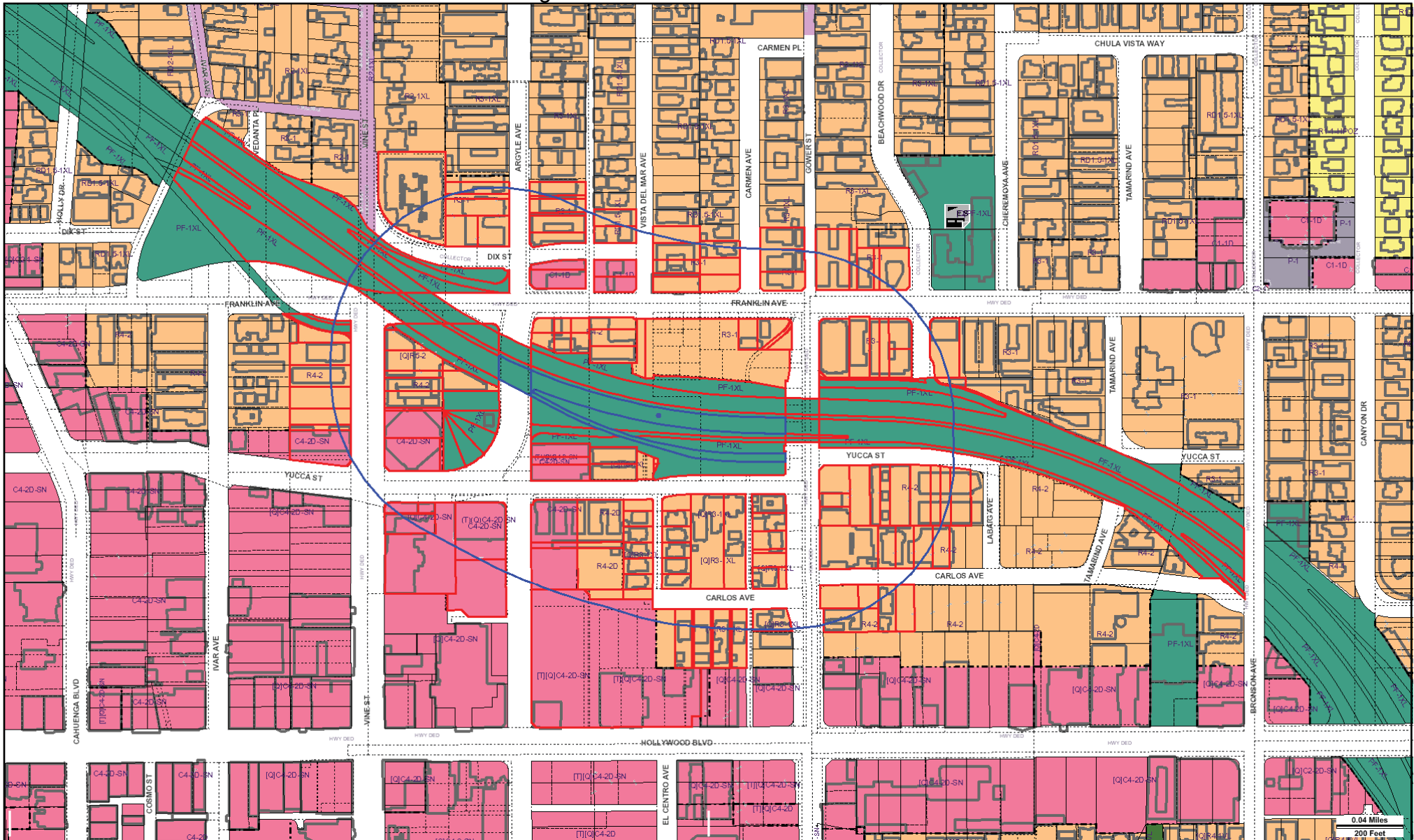


Address: undefined  
APN: None  
PIN #: 150A187 644

Tract: None  
Block: None  
Lot: None  
Arb: None

Zoning: PF-1XL  
General Plan: Public Facilities Freeway





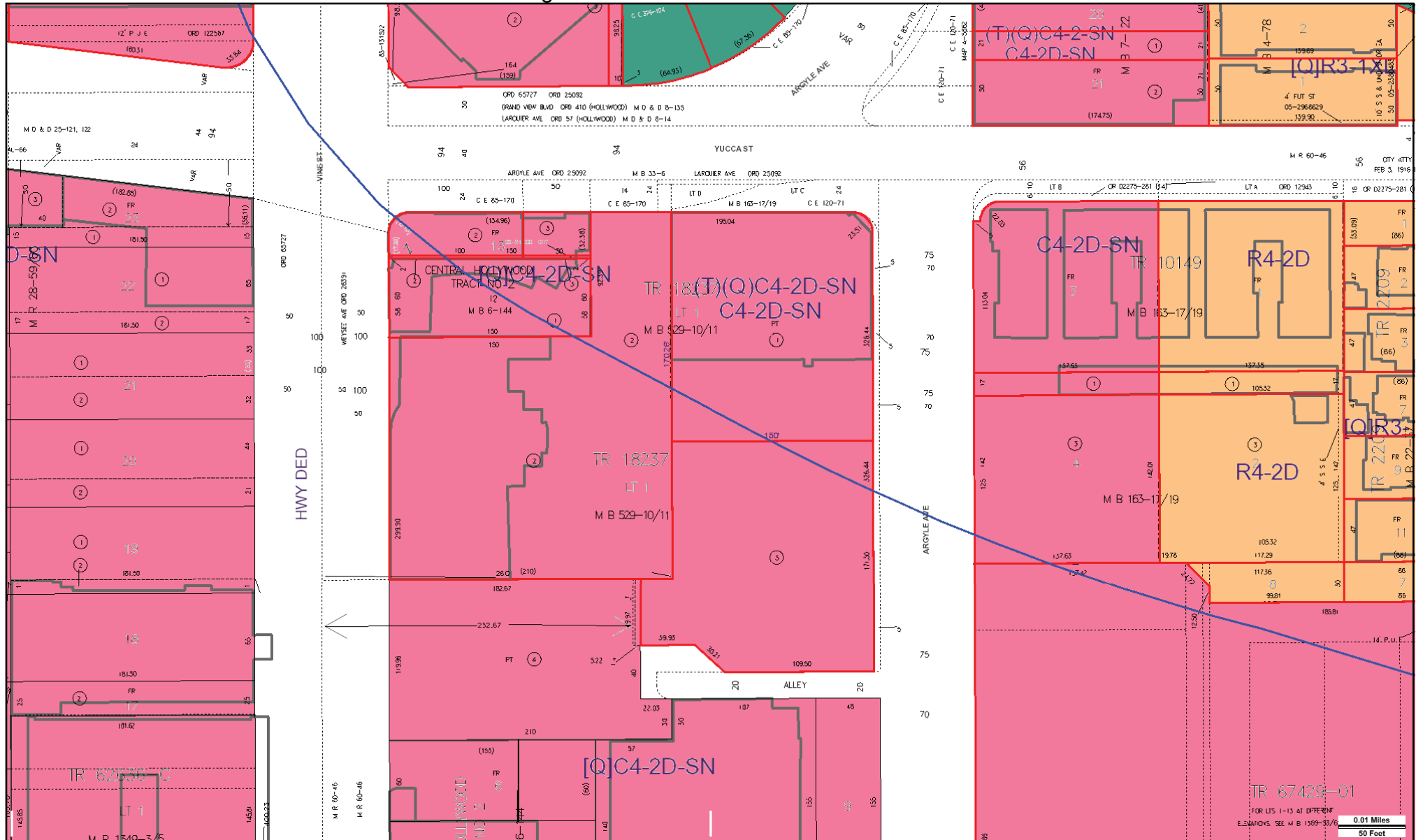
Address: undefined  
APN: None  
PIN #: 150A189 354

Tract: None  
Block: None  
Lot: None  
Arb: None

Zoning: PF-1XL  
General Plan: Public Facilities Freeway







Address: undefined  
APN: None  
PIN #: 150A189 354

Tract: None  
Block: None  
Lot: None  
Arb: None

Zoning: PF-1XL  
General Plan: Public Facilities Freeway





Address: undefined  
APN: None  
PIN #: 150A189 379

Tract: None  
Block: None  
Lot: None  
Arb: None

Zoning: PF-1XL  
General Plan: Public Facilities Freeway



Attachment 6

# **AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE**



**April 2005**

California Environmental Protection Agency  
California Air Resources Board





## **Freeways and High Traffic Roads**

Air pollution studies indicate that living close to high traffic and the associated emissions may lead to adverse health effects beyond those associated with regional air pollution in urban areas. Many of these epidemiological studies have focused on children. A number of studies identify an association between adverse non-cancer health effects and living or attending school near heavily traveled roadways (see findings below). These studies have reported associations between residential proximity to high traffic roadways and a variety of respiratory symptoms, asthma exacerbations, and decreases in lung function in children.

One such study that found an association between traffic and respiratory symptoms in children was conducted in the San Francisco Bay Area. Measurements of traffic-related pollutants showed concentrations within 300 meters (approximately 1,000 feet) downwind of freeways were higher than regional values. Most other studies have assessed exposure based on proximity factors such as distance to freeways or traffic density.

These studies linking traffic emissions with health impacts build on a wealth of data on the adverse health effects of ambient air pollution. The data on the effects of proximity to traffic-related emissions provides additional information that can be used in land use siting and regulatory actions by air agencies. The key observation in these studies is that close proximity increases both exposure and the potential for adverse health effects. Other effects associated with traffic emissions include premature death in elderly individuals with heart disease.

### **Key Health Findings**

- Reduced lung function in children was associated with traffic density, especially trucks, within 1,000 feet and the association was strongest within 300 feet. (Brunekreef, 1997)
- Increased asthma hospitalizations were associated with living within 650 feet of heavy traffic and heavy truck volume. (Lin, 2000)
- Asthma symptoms increased with proximity to roadways and the risk was greatest within 300 feet. (Venn, 2001)
- Asthma and bronchitis symptoms in children were associated with proximity to high traffic in a San Francisco Bay Area community with good overall regional air quality. (Kim, 2004)
- A San Diego study found increased medical visits in children living within 550 feet of heavy traffic. (English, 1999)

In these and other proximity studies, the distance from the roadway and truck traffic densities were key factors affecting the strength of the association with adverse health effects. In the above health studies, the association of traffic-related emissions with adverse health effects was seen within 1,000 feet and was

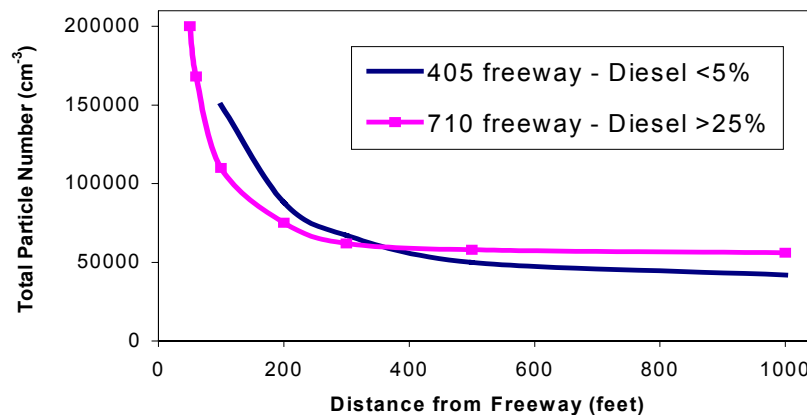
strongest within 300 feet. This demonstrates that the adverse effects diminished with distance.

In addition to the respiratory health effects in children, proximity to freeways increases potential cancer risk and contributes to total particulate matter exposure. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risk from motor vehicle traffic – diesel particulate matter (diesel PM) from trucks, and benzene and 1,3-butadiene from passenger vehicles. On a typical urban freeway (truck traffic of 10,000-20,000/day), diesel PM represents about 70 percent of the potential cancer risk from the vehicle traffic. Diesel particulate emissions are also of special concern because health studies show an association between particulate matter and premature mortality in those with existing cardiovascular disease.

#### Distance Related Findings

A southern California study (Zhu, 2002) showed measured concentrations of vehicle-related pollutants, including ultra-fine particles, decreased dramatically within approximately 300 feet of the 710 and 405 freeways. Another study looked at the validity of using distance from a roadway as a measure of exposure

**Figure 1-1**  
**Decrease In Concentration of Freeway Diesel PM Emissions**  
**With Distance**



to traffic related air pollution (Knape, 1999). This study showed that concentrations of traffic related pollutants declined with distance from the road, primarily in the first 500 feet.

These findings are consistent with air quality modeling and risk analyses done by ARB staff that show an estimated range of potential cancer risk that decreases with distance from freeways. The estimated risk varies with the local meteorology, including wind pattern. As an example, at 300 feet downwind from a freeway (Interstate 80) with truck traffic of 10,000 trucks per day, the potential cancer risk was as high as 100 in one million (ARB Roseville Rail Yard Study). The cancer health risk at 300 feet on the upwind side of the freeway was much

less. The risk at that distance for other freeways will vary based on local conditions – it may be higher or lower. However, in all these analyses the relative exposure and health risk dropped substantially within the first 300 feet. This phenomenon is illustrated in Figure 1-1.

State law restricts the siting of new schools within 500 feet of a freeway, urban roadways with 100,000 vehicles/day, or rural roadways with 50,000 vehicles with some exceptions.<sup>2</sup> However, no such requirements apply to the siting of residences, day care centers, playgrounds, or medical facilities. The available data show that exposure is greatly reduced at approximately 300 feet. In the traffic-related studies the additional health risk attributable to the proximity effect was strongest within 1,000 feet.

The combination of the children's health studies and the distance related findings suggests that it is important to avoid exposing children to elevated air pollution levels immediately downwind of freeways and high traffic roadways. These studies suggest a substantial benefit to a 500-foot separation.

The impact of traffic emissions is on a gradient that at some point becomes indistinguishable from the regional air pollution problem. As air agencies work to reduce the underlying regional health risk from diesel PM and other pollutants, the impact of proximity will also be reduced. In the meantime, as a preventative measure, we hope to avoid exposing more children and other vulnerable individuals to the highest concentrations of traffic-related emissions.

### Recommendation

- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.

### References

- Brunekreef, B. et al. "Air pollution from truck traffic and lung function in children living near motorways." Epidemiology. 1997; 8:298-303
- Lin, S. et al. "Childhood asthma hospitalization and residential exposure to state route traffic." Environ Res. 2002;88:73-81
- Venn, et al. "Living near a main road and the risk of wheezing illness in children." American Journal of Respiratory and Critical Care Medicine. 2001; Vol.164, pp. 2177-2180
- Kim, J. et al. "Traffic-related air pollution and respiratory health: East Bay Children's Respiratory Health Study." American Journal of Respiratory and Critical Care Medicine 2004; Vol. 170. pp. 520-526

---

<sup>2</sup> Section 17213 of the California Education Code and section 21151.8 of the California Public Resources Code. See also Appendix E for a description of special processes that apply to school siting.

Attachment 7



**LETTER NO. 03 - CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)**

Dianna Watson  
IGR/CEQA Branch Chief  
District 7, Regional Planning  
100 Main Street, MS#16, Los Angeles, CA 90012-3606

December 10, 2012

**Comment No. 03-1**

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The proposed project would include the construction of approximately 1 million square feet of developed floor area. The historic Capitol Records Building and the Gogerty Building would remain within the project site. The Project would demolish and/or remove the existing rental car facility. The project would develop a mix of land uses including 461 residential dwelling units, 254 luxury hotel rooms, 264,303 square feet of office space, 25,000 square feet of restaurant space, 80,000 square feet of health and fitness club space, and 100,000 square feet of retail space.

Below are Caltrans' major concerns with the Draft Environmental Impact Report (DEIR) for the Millennium Hollywood Project:

**Response to Comment No. 03-1**

The comment is an introduction and as such, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration. See Response to Comment Nos. 03-2 to 03-15 (Caltrans) for further detail.

**Comment No. 03-2**

1. Caltrans submitted a comment letter dated May 18, 2011, on the Notice of Preparation (NOP) and met with the developer's consultant on September 15, 2011, to discuss Caltrans' concerns about the project's impact on the US-101 freeway and on/off ramps within the 5 miles radius of the project site. The traffic consultant acknowledged Caltrans' concerns and it was understood by both parties that the traffic procedures for analyzing impacts to the state highway system would follow standard statewide procedures outlined in Caltrans Traffic Study Guide. However, the June 2012 Traffic Impact Study (TIS), which is the basis for the traffic impact discussion in the DEIR, did not follow those procedures and does not analyze the impacts to the state highway system.

**Response to Comment No. 03-2**

As cited in the comment, Caltrans was consulted during the NOP process. The concerns and recommendation of Caltrans were considered during the transportation analysis scoping process, including the use of the Caltrans draft procedures. Also taken into account were the concerns and recommendations of other NOP commenters, as well as the City of Los Angeles Department of Transportation (LADOT) policies and the past analyses conducted for similar projects by the City of Los Angeles (the lead agency). The comment states that the Traffic Study does not analyze the impacts to the state highway system; however, the Traffic Study analyzed key freeway ramps utilizing LADOT's signalized intersection LOS methodology and of freeway mainline segments utilizing the Congestion Management Program (CMP) recommended methodology. The Caltrans Traffic Study Guide was consulted in the preparation of the Traffic Study but it does not provide a definition of thresholds of significance; therefore, the CMP methodology was used because it defines thresholds of significance and is the standard methodology used by the lead agency for all traffic studies within the City of Los Angeles. The CMP, a state-mandated program, includes procedures and thresholds that provide a consistent evaluation of projects to address the potential impacts on the regional transportation system.

**Comment No. 03-3**

2. There was no analysis performed for any of the freeway elements. The TIS only used the Los Angeles County Congestion Management Program (CMP) criteria. However, the CMP fails to provide adequate information as to direct and cumulative impacts to the freeway mainline and ramps, per CEQA.

**Response to Comment No. 03-3**

The CMP criteria provide an initial review to determine if significant Project impacts may occur and in turn require further study. The initial review in the Traffic Study concluded that Project impacts would be less than significant, so subsequent analyses were determined to not be needed. Support for this conclusion is provided by the recently certified Hollywood Community Plan Update Environmental Impact Report which was also determined not to have a significant impact on the freeway system.

To address Caltrans' concerns, an additional model analysis was conducted. The analysis used the current Southern California Association of Governments (SCAG) model for year 2035, with LADOT refinements, for the initial future projections (the Base Model). See Appendix B, Transportation Modeling Procedures and Results, attached hereto for the model procedures and results. The model demonstrated that the Project will not result in the addition of 150 trips or more to any freeway segment. This analysis verifies that Project traffic impacts on the regional system will be less than significant.

**Comment No. 03-4**

3. Currently, the Level of Service (LOS) for US-101 is operating at LOS F. Any additional trips will worsen the existing freeway condition. The TIS did not include a cumulative traffic analysis for US-101, which would consider the trips generated from the 58 related projects that are referred to in the DEIR, the

proposed NBC Universal Project, and growth from the Hollywood Community Plan (Plan). Because the TIS prepared for the Plan in 2005 determined that build-out of the Plan would result in significant transportation impacts to the US-101, the Plan created a Transportation Improvement and Mitigation Plan (TIMP) to identify future improvements to the US-101. Since the proposed project site is located within the Plan area, the identified improvements should have been taken into consideration, as well as improvements listed in Metro's Long Range Transportation Plan.

#### **Response to Comment No. 03-4**

The Project is not expected to generate more than 150 additional trips on the freeway system. Therefore, based on the CMP criteria used by the City of Los Angeles on this and other projects, the Project would not result in significant traffic impacts on the freeway mainline (see Response to Comment No. 03-3 (Caltrans) above). In addition, the Project will provide infill uses that reduce regional trip demand as called for by the Smart Growth Initiatives in the Demand Section of the Metro's Long Range Development Plan (LRDP) and in the Sustainable Community Strategies within the Regional Transportation Plan adopted by SCAG. As mitigation, the Project will participate in upgrades to the regional transportation system by funding or implementing other programs called for in the LRDP and TIMP. These programs include signal system upgrades, upgrades to the transit system (through the Project installing shelters at area bus stops, improving the pedestrian linkages to those stops, and funding of alternative mode lanes), and a TDM Program to help reduce project automobile trip demand. These mitigation measures will improve conditions on the Congestion Management Plan system, including the regional freeway system. Also, given the robust transit system in the Project's vicinity, a main focus of the transportation mitigation program is to reduce automobile trips by enhancing pedestrian and bicycle linkages to the transit system and investing in multi-modal transportation improvements. This focus is consistent with LADOT's Traffic Study Guidelines and the objectives identified in the Hollywood Community Plan Update.

Further, no applicable Hollywood Community Plan Update Transportation Improvement and Mitigation Plan (TIMP) requirements are listed in the comment and, after additional review of the TIMP, no applicable TIMP requirements or additional measures were identified. For example, the Capitol Improvement measures in the TIMP are not at locations identified as having unmitigatable significant Project impacts. Project participation in the program called for in the TIMP to "coordinate Caltrans' freeway traffic management system with the ATSAC/Adaptive Traffic Control System (ATCS) highway and street traffic signal management system" was discussed in the meeting which took place on December 4, 2012 between City, Project and Caltrans representatives but rejected by Caltrans representatives.

#### **Comment No. 03-5**

4. Page .IV.K.1-60 of the DEIR states: "'The Project would result in a less than significant impact with respect to trip generation upon CMP locations and on freeway segments. No mitigation is required.'" This conclusion is not based on any credible analysis that could be found anywhere in the DEIR. It is Cal

trans' opinion, based on the work that we have done in this area, that this project will result in significant impacts to the state highway system.

### **Response to Comment No. 03-5**

The Traffic Study and the Draft EIR analyzed impacts to CMP locations and freeway segments based on the CMP criteria (see Response to Comment No. 03-2 (Caltrans)). Based on the data from this analysis, the Traffic Study concluded that Project impacts would be less than significant, so subsequent analyses were determined to not be needed. However, an additional model analysis was conducted using the current SCAG model for year 2035 for the initial future projections (the Base Model). This analysis also shows that Project traffic impacts on the freeway system will be less than significant. See the Response to Comment No. 03-3 for additional details.

### **Comment No. 03-6**

5. The submitted traffic analysis did not include the following ramp intersections that are closest to the project site, which may be significantly impacted by this development:

- SB Route 101 on-ramp from Argyle Avenue
- SB Route 101 off-ramp to Gower Avenue
- NB Route 101 off-ramp to Gower Avenue
- SB Route 101 off-ramp to Cahuenga Blvd.
- SB Route 101 on-ramp from Cahuenga Blvd.
- SB Route 101 off-ramp to Vine Street

The traffic analysis at these off-ramps needs to show projected queue build-up upstream of the off-ramp. Although most of the on-ramps are meter controlled, the analysis needs to show how the added/over-flow volume to the on-ramp may affect other nearby intersections, including off-ramps. Caltrans is concerned that the freeway ramps will back up, creating a potentially unsafe condition. To ensure the ramps do not back up, the intersections adjacent to the ramps must be able to absorb the off-ramp volumes at the same time as they serve local circulation and land uses.

### **Response to Comment No. 03-6**

Standard City procedures as outlined in the LADOT Traffic Study Policies and Procedures, May 2012, were selected as the most appropriate for use in the Traffic Study. The study locations selected were those locations at which the Project traffic impacts have the potential to be significant and substantial. The locations at which traffic impacts may be significant are the critical capacity constraints



of the area roadway system. The freeway ramps, including the meters and weave sections on the ramps, are not the roadway system constraints in the Hollywood area. Rather, the signalized intersections and the freeway mainline sections were determined to form the capacity constraints in the Hollywood area. Queues from those constraints determine the conditions on the ramps and at other non-critical locations. The more minor (STOP controlled) intersections were determined not to constrain the system capacity. Further, according to LADOT guidelines, the analysis of unsignalized intersections in traffic impact studies is solely to assess the need for future signalizing by conducting warrant analyses. Only unsignalized intersections that serve as integral elements to the project site's access and circulation plan are included in such an analysis. Here, there are no unsignalized intersections that serve as integral elements to Project access and circulation and as such, no unsignalized intersections were studied.

**Comment No. 03-7**

6. As shown in the DEIR, Table 5 Project Trip Generation, the project will generate a 19,486 average daily vehicle trips with 1,064/1,888 vehicle trips during the AM/PM peak hours. These volumes appear to be low and Caltrans requests that the lead agency verify them. Also, the trip reduction credits taken are not in compliance with the Caltrans Traffic Impact Study Guide and any deviation should be properly justified and substantiated. For example, the 30% reduction of the retail pass-by trips is significantly high without justification. Utilizing such high reduction rates will result in inadequate identification of traffic impacts and mitigation, thus violating CEQA.

**Response to Comment No. 03-7**

LADOT, the responsible department within the City of Los Angeles (the lead agency), verified that the rates, equations, and calculations used in the Traffic Study were appropriate for the Project. All but one of the base generation estimates cited in the comment were prepared using the information and procedures in Trip Generation, 8th Edition, 2008 Manual, Institute of Transportation Engineers (ITE). (Information for the rental car facility use was not available from that source, so rates incorporated into the West Los Angeles Transportation and Mitigation Specific Plan, rates previously used by the City, were utilized.) Likewise, the pass-by trip adjustment cited in the comment is specified in the LADOT Policies and Procedures, May 2012 and was in turn based on a conservative implementation of the procedures in the ITE Trip Generation Manual. The data and procedures in the ITE Trip Generation Manual are nationally-accepted guidelines utilized by most agencies in Los Angeles County and are the most appropriate source for the trip generation estimates for the Project. Also, it should be noted that the trip generation rates identified in the ITE Trip Generation Manual are based on surveys of sites in suburban areas with little to no transit use, so it is common practice to allow for trip reduction credits to allow for potential transit trips, pass-by trips, and internal trips associated with mixed-use projects. Also see Response to Comment No. 59-27 (Jordon, David) for a discussion of other adjustments.

**Comment No. 03-8**

To address these concerns, an analysis for the project's impacts to the freeway system should be performed based on the proposed scope of the project as described in the DEIR and would need to include all of the following to determine the actual impact of this project on the State facilities in the project vicinity:

- a. If the project will be developed in phases, the project added demand and trip assignment to US-101 should be based on each phase of the project otherwise it should be based on 100% occupancy.

**Response to Comment No. 03-8**

Please see Response to Comment No.03-3 (Caltrans) concerning the project freeway impacts including impacts on the US 101. The Project does not have defined phases, so no phasing analysis is appropriate. The Traffic Study, the Draft EIR, and the analysis in Response to Comment No. 03-3 above analyzed the “worst-case scenario” of 100% occupancy.

**Comment No. 03-9**

- b. The Trip Generation figures and its distribution need to be forecasted based on a Select Zone Analysis. Based on the magnitude of the project and its close proximity to US-101, the trip assignment appears to be unreasonably low. Please elaborate on the trip assignment methodology utilized.

**Response to Comment No. 03-9**

The select zone analysis recommended in the comment is not considered appropriate for the Project. A select zone analysis fails to accurately analyze urban infill projects, including the Project. In particular, a select zone analysis does not take intercepted trips into account, and intercepted trips are a major factor for urban in-fill projects. Further, urban areas (such as the Traffic Study area in Hollywood) contain numerous more minor streets with signalized intersections that are not in the regional model network. Those intersections may be significantly impacted, but the streets and the intersections would not have trips assigned to them by a select zone analysis.

A manual approach was selected as the most appropriate method to be used for the Traffic Study. The manual procedures utilized separated the Project into components by land uses and separately assigned the trips to and from those components. The assignments considered the types of land uses in the surrounding area to which the component's trips would be linked. The assignments were individually reviewed and approved by LADOT and are detailed in the Traffic Study. See Appendix K.1 of the Draft EIR.

**Comment No. 03-10**

c. Trip Generation figures from other sources should be cross-referenced by the source, page number, year, and table numbers.

**Response to Comment No. 03-10**

Appendix D of the Traffic Study (Appendix K.1 of the Draft EIR) lists the source, land use codes (which may be within multi-page sections), source edition, and year. The land-use code and independent variable dictate the formula used. Tables were not used.

**Comment No. 03-11**

d. The off ramps on NB and SB US-101, between Vermont Avenue and Highland Avenue, which would represent the most impacted area by the proposed Development, should be analyzed utilizing the Highway Capacity Manual (HCM) 85th Percentile Queuing Analysis methodology with the actual signal timings at the ramps' termini.

**Response to Comment No. 03-11**

The CMA methodology was selected for use in the Traffic Study for all intersections. The CMA analysis is specified for use in traffic studies by the lead agency, the City of Los Angeles. Traffic Study Policies and Procedures, May 2012 published by the City of Los Angeles, Department of Transportation specifies CMA calculations as the methodology to be used in City of Los Angeles traffic studies. The CMA methodology was selected for inclusion in the City of Los Angeles manual as it is a “Planning Methodology” rather than an “Operations Methodology”. It should be noted that the methodology recommended in the comment would be dependent upon the signal timing remaining fixed through 2035 for the horizon year to be accurate, whereas the computerized signal systems now being employed in the City of Los Angeles vary the signal timing on an instantaneous basis. However, additional methodologies may be required to be used during detailed mitigation design by the agency approving implementation of a mitigation measure, with appropriate adjustments being made.

**Comment No. 03-12**

e. Similarly, the on ramps on NB and SB US-101, within the same area, should be analyzed utilizing the same methodology and with the actual metering rates. These rates can be obtained by contacting Ms. Afsaneh Razavi, Senior Transportation Engineer, Caltrans Ramp Metering Department at (323) 259- 1841.

**Response to Comment No. 03-12**

Standard City procedures as outlined in the LADOT Traffic Study Policies and Procedures, May 2012, were selected as the most appropriate for use in the Traffic Study. See Response to Comment Nos. 03-6 and 03-11 (Caltrans) for additional information.

**Comment No. 03-13**

f. An HCM weaving analysis needs to be performed for both the NB and SB mainline segments, between the on and off ramps within the same area, utilizing balanced traffic demands entering and exiting the weaving segments.

**Response to Comment No. 03-13**

Standard City procedures as outlined in the LADOT Traffic Study Policies and Procedures, May 2012, were selected as the most appropriate for use in the Traffic Study. See Response to Comment Nos. 03-6 and 03-11 (Caltrans) for additional information.

**Comment No. 03-14**

Caltrans is concerned that the project impacts may result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering. These concerns need to be adequately addressed in the EIR.

**Response to Comment No. 03-14**

These concerns are adequately addressed in the Traffic Study and Section IV.K.1 Transportation-Traffic of the Draft EIR. The Traffic Study, the Draft EIR, and the additional analysis provided in Response to Comment No. 03-03 above adequately demonstrate traffic impacts resulting from the Project. See Response to Comment Nos. 03-3 and 03-6 (Caltrans) for additional information.

**Comment No. 03-15**

In summary, without the necessary traffic analysis, Caltrans cannot recognize the TIS and DEIR as adequately identifying and mitigating the project's impacts to the State highway facilities.

If you have any questions, please feel free to contact Alan Lin the project coordinator at (213) 897-8391 and refer to IGR/CEQA No. 121036AL.

**Response to Comment No. 03-15**

The Traffic Study, the Draft EIR, and the additional analysis provided in Response to Comment No. 03-03 above adequately demonstrate traffic impacts resulting from the Project. See Response to Comment Nos. 03-2 through 03-11 (Caltrans) for additional information.



Attachment 8

## **Millennium Hollywood Project Response to the Basmaciyan Memorandum**

This memorandum is in response to Mr. Herman Basmaciyan's memorandum (the Basmaciyan Memo) regarding the Millennium Hollywood Project (the Project) dated June 3, 2013. The Basmaciyan Memo reiterated some comments of the Caltrans letter, which contains factual errors and does not properly consider the Final EIR responses to comments. The Basmaciyan Memo also provides comments on the adequacy of the Traffic Study and traffic analysis in the EIR.

### Responses to Caltrans' Related Comments in Section A.1 of the Basmaciyan Memo:

The Basmaciyan Memo erroneously states that "the City and this EIR are mandated to comply with the Caltrans methodology and to disclose and analyze impacts accordingly in a recirculated DEIR". Caltrans had previously indicated that any trip on a State highway facility not operating at acceptable levels was considered significant by its guidelines. That recommended criterion was rejected by the City of Los Angeles Department of Transportation (LADOT), a department of the lead agency.

The City of Los Angeles (City) staff and staff preparing the Traffic Study did meet with Caltrans staff during the scoping period to consult with them, and to ensure that Caltrans recommendations were fully understood and considered. The Caltrans Guide for the Preparation of Traffic Studies was reviewed, discussed with LADOT and utilized, where LADOT determined the guidelines to be appropriate for the Traffic Study. It should be noted that the Caltrans Guide for the Preparation of Traffic Studies does not provide a definition of thresholds of significance; therefore, the Congestion Management Program (CMP) methodology was used because it defines thresholds of significance and is the standard methodology used by the lead agency for all traffic studies within the City. The CMA calculations in the EIR for the Project utilized the methodology specified in the LADOT Traffic Study Policies and Procedures. The LADOT specified methodology is a nationally accepted methodology.

The Traffic Study and EIR analysis addressed Project impacts on the two most critical components for the study area highway system -- the freeway mainline and the signalized intersections. These components are the primary determinants of roadway conditions including for entries and exits to freeway interchange ramps and in the axillary lane weave sections. For instance, ramp meter rates and merge and weave capacity are dependent upon mainline conditions. Off-ramp capacity is constrained by the surface street intersection(s) at the base of the ramp. Further, the freeway mainlines conditions (including the resulting queues extending from the mainline segments onto the surface streets) are identified as potential system capacity constraints (see for example Response to Comment No. 03-6 in the Final EIR). A review of the queues in the study area indicates that the system capacity constraints (located at the front end of the queues) tend to be freeway mainline segments. The resulting queues extend throughout the upstream locations, including the surface roadways connected to the freeway system by ramps.

Further, it has been observed that the queues extend through and beyond the intersections, thereby indicating that although the intersection is congested, the actual capacity constraint is downstream of the intersection (e.g., queues from a freeway mainline often extend down a ramp and block the tributary surface streets). Improvements to the intersection will not relieve the congestion in such cases. Also note that the Traffic Study analysis was conservative in not reflecting drivers avoiding congested times and locations.

As documented in the Final EIR, the computer model utilized was the SCAG model developed for the Regional Transportation Improvement Plan (RTIP). The version utilized by the City was altered only by land-use change for the Project zone, as documented in the Final EIR. No network changes were made. The model run results provided confirmation of the conclusion that Project impacts on the freeway system would be less than significant. That conclusion was made based on the other analyses provided in the Traffic Study and documented in the Draft EIR. The model utilized has been fully documented in the RTIP and associated documents, and the EIR appropriately contains only information regarding the subsequent land-use modifications made in order to utilize the model to analyze the impacts of the Project on the freeway system.

Caltrans procedures do not take in to account that computer model networks do not contain the level of detail needed for the Project Traffic Study to consider and analyze the numerous minor Hollywood area roadways that are of concern to local residents and decision makers. Further, model zones utilize average area conditions and do not consider project specifics. Important project specific parameters include the locations of sites within a larger model zone (location is a particularly relevant consideration for encouraging transit oriented development, such as the Project) or the detailed land-uses and how they will interact with the surrounding community (e.g. connections are particularly important to differentiate local serving support uses from a regional mall). Thus, it was determined that the computer model was not the appropriate tool to assign trips.

The Traffic Study and EIR address whether the Project is a substantial contributor to cumulatively considerable freeway impacts. Other documents including the CMP and the RTIP have analyzed Southern California freeway conditions. These analyses have included portions of the roadway system with adverse conditions under the conditions existing at the time of the studies. The CMP and RTIP analyses considered whether congestion will exist and the factors causing the congestion. Their consideration included both the volumes and capacities. Few measures were identified to increase capacity in those studies. No capacity increasing measures are cited in the comment. Improving (decreasing) the volume to capacity ratio was determined in the RTIP and CMP to be primarily dependent upon decreasing the volume rather than increasing the capacity. The RTIP and CMP have determined that improved development patterns, such as the Project, are necessary components to accomplishing volume reductions. The Project, an infill, mixed-use, and transit oriented development (Smart Growth) project, is of the type demonstrated to reduce volumes and thus improve traffic conditions.

Responses to Trip Cap and Trip Generation Comments in Sections A.2 and A.3 of the Basmaciyan Memo:

Any additional development that would increase peak hour trips beyond the Project Trip Cap would be subject to additional analysis that would meet the California Environmental Quality Act (CEQA) standards. The total trip generation for the peak hours was determined to be the variable most strongly correlated to the traffic impact and selected for use in the Trip Cap. A wide variety of additional variables were considered in selecting the peak hour trips as the most appropriate for the Trip Cap including considering daily trips or subdivisions of the trips into directions or trip type categories. However, such additions were determined to add undue complexity because the additional variables would not commensurately improve the ability to determine traffic impacts.

The trip generation rates and formulas used in the Traffic Study and EIR were taken from the ITE Trip Generation manual. The adjustments that were utilized were taken from the LADOT Policies and Procedures manual, and account for the environmental conditions at the Project Site. Further, it was determined that trip monitoring was not appropriate for this Project because the Project will have multiple homeowners and other tenants. However, the TDM program has many safeguards including the preliminary TDM program being prepared and provided for LADOT review prior to the issuance of the first building permit for the Project, a final TDM program being approved by LADOT prior to the issuance of the first certificate of occupancy for the Project and both the pedestrian/bicycle friendly design and TDM program must be acceptable to the City Planning Department and LADOT.

Responses Regarding Technical Points B.1 and B.2 of the Basmaciyan Memo:

As shown in Table 5 of the Traffic Study, a transit usage credit of 15% was utilized, not 25% as the comment suggests. Further, the historic Capitol Records and Gogerty Buildings, as well as the Walk of Fame, limit the sidewalk improvements that can be made along Vine Street, but the sidewalks widths were considered in discussion with LADOT and determined to be adequate for transit usage. Further, it is required that improvements are made to meet to applicable City standards. Upgrades to the sidewalks to and from the Hollywood/Vine Metro Red Line Transit Station were included as a Project mitigation measure and as such in the Mitigation Monitoring Report Program, and as a condition of approval.

Responses to Truck Access Comments in Section B.3. of the Basmaciyan Memo:

The Project Site was found not to present any unusual constraints for truck access and no such constraint was identified in the comment. Therefore the normal City building permit requirements for a detailed review and approval of Project Site access and circulation prior to building permit issuance is considered adequate to ensure that proper access and circulation for trucks is provided within the Project Site.



Responses Regarding Pedestrian Issues in Sections B.4 and B.5. of the Basmacıyan Memo:

Pedestrian volumes were included in the counts conducted at each intersection. No unusual pedestrian volumes or patterns were identified in a review of the counts, nor was any evidence of an unusual circumstance presented in the comment.

Further, no unusual circumstances that differ from the normal potential for pedestrian/vehicular conflicts were identified for the location mentioned in the comment. The distances cited in the comment are typical for mid-block crosswalks throughout the City. The operations of such location have been determined to be satisfactory.

Responses Regarding Site Access and Parking in Sections B.6. through B.9 of the Basmacıyan Memo:

The traffic impact implications regarding the amount of land-uses and parking on each of the two portions of the Project Site (the East Site and the West Site) was analyzed in Appendix L of the Traffic Study and in the Draft EIR.

Installation of a traffic signal at a Project driveway has not been analyzed as it is not a Project component or recommended mitigation measure. Vehicles will be required to yield to pedestrians as they are at similar driveways in the City including the Downtown and Hollywood areas. Since the pedestrian flows at the Project driveways are considered normal they do not require any further analysis.

All pedestrian access to and from the Project Site will be from the public sidewalks that are shown on the Conceptual Project Site Plan, Figure 3 of the Traffic Study. Figure 3 also shows the pedestrian linkage between the East Site and West Site of the Project which is the crosswalk at Vine Street mid-block between Hollywood Boulevard and Yucca Street. As the pedestrian flows are not accompanied by parallel vehicular flows, mid-block crosswalks have been determined by LADOT not to represent system capacity constraints that require analysis.

The Project entitlements include a request for shared parking per Section 12.21.A.4(y) of the Municipal Code. Allowances for shared parking will only be made when applicable. It should be noted that the pedestrian linkages will connect the two sites (the East Site and the West Site).

Weekends as well as weekday parking demands were considered for each scenario in the shared parking analysis and the Draft EIR. The weekday peak hours of the roadway are the time at which the greatest congestion in the Hollywood area occurs and were analyzed in the Traffic Study. Note that many of the Project uses (e.g. residential and office) have a relatively high number of weekday peak hours roadway trips.

### Summary

The Traffic Study adequately addresses vehicular traffic as well as other travel modes, including pedestrians and transit. The vehicular analysis addresses a variety of topics including impacts on the regional freeway system. The Traffic Study and EIR considered a wide variety of alternative assumptions and methodologies, and presented the resulting conclusions from the use of those different assumptions and methodologies. The Traffic Study base methodology is consistent with the LADOT Traffic Studies Policies and Procedures, which are nationally recognized and is the standard methodology used by the lead agency for all traffic studies within the City. . The Traffic Study and EIR conclusions are consistent with the strategies set forward in RTIP by the SCAG, and the CMP by MTA. The studies conducted for each of those plans conclude that Smart Growth, such as the Project, is needed to manage the system-wide traffic volumes and transportation demands.

Attachment 9

**Response to Comment No. 03-2**

As cited in the comment, Caltrans was consulted during the NOP process. The concerns and recommendation of Caltrans were considered during the transportation analysis scoping process, including the use of the Caltrans draft procedures. Also taken into account were the concerns and recommendations of other NOP commenters, as well as the City of Los Angeles Department of Transportation (LADOT) policies and the past analyses conducted for similar projects by the City of Los Angeles (the lead agency). The comment states that the Traffic Study does not analyze the impacts to the state highway system; however, the Traffic Study analyzed key freeway ramps utilizing LADOT's signalized intersection LOS methodology and of freeway mainline segments utilizing the Congestion Management Program (CMP) recommended methodology. The Caltrans Traffic Study Guide was consulted in the preparation of the Traffic Study but it does not provide a definition of thresholds of significance; therefore, the CMP methodology was used because it defines thresholds of significance and is the standard methodology used by the lead agency for all traffic studies within the City of Los Angeles. The CMP, a state-mandated program, includes procedures and thresholds that provide a consistent evaluation of projects to address the potential impacts on the regional transportation system.

**Comment No. 03-3**

2. There was no analysis performed for any of the freeway elements. The TIS only used the Los Angeles County Congestion Management Program (CMP) criteria. However, the CMP fails to provide adequate information as to direct and cumulative impacts to the freeway mainline and ramps, per CEQA.

**Response to Comment No. 03-3**

The CMP criteria provide an initial review to determine if significant Project impacts may occur and in turn require further study. The initial review in the Traffic Study concluded that Project impacts would be less than significant, so subsequent analyses were determined to not be needed. Support for this conclusion is provided by the recently certified Hollywood Community Plan Update Environmental Impact Report which was also determined not to have a significant impact on the freeway system.

To address Caltrans' concerns, an additional model analysis was conducted. The analysis used the current Southern California Association of Governments (SCAG) model for year 2035, with LADOT refinements, for the initial future projections (the Base Model). See Appendix B, Transportation Modeling Procedures and Results, attached hereto for the model procedures and results. The model demonstrated that the Project will not result in the addition of 150 trips or more to any freeway segment. This analysis verifies that Project traffic impacts on the regional system will be less than significant.

**Comment No. 03-4**

3. Currently, the Level of Service (LOS) for US-101 is operating at LOS F. Any additional trips will worsen the existing freeway condition. The TIS did not include a cumulative traffic analysis for US-101, which would consider the trips generated from the 58 related projects that are referred to in the DEIR, the

**Comment No. 14-6**

In the "Related Projects" section of the DEIR, which compares this project with other projects nearby, unapproved, proposed developments are used alongside existing structures, allowing the square footage increase that this project suggests to be seen as more reasonable. However, the structures included on the comparative chart are all less than one-third the size of the proposed Millennium tower. The only project that is as large is the proposed redevelopment of the Paramount Studios Lot. At 1,385,700 sq. ft., the Paramount Lot is a much larger property and does not have any single building of a comparative height as proposed by Millennium. We believe that the addition of the proposed tower(s) will overwhelm contributing properties in the district and the proposed "separation" of new and old construction is simply not an adequate mitigation measure.

**Response to Comment No. 14-6**

It should be noted that the Related Projects List contained in the Draft EIR was included to analyze potential cumulative impacts. Accordingly, the list should include all past, present, and reasonably foreseeable projects that could have cumulative impacts when considered together with the Project. As required by CEQA, the intent of this analysis is to include unapproved, proposed and existing projects (that are not overly speculative) to provide a conservative cumulative analysis. The commenter is suggesting that the Draft EIR uses this approach to make the Project seem more reasonable, when in fact the approach is mandated by CEQA and actually is more conservative than limiting the Related Projects List as the commenter seems to propose.

The Related Projects List is included in Table III-1, Related Projects List, of the Draft EIR. The list was based on consultation with the LADOT database of projects in the area, traffic reports for individual projects, and other sources, as listed in the Notes to Table III-1. The list was based on known and foreseeable projects at the time the Notice of Preparation for the Project was prepared. The Related Projects List included related projects as far west as La Brea Avenue, as far east as Western Avenue, as far south as Melrose Avenue, as well as many related projects along Hollywood Boulevard in the vicinity of the Project Site.

The portion of the comment regarding the characteristics of the Paramount Studios project does not challenge the adequacy of the analysis or conclusions of the Draft EIR, and thus does not require a response here. Regarding the scale and massing of the Project, please see Response to Comment No. 14-5 (Hollywood Heritage) above, Response to Comment Nos. 19-2, 19-3 (Los Angeles Conservancy), and the Topical Response 4, Cultural Resources.

**Comment No. 14-7**

Hollywood Heritage appreciates the efforts of the project's developers and will work diligently with them to ensure the preservation and protection of all of Hollywood's historic resources. Please feel free to contact us at (323) 874-4005 should you have any questions.



Attachment 10

22 July 2013

Mr. Steve Hood  
Millennium Partners  
301 Mission Street, Level B1  
San Francisco, California 94105

**Re: Langan Responses to Wilson Peer Review Letter dated 17 June 2013**  
**Langan Project No.: 700019502**

Dear Mr. Hood:

Langan Engineering & Environmental Services, Inc. (Langan) has reviewed the above referenced letter prepared by Mr. Kenneth Wilson, CEG (Wilson Letter) regarding our Preliminary Engineering Study, dated 10 May 2012 (May Langan Report) and our Fault Investigation Report (November Langan Report), dated 30 November 2012 for the proposed Millennium Hollywood Development (the Site). The Wilson Letter was prepared at the request of The Silverstein Law Firm, who is opposing the project. The May Langan Report was prepared for Millennium Partners and provided to the City of Los Angeles for consideration and to support the Draft Environmental Report (DEIR) and Final Environmental Report (FEIR). The November Langan Report was prepared to support Millennium Partners' application for a tract map. The City of Los Angeles Department of Building and Safety issued a Geology and Soils Report Approval Letter, dated 31 January 2013 approving the November Langan Report. In summary, while it is evident that Mr. Wilson has reviewed our reports and is familiar with the historic literature regarding the Hollywood Fault, we disagree with many of the statements, interpretations, opinions, and conclusions that he provided in his report.

Our responses to each of the statements in the Wilson Letter (which are in italics below) as well as clarifications and references are presented below.

**A. SECTION: The DEIR and FEIR for the Millennium Hollywood Project**  
**SUBSECTION: DEIR**

**STATEMENT:** *The DEIR contains one paragraph devoted to fault rupture (page IV.D-2). Citations to supporting information, data, and maps are direct and indirect with the assumption that the 2 May 2012 Langan report (May Langan Report) is the primary source. This report is not a fault investigation report, but is a preliminary geotechnical engineering study that has this single paragraph devoted to fault rupture. In the DEIR and the May Langan Report, reliance for the "closest fault" being "0.4 miles from the Project Site" is not specific as to what fault or what direction from the Project Site.*

**RESPONSE:**

- Langan recognizes that the May Langan Report is a preliminary geotechnical engineering study. The May Langan Report was prepared for use as a technical appendix to the DEIR and was not intended or prepared as a final design

geotechnical report or a fault investigation report. The report clearly states, however, that the results and recommendations are adequate to support analysis of the Project's potential geotechnical impacts because the report is based on existing geologic conditions on the Site and contains citations to authoritative evidence. As stated in the May Langan Report, additional geotechnical and seismic studies would be performed as part of the final building design. These studies are required mitigation for the project.

- Langan disagrees with Mr. Wilson's statement that the May Langan Report is not specific as to what fault is closest to the Site and what direction that fault is from the Site. The Seismic Considerations section (page 6) of the May Langan Report explains the City of Los Angeles's ZIMAS system reports the closest fault to the Site is the Santa Monica/Hollywood Fault and that the fault is located approximately 0.4 miles from the Site. The Hollywood fault is located north of the Site as shown on Figure 5 in the same report, which is based on reliable fault data from the United States Geological Survey (USGS).

## **B1.SECTION: The DEIR and FEIR for the Millennium Hollywood Project**

### **SUBSECTION: DEIR**

**STATEMENT:** *From the references cited we can determine: 1. The May Langan Report shows only the 1996 City of Los Angeles Safety Element Fault Rupture Study Area (FRSA) Map, but shows no actual fault, however suggesting it is south of the Millennium Project Site within the FRSA;*

### **RESPONSE:**

- Langan disagrees with Mr. Wilson's statement that the May Langan Report only shows the City of Los Angeles' (City) Fault Rupture Study Area (FRSA) exhibit, but no actual fault. Figure 5 in the May Langan Report shows the location of the Site in relation to the Hollywood and other faults in southern California based on Geographic Information System (GIS) data published by the USGS and California Geological Survey (CGS). Figure 4 in the May Langan Report shows the proximity of the Site in relation to the City's nearest FRSA. The background image map from Figure 4 is taken directly from the City's Safety Element, which does not show actual fault locations.

## **B2.SECTION: The DEIR and FEIR for the Millennium Hollywood Project**

### **SUBSECTION: DEIR**

**STATEMENT:** *2. The City of Los Angeles ZIMAS system shows no fault locations and only provides a GIS computed distance to the Hollywood fault, which we determined from the system to be 0.49 to 0.60 mile depending upon the parcel selected. This suggests (by selecting progressively more southerly parcels) the fault is programmed into the City's ZIMAS system as north of the Project Site;*

### **RESPONSE:**

- Langan agrees that based on the GIS database files that are referenced by the City's ZIMAS system, the Hollywood Fault is north of the Site, which is consistent with the USGS/CGS GIS database, as shown on Figure 5 of our May Langan Report. The use of GIS data to compute distances is considered an appropriate and accurate way to measure distance. Mr. Wilson's statement here acknowledges that the Hollywood Fault is located north of the Site

according to GIS-based information in the ZIMAS system. Langan's subsurface exploration confirms that the Hollywood fault is not on the investigated portion of the site.

**B3. SECTION: The DEIR and FEIR for the Millennium Hollywood Project**  
**SUBSECTION: DEIR**

**STATEMENT:** 3. A reference to CDMH 2002 (likely intended to be CDMG (2002)) is to an outdated regional fault map with no detailed information on the Hollywood fault location.

**RESPONSE:**

- The California Division of Mines and Geology (CDMG) 2002 map is a reliable historical reference for faults in California. Figure 5 in the May Langan Report was developed in GIS using GIS data files from the 2010 USGS and 2010 California Geologic Survey fault databases. These are the most current data files available that provide information on the location of the Hollywood fault.

**B4. SECTION: The DEIR and FEIR for the Millennium Hollywood Project**  
**SUBSECTION: DEIR**

**STATEMENT:** 4. An unspecified reference to CGS is likely to something called "Active Near-Source Fault Zones map" noted in the May Langan Report and in the April 28, 2011 City of Los Angeles Initial Study where the 0.4 miles (0.63 km) may first appear, but the source for the statement that the fault is 0.4 miles from the Site is unspecified and thus unknown.

**RESPONSE:**

- To clarify, the "Maps of Known Active Fault Near-Source Fault Zones" are maps prepared by California Division of Mines and Geology (CDMG) currently the California Geological Survey (CGS) in cooperation with the Structural Engineers Association of California's (SEAOC) Seismology Committee and the USGS, and were published by International Conference of Building Officials (ICBO). The maps are not intended to be used determine fault locations because the maps show 2 kilometer (km) wide zones around seismic sources, not faults. To clarify, the statement regarding distance between the Site and the fault is based on data accessed from the City's ZIMAS system which is a GIS based system.

**C. SECTION: The DEIR and FEIR for the Millennium Hollywood Project**  
**SUBSECTION: DEIR**

**STATEMENT:** Our conclusion from the DEIR paragraph and the May Langan Report is that the City Initial Study Geology and Soils item a.1 (fault rupture) discussion was used nearly intact and considered no other research. In fact, we believe none of the sources fully cited in the DEIR show a fault location.

In 2010, the California Geological Survey (CGS) published its 2010 Fault Activity Map of California, which became the primary source for determining if a location in California might be underlain by an active or potentially active fault. In the pamphlet accompanying the map, one can determine what reports were utilized to make the location

determination for each fault. A copy of the statewide CGS 2010 Fault Activity Map of California (available online at <http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html>) and relevant excerpts [sic] from the accompanying pamphlet are attached as Exhibit D. The Hollywood fault (Fault No. 392) is listed and shows several reports that form the basis for the State's most recent and credible active fault location map. This authoritative source was not used for the DEIR or the May Langan Report.

**RESPONSE:**

- Langan disagrees with Mr. Wilson's statement that none of the sources cited in the DEIR show a fault location. Figure 5 in the May Langan Report shows the locations of active faults in southern California. The May Langan Report contains a list of 19 references used to create the report, several of which are authoritative sources for fault location. Figure 5 references the USGS Geologic Survey GIS data base files which are consistent with the files used by CGS to publish the CGS 2010 Fault Activity Map of California.
- Langan agrees that the CGS 2010 Fault Activity Map of California is a resource to be used for determining if a location in California might be underlain by an active or potentially active fault. Langan does not dispute that the Hollywood Fault can be considered active. The DEIR acknowledges that the Site is within the zone of influence of several active and potentially active fault systems-. The CGS Fault Activity Map of California referenced by Mr. Wilson is a map that was prepared at a 1:750,000 scale and is not intended to be photocopied and "zoomed in" to a city street level scale. The metadata file that accompanies the GIS files for the map specifically states that the data is not intended to be used at a scale larger than 1:500,000 as the inaccuracies in the locations of the faults may occur at larger scales. Per the metadata file, "Display at significantly larger scales may produce error in location of contacts or faults relative to features contained in other data sets." As such, the map is intended to show proximity of locations to active or potentially active faults, but cannot be used to measure accurate distances at city street level accuracy. Langan agrees the explanatory text accompanying the CGS 2010 Fault Activity Map of California includes a list of reports (Appendix C) that the CGS referred to in order to create the map. These reports do not undermine any of the preliminary geotechnical conclusions in the May Langan Report. The Dolan and others (1997) report is a referenced report for the Hollywood fault in the text accompanying the 2010 California Fault Activity Map of California. Dolan and others (1997) explicitly states that the Crook and Proctor's (1992) work on the Hollywood Fault did not identify active faults.
- Langan disagrees with Mr. Wilson's statement that the 2010 CGS Fault Activity Map of California and accompanying text were not used in the May Langan Report. The CGS 2010 Fault Activity Map of California and accompanying explanatory text with references were an integral part of the May Langan Report. Although not explicitly stated, the fault locations shown on the CGS 2010 Fault Activity Map of California are part of the USGS GIS files that were used and referenced in Figure 5 of the May Langan Report and Figure 4 and Plate 1 in the November Langan Report.



#### **D. SECTION: The DEIR and FEIR for the Millennium Hollywood Project**

##### **SUBSECTION: FEIR**

**STATEMENT:** *The November Langan Report documenting the fault investigation was prepared, based on its date, at least 3 months prior to the publication of the FEIR and discusses the potential for faulting through the West and East Sites south of Yucca Street and crossing Vine Street. The FEIR does not mention this November Langan Report or its findings. The November Langan Report is not attached as one of the A through J appendices, and Responses appear to only refer to the DEIR and the May Langan Report used to prepare the Geology and Soils section for the DEIR (see above). At least two fault rupture related comments (Nos. 24-4 and 45-9) were responded to in the FEIR, but the November Langan Report findings are not mentioned in support of the Responses. In fact, the commenter for Comment No. 45-9 seems to recognize (without specifically citing) the existence of the technical studies and maps (Crook and Proctor, 1992; Dolan and others, 1997) mentioned in the November Langan Report.*

*It seems inappropriate that the November Langan Report was not available to the public prior to or in conjunction with the DEIR and that the November Langan Report was not referenced in the Responses to Comments No. 24-4 and 45-9 in the FEIR. As discussed for the DEIR, the 2010 CGS Fault Activity Map of California also was not used in the FEIR.*

##### **RESPONSE:**

- Mr. Wilson fails to recognize that the May Langan Report was sufficient to support the DEIR, and contained reliable evidence to indicate that surface fault rupture was unlikely on the Site. He also fails to understand that the DEIR includes mitigation measures that require a detailed design-level geotechnical study before the project can be built. Langan also notes that the November Langan Report is a fault investigation report for the Site that was prepared to inform the tract map review process, which can be distinguished from the CEQA process associated with the DEIR and FEIR. To clarify, the November Langan Report was initiated in response to the Department of Building and Safety's request for a subsurface geologic investigation to evaluate surface displacement due to potential faulting. The November Langan Report was submitted to satisfy this request and in support of the Tentative Tract Map application. The November Langan Report confirmed that active traces of the Hollywood fault were not observed within the investigated portion of the Site. This evidence supports and clarifies the findings of the May Langan Report.

#### **E. SECTION: The May 2012 Preliminary Geotechnical Study**

##### **SUBSECTION: General Observations**

**STATEMENT:** *The May and November Langan Engineering geotechnical and fault investigation reports do not contain key information available at the time from the 2010 CGS Fault Activity Map of California and its cited references. This is discussed above and in our opinion leads to conclusions in both reports related to the location and character of the Hollywood fault that are incomplete with regard to the Millennium Project Site.*

##### **RESPONSE:**

- Langan disagrees with Mr. Wilson's statement that the May and November Langan Reports do not contain key information from the 2010 CGS Fault Activity Map of California and its cited references, and that conclusions in these reports are incomplete as a result. The Dolan and others (1997) report referenced in the text accompanying the 2010 CGS Fault Activity Map is discussed and referenced in the November Langan Report and although not explicitly stated, the GIS files associated with the CGS 2010 Fault Activity Map of California are part of the USGS GIS files that were used and referenced in Figure 5 of the May Langan Report and Figure 4 and Plate 1 in the November Langan Report. The May and November Langan Reports are accurate in the description of the Hollywood fault as being active in other locations. None of the references cited by Mr. Wilson, or the subsurface investigation of the Site performed by Langan produced evidence that active strands of the Hollywood fault are present within the investigated portion of the Site. It is critically important to recognize that Langan is the only entity that has hard evidence based on recent borings from the Site. These borings confirm the conclusions of the May Langan Report that surface fault rupture at the Site is unlikely; and support the November Langan Report findings that the Hollywood Fault is not located on the investigated portion of the Site. All other evidence cited by Mr. Wilson is based on speculation and is not based onsite specific subsurface exploration.

**F. SECTION: The May 2012 Preliminary Geotechnical Study**

**SUBSECTION: General Observations**

**STATEMENT:** *Also noted above, and as you indicated, the November Langan Report was not released to the public or included with the DEIR or FEIR and is the only report we are aware of that supports what we believe is the incorrect DEIR/FEIR conclusions that no active faults exist on the Project Site.*

**RESPONSE:**

- The November Langan Report was submitted to the City's Department of Building and Safety (Department) at which point the report became a public record and the Department issued a Geology and Soils Report Approval Letter, dated 31 January 2013 approving the November Langan Report. Therefore, the November Langan Report is clearly a public record. Also, the November Langan Report has been included in the administrative record for the DEIR and FEIR.
- The November Langan Report is the only report that is based on subsurface exploration at the Site; and it clarifies the conclusions of the May Langan Report that no active faults exist on the Site. The November Langan Report (as compared to any of the sources cited by Mr. Wilson) is the only site-specific subsurface investigation that we are aware of in which a subsurface investigation was performed within the Site to determine the presence or absence of active faulting within the Site.

**G. SECTION: The May 2012 Preliminary Geotechnical Study**

**SUBSECTION: General Observations**

**STATEMENT:** *In addition, the November Langan Report only investigated the West Site and no fault investigation was conducted for the East Site.*

**RESPONSE:**

- Langan performed a fault investigation within the West Site. Prior to performing our site-specific subsurface fault investigation for active faults within the Site, a meeting was held with the City Department of Building and Safety's Engineering Geologists on 2 July 2012 to discuss the methodology to be used and need for subsurface investigation at the Site in connection with the Department's review of the tract map. The City's Engineering Geologists agreed that since the East Site contains surface and subsurface structures that limit the areas available for a site-specific subsurface fault investigation (specifically the sound chambers for the Capital Records building and other buildings), that the active fault investigation would be performed on accessible areas of the West Site. The City's Engineering Geologists required that the investigation follow the applicable requirements of the Alquist-Priolo Earthquake Fault Zoning Act, California Geological Survey (CGS) Special Publication 42, CGS Note 49, Board for Geologists and Geophysicists' Geologic Guidelines for Earthquake and/or Fault Hazard Reports, and similar to methods used for other investigations (not on the Site) of the Hollywood fault in City of Los Angeles as performed by Law/Crandall (2000) and Leighton Consulting, Inc. (2011). The City's Engineering Geologists also approved Langan's method of investigation and boring locations prior to the investigation. The City's Engineering Geologists also indicated that should an active fault be found on the West Site, the East Site be investigated where feasible. Evidence of active faulting was not observed during our site-specific subsurface fault investigation within the investigated portion of the Site and the Department issued a Geology and Soils Report Approval Letter, dated 31 January 2013 that approved the November Langan Report as related to the tract map application under review.

**H. SECTION: The May 2012 Preliminary Geotechnical Study**

**SUBSECTION: Potential Groundwater Barrier**

**STATEMENT:** *As indicated in the DEIR and FEIR discussions above, the statement that the Hollywood fault is 0.4 miles from the Project Site is not supported by the references cited in the May Langan Report. One aspect of the May Langan Report not discussed in the report or the DEIR/FEIR with respect to faulting is the information from the hollow stem auger borings LB1 through LB4. The borings appear to have been laid out on the site for geotechnical investigation purposes to be within potential building footprints. They were oriented parallel to the Hollywood fault trend, not perpendicular as would be required for a fault study. However, an important finding was not reported (see Figure 1 above) as discussed below.*

**RESPONSE:**

- Langan disagrees with Mr. Wilson's statement that the distance from the Hollywood Fault to the Site is not supported by references cited in the May Langan Report. The City's ZIMAS system is cited and referenced in the May Langan Report as the source of the information that the distance between the Hollywood fault and the Site is approximately 0.4 miles. Note in previous a statement, Mr. Wilson said he determined the distance from the Hollywood fault

to the Site using the ZIMAS system and that the fault is programmed into the City's ZIMAS system as north of the Site, thereby establishing Mr. Wilson believes the ZIMAS system is a credible reference. Mr. Wilson provides no other evidence that establishes a numerical distance of the Hollywood Fault to the Site.

- Langan agrees the investigation performed for the May Langan Report was for preliminary geotechnical investigation purposes and was not intended or prepared as a final design geotechnical report and/or a fault investigation report. The May Langan Report, however, is adequate to support the potential impact analysis in the DEIR. Also, the May Langan Report specifically states "A final design geotechnical and seismic study, including additional subsurface investigations and evaluation, will be performed at the Site once final structures and loads are determined, prior to final foundation design."
- Langan agrees borings LB1 through LB4 performed as part of our Preliminary Geotechnical Engineering Study are positioned roughly parallel to the generally east-west trend of the Hollywood fault.

**I. SECTION: The May 2012 Preliminary Geotechnical Study**  
**SUBSECTION: Potential Groundwater Barrier**

**STATEMENT:** *One of the important features of the Hollywood fault, in some locations, is it often serves as a groundwater barrier. Because at some locations the fault creates a clay-rich gouge material, water flowing southward from the Santa Monica Mountains on the north is trapped behind the fault, which causes shallower water immediately north of the fault compared to immediately south of the fault. Groundwater levels are often many tens of feet deeper on the south. The May Langan Report (their Figures 1 and 2, and the boring logs) shows that groundwater was detected at consistent depths in borings LB1, LB2, and LB4 at 50 to 57 feet deep. These locations are clearly north of the Crook and Proctor (1992) fault locations, except for LB4, which is almost on the fault. LB3 (shows as groundwater not encountered to 61.5 feet) is clearly south of the mapped faults. The most straightforward explanation for this is the presence of a fault along the Crook and Proctor trend backing up groundwater north of the Hollywood fault. Had LB4 been considered in the fault investigation program, it should have been deepened to determine actual groundwater depth at this location. We believe that LB3 groundwater depth indicates the fault to be just south of its mapped location.*

**RESPONSE:**

- It is common geotechnical knowledge that a fault can act as a groundwater barrier at some locations, producing higher groundwater levels on one side of the fault with respect to the other. Regarding the Site, depths to groundwater in the borings presented in the November Langan Report do not indicate the presence of a groundwater barrier between borings. Note also that Dolan (1997) reports groundwater barriers related to the Hollywood fault are located west of the Site (west of Cahuenga Boulevard and east of Highland) and not within the Site.
- Langan disagrees with Mr. Wilson's discussion of groundwater levels reported in the May Langan Report and his concocted Figure 1 since Mr. Wilson discusses inaccurate groundwater depths in the statement and presents inaccurate depths

to groundwater and boring identifications in his Figure 1. The depths to groundwater in feet below ground surface as reported in the May Langan Report are as follows:

- LB1- 51 feet below ground surface
  - LB2 - 58 feet below ground surface
  - LB3 - not encountered to 61.5 feet below ground surface
  - LB4 - 57 feet below ground surface
- Langan disagrees with Mr. Wilson's statement that boring LB4 shown in his Figure 1 is "almost on the fault" since (i) distance clearly separates LB4 and the dotted line Mr. Wilson labels as "Concealed fault projection by Crook and Proctor (1992)" and (ii) a fault has not been confirmed within the Site by subsurface investigation performed within the Site. It is critical to understand that the fault "projections" illustrated in Mr. Wilson's Figure 1 are merely conjecture. We note that inferred fault projections drawn by Crook and Proctor (1992) were not identified as, nor confirmed by investigation, to be active fault traces nor were the projections of the faults on the Site identified via a site-specific subsurface investigation within the Site. Cook and Proctor (1992) even classify their discussion of the Hollywood Fault as "conjecture" and mark their delineation of the potential location of the Fault with "?" question marks. This conjectured evidence is obviously inferior to current subsurface exploration of the site done by Langan to support its report findings.
- The groundwater data collected during our geotechnical investigation associated with the May Langan Report was also considered in our site-specific subsurface fault investigation. Groundwater was encountered in predominantly sandy units in borings LB1, LB2, and LB4 whereas boring LB3 terminated in silty clay which is not generally conducive to bearing groundwater. The groundwater data collected during our fault investigation is based on groundwater level readings within the boreholes after stabilization; therefore, these readings are considered representative of groundwater conditions. Groundwater levels measured in the fault investigation were consistent and did not indicate the presence of a groundwater barrier. Therefore, Mr. Wilson's argument that groundwater data indicates faulting is unsupported.

## **J. SECTION: The May 2012 Preliminary Geotechnical Study**

### **SUBSECTION: Project Site Location Relative to the FRSA Boundary**

**STATEMENT:** *In the May Langan Report, the blue polygons, used to represent the Millennium Project's West and East Site locations, are shifted some 850 feet to the north of their actual location south of Yucca Street. If one takes the lines and streets of Langan's Figure 4 and overlays it on a scaled map of Hollywood, it shows Langan drew the Millennium Project Site just south of Franklin Avenue where the Hollywood freeway is located. Figure 2 above shows the FRSA, the Langan-drawn blue polygon locations, and a red rectangle that we have included showing the Millennium Project Site location, which is south of Yucca Street.*

### **RESPONSE:**

- Langan disagrees with Mr. Wilson's statement that the Site is represented some 850 feet north of their actual location in the May Langan Report. Mr. Wilson is referring to Figure 4 in the May Langan Report which illustrates the Site in



proximity to the City's FRSA nearest the Site. The "lines and streets of Langan's Figure 4" are a direct reproduction of the FRSA exhibit from the City's Safety Element. It is impossible to overlay the City's FRSA exhibit on a scaled street map and match all of the coinciding streets because these maps are not at the same scale. This is evidenced by Mr. Wilson's Figure 2 since Hollywood and Sunset Boulevards are mismatched between the street map that he included and the overlying zoomed in and cropped portion of the FRSA exhibit. It is not possible to locate the Site accurately on the map with respect to a FRSA, accurately measure a distance on the FRSA exhibit as Mr. Wilson did, and it is not technically correct to zoom in the FRSA exhibit the way shown in Mr. Wilson's Figure 2, to identify the map as a scaled image, and to measure distance from the zoomed in map. Simply, neither Mr. Wilson's map nor Langan's Figure 4 are to scale. Therefore, such maps cannot be used to measure distances or precise location. To be clear, Figure 4 was merely to illustrate the "proximity" of the FRSA as "adjacent" to the Site. The plotting of the Site in relation to the FRSA has also become immaterial because the November Langan Report was performed (regardless of site location) and clarified that the Hollywood Fault is not on the investigated portion of the Site, which is consistent with the conclusions of the May Langan Report.

**K. SECTION: November 30, 2012 Fault Investigation Report**

**SUBSECTION: Project Site Location Relative to the FRSA Boundary**

**STATEMENT:** *It is our understanding that Langan prepared a Fault Investigation Report for the Project Site after, in response to the May Langan Report discussed above, the City Building and Safety Department decided to require preparation of such a study. Contrasted with the May Langan Report, Figures 3 and 4 of the Fault Investigation Report are substantially similar to Figures 4 and 5 of the May Langan Report. As with the May Langan Report, there is no neighborhood-level analysis of the location of the Hollywood fault lines or an accurate depiction of the Fault Rupture Study Area (FRSA) northern boundary line crossing the property.*

**RESPONSE:**

- To be clear, the fault investigation was performed to support the tract map and the Department of Building and Safety's request. It was not prepared for the CEQA process or to replace the May Langan Report in the EIR. Langan performed a site-specific subsurface fault investigation within the Site and submitted our fault investigation report as requested and pursuant to industry standards.
- Langan agrees that Figures 4 and 5 in the May Langan Report are similar to Figures 3 and 4 in the November Langan Report, respectively. Figure 4 in the May Langan Report and Figure 3 in the November Langan Report show the Site in proximity to the nearest FRSA. As discussed previously, Figures 4 and 3 from the May and November Reports, respectively, are not intended to be scaled maps. These figures only illustrate the general proximity of the nearest FRSA zone to the Site and are not drawn to scale. The nearest FRSA zone is located adjacent to the Site, not within the Site as discussed in both reports. Again, it is important to note that a fault investigation was performed regardless of where the Site is plotted on the FRSA maps; and that investigation clarifies, and is

consistent with, the conclusions of the May Langan Report..

- Langan disagrees with Mr. Wilson's statement there is no neighborhood-level analysis of the Hollywood fault. The November Langan Report identifies and discusses studies by Law/Crandall, GeoPentech, and Leighton Consulting who have located active strands of the Hollywood fault during subsurface fault investigations within other sites to the northwest of the Site. Also, Plate 1 and the inset of the November Langan Report depict the location of the Site and Hollywood fault traces based on CGS and USGS GIS data, and the Crook and Proctor (1992) report respectively, on a neighborhood scale per the City of Los Angeles Department of Building and Safety's request. This information merely amplifies, and is otherwise consistent with, the May Langan Report.

**L. SECTION: November 30, 2012 Fault Investigation Report**  
**SUBSECTION: Introduction (Page 1)**

**STATEMENT:** *Following are observations regarding the Fault Investigation Report analysis and some of the documentation it relies upon.*

*The second sentence of the Introduction of the November Langan Report on page 1 again indicates that that Project Site is "not located within a current state or city mandated fault investigation zone". As explained relative to the May Langan Report, this Figure 3 once again shows the Project Site adjacent to Franklin Avenue rather than within the northern boundary of the FRSA. If this was recognized by City of Los Angeles staff, their fault investigation requirement would be consistent with discovering the depiction of the Project location in the Figure 3 of the May Langan Report. Given this set of facts, as you indicated it is unclear why it is stated that the City's requirement to investigate for on-site faults was based solely on Section 1803.5.11 of the Los Angeles Building Code since the Project Site "is located within 500 feet of the Hollywood fault trace (as mapped by the California Geologic Survey (CGS) and the United States Geological Survey (USGS))." This seems to be inconsistent with the statement that the Hollywood Fault is 0.4 miles from the Project Site. It is unclear if the City realized that reliable maps show (though not in the Langan Reports) fault traces mapped directly through the Project Site. This issue is discussed further in relation to other figures in the November Langan Report.*

**RESPONSE:**

- Langan agrees that a portion of the second sentence in the Introduction of the November Langan Report says the Site "...is not located within in a current state or city mandated fault investigation zone." This statement is based on reliable Maps and Langan's determination regarding the proximity of the Site to zones and faults.
- Langan disagrees with Mr. Wilson's discussion of Figure 3 included in the May Langan Report in the statement above. Mr. Wilson says, "As explained relative to the May Langan Report, this Figure 3 once again shows the Project Site adjacent to Franklin Avenue rather than within the northern boundary of the FRSA. If this was recognized by City of Los Angeles staff, their fault investigation requirement would be consistent with discovering the depiction of the Project location in the Figure 3 of the May Langan Report." Figure 3 in the May Langan Report is a Historic Groundwater Level Map and does not pertain to the City's FRSA and would not be grounds for the City staff to require

the performance of a fault investigation within the Site. It is also important to recognize that Mr. Wilson's arguments about precise locations of the Site, on maps that are not to scale, are tempered by the fact that a fault investigation was performed.

- To clarify Langan's position, the November Langan Report was initiated in response to the City's request while reviewing the Tentative Tract Map. During our meeting with Department staff, they acknowledged that the Site is not located within a current State and/or City of Los Angeles mandated fault investigation zone and that projects on immediately adjacent sites that were closer to the identified Hollywood fault had not historically been required to perform fault investigations prior to permitting and construction. Nevertheless, the Department requested that the portion of this Site within 500 feet of the location where the CGS (and USGS) have mapped the Hollywood fault be investigated for active fault traces. The investigation was performed following the applicable requirements of the Alquist-Priolo Earthquake Fault Zoning Act, California Geological Survey (CGS) Special Publication 42, CGS Note 49, Board for Geologists and Geophysicists' Geologic Guidelines for Earthquake and/or Fault Hazard Reports standards, and employed similar methods used for other investigations of the Hollywood fault as performed by Law/Crandall (2000) and Leighton Consulting, Inc. (2011).
- Langan disagrees with Mr. Wilson's statement that maps he cites reliably depict active fault traces mapped directly through the Site. As discussed previously, the traces reportedly identified within the Site are "inferred" buried traces which have not been confirmed by a site-specific subsurface investigation. The geologic section shown in Figure 2b of the Crook and Proctor Report (1992) from the Metro Rail borings do not depict offset of the Recent Alluvium. This is consistent with the findings of our fault investigation which concluded that there is no evidence of active faulting within the investigated portion of the Site. Dolan and others (1997) supports Langan's findings and refute the Crook and Proctor (1992) findings as follows:
  - Figure 5 in Dolan and others (1997) report provides an alternate interpretation of the Metro Rail findings (west of the Site) used in the Crook and Proctor study, and formally refutes Crook and Proctor's alleged identification of two (2) buried fault locations shown on the Crook and Proctor Figure 2b.
  - Figure 5 in Dolan and others (1997) report does not depict offset of the Recent Alluvium (west of the Site). Dolan and others (1997) note, "We [Dolan and others] observe no evidence for this strand, and we do not show it in the figure."
  - In addition, with reference to the Crook and Proctor (1992) and others studies, Dolan and others (1997) state ". . . the exact location of the Hollywood fault had been identified at only a few sites during the course of geotechnical investigations, notable early exploration of the Metropolitan Transit Authority subway currently under construction (e.g., Converse Consultants, Earth Sciences Associates, and Geo/Resource Consultants, 1981, Crook and Proctor, 1992) excavated several sites along the mountain front. However, they did not expose any active strands of the fault".

**M. SECTION: November 30, 2012 Fault Investigation Report**

**SUBSECTION: Hollywood Fault (page 4)**

**STATEMENT:** *The discussion of the Hollywood fault begins with Langan again stating that the "... fault is reportedly located approximately 0.4 miles from the Site", which as discussed above is not accurate based on references fully cited. Once again, there is no citation to any authoritative information source that can be independently verified.*

**RESPONSE:**

- Langan disagrees with Mr. Wilson's statement that "Once again, there is no citation to any authoritative information source that can be independently verified" regarding where the distance between the Site and the nearest fault, the Hollywood fault was obtained. As presented in the November Langan Report the Hollywood Fault section (page 4) of the November Langan Report explains that the distance and identity of the fault nearest the Site was sourced from the City's ZIMAS system. Mr. Wilson cannot credibly claim the City's ZIMAS system is not an authoritative information source, since as previously discussed herein Mr. Wilson used the same ZIMAS system to determine the distance from the Hollywood fault to the Site.

**N. SECTION: November 30, 2012 Fault Investigation Report**

**SUBSECTION: Summary of Prior Fault Studies (pages 4-5)**

**STATEMENT:** *In this portion of the November Langan Report, there are brief summaries of prior studies of the locations and characteristics of the Hollywood fault. Crook and Proctor (1992) used aerial photograph evidence of scarp features and observations in borings to project two fault traces directly through the Project Site (Plate 1). A copy of the Crook and Proctor study is attached as part of Exhibit B.*

*The November Langan Report's description and discussion of the Dolan and others (1997) study is incomplete. Dolan and others did not perform an aerial photographic review as indicated in the November Langan Report (the words "aerial", "photograph", and "photo" do not appear in the Dolan report). Their geomorphic study was based on using 1920s topographic maps to map fault scarps (a steeper slope between two flatter areas — the fault is below and in front of the scarp) and then they field checked the topographic results to confirm a scarp existed. They accounted for possible grading and ruled that out as a means to form the scarps. There is no statement by Langan that Figure 4 of the Dolan and others 1997 study depicts a fault scarp trace through the northern portion of the Project Site. Dolan and others also presented evidence of data to the west where there is a groundwater barrier along the trend of the scarps (darker shading in Figure 4 of Dolan and others 1997 study); this is not reported in the November Langan Report. Additionally, the November Langan Report does not mention that the Dolan and others (1997) study confirmed the 1992 report of Crook and Proctor, in particular that they agreed with the existence of the southern Crook and Proctor fault strand, which traverses the center of the Millennium East Site and the southern edge of the West Site (see Figure 1 above).*

**RESPONSE:**

- Langan agrees that a brief summary of prior publications that discuss the

Hollywood fault within the Site and vicinity is presented in the November Langan Report. As stated in the Introduction of the November Langan Report, one of the purposes of the November Langan Report was to, "Provide an overview of available information on active faults in the immediate vicinity of the Site." This information is consistent with and clarifies information in the May Langan Report.

- We disagree with Mr. Wilson's statement regarding the discussion of the Dolan and others (1997) study as being incomplete, since the discussion notes Dolan and others (1997) conclusions are based on geomorphic data and presents additional information regarding Dolan and others (1997) work. The Dolan (1997) report does not present subsurface-exploration-based evidence of active traces of the Hollywood fault within the Site.
- Langan disagrees with Mr. Wilson's statement that Figure 4 of Dolan and others (1997) depicts a fault scarp trace in the northern portion of the Site. The darker shading alluded to in Mr. Wilson's statement and explained in the caption of Dolan and others' (1997) Figure 4 depicts "inferred" (not actual) fault scarps. This is an important distinction because "inferred" data is always subject to on-site verification. The November Langan Report is the only available onsite verification and it confirms the Hollywood fault is not on the investigated portion of the Site.
- Langan disagrees with Mr. Wilson's statement that the darker shading in Figure 4 of Dolan and others (1997) report depicts groundwater barriers, since as explained in the caption of Dolan and others' (1997) Figure, "Darkest shaded areas are inferred fault scarps.
- Langan agrees with Mr. Wilson's statement that Dolan and others (1997) denotes groundwater barriers related to the Hollywood fault as being west of the Site (west of Cahuenga Boulevard and east of Highland Street) and not within the Site.
- Langan disagrees with Mr. Wilson's statement that Dolan and others (1997) study confirmed Crook and Proctor (1992) findings since (i) Figure 5 in Dolan and others (1997) report provides an alternate interpretation of the Metro Rail findings used in the Crook and Proctor's study, and formally refutes Crook and Proctor's alleged identification of two (2) buried fault locations shown on Crook and Proctor's Figure 2b, and (ii) Dolan and others' (1997) Figure 5 also does not depict offset of the Recent Alluvium (west of the Site). Dolan and others (1997) note that, "We [Dolan and others] observe no evidence for this strand, and we do not show it in the figure." In addition, with reference to the Crook and Proctor (1992) and others studies, Dolan and others (1997) state ". . . the exact location of the Hollywood fault had been identified at only a few sites during the course of geotechnical investigations, notable early exploration of the Metropolitan Transit Authority subway currently under construction (e.g., Converse Consultants, Earth Sciences Associates, and Geo/Resource Consultants, 1981, Crook and Proctor, 1992) excavated several sites along the mountain front. However, they did not expose any active strands of the fault."

**O. SECTION: November 30, 2012 Fault Investigation Report**  
**SUBSECTION: Summary of Prior Fault Studies (pages 4-5)**



**STATEMENT:** Based upon review of the November Langan Report descriptions of the work of Crook and Proctor (1992) and Dolan and others (1997), it appears that significant aspects of those two key studies are not included or not completely summarized. Crook and Proctor have worked in this portion of southern California for well over 45 years and have numerous peer-reviewed publications and geologic maps. Dolan is a key technical contributor to the Southern California Earthquake Center and has numerous papers published in peer-reviewed journals, others dealing with faulting along the Santa Monica Mountains. With respect to Crook and Proctor (1992) the November Langan Report states:

*"One (1) of the Metro Rail boring encountered a rock fragment overlying alluvium, which the authors interpreted as Miocene age sedimentary rock overlies alluvium; thereby suggesting two (2) east-west trending branches of the Hollywood fault could project through the Site. Note that their conclusions are based on limited subsurface data and additional sampling was not performed to confirm if the rock fragment was from a bedrock unit or from a boulder within the alluvium. "*

*In our opinion, this diminishes Crook and Proctor's work, when in fact their report states that Metro Rail boring 28B encountered 10 feet of fault breccia (not a single rock fragment) consisting of brecciated sandstone, alluvium, and siltstone, at 122 feet deep in a hole otherwise consisting of entirely alluvium to 220 feet deep as shown on their Figure 2b. In other situations we have seen, such a description may well have prompted a program of trenching, geophysics, and properly placed bore holes to prove or disprove these observations.*

**RESPONSE:**

- Langan disagrees with Mr. Wilson's statement that Langan diminished Crook and Proctor's (1992) work. Crook and Proctor have not performed a site-specific subsurface fault investigation within the Site. Any work based on conjecture must be balanced with more reliable onsite subsurface investigations. Langan has performed an investigation within the Site and found no evidence of active faulting within the investigated portion of the Site. Crook and Proctor's conclusions are based on limited subsurface data (not from the Site) and additional sampling was not performed to confirm the data related to the encountered breccia and Crook and Proctor state, "*Recency of displacement on the Hollywood fault could not be absolutely determined, although geomorphic expression (Weber and others, 1980; Dolan and Sieh, (1991) suggests late Quaternary movement.*" In addition, with reference to the Crook and Proctor (1992) and others studies, Dolan and others (1997) state ". . . the exact location of the Hollywood fault had been identified at only a few sites during the course of geotechnical investigations, notable early exploration of the Metropolitan Transit Authority subway currently under construction (e.g., Converse Consultants, Earth Sciences Associates, and Geo/Resource Consultants, 1981, Crook and Proctor, 1992) excavated several sites along the mountain front. However, they did not expose any active strands of the fault". No evidence of offset is reported in the Recent Alluvium in boring 28-2 (Converse and others, 1981) in Crook and Proctor (1992) therefore evidence is not provided of active faulting along the reported southern strands of the Hollywood fault.

- Mr. Wilson's suggestion that Crook and Proctor's (1992) findings should have prompted additional subsurface investigation to prove or disprove their observation has been complied with. As discussed, the November Langan Report was additional subsurface investigation. The results are consistent with the preliminary findings of the May Langan Report. Both reports were prepared based on industry standard methodologies and the fault investigation confirms the findings of the prior report.

**P. SECTION: November 30, 2012 Fault Investigation Report**

**SUBSECTION: Plate 1 – Hollywood Fault Locales**

**STATEMENT:** *Plate 1 depicts two traces of the Hollywood fault, one lying approximately 800 feet north of the Project Site (USGS, 2005) and another fault trace is shown south of Franklin Avenue within approximately 400 feet of the Project Site attributed to Crook and Proctor. The Crook and Proctor report clearly shows in their Figures 1 and 2a that they map the two other fault scarp traces of the Hollywood Fault through the Millennium Project Site, both East and West Sites. In this case, once again, Langan's maps confirm that these faults are much closer than 0.4 miles (2112 feet) from the Millennium Project Site. In fact, they are located on the Project Site.*

*Plate 1 also depicts existing scarps, bore holes, and other data by Crook and Proctor (1992) that support their suspected location of fault traces through the Project Site. Had this Plate been part of the Geology and Soils data analyzed as part of the Draft EIR and reviewed by City staff with the May Langan Report, in our professional opinion it is likely that a full fault investigation of the entire Project Site would have been required including borings, trenching, geophysical surveys, and other modern techniques to determine whether and where active faults are located on the Project Site.*

**RESPONSE:**

- Langan agrees, the fault locations shown on Plate 1 included in the November Langan Report are based on Crook and Proctor (1992). The locations have not been confirmed to be within the Site or to be active by any publication or subsurface investigation. The inferred lines were not drawn by Crook and Proctor (1992) based on site-specific subsurface investigation or mapping, therefore are not confirmed locations of active traces of the Hollywood fault. In addition, the Crook and Proctor (1992) report is not referred to by the CGS as a reference report for the Hollywood fault, and the Crook and Proctor study did not provide any evidence of active traces of the Hollywood fault within the Site. Evidence of active faulting was not observed within the investigated portion of the Site during our site-specific subsurface fault investigation. Simply, none of the data presented by Mr. Wilson provides evidence (that has been confirmed by exploration on the Site) of active traces of the Hollywood fault being located within the Site.

**Q. SECTION: November 30, 2012 Fault Investigation Report**

**SUBSECTION: Plate 2 – Subsurface Profile A-A'**

**STATEMENT:** *The November Langan Report does not discuss the interpretation of subsurface profile (cross-section) A-A' in Plate 2, which shows the geologic units*

defined by analysis of the sonic drilling samples. There is mention of the general parameters of the information shown on cross-section A-A', but no detailed interpretation and analysis of what bedding or structural features are present, and how these may relate to the presence or lack of faulting. The only comment is that there appears to be no offset of the groundwater surface as shown in the sonic borings. This may be significant, but the Hollywood Fault (indeed many faults) is not everywhere a perfect barrier to water flow. Also, more reliable water levels were obtained for the May Langan Report discussed earlier. Therefore, the groundwater surface alone is not dispositive with regard to fault activity.

Other interesting information is shown in cross-section A-A' but not discussed in the November Langan Report text. There is no discussion of the elevation difference of the base of the young alluvium (Qya) where it overlies the top of the older alluvium (Qoa). On the north side of the section, this geologic contact is nearly a perfect straight line through Borings B4, B3, and B6.

But, at Borings B2 and B5, the surface suddenly jumps up some 4 to 5 feet, only to then drop down again about 12 feet at Boring B1. From the level surface defined by B4, B3, and B6 to the surface at B1, there is a drop of 8 feet with a high point in between. Since the Hollywood fault has a movement of up on the north side, this 8 feet of "up-on-the-north" elevation difference must be explained, and a reverse fault may be the best explanation. The 8 feet, if it is fault displacement is at the low end of the projections of Dolan and others' observations of roughly 9 to 21 feet.

In addition, in this same geologically questionable area between Borings B2/B5 and B1, there is almost no correlation of the sedimentary units, to the extent they were fully mapped by Langan. Units in Boring B1 are predominantly CL (a clay-rich material) and the materials in the area of Borings B2/B5 at the same elevations (roughly 320 to 355 feet elevation) are SP, SW, and SM (various types of sand). These two type of materials are laid down in completely different environments (e.g., a lake for clay versus a river for sand) so should not normally be juxtaposed against one another. While some other explanation may be suggested, this juxtaposition of unlike deposits combined with the drop in the base on the Qya immediately above, and the deeper groundwater in LB3 indicates that north-side-up offset on the Hollywood fault a logical explanation. The November Langan Report does not recognize or discuss either significant geologic feature.

#### **RESPONSE:**

- Langan disagrees with Mr. Wilson's statements. It should be noted that Mr. Wilson merely reviewed reports to form his opinion. In contrast, Langan was involved with onsite exploration and direct access to the borings and methods used to evaluate the Site, all of which was performed according to professional standards and in consultation with the Department of Building and Safety. The following is a summary of the subsurface conditions, laboratory test results, discussion and evaluation, and conclusion presented in the November Langan Report, beginning on page 5.
  - Stratigraphic units within the investigated portion of the Site slope gently away from the Santa Monica Mountains and exhibit a trend in fining particle size from north to south, consistent with the character

- of an alluvial depositional environment at the base of a mountain range.
- Traces of the Hollywood fault are alleged by others in vicinity of the Site, but locations are not well defined and prior to our investigation site-specific subsurface investigation had not been performed within the Site to confirm their locations.
  - The Hollywood fault has been field documented through subsurface investigation northwest of the Site, per published studies by Law/Crandall, GeoPentech, and Leighton Consulting, Inc.
  - The groundwater data collected during our fault investigation is based on groundwater level readings within the boreholes after stabilization; therefore, these readings are considered representative of groundwater conditions. Depth to groundwater within the Site corresponds with the regional groundwater trend (Figure 2, November Langan Report) and evidence of a groundwater barrier between borings was not observed within the investigated portion of the Site.
  - Detailed inspection of the cores collected during our investigation did not reveal evidence of shearing.
  - Active faulting was not observed during our site-specific subsurface fault investigation within the investigated portion of the Site.
  - Contact between young alluvium (Qya) and underlying old alluvium (Qoa) is a variable erosional unconformity.
  - An inconsistent apparent date (older material over younger material) was reported at approximately 20 feet below ground surface in boring B2. The soils at this depth were further explored with two (2) additional sonic borings, B5 and B6, cored in the immediate vicinity of sonic boring B2. Apparent age results from borings B5 and B6 samples confirmed the sample results at 20 feet from boring B2 were not representative of the overall stratigraphic environment.
    - The stratigraphic units targeted by Mr. Wilson in borings B2, B5 and B1 between approximately el 320 and 355 are within Old Alluvium (Qoa) based on radiometric dating and thus greater than 11,000 years in age. Evidence of faulting was not observed in core samples recovered during our fault investigation within the investigated portion of the Site. If faulting were present in these units targeted by Mr. Wilson, the faulting would not have been considered active faulting since an active fault is a fault that has ruptured in the most recent 11,000 years (Holocene age) and based on radiocarbon dating results, these sediments are confirmed to be more than 11,000 years in age.

**R. SECTION: California Geological Survey 2010 Fault Activity Map of California**  
**SUBSECTION: Summary of Prior Fault Studies (pages 4-5)**

**STATEMENT:** As mentioned above, the California Geological Survey published in 2010 its Fault Activity Map of California, which has become the primary source for

*determining if a location in California might be underlain by an active or potentially active fault. The Hollywood Fault (Fault No. 392) is shown on the map, but this recent comprehensive source was not used for the DEIR, the May Langan Report, the November Langan Report, or the FEIR. As shown in Figure 3 below, this State map shows the Hollywood fault potentially passing through the Hollywood Millennium Project Site as documented by Crook and Proctor (1992). The description of the orange band around the fault classifies it as "Holocene fault displacement during past 11,700 years without historic record." Most consider the presence of this fault on the 2010 CGS Fault Activity Map of California as evidence of its existence and active status unless proven otherwise.*

**RESPONSE:**

- Langan recognizes that the CGS 2010 Fault Activity Map of California is a resource to be used for determining if a location in California might be underlain by an active or potentially active fault. The CGS Fault Activity Map of California is a map that was prepared at a 1:750,000 scale and is not intended to be photocopied and "zoomed in" to a city street level scale. The metadata file that accompanies the GIS files for the map specifically states that the data is not intended to be used at a scale larger than 1:500,000 as the inaccuracies in the locations of the faults may occur at larger scales. Per the metadata file, "Display at significantly larger scales may produce error in location of contacts or faults relative to features contained in other data sets." As such, the map is intended to show proximity of locations to active or potentially active faults, but cannot be used to measure accurate distances at city street level accuracy.
- Langan disagrees that the 2010 CGS Fault Activity Map of California and the accompanying text are not incorporated into the May and November Langan Report, the DEIR, and/or the FEIR. The CGS 2010 Fault Activity Map of California and accompanying explanatory text with references were integral parts of our investigation reports. The GIS files associated with the CGS 2010 Fault Activity Map of California are part of the USGS GIS files that were used and referenced in Figure 5 of the Preliminary May Langan Report and Figure 4 and Plate 1 in the November Langan Report. The May Langan Report is a technical appendix to the DEIR, the FEIR is based on the DEIR, and therefore the 2010 CGS Fault Activity Map and accompanying text are incorporated into each of the Langan and EIR reports.
- Langan disagrees with Mr. Wilson's use of the 2010 CGS Fault Activity Map of California in his Figure 3. The scale of CGS 2010 Fault Activity Map of California is 1:750,000. Due to the scale of the original map, it is not technically correct to "zoom" it in to city street level as shown in Mr. Wilson's Figure 3 and then overlay an uncited city street map. Per the CGS GIS metadata files, "The geologic map (2010 CGS Fault Activity Map of California) was digitized from compilations ranging in scale from 1:100,000 to 1:1,000,000, and is an accurate representation of the source maps. It is intended to be used at scales equal to or smaller than 1:500,000. Display at significantly larger scales may produce error in location of contacts or faults relative to features contained in other data sets."
- We disagree with Mr. Wilson's implication that the Crook and Proctor (1992) report documents that the active strands of the Hollywood Fault are present on the Site. The Crook and Proctor (1992) report as stated by Dolan and others



(1997) does not document active strands of the Hollywood fault. This report is not cited as a Reference in Appendix A or C for the Hollywood fault as alluded to in the statement above by Mr. Wilson.

- The location of the Hollywood fault, as speculated by Crook and Proctor (1992), has not been confirmed by site-specific subsurface investigation. That evidence is based on conjecture. In contrast, the November Langan Report is based on current physical and carbon dating evidence obtained from the geologic materials on the Site.

## **S1.SECTION: Conclusions**

**STATEMENT:** *Considering all of the foregoing discussion, we conclude that: 1. The fault investigation technical studies supporting the DEIR and FEIR have not adequately considered all relevant existing data describing possible or probable locations of the Hollywood fault at and near the Hollywood Millennium Project Site;*

### **RESPONSE:**

- Langan disagrees that the DEIR and FEIR have not considered relevant existing technical data related to the speculated location of the Hollywood fault within the Site and vicinity. Langan performed a site-specific subsurface fault investigation within the Site and reviewed and discussed several geologic reports on the Hollywood fault. Langan also reviewed Dolan and others, Crook and Proctor, and others as discussed in the November Langan Report. Dolan and others, Crook and Proctor, and others have not performed a site-specific subsurface fault investigation within the Site. Evidence of the Hollywood fault was not observed within the investigated portion of the Site during our site-specific subsurface fault investigation. In his discussion, Mr. Wilson did not provide any data or reference regarding the location of active fault traces of the Hollywood fault at or near the Site that was not identified or reviewed as part of the studies performed by Langan. The results of the November Langan Report are consistent with, and clarify, the conclusions of the May Langan Report that the Hollywood fault is not located on the investigated portion of the Site and that surface rupture is therefore unlikely.

## **S2.SECTION: Conclusions**

**STATEMENT:** *2. For the fault location data cited there are inconsistencies in the stated distance from the Hollywood Millennium Project Site to the Hollywood fault, which may have affected studies required by the City;*

### **RESPONSE:**

- Langan disagrees that inconsistencies are cited in the May and November Langan Reports regarding the distance from the Site to the Hollywood fault. The distance is consistently cited from the City's ZIMAS system as being approximately 0.4 miles from the Site in the aforementioned reports. The Site is not within a State or City mapped fault investigation zone.

### **S3.SECTION: Conclusions**

**STATEMENT:** 3. May Langan Report investigations have provided information suggesting a possible groundwater barrier south of their borings LB1, LB2, and LB4;

**RESPONSE:**

- Langan disagrees that the depths to groundwater reported in the May Langan Report suggest a possible groundwater barrier within the Site. Mr. Wilson's discussion regarding the measured groundwater levels and his presentation of data regarding the groundwater levels in Figure 1 is inaccurate. The groundwater data collected during our fault investigation is based on groundwater level readings taken within the boreholes after stabilization and corresponds with the regional trend of groundwater (Figure 2, November Langan Report) increasing in depth and elevation northward, toward the Santa Monica Mountains. Also, evidence of a groundwater barrier(s) between borings was not observed within the investigated portion of the Site (Langan November Report) and Dolan and others (1997) report groundwater barriers related to the Hollywood fault are located west of the Site (west of Cahuenga Boulevard and east of Highland) and not within the Site. During the preliminary geotechnical investigation groundwater was encountered within sandy layers.

### **S4.SECTION: Conclusions**

**STATEMENT:** 4. November Langan Report investigations have provided information suggesting a possible offset of the young and older alluvium contact and possible fault juxtaposition of unlike geologic layering between borings B2/B5 and B1;

**RESPONSE:**

- Langan disagrees that data presented in the November Langan Report suggests an offset in young and older alluvium and that unlike layering between borings B2, B5, and B1 suggest a fault is located within the Site for the following reasons:
  - The stratigraphic units within the investigated portion of the Site slope gently away from the Santa Monica Mountains and exhibit a trend in fining particle size from north to south, consistent with the character of an alluvial depositional environment at the base of a mountain range.
  - The specific stratigraphic units targeted by Mr. Wilson in borings B2, B5 and B1 between approximately el 320 and 355 are within Old Alluvium (Qoa) and thus greater than 11,000 years in age based on radiocarbon dating. Evidence of faulting was not observed in core samples recovered during our fault investigation within the investigated portion of the Site. If faulting were present in these units targeted by Mr. Wilson, the faulting would not have been considered active faulting since an active fault is a fault that has ruptured in the most recent 11,000 years (Holocene age) as defined by the CGS and based on radiocarbon dating results, these sediments were confirmed to be more than 11,000 years in age. Evidence of active faulting was not observed during our site-specific subsurface fault investigation within the investigated portion of the Site.
  - The contact between young alluvium (Qya) and underlying old alluvium (Qoa) is a variable erosional unconformity as described in the November

Langan Report.

**S5.SECTION: Conclusions**

**STATEMENT:** 5. *The FEIR does not reference the November Langan Report or the Crook and Proctor (1992) and Dolan and others (1997) studies or the California Geological Survey 2010 Fault Activity Map of California, which individually and collectively provide sufficient data to suspect active faulting through the Hollywood Millennium Project Site.*

**RESPONSE:**

- Langan disagrees that the 2010 CGS Fault Activity Map of California and the accompanying text are not referenced in the FEIR. The CGS 2010 Fault Activity Map of California and accompanying explanatory text with references were integral parts of the May and November Langan Reports. Although not explicitly stated, the GIS files associated with the CGS 2010 Fault Activity Map of California are part of the USGS GIS files that were used and referenced in Figure 5 of the May Langan Report and Figure 4 and Plate 1 in the November Langan Report. The May Langan Report is a technical appendix to the DEIR, the FEIR is based on the DEIR, and therefore the 2010 CGS Fault Activity Map and accompanying text are incorporated into each of the Langan and EIR reports.
- The Crook and Proctor (1992) study does not present evidence of active faulting through the Site. As stated in Dolan and others (1997), Crook and Proctor (1992) did not expose any active strands of the fault.
- The active strands of the Hollywood fault that have been identified by Dolan and others (1997) are not in the immediate vicinity of the Site and there is no evidence of active faulting within the Site.
- Evidence of active faulting was not observed during our site-specific subsurface fault investigation within the investigated portion of the Site. Our study is the only study cited by Mr. Wilson in which a site-specific fault investigation was performed within the Site. Our study confirmed that active strands of the Hollywood fault are not present within the Site in the area investigated.

**CLOSURE**

Please call the undersigned if you have any questions regarding this report.

Sincerely,

**Langan Engineering and Environmental Services, Inc.**



Dan R. Eberhart, CEG 965  
Associate

Attachments:

California Division of Mines and Geology, 1 July 1986, Special Studies Zones Hollywood Quadrangle

California Geological Survey, 2007, Fault-Rupture Hazard Zones in California, Special Publication 42

California Geological Survey, 2002, Note 49: Guidelines for Evaluating the Hazard of Surface Fault Rupture

California Board for Geologists and Geophysicists, July 1998, Geologic Guidelines for Earthquake and/or Fault Hazard Reports

City of Los Angeles Planning Department, March 1994, Safety Element Exhibit A: Alquist-Priolo Special Study Zones & Fault Rupture Study Areas

Crook, R., and Proctor, R., 1992, The Santa Monica and Hollywood Faults and the Southern Boundary of the Transverse Ranges Province, in Pipkin, B., and Proctor, R., eds., Engineering Geology Practice in Southern California. P. 233-246.

Dolan, J., Sieh, K., Rockwell, T., Gupta, P., and Miller, G., 1997, Active Tectonics, Paleoseismology, and Seismic Hazards of the Hollywood Fault, Northern Los Angeles Basin, California, in Geological Society of America Bulletin 1997; v. 109; no. 12; p. 1595-1616.

**SPECIAL PUBLICATION 42**  
**Interim Revision 2007**

# **FAULT-RUPTURE HAZARD ZONES IN CALIFORNIA**

Alquist-Priolo Earthquake Fault Zoning Act  
with Index to Earthquake Fault Zones<sup>1</sup> Maps

<sup>1</sup> Name changed from Special Studies Zones January 1, 1994



**DEPARTMENT OF CONSERVATION**  
*California Geological Survey*

**STATE OF CALIFORNIA**  
ARNOLD SCHWARZENEGGER  
GOVERNOR

**THE RESOURCES AGENCY**  
MIKE CHRISMAN  
SECRETARY FOR RESOURCES

**DEPARTMENT OF CONSERVATION**  
BRIDGETT LUTHER  
DIRECTOR

**CALIFORNIA GEOLOGICAL SURVEY**  
JOHN G. PARRISH, *PH.D.*  
STATE GEOLOGIST



**SPECIAL PUBLICATION 42**

**FAULT-RUPTURE HAZARD ZONES IN CALIFORNIA**

**Alquist-Priolo Earthquake Fault Zoning Act  
With Index to Earthquake Fault Zones Maps**

**by**

**WILLIAM A. BRYANT and EARL W. HART**

**Geologists**

**Interim Revision 2007**

California Department of Conservation  
California Geological Survey  
801 K Street, MS 12-31  
Sacramento, California 95814

## PREFACE

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to regulate development near active faults so as to mitigate the hazard of surface fault rupture.

This report summarizes the various responsibilities under the Act and details the actions taken by the State Geologist and his staff to implement the Act.

This is the eleventh revision of Special Publication 42, which was first issued in December 1973 as an "Index to Maps of Special Studies Zones." A text was added in 1975 and subsequent revisions were made in 1976, 1977, 1980, 1985, 1988, 1990, 1992, 1994, and 1997. The 2007 revision is an interim version, available in electronic format only, that has been updated to reflect changes in the index map and listing of additional affected cities. In response to requests from various users of Alquist-Priolo maps and reports, several digital products are now available, including digital raster graphic (pdf) and Geographic Information System (GIS) files of the Earthquake Fault Zones maps, and digital files of Fault Evaluation Reports and site reports submitted to the California Geological Survey in compliance with the Alquist-Priolo Act (see Appendix E).

On January 1, 1994, the name of the Alquist-Priolo Special Studies Zones Act was changed to the Alquist-Priolo Earthquake Fault Zoning Act, and the name Special Studies Zones was changed to Earthquake Fault Zones as a result of a July 25, 1993 amendment.

Information on new and revised Earthquake Fault Zones maps will be provided as supplements until the next revision of this report.

**CALIFORNIA DEPARTMENT OF CONSERVATION  
CALIFORNIA GEOLOGICAL SURVEY**

801 K Street, MS 12-31  
Sacramento, CA 95814-3531  
[www.conservation.ca.gov/cgs](http://www.conservation.ca.gov/cgs)

**PUBLIC INFORMATION OFFICES:**

SACRAMENTO AREA  
Publications and Information  
801 K Street, MS 14-33  
Sacramento, CA 95814-3532  
(916) 445-5716

SAN FRANCISCO AREA  
345 Middlefield Road, MS 520  
Menlo Park, CA 94025  
(650) 688-6327

LOS ANGELES AREA  
888 South Figueroa, Suite 475  
Los Angeles, CA 90017  
(213) 239-0878

**SUPPLEMENT NO. 1 TO SPECIAL PUBLICATION 42 (2007 Interim Edition)**

**NEW AND REVISED OFFICIAL MAPS OF EARTHQUAKE FAULT ZONES OF SEPTEMBER 21, 2012**

Official Maps of new and revised Earthquake Fault Zones, indexed hereon, are issued pursuant to the Alquist-Priolo Earthquake Fault Zoning Act. Revised maps supersede earlier Official Maps.

Copies of these maps may be examined at the offices of affected cities and counties, at the Public Information offices of the California Geological Survey (CGS), and on the CGS website ([http://www.quake.ca.gov/gmaps/ap/ap\\_maps.htm](http://www.quake.ca.gov/gmaps/ap/ap_maps.htm)). Both GIS and pdf files can be downloaded from this website. Printed maps may be purchased from ARC-Bryant (formerly BPS Reprographic Services), 945 Bryant Street, San Francisco, California 94103, telephone (415) 495-8700.

For information on Official Maps of Earthquake Fault Zones previously issued, and for provisions of the Alquist-Priolo Earthquake Fault Zoning Act, the reader should consult the 2007 edition of Special Publication 42, "Fault-rupture Hazard Zones in California." This publication is available online only from the California Geological Survey at <ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf>.

Official Maps issued September 21, 2012 (Map numbers keyed to index map):

- |                     |                  |                  |
|---------------------|------------------|------------------|
| 1. Hayward.*        | 6. Salton*       | 11. Coyote Wells |
| 2. Piru             | 7. Durmid*       | 12. Yuha Basin   |
| 3. Mecca*           | 8. Carrizo Mtn.* | 13. Mount Signal |
| 4. Mortmar*         | 9. Painted Gorge |                  |
| 5. Orocopia Canyon* | 10. Plaster City |                  |

\* Revised zone map

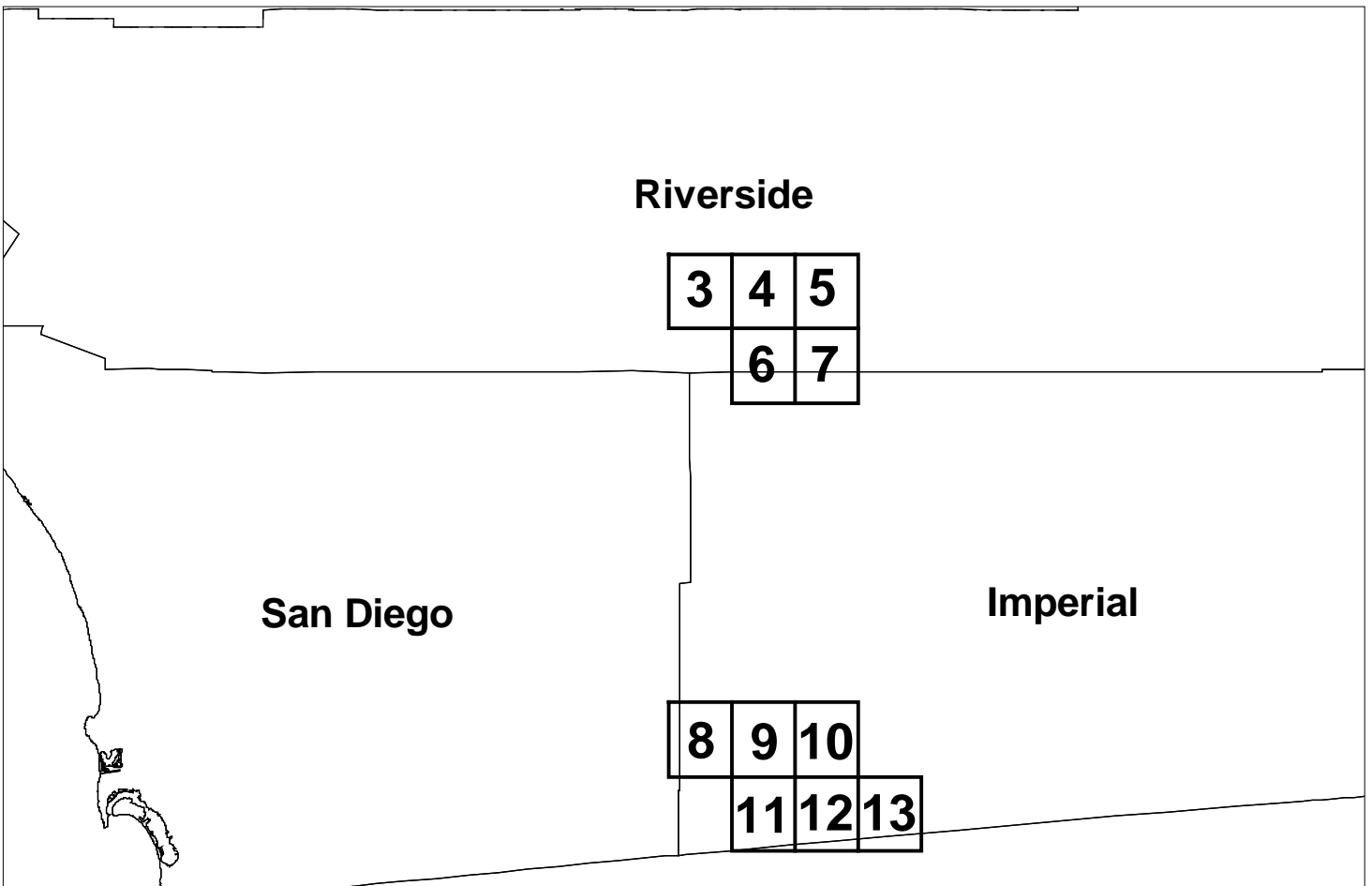
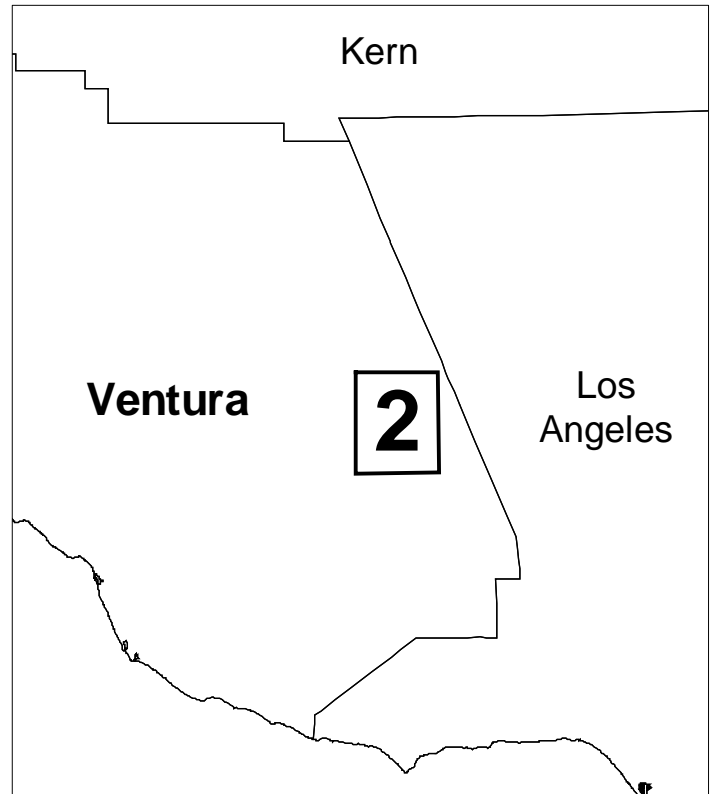
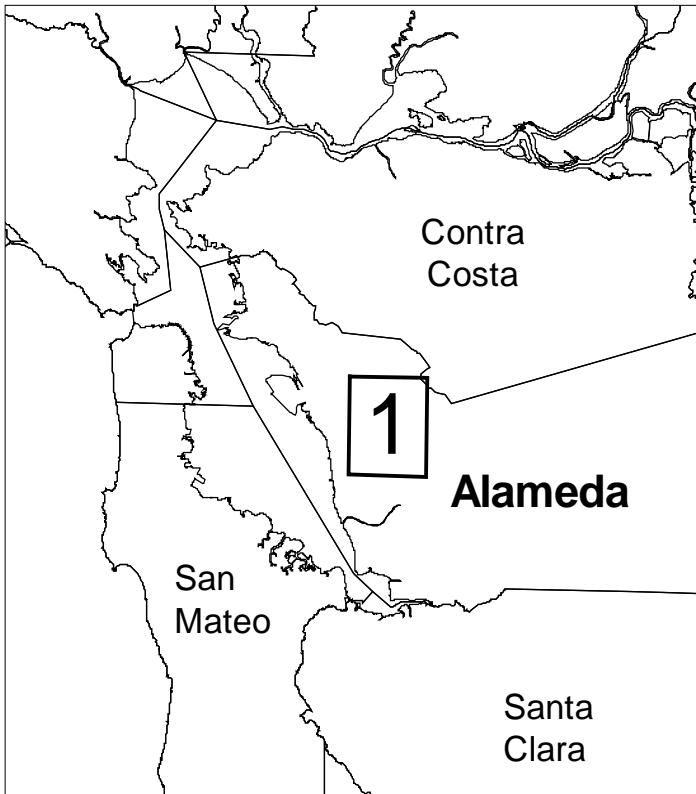
Cities and counties affected by new or revised Earthquake Fault Zones shown on Official Maps of September 19, 2012:

**Cities**

Hayward  
Oakland  
San Leandro

**Counties**

Alameda  
Imperial  
Riverside  
San Diego  
Ventura



**SUPPLEMENT NO. 1 INDEX MAP**  
**NEW AND REVISED OFFICIAL MAPS OF EARTHQUAKE FAULT ZONES OF SEPTEMBER 21, 2012**  
 (See List for Names of Maps)

# CONTENTS

<b>INTRODUCTION.....</b>	<b>1</b>
<b>PROGRAM FOR ZONING AND EVALUATING FAULTS .....</b>	<b>2</b>
Requirements of the Act .....	2
Initial Program for Zoning Faults .....	2
Definitions, Policies, Rationale.....	3
Fault and Fault Zone.....	3
Fault Trace.....	5
Active Fault.....	5
Potentially Active Fault.....	5
Sufficiently Active and Well-Defined .....	5
Delineating the Earthquake Fault Zones.....	6
Fault Evaluation and Zoning Program.....	6
Uses and Limitations of Earthquake Fault Zones Maps.....	9
<b>INDEX TO MAPS OF EARTHQUAKE FAULT ZONES .....</b>	<b>9</b>
Availability of Earthquake Fault Zones Maps .....	9
<b>REFERENCES.....</b>	<b>10</b>
<b>APPENDICES .....</b>	<b>22</b>
Appendix A. Alquist-Priolo Earthquake Fault Zoning Act .....	22
Appendix B. Policies and Criteria of the State Mining and Geology Board .....	26
Appendix C. Guidelines for Evaluating the Hazard of Surface Fault Rupture .....	28
Appendix D. General Guidelines for Reviewing Geologic Reports.....	33
Appendix E. Products of the Fault Evaluation and Zoning Program .....	36
Appendix F. Waiver Procedure for the Alquist-Priolo Act.....	42
<b>TABLES</b>	
Table 1. Summary of responsibilities and functions under the Alquist-Priolo Earthquake Fault Zoning Act .....	1
Table 2. Summary of policies and criteria adopted by the State Mining and Geology Board and codified in California Code of Regulations .....	2
Table 3. Official Maps of Earthquake Fault Zones issued 1974 through 2007 .....	2
Table 4. Cities and counties affected by Earthquake Fault Zones as of August 2007 .....	3
Table 5. Surface faulting associated with earthquakes in California, 1974-June 2007 .....	8
<b>FIGURES</b>	
Figure 1. Principal active faults in California zoned under the Alquist-Priolo Earthquake Fault Zoning Act.....	4
Figure 2. Geologic time scale.....	5
Figure 3. Example of Earthquake Fault Zones Map.....	7
Figure 4. Index to Official Maps of Earthquake Fault Zones .....	11-21



# FAULT-RUPTURE HAZARD ZONES IN CALIFORNIA

By

William A. Bryant and Earl W. Hart

## INTRODUCTION

The Alquist-Priolo Earthquake Fault Zoning Act was signed into law December 22, 1972, and went into effect March 7, 1973. The Act, codified in the Public Resources Code as Division 2, Chapter 7.5, has been amended ten times. A complete text of the Act is provided in Appendix A. The purpose of this Act is to prohibit the location of most structures for human occupancy across the traces of active faults and to thereby mitigate the hazard of fault rupture (Section 2621.5).

This law initially was designated as the Alquist-Priolo Geologic Hazard Zones Act. The Act was renamed the Alquist-Priolo Special Studies Zones Act effective May 4, 1975 and the Alquist-Priolo Earthquake Fault Zoning Act effective January 1, 1994. The original designation "Special Studies Zones" was changed to "Earthquake Fault Zones" when the Act was last renamed.

Under the Act, the State Geologist (Chief of the California Geological Survey [CGS]) is required to delineate "Earthquake Fault Zones" (EFZs) along known active faults in California. Cities and counties affected by the zones must regulate certain development "projects" within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting. The State Mining and Geology Board provides additional regulations (Policies and Criteria) to guide cities and counties in their implementation of the law (California Code of Regulations, Title 14, Div. 2). A summary of principal responsibilities and functions required by the Alquist-Priolo Act is given in Table 1. The Policies and Criteria are summarized in Table 2, and the complete text is provided in Appendix B.

This publication identifies and describes (1) actions taken by the State Geologist to delineate Earthquake Fault Zones, (2) policies used to make zoning decisions, and (3) Official Maps of Earthquake Fault Zones issued to date. A continuing program to evaluate faults for future zoning or zone revision also is summarized. Other aspects of the Alquist-Priolo Earthquake Fault Zoning Act and its implementation are discussed by Hart (1978 and 1986). The effectiveness of the AP Act and program was evaluated by Reitherman and Leeds (1990). The program is implementing many of the recommendations in that report.

Information presented here is based on various in-house documents and publications of the authors and others of the CGS (see Appendix E).

*Table 1. Summary of responsibilities and functions under the Alquist-Priolo Earthquake Fault Zoning Act (see Appendix A for full text of Act).*

State Mining and Geology Board	
1.	Formulates policies and criteria to guide cities and counties (Sec. 2621.5 and 2623). (See Appendix B.)
2.	Serves as Appeals Board (Sec. 673).
State Geologist	
1.	Delineates Earthquake Fault Zones; compiles and issues maps to cities, counties, and state agencies (Sec. 2622). a. Preliminary Review Maps. b. Official Maps.
2.	Reviews new data (Sec. 2622). a. Revises existing maps. b. Compiles new maps.
3.	Approves requests for waivers initiated by cities and counties (Sec. 2623).
Cities and Counties	
1.	Must adopt zoning laws, ordinances, rules, and regulations; primary responsibility for implementing Act (Sec. 2621.5).
2.	Must post notices of new Earthquake Fault Zones Maps (Sec. 2621.9 and 2622).
3.	Regulates specified "projects" within Earthquake Fault Zones (Sec. 2623). a. Determines need for geologic reports prior to project development. b. Approves geologic reports prior to issuing development permits. c. May initiate waiver procedures. (See Appendix F.)
Other	
1.	<i>Seismic Safety Commission</i> - advises State Geologist and State Mining and Geology Board (Sec. 2630).
2.	<i>State Agencies</i> - prohibited from siting structures for human occupancy across active fault traces (Sec. 2621.5).
3.	<i>Disclosure</i> - prospective buyers of any real property located within an Earthquake Fault Zone must be notified of that fact (Sec. 2621.9).

*Table 2. Summary of policies and criteria adopted by the State Mining and Geology Board and codified in California Code of Regulations (see Appendix B for full text).*

Policies	
1.	Defines active fault (equals potential hazard) as a fault that has had surface displacement during Holocene time (last 11,000 years) (Sec. 3601).
2.	Defines "structure for human occupancy" and other terms (Sec. 3601).
3.	Requires cities and counties to notify property owners within proposed new and revised Earthquake Fault Zones (Sec. 3602).
4.	Provides opportunity for public to comment on Preliminary Review Maps of Earthquake Fault Zones (Sec. 3602).
5.	Provides for comments and recommendations to State Geologist regarding Preliminary Review Maps (Sec. 3602).
Specific Criteria for Lead Agencies (Sec. 3603)	
1.	No structure for human occupancy defined as a "project" is permitted on the trace of an active fault. Unless proven otherwise, the area within 50 feet of an active fault is presumed to be underlain by active branches of the fault.
2.	Requires disclosure of Earthquake Fault Zones to the public.
3.	Requires that buildings converted to structures for human occupancy comply with provisions of the Act.
4.	Requires geologic reports directed at the problem of potential surface faulting for all projects defined by the Act.
5.	Requires cities and counties to review geologic reports for adequacy.
6.	Requires that geologic reports be submitted to the State Geologist for open-file.

### PROGRAM FOR ZONING AND EVALUATING FAULTS Requirements of the Act

Section 2622 of the Alquist-Priolo Earthquake Fault Zoning Act (Appendix A) requires the State Geologist to:

1. "Delineate ... appropriately wide earthquake fault zones to encompass all potentially and recently active traces of the San Andreas, Calaveras, Hayward, and San Jacinto faults, and such other faults, or segments thereof, as the State Geologist determines to be sufficiently active and well-defined as to constitute a potential hazard to structures from surface faulting or fault creep."

2. Compile maps of Earthquake Fault Zones and submit such maps to affected cities, counties, and state agencies for their review and comment. Following appropriate reviews, the State Geologist must provide Official Maps to the affected cities, counties, and state agencies.

3. Continually review new geologic and seismic data to revise the Earthquake Fault Zones or delineate additional zones.

These requirements constitute the basis for the State Geologist's fault-zoning program and for many of the policies devised to implement the program.

### Initial Program for Zoning Faults

As required under the Act, the State Geologist initiated a program early in 1973 to delineate Earthquake Fault Zones to encompass potentially and recently active traces of the San Andreas, Calaveras, Hayward, and San Jacinto faults, and to compile and distribute maps of these zones. A project team was established within the CGS to develop and conduct a program for delineation of the zones.

Initially, 175 maps of Earthquake Fault Zones were delineated for the four named faults. These zone maps, issued as Preliminary Review Maps, were distributed for review by local and state government agencies on December 31, 1973. Following prescribed 90-day review and revision periods, Official Maps were issued on July 1, 1974. At that time, the Earthquake Fault Zones became effective and the affected cities and counties were required to implement programs to regulate development within the mapped zones. A second set of Official Maps -- 81 maps of new zones and five maps of revised zones -- was issued on January 1, 1976 to delineate new and revised zones. Additional Official Maps of new and revised zones were issued in succeeding years, as summarized in Table 3.

<i>Table 3. Official Maps of Earthquake Fault Zones issued 1974 through August 2007.</i>			
DATE OF ISSUE	NEW MAPS	REVISED MAPS	WITHDRAWN MAPS
July 1, 1974	175	-	-
January 1, 1976	81	5	-
January 1, 1977	4	3	-
January 1, 1978	1	-	-
July 26, 1978	2	-	-
January 1, 1979	4	7	-
January 1, 1980	21	9	-
January 1, 1982	13	27	2
July 1, 1983	18	12	-
January 1, 1985	33	10	-
July 1, 1986	18	14	-
March 1, 1988	58	4	-
January 1, 1990	60	25	-
November 1, 1991	46	8	-
July 1, 1993	1	10	2
June 1, 1995	8	13	-
May 1, 1998	2	1	-
May 1, 1999	3	1	-
May 1, 2003	3	11	-
August 16, 2007	-	1	-
Totals	551	161	4

As of August 16, 2007, 551 Official Maps of Earthquake Fault Zones have been issued. Of these, 161 have been revised since their initial issue and four have been withdrawn. The maps are identified by quadrangle map name and the date of issue or revision on the Index to Maps of Earthquake Fault Zones (Figure 4).

The maps delineate regulatory zones for the faults generally identified in Figure 1. Additional faults will be zoned in the future, and some zones will be revised. Thirty-six counties and 104 cities are affected by the existing Earthquake Fault Zones. These jurisdictions are listed in Table 4.

### Definitions, Policies, Rationale

For the State Geologist to carry out the mandate to establish regulatory zones, certain terms identified in Section 2622 of the Act had to be defined and policies had to be

developed to provide a consistent and reasonable approach to zoning. After the zoning program was underway and the surface fault-rupture process was better understood, other terms were defined and some zoning policies were modified.

### Fault and Fault Zone

A *fault* is defined as a fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side. Most faults are the result of repeated displacement that may have taken place suddenly and/or by slow creep. A fault is distinguished from those fractures or shears caused by landsliding or other gravity-induced surficial failures. A *fault zone* is a zone of related faults that commonly are braided and subparallel, but may be branching and divergent. A fault zone has significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles.

Table 4. Cities and counties affected by Earthquake Fault Zones as of August 16, 2007\*

CITIES (104)**			COUNTIES (36)	
American Canyon	Hayward	Rosemead	Alameda	Stanislaus
Arcadia	Hemet	San Bernardino	Alpine	Ventura
Arcata	Highland	San Bruno	Butte	Yolo
Arvin	Hollister	San Diego	Contra Costa	
Bakersfield	Huntington Beach	San Fernando	Fresno	
Banning	Indio	San Jacinto	Humboldt	
Barstow	Inglewood	San Jose	Imperial	
Beaumont	La Habra	San Juan Bautista	Inyo	
Benicia	La Habra Heights	San Leandro	Kern	
Berkeley	Lake Elsinore	San Luis Obispo	Lake	
Bishop	Livermore	San Marino	Lassen	
Brea	Loma Linda	San Pablo	Los Angeles	
Calimesa	Long Beach	San Ramon	Marin	
Camarillo	Los Angeles	Santa Clarita	Mendocino	
Carson	Malibu	Santa Rosa	Merced	
Cathedral City	Mammoth Lakes	Seal Beach	Modoc	
Chino Hills	Milpitas	Signal Hill	Mono	
Coachella	Monrovia	Simi Valley	Monterey	
Colton	Moorpark	South Pasadena	Napa	
Compton	Moreno Valley	South San Francisco	Orange	
Concord	Morgan Hill	Temecula	Riverside	
Corona	Murrieta	Trinidad	San Benito	
Coronado	Oakland	Twentynine Palms	San Bernardino	
Culver City	Pacifica	Union City	San Diego	
Daly City	Palmdale	Upland	San Luis Obispo	
Danville	Palm Springs	Ventura (San Buenaventura)	San Mateo	
Desert Hot Springs	Palo Alto	Walnut Creek	Santa Barbara	
Dublin	Pasadena	Whittier	Santa Clara	
El Cerrito	Pleasanton	Willits	Santa Cruz	
Fairfield	Portola Valley	Windsor	Shasta	
Fontana	Rancho Cucamonga	Woodside	Siskiyou	
Fortuna	Redlands	Yorba Linda	Solano	
Fremont	Rialto	Yucaipa	Sonoma	
Gardena	Richmond	Yucca Valley		
Glendale	Ridgecrest			

\* To inquire about local government policies and regulations or to consult (obtain) copies of specific Earthquake Fault Zones maps, address the Planning Director of each county or city. Some jurisdictions have replotted the EFZ boundaries on large-scale parcel maps.

\*\* Additional cities may be affected by the zones as new cities are created, city boundaries are expanded, or new zones are established

**PRINCIPAL FAULTS ZONED  
UNDER ALQUIST-PRIOLO  
EARTHQUAKE FAULT ZONING ACT  
1974-2007**

0 50 100 miles  
0 100 200 kilometers

Note: Other faults may be zoned in the future and existing zones may be revised when warranted by new fault data

Figure 1. Principal active faults in California zoned under the Alquist-Priolo Earthquake Fault Zoning Act. Asterisk indicates faults with historic surface rupture.



### Fault Trace

A *fault trace* is the line formed by the intersection of a fault and the earth's surface. It is the representation of a fault as depicted on a map, including maps of the Earthquake Fault Zones.

### Active Fault

For the purposes of this Act, an *active fault* is defined by the State Mining and Geology Board as one which has "had surface displacement within Holocene time (about the last 11,000 years)" (see Appendix B, Section 3601). This definition does not, of course, mean that faults lacking evidence for surface displacement within Holocene time are necessarily inactive. A fault may be presumed to be inactive based on satisfactory geologic evidence; however, the evidence necessary to prove inactivity sometimes is difficult to obtain and locally may not exist.

### Potentially Active Fault

Because the Alquist-Priolo Act requires the State Geologist to establish Earthquake Fault Zones to encompass all "potentially and recently active" traces of the San Andreas, Calaveras, Hayward, and San Jacinto faults, additional definitions were needed (Section 2622). Initially, faults were defined as *potentially active*, and were zoned, if they showed evidence of surface displacement during Quaternary time (last 1.6 million years, Figure 2). Exceptions were made for certain Quaternary (i.e., Pleistocene) faults that were presumed to be inactive based on direct geologic evidence of inactivity during all of Holocene time or longer. The term "recently active" was not defined, as it was considered to be covered by the term "potentially active." Beginning in 1977, evidence of Quaternary surface displacement was no longer used as a criterion for zoning. However, the term "potentially active" continued to be used as a descriptive term on map explanations on EFZ maps until 1988.

### Sufficiently Active and Well-defined

A major objective of the CGS's continuing Fault Evaluation and Zoning Program is to evaluate the hundreds of remaining potentially active faults in California for zoning consideration. However, it became apparent as the program progressed that there are so many potentially

active (i.e., Quaternary) faults in the state (Jennings, 1975) that it would be meaningless to zone all of them. In late 1975, the State Geologist made a policy decision to zone only those potentially active faults that have a relatively high potential for ground rupture. To facilitate this, the terms "sufficiently active" and "well-defined," from Section 2622 of the Act, were defined for application in zoning faults other than the four named in the Act. These two terms constitute the present criteria used by the State Geologist in determining if a given fault should be zoned under the Alquist-Priolo Act.

*Sufficiently active.* A fault is deemed sufficiently active if there is evidence of Holocene surface displacement along one or more of its segments or branches. Holocene surface displacement may be directly observable or inferred; it need not be present everywhere along a fault to qualify that fault for zoning.

*Well-defined.* A fault is considered well-defined if its trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The fault may be identified by direct observation or by indirect methods (e.g., geomorphic evidence; Appendix C). The critical consideration is that the fault, or some part of it, can be located in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

Determining if a fault is sufficiently active and well-defined is a matter of judgment. However, these definitions provide standard, workable guidelines for establishing Earthquake Fault Zones under the Act.

The evaluation of faults for zoning purposes is done with the realization that not all active faults can be identified. Furthermore, certain faults considered to be active at depth, because of known seismic activity, are so poorly defined at the surface that zoning is impractical. Although the map explanation indicates that "potentially active" (i.e., Quaternary) faults are identified and zoned (with exceptions) on the Official Maps of Earthquake Fault Zones until 1988, this is basically true only for those maps issued July 1, 1974 and January 1, 1976. Even so, all of the principal faults zoned in 1974 and 1976 were active during Holocene time, if not historically. Beginning with the maps of January 1, 1977, all faults zoned meet the criteria of "sufficiently active and well-defined."

GEOLOGIC AGE			YEARS BEFORE PRESENT (estimated)
	Period	Epoch	
CENOZOIC	QUATERNARY	Historic Holocene	200
		Pleistocene	11,000
	TERTIARY	Pliocene	1,600,000
		pre-Pliocene	5,000,000
			66,000,000
pre-CENOZOIC time			
Beginning of geologic time			4,600,000,000

Faults along which movement has occurred during this interval and defined as *active* by Policies and Criteria of the State Mining and Geology Board.

Faults defined as *potentially active* for the purpose of evaluation for possible zonation.

Figure 2. Geologic time scale.



## Delineating the Earthquake Fault Zones

Earthquake Fault Zones are delineated on U.S. Geological Survey topographic base maps at a scale of 1:24,000 (1 inch equals 2,000 feet). The zone boundaries are straight-line segments defined by turning points (Figure 3). Most of the turning points are intended to coincide with locatable features on the ground (e.g., bench marks, roads, streams). Neither the turning points nor the connecting zone boundaries have been surveyed to verify their mapped locations.

Locations of Earthquake Fault Zone boundaries are controlled by the position of fault traces shown on the Official Maps of Earthquake Fault Zones. With few exceptions, the faults shown on the 1974 and 1976 Earthquake Fault Zones maps were not field-checked during the compilation of these maps. However, nearly all faults zoned since January 1, 1977 have been evaluated in the field or on aerial photographs to verify that they do meet the criteria of being sufficiently active and well-defined.

Zone boundaries on early maps were positioned about 660 feet (200 meters) away from the fault traces to accommodate imprecise locations of the faults and possible existence of active branches. The policy since 1977 is to position the EFZ boundary about 500 feet (150 meters) away from major active faults and about 200 to 300 feet (60 to 90 meters) away from well-defined, minor faults. Exceptions to this policy exist where faults are locally complex or where faults are not vertical.

## Fault Evaluation and Zoning Program

The Fault Evaluation and Zoning Program was initiated in early 1976 for the purpose of evaluating those "other faults" identified in the Act as "sufficiently active and well-defined" (see definition above) after it was recognized that effective future zoning could not rely solely on the limited fault data of others. Justification of this program is discussed in more detail in Special Publication 47 of the Division of Mines and Geology (1976; also see Hart, 1978).

The program was originally scheduled over a 10-year period. The state was divided into 10 regions or work areas (Figure 1), with one region scheduled for evaluation each year. However, the work in some regions was extended due to heavy workloads. Fault evaluation work includes interpretation of aerial photographs and limited field mapping, as well as the use of other geologists' work. A list of faults to be evaluated in a target region was prepared and priorities assigned. The list included potentially active faults not yet zoned, as well as previously zoned faults or fault-segments that warranted zone revisions (change or deletion). Faults also were evaluated in areas outside of scheduled regions, as the need arose (e.g., to map fault rupture immediately after an earthquake). The fault evaluation work was completed in early 1991. The work is summarized for each region in Open-File Reports (OFR) 77-8, 78-10, 79-10, 81-3, 83-10, 84-52, 86-3, 88-1, 89-16, and 91-9 (see Appendix E). Appendix E is a complete list of publications and products of the Fault Evaluation and Zoning Program.

For each fault evaluated, a Fault Evaluation Report (FER) was prepared, summarizing data on the location, recency of activity, and sense and magnitude of displacement. Each FER contains recommendations for or against zoning. These in-house reports are filed at the CGS Sacramento Regional Office at 801 K Street, MS 12-31, Sacramento, 95814, where they are available for reference. Reference copies of the FERs are filed in the CGS's Los Angeles and San Francisco Bay regional offices. An index to FERs prepared 1976 to April 1989 is available as OFR 90-9 (see Appendix E). This list and an index map identify the faults that have been evaluated. Digital files of all FER's are available in pdf format (CGS CD 2002-01; CD 2002-02; CD 2002-03) (see Appendix E).

Under the AP Act (Sec. 2622), the State Geologist has an on-going responsibility to review "new geologic and seismic data" in order to revise the Earthquake Fault Zones and to delineate new zones "when warranted by new information."

As a result of the fault evaluations made since 1976, 295 new and 155 revised Earthquake Fault Zones Maps have been issued and four maps have been withdrawn (Table 3). The faults zoned since 1976 are considered to meet the criteria of "sufficiently active and well-defined" (see Definitions above). Many other faults did not appear to meet the criteria and were not zoned. It is important to note that it is sometimes difficult to distinguish between slightly active faults and inactive ones, because the surface features formed as a result of minor, infrequent rupture are easily obliterated by geologic processes (erosion, sedimentation, mass wasting) or people's activities. Even large scale fault-rupture can be obscured in complex geologic terranes or high-energy environments. Recent fault-rupture also is difficult to detect where it is distributed as numerous breaks or warps in broad zones of deformation. As a consequence of these problems, it is not possible to identify and zone all active faults in California. For the most part, rupture on faults not identified as active is expected to be minor.

Since zones were first established in 1974, there have been 25 earthquakes or earthquake sequences associated with surface faulting in various parts of California (Table 5). This is an average of 0.75 fault-rupture events per year. Most of the recent surface faulting has been relatively minor; either in terms of amount of displacement or length of surface rupture (Table 5). However, one foot (30 cm) or more displacement occurred during seven events. Earlier records (incomplete) suggest that displacements of 3 feet (one meter) or more occur at least once every 15 to 20 years in California (Bonilla, 1970; Grantz and Bartow, 1977). Many of the recent coseismic events occurred on faults that were not yet zoned, and a few were on faults not considered to be potentially active or not even mapped. However, coseismic rupture also occurred on faults mostly or entirely within the Earthquake Fault Zones in nine of the rupture events (Table 5). A sequence of four rupture events occurred in the Lompoc diatomite quarry and presumably was triggered by quarrying (see event #10, Table 5). In addition, aseismic fault creep has occurred on many zoned faults in the last 30 years (see footnote, Table 5). Most fault creep is tectonically induced, although some is induced by people (mainly by fluid withdrawal).



Table 5. Surface faulting associated with earthquakes in California, 1974–June 2007. List excludes fault creep and faulting triggered by shaking or movement on a different fault<sup>1</sup>. See Bonilla (1970), Jennings (1985), and Grantz and Bartow (1977) for earlier faulting events.

Fault (County where located)	Year of rupture	Magnitude of earthquake	Surface rupture <sup>2</sup> Max. displacement (cm)	Total length <sup>2</sup> (km)	Main sense of displacement <sup>3</sup>	Comments
1. Brawley (Imperial)	1975	4.7	20	10.4	N	Also ruptured in 1940 and 1979, fault creep in part.
2. Galway Lake (San Bernardino)	1975	5.3	1.5	6.8	RL	Fault previously unknown.
3. Cleveland Hill (Butte)	1975	5.7	5	5.7	N	Fault not previously known to be Holocene-active.
4. Stephens Pass (Siskiyou)	1978	4.3	30	2+	N	Fault previously unknown.
5. Homestead Valley (San Bernardino)	1979	5.2	8	3.3	RL	Also minor rupture on Johnson Valley fault.
6. *Calaveras (San Benito, Santa Clara)	1979	5.9	1	39 (?)	RL	Minor, discontinuous rupture mostly in creep-active segment.
7. *Imperial (Imperial)	1979	6.6	55 15 10	30 13 1	RL N N	Creep triggered on San Andreas and Superstition Hills faults; also ruptured in 1940. Rico fault not previously known.
8. Greenville (Alameda)	1980	5.6	3	6.5	RL	Minor left-lateral slip also occurred on Las Positas fault.
9. Hilton Creek-Mammoth Lakes (Mono)	1980	6.0-6.5	30	20	N	Rupture on many minor faults, may relate to volcanic activity. Minor ruptures also in 1981.
10. *Lompoc quarry (Santa Barbara)	1981	2.5	25	0.6	R	Flexural slip on flank of syncline triggered by quarrying; do not plan to zone. Similar earthquake-associated ruptures occurred in 1985, 1988, and 1995.
11. Little Lake (Kern)	1982	5.2	0+	10	RL/N	Fracture zones on monoclines.
12. *Coalinga Nose (Fresno)	1983	6.7	5	.005	R	Secondary fault (?) associated with 43 cm of antinormal uplift; too minor to zone.
13. Nunez (Fresno)	1983	5.2-5.9	60	3.3	R	Aftershocks associated with event (12) above.
14. *Calaveras (Santa Clara)	1984	6.1	20 (?)	1.2	RL	Questionable faulting; triggered afterslip in 15-km long creep-zone to south.
15. *Banning (Riverside)	1986	5.9	7	9	RL	Minor slip also triggered locally on Garnet Hill and Desert Hot Springs (?) faults as well as more distant faults.
16. *White Mountains (Mono, Inyo)	1986	6.4	11	13	RL/N	Also extensional cracks on faults in Volcanic Tableland in 40km x 12km area.
17. Elmore Ranch (Imperial)	1987	6.2	12	12	LL	Also lesser left-lateral rupture on nearby faults.
18. *Superstition Hills (Imperial)	1987	6.6	90	28	RL	Much of rupture occurred as afterslip; associated with event 17.
19. *San Andreas (Santa Cruz)	1989	7.1	2.5	1?	RL	Surface rupture possibly triggered slip; slip also triggered on nearby Calaveras and San Andreas faults outside of aftershock zone. Secondary faulting may have occurred with ridgetop spreading fissures.
20. *Johnson Valley (San Bernardino)	1992	7.3	460-600	85	RL	Most significant fault rupture since 1906; ruptures connected several separate faults; triggered slip also occurred on at least 10 other faults.
21. *Eureka Valley (Inyo)	1993	6.1	2	5+	RL/N	Two zones of left-stepping fractures along pre-existing fault scarps; incompletely mapped; remote area, not zoned.
22. *Stevenson Ranch (Los Angeles)	1994	6.7	19	0.6	R	Flexural slip faults on limb of fold near Newhall; related to blind thrust faulting. Minor slip also triggered on Mission Wells fault, which ruptured in 1971.
23. Airport Lake (Kern and Inyo)	1995	5.4-5.8	1	2.5	RL/N	Discontinuous cracks along pre-existing scarp.
24. Lavic Lake (Bullion)	1999	7.1	525	45	RL	Bullion and Mesquite Lake faults previously zoned; Lavic Lake had not ruptured in Holocene.
25. *San Andreas (Monterey, San Luis Obispo)	2004	6.0	15	32	RL	Parkfield section of San Andreas fault zone; also ruptured in 1966. Much of rupture occurred as afterslip.

<sup>1</sup> Tectonic (aseismic) fault-creep and triggered slip have occurred along various segments of the San Andreas, Hayward, Calaveras, Concord, Green Valley, Imperial, Superstition Hills, Maacama, Garlock, and more than 10 other faults. People-induced fault-creep has been reported on at least 12 other faults due to withdrawal of groundwater or oilfield fluids. See Jennings (1994) for map locations.

<sup>2</sup> Includes some afterslip. Rupture length measured from distal ends of rupture, which often is discontinuous.

<sup>3</sup> N=normal displacement; R=reverse displacement; RL=right-lateral displacement; LL=left-lateral displacement.

\* Cosismic surface faulting occurred mostly or entirely within existing Earthquake Fault Zones during eight events

In addition to evaluating and zoning faults, program staff also perform other functions necessary to the implementation of the APEFZ Act. Regulations (Section 3603, Appendix B) require that cities and counties file geologic reports for “project” sites in Earthquake Fault Zones with the State Geologist. By the middle of 2006, over 4000 site-specific geologic reports investigating the hazard of surface-fault rupture had been filed for public reference. Site reports on file with CGS through 2000 are available as digital images in pdf format (CGS CD 2003-01; CD 2003-02). Reports filed after 2000 are available for reference at the Geologic Information and Publications Office in Sacramento (see Appendix E).

In order to improve the quality of site investigations and reports, guidelines were prepared in 1975 to assist others in evaluating faults. These guidelines have been revised and appear as Appendix C.

General guidelines for reviewing geologic reports for adequacy, required by Section 3603 of the regulations, are provided in Appendix D.

If a city or county considers that a geologic investigation of a proposed “project” is unnecessary, it may request a waiver from the State Geologist (Section 2623, Appendix A). A waiver form detailing the procedures used is provided in Appendix F. Through 2006, 84 waiver requests have been processed by program staff.

Another important activity is to provide information on the APEFZ Act, the Division’s Fault Evaluation and Zoning Program, and fault-rupture hazards to both the public and private sectors. Program staff responds to about 1,500 inquiries each year from geologists, planners, building officials, developers, realtors, financial institutions, and others.

### **Uses and Limitations of Earthquake Fault Zones Maps**

The Earthquake Fault Zones are delineated to define those areas within which fault-rupture hazard investigations are required prior to building structures for human occupancy. Traces of faults are shown on the maps mainly to justify the locations of zone boundaries. These fault traces are plotted as accurately as the sources of data permit; yet the plots are not sufficiently accurate to be used as the basis for building set-back requirements, and they should not be so used.

The fault information shown on the maps is not sufficient to meet the requirement for fault-rupture hazard investigations. Local governmental units must require developers to have project sites within the Earthquake Fault Zones evaluated to determine if a potential hazard from any fault, whether heretofore

recognized or not, exists with regard to proposed structures and their occupants.

The surface fault-ruptures associated with historic earthquake and creep events are identified where known. However, no degree of relative potential for future surface displacement or degree of hazard is implied for the faults shown. Surface ruptures resulting from the secondary effects of seismic shaking (e.g., landsliding, differential settlement, liquefaction) are omitted from the map and do not serve as a basis for zoning.

Active faults may exist outside the Earthquake Fault Zones on any zone map. Therefore, fault investigations are recommended for all critical and important developments proposed outside the Earthquake Fault Zones.

### **INDEX TO MAPS OF EARTHQUAKE FAULT ZONES**

The following pages (Figures 4A to 4J) indicate the names and locations of the Official Maps of Earthquake Fault Zones delineated by the California Geological Survey under the Alquist-Priolo Earthquake Fault Zoning Act (Appendix A). These index pages identify all Official Maps of Earthquake Fault Zones released by the State Geologist through August 2007. The official maps are compiled on U.S. Geological Survey 7.5-minute topographic quadrangle maps at a scale of 1 inch equals 2,000 feet (Figure 3). Cities and counties affected by these maps are listed in Table 4.

Because Earthquake Fault Zones maps are issued every year or two to delineate revised and additional zones, users of these maps should check with the California Geological Survey for up-to-date information on new and revised Earthquake Fault Zones maps. A change in zones also may affect different local governments. This index to Official Maps of Earthquake Fault Zones (Figures 4A to 4J) will be revised in future years as new maps are issued.

The Earthquake Fault Zones maps are available for purchase as indicated under Availability of Earthquake Fault Zones Maps. Also, they may be consulted at any office of the California Geological Survey and at the planning departments of all cities and counties affected locally by Earthquake Fault Zones (Table 4).

### **Availability of Earthquake Fault Zones Maps**

Reproducible masters, from which copies of local Earthquake Fault Zones maps (scale 1:24,000) can be made, have been provided to each of the cities and counties affected by the zones. Requests for copies of

particular Earthquake Fault Zones maps of local areas should be directed to the Planning Director of the appropriate city or county. Refer to the index of Earthquake Fault Zones maps for the quadrangle names of the maps needed.

Arrangements also have been made with ARC-Bryant (formerly BPS Reprographic Services), San Francisco, to provide paper copies of the Earthquake Fault Zones maps to those who cannot get them conveniently from the cities and counties.

ARC-Bryant  
945 Bryant Street  
San Francisco, CA 94103  
Telephone: (415) 495-8700

Each map must be ordered by quadrangle name as shown on the index map. The cost of the maps is nominal; handling and C.O.D. charges are extra. These maps are not sold by the California Geological Survey.

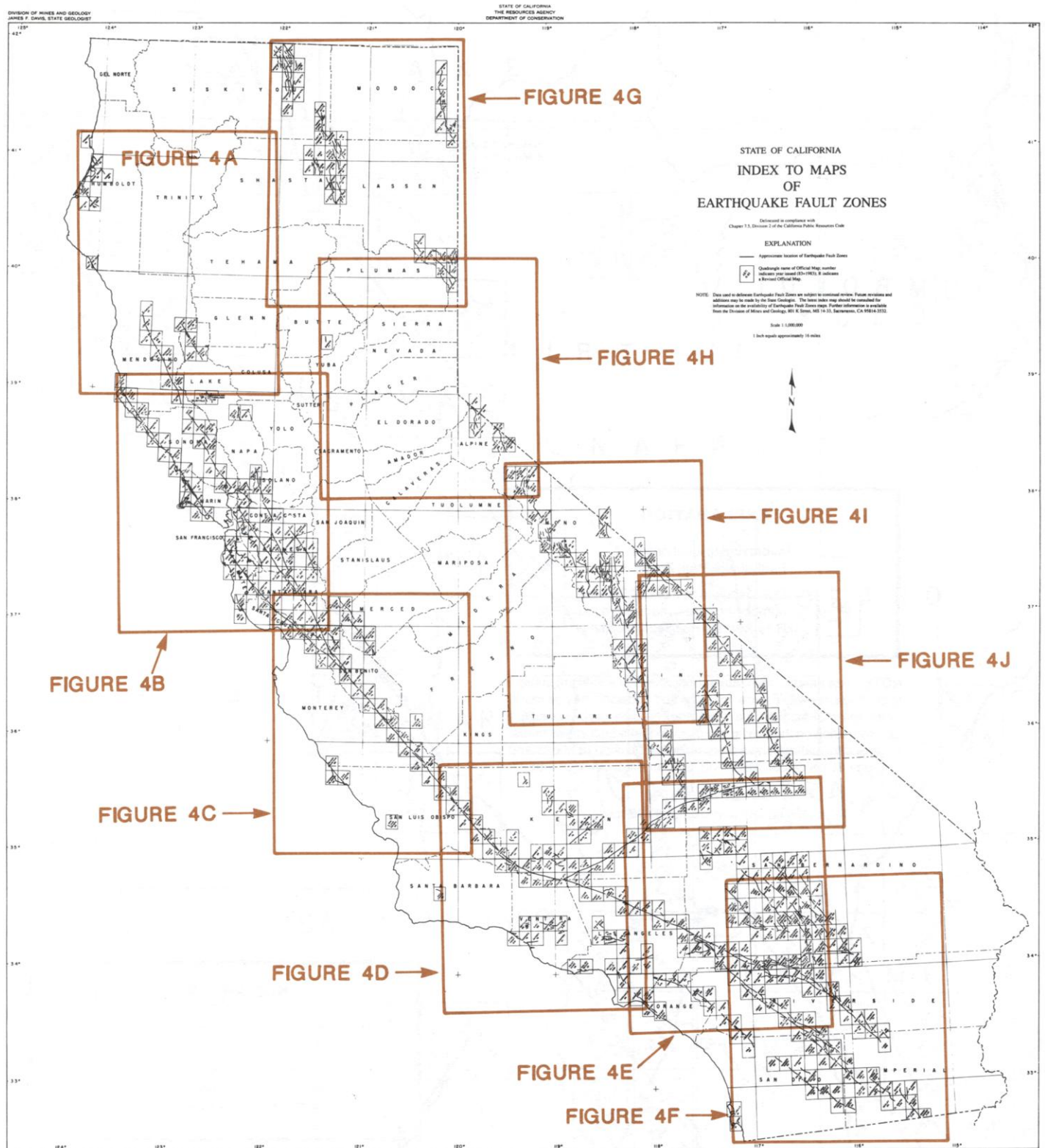
Digital files of the maps can be obtained from the California Geological Survey in both digital raster (pdf) and Geographic Information System (GIS) format. Refer to Appendix E for more information on obtaining digital files of the maps.

## REFERENCES

(See Appendix E for Complete List of AP Products)

- Bonilla, M.G., 1970, Surface faulting and related effects, *in* Wiegel, R.L., editor, *Earthquake Engineering*: Prentice-Hall, Inc., Englewood Cliffs, New Jersey, p. 47-74.
- California Division of Mines and Geology, 1976, Active fault mapping and evaluation program -- 10-year program to implement Alquist-Priolo Special Studies Zones Act: California Division of Mines and Geology Special Publication 47, 42 p.
- Grantz, A. and Bartow, A., 1977, Active faults of California: U.S. Geological Survey pamphlet, 15 p.
- Hart, E.W., 1978, Zoning for the hazard of surface fault rupture in California: International Conference on Microzonation, 2nd, San Francisco, 1978, Proceedings, v. 2, p. 635-646.
- Hart, E.W., 1986, Zoning for the hazard of surface faulting in California, *in* Proceedings Conference XXXII -- Workshop on future directions in evaluating earthquake hazards in southern California, November 12-13, 1985: U.S. Geological Survey Open-File Report 86-401, p. 74-83.
- Jennings, C.W., 1975, Fault map of California with locations of volcanoes, thermal springs, and thermal wells: California Division of Mines and Geology Data Map No. 1, scale 1:750,000.
- Jennings, C.W., 1985, An explanatory text to accompany the 1:750,000 scale Fault and Geologic Maps of California: Division of Mines and Geology Bulletin 201, 197 p., 2 plates.
- Jennings, C.W., 1994, Fault activity map of California and adjacent areas: California Department of Conservation, Division of Mines and Geology Geologic Data Map No. 6, scale 1:750,000 (appendices).
- Reitherman, R. and Leeds, D.J., 1990, A study of the effectiveness of the Alquist-Priolo program: California Division of Mines and Geology Open-File Report 90-18, 131 p.

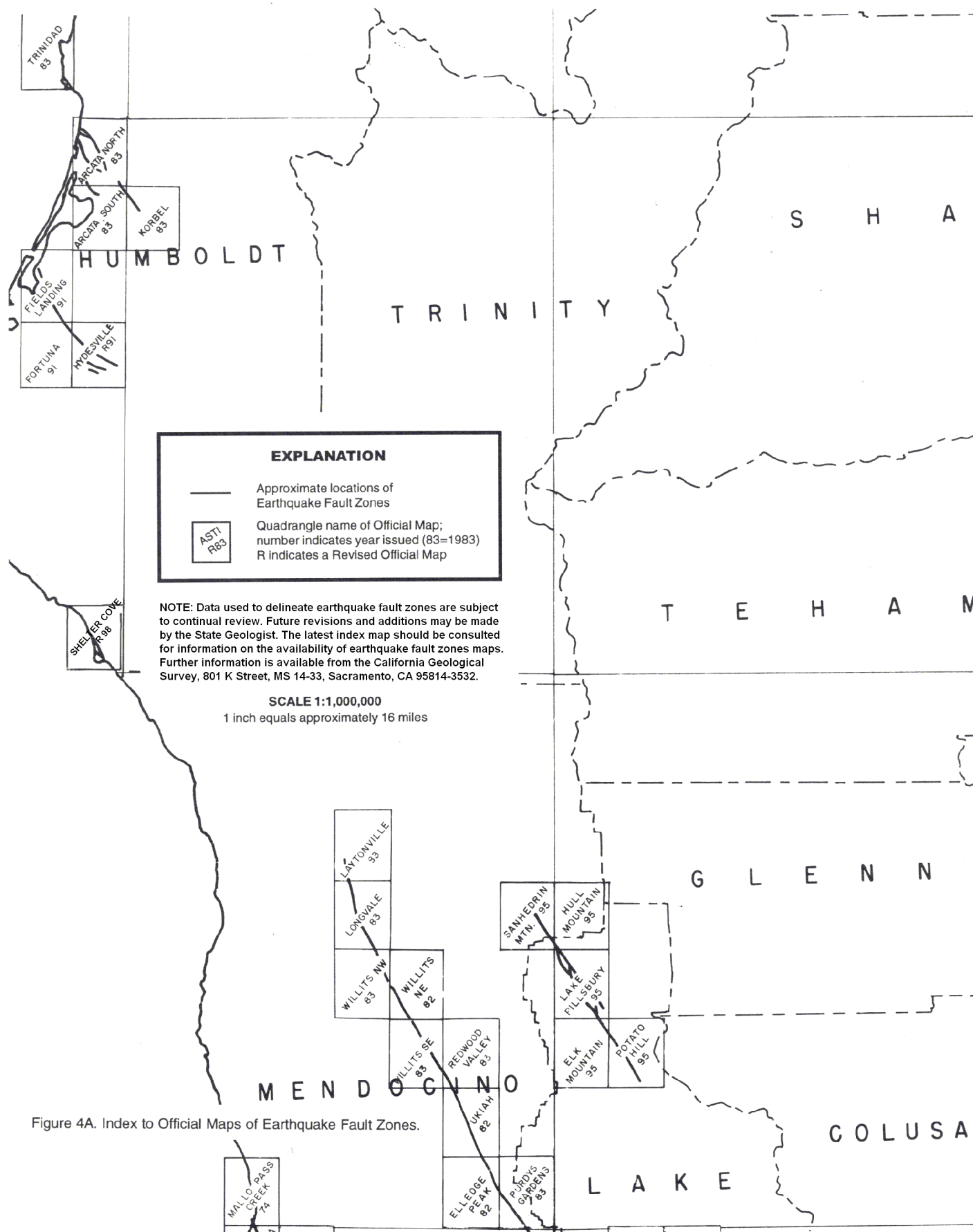




Data used to delineate Earthquake Fault Zones are subject to continual review. Future revisions and additions may be made by the State Geologist. Future supplements to this report should be consulted for information on the availability of Earthquake Fault Zones maps.

These Earthquake Fault Zones maps are delineated in compliance with Chapter 7.5, Division 2 of the California Public Resources Code.

Figure 4. Index to Official Maps of Earthquake Fault Zones.



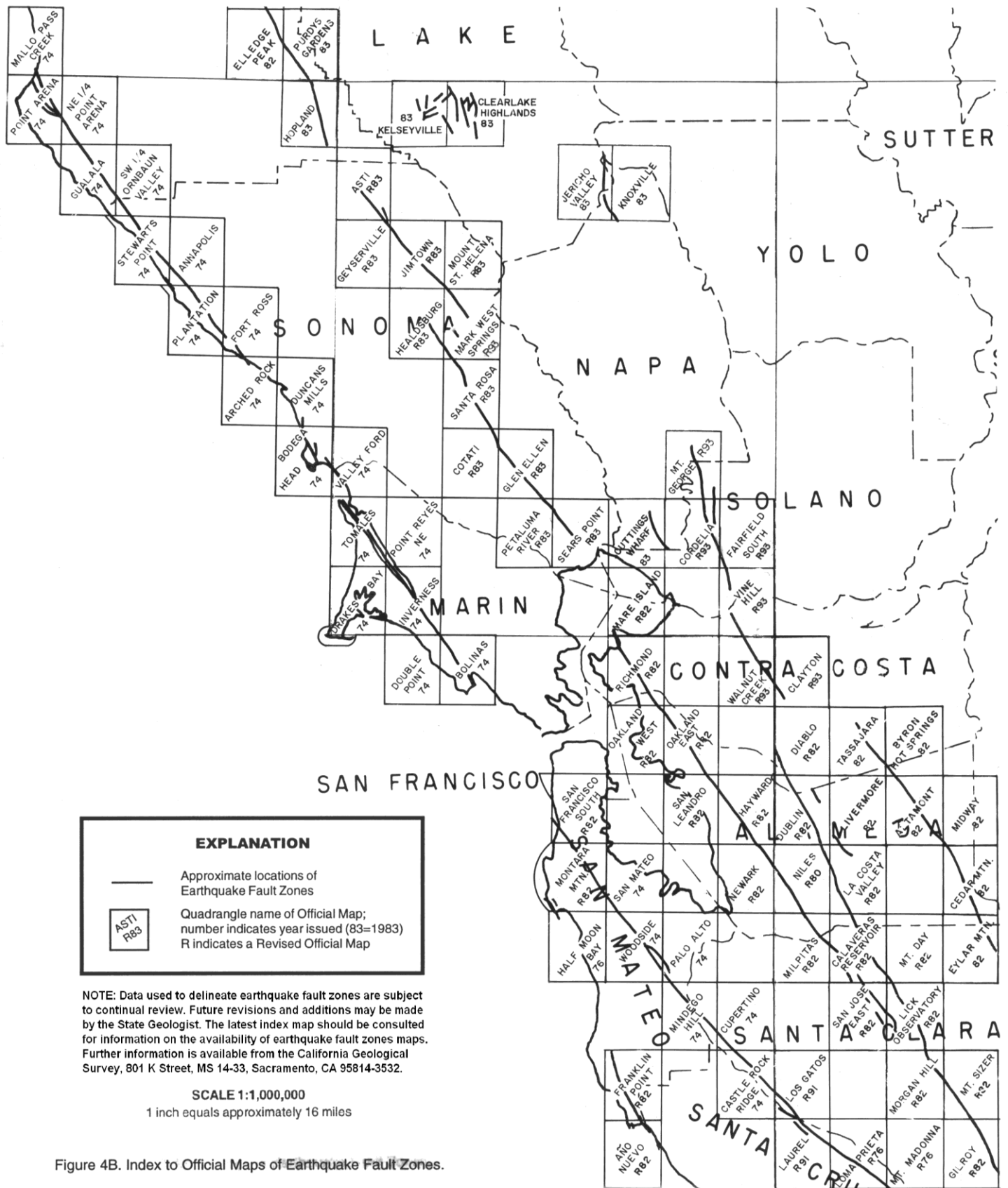


Figure 4B. Index to Official Maps of Earthquake Fault Zones.

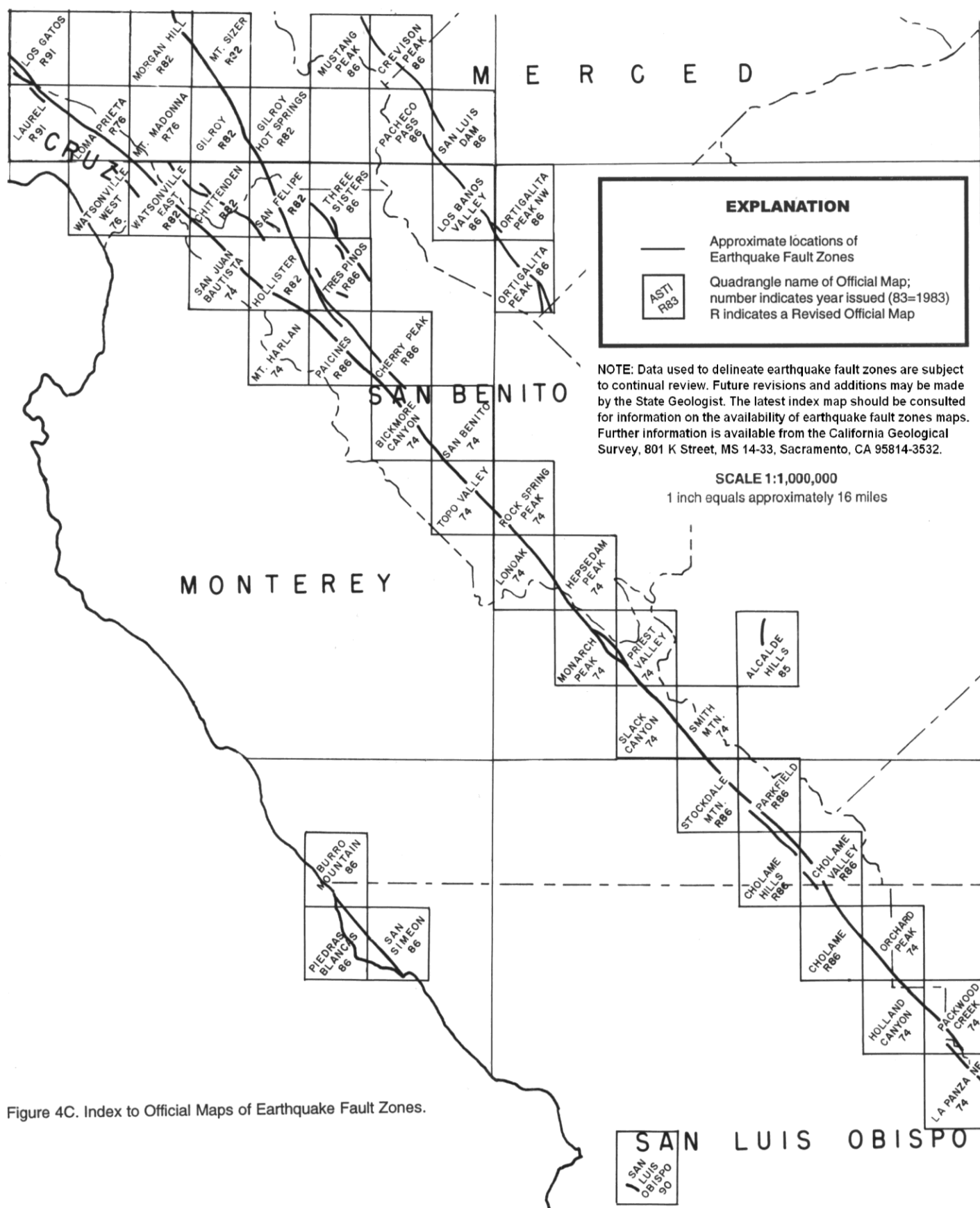
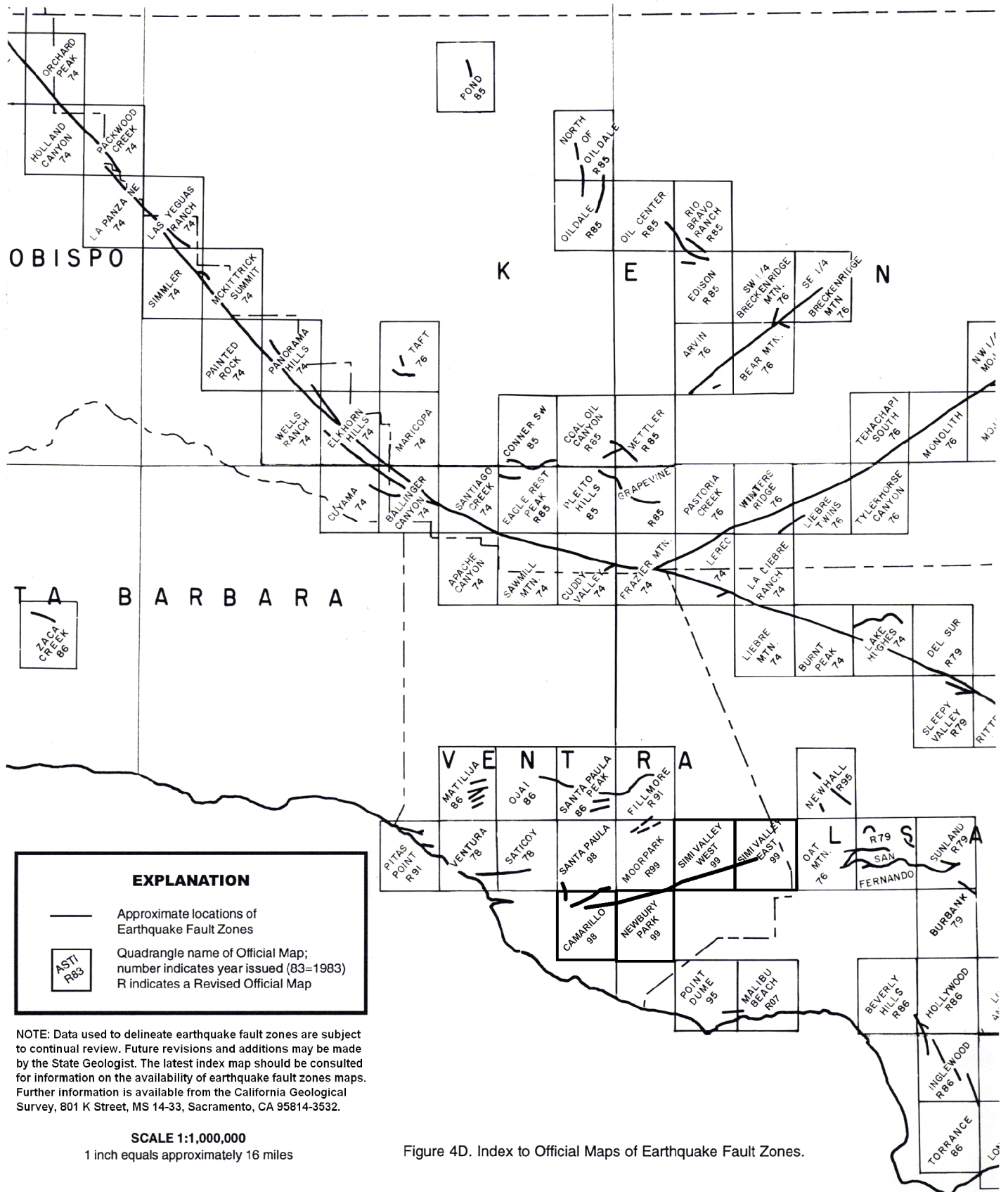


Figure 4C. Index to Official Maps of Earthquake Fault Zones.





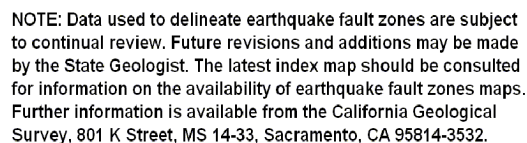
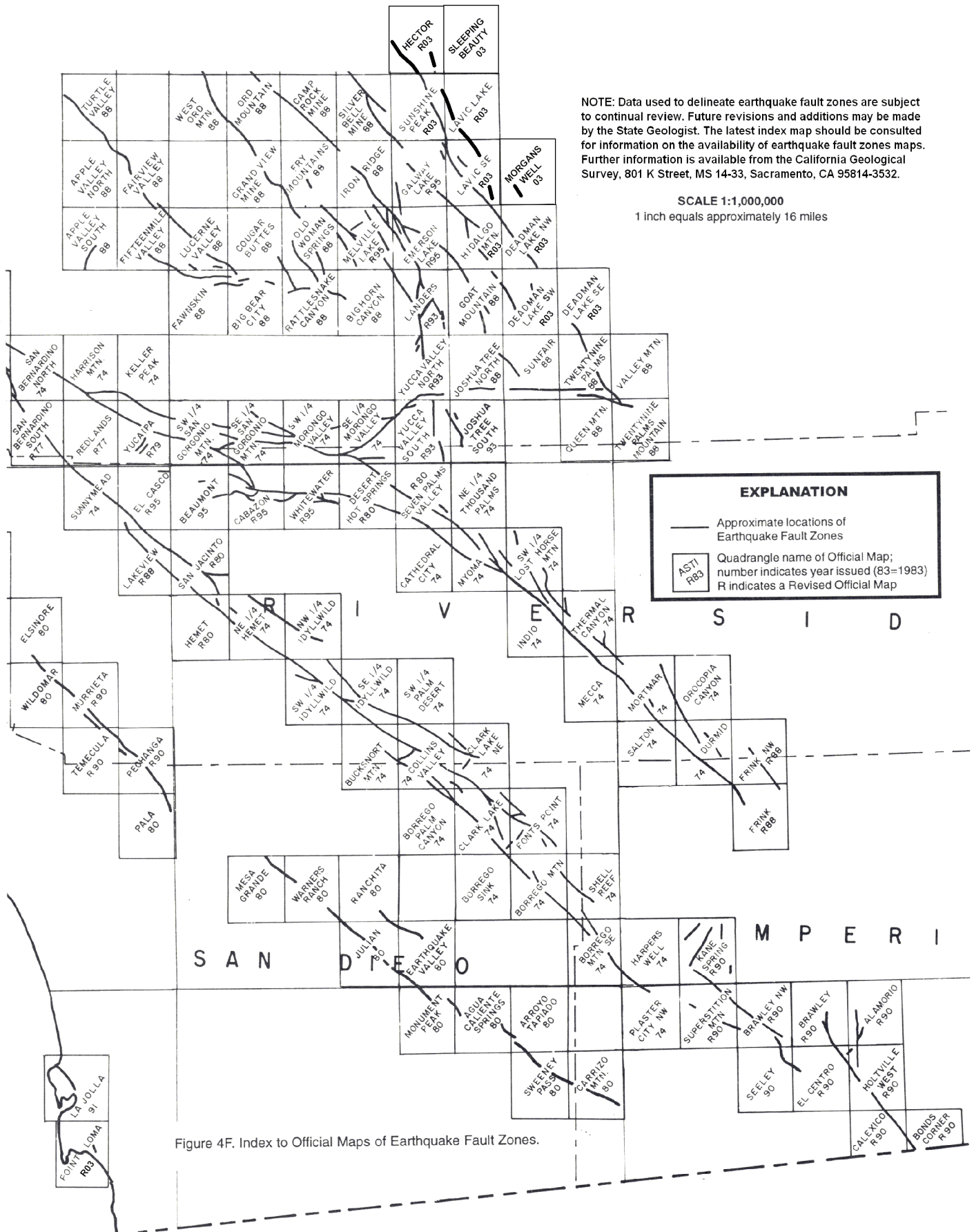
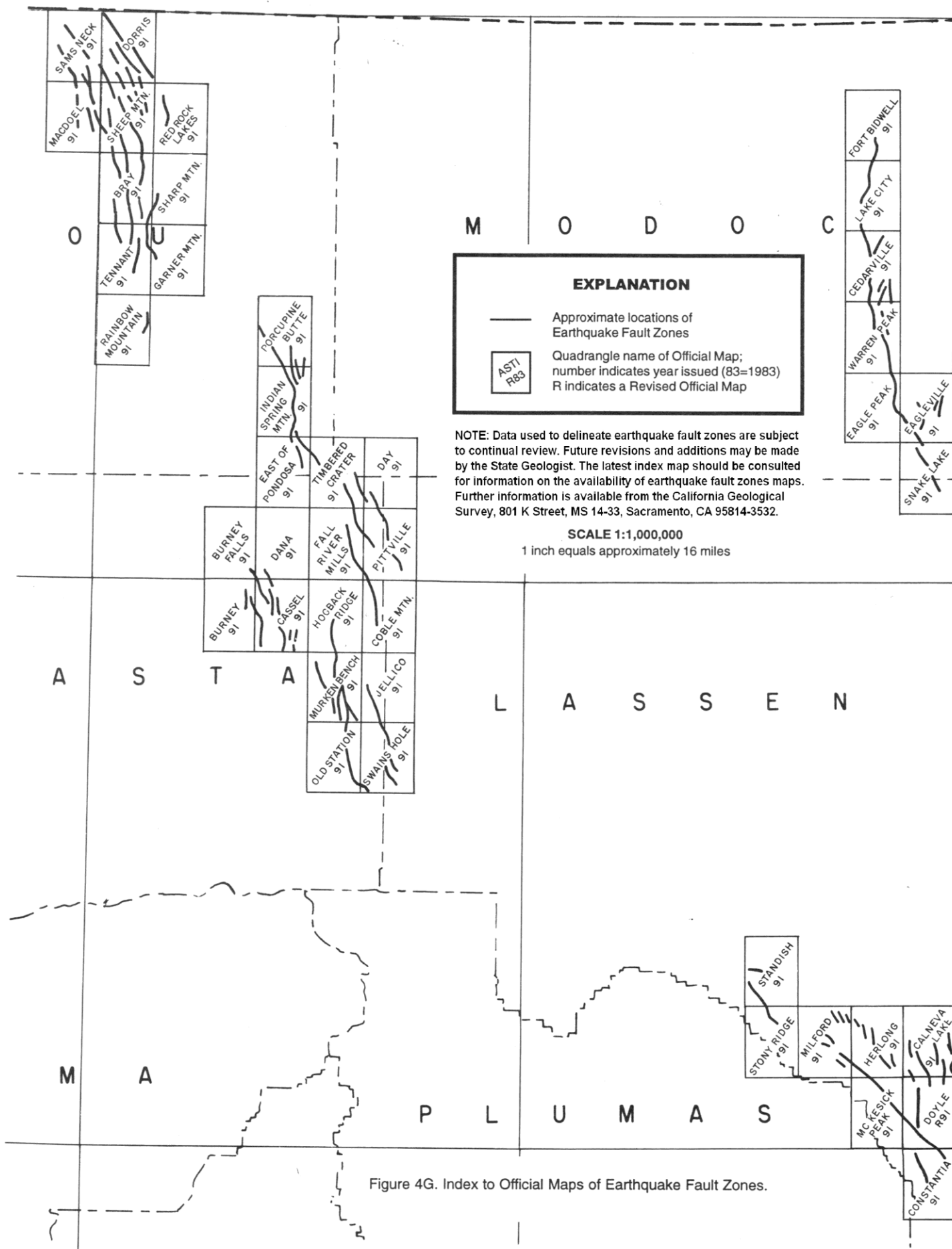


Figure 4E. Index to Official Maps of Earthquake Fault Zones.





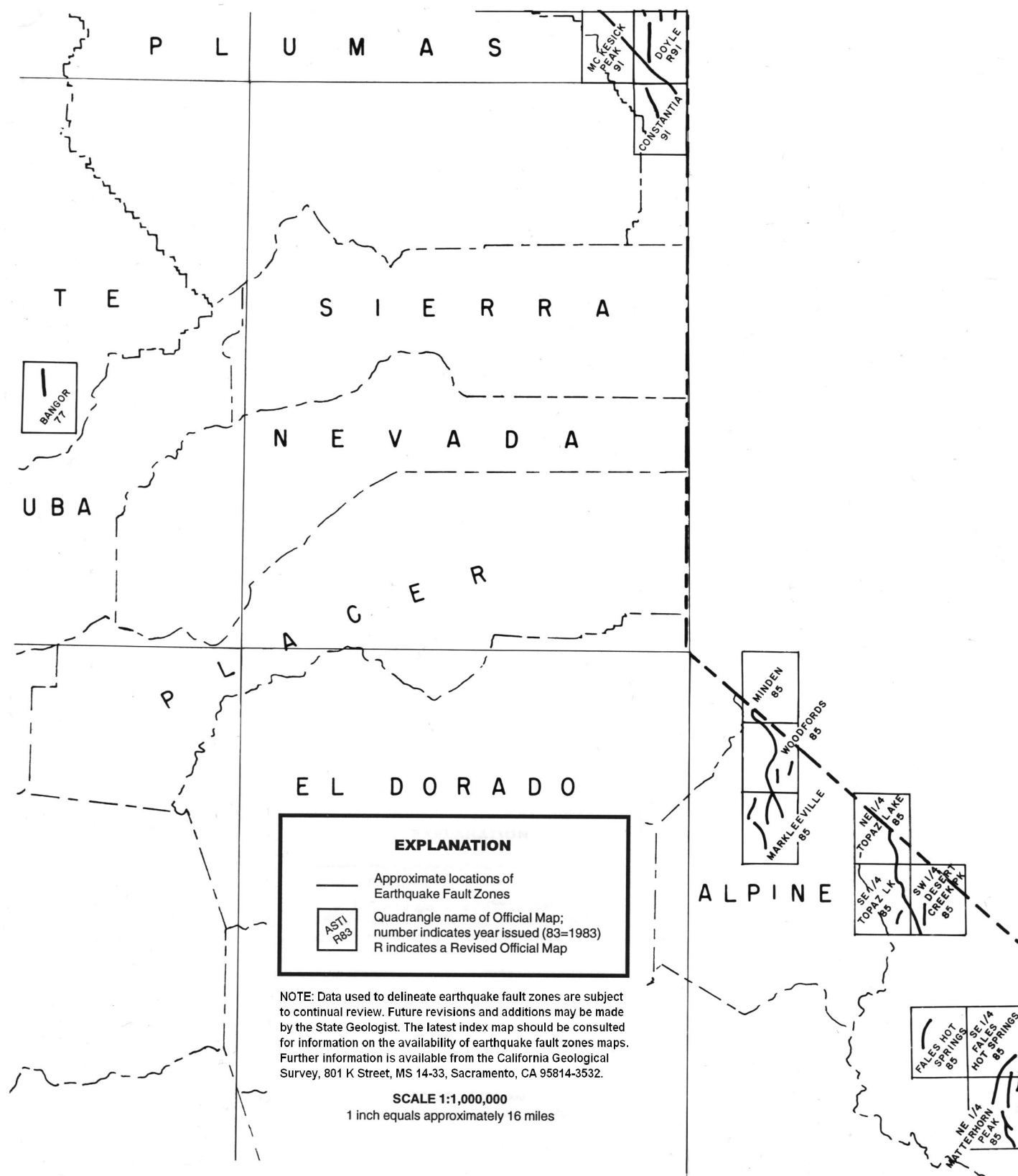


Figure 4H. Index to Official Maps of Earthquake Fault Zones.

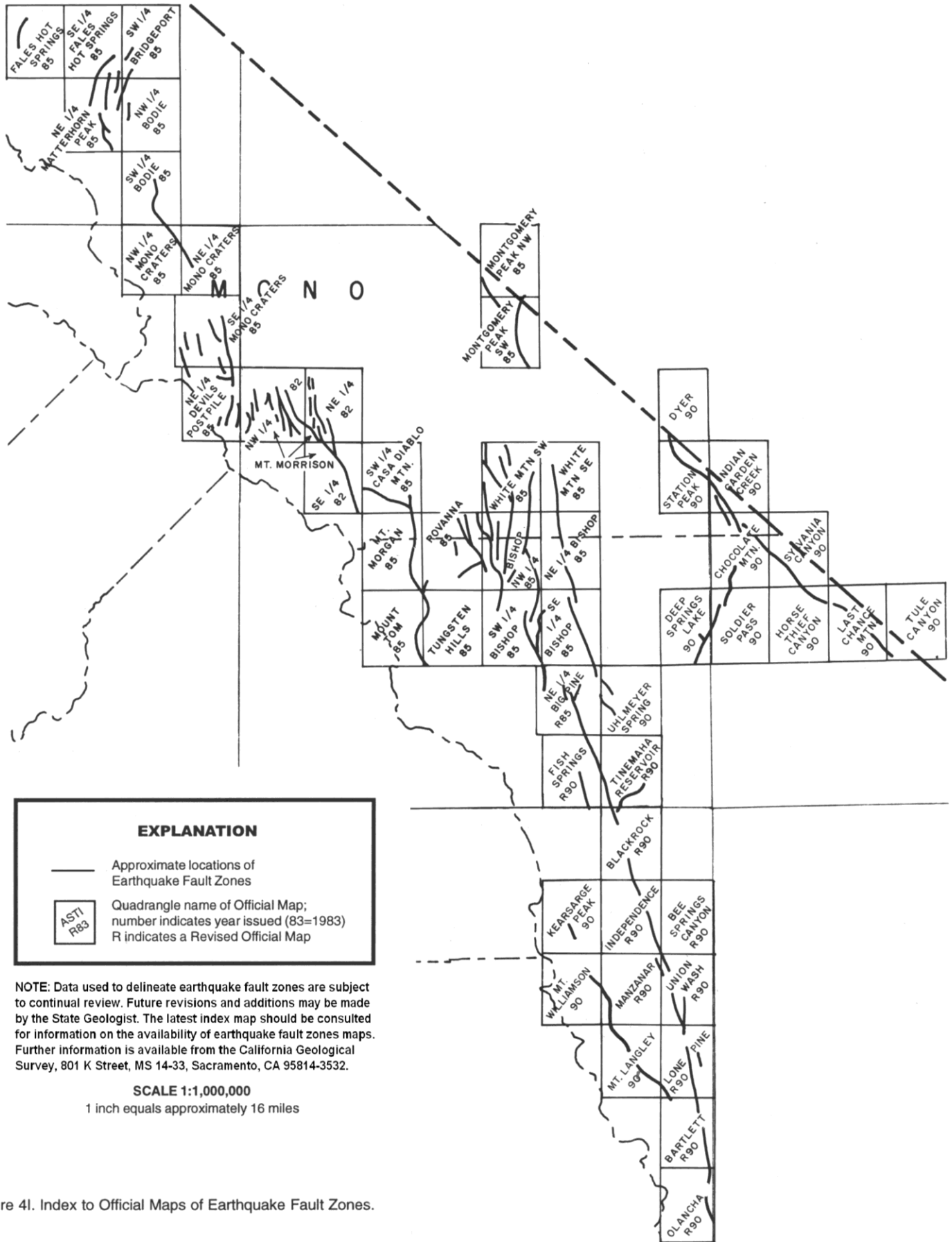


Figure 4I. Index to Official Maps of Earthquake Fault Zones.



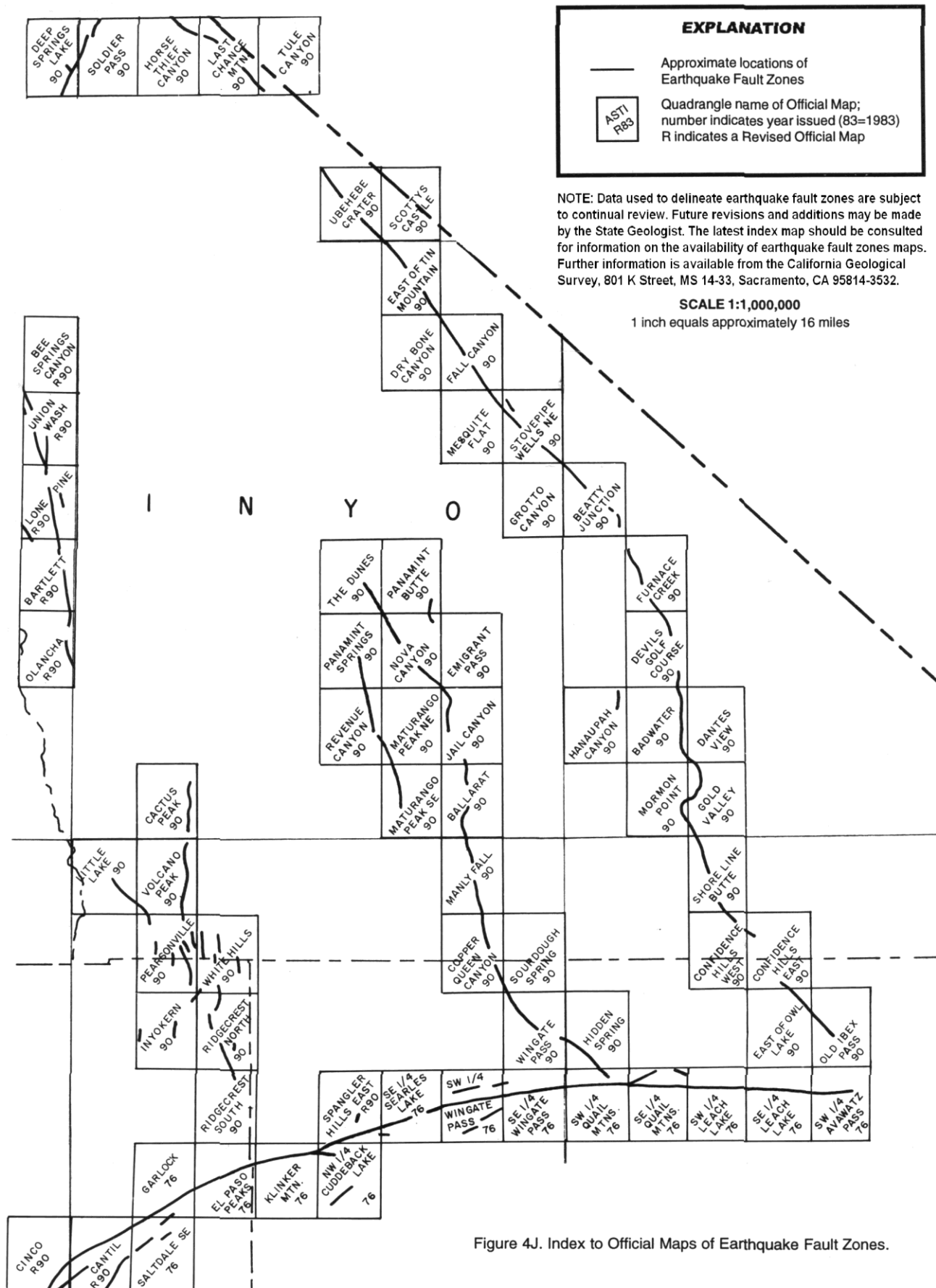


Figure 4J. Index to Official Maps of Earthquake Fault Zones.

## APPENDICES

Data are presented herein to provide city and county officials, property owners, developers, geologists, and others with specific information they may need to effectuate the Act.

Because the Act must be implemented at the local government level, it is imperative that the local entities understand its various aspects.

### Appendix A ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT<sup>1</sup> Excerpts from California Public Resources Code

#### **DIVISION 2. Geology, Mines and Mining** **CHAPTER 7.5 Earthquake Fault Zones<sup>2</sup>**

**2621.** This chapter shall be known and may be cited as the Alquist-Priolo Earthquake Fault Zoning Act<sup>1</sup>.

**2621.5.** (a) It is the purpose of this chapter to provide for the adoption and administration of zoning laws, ordinances, rules, and regulations by cities and counties in implementation of the general plan that is in effect in any city or county. The Legislature declares that this chapter is intended to provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults. Further, it is the intent of this chapter to provide the citizens of the state with increased safety and to minimize the loss of life during and immediately following earthquakes by facilitating seismic retrofitting to strengthen buildings, including historical buildings, against ground shaking.

(b) This chapter is applicable to any project, as defined in Section 2621.6, which is located within a delineated earthquake fault zone, upon issuance of the official earthquake fault zones maps to affected local jurisdictions, except as provided in Section 2621.7.

(c) The implementation of this chapter shall be pursuant to policies and criteria established and adopted by the Board<sup>3</sup>

**2621.6.** (a) As used in this chapter, "project" means either of the following:

(1) Any subdivision of land which is subject to the Subdivision Map Act, (Division 2 (commencing with Section 66410) of Title 7 of the Government Code), and which contemplates the eventual construction of structures for human occupancy.

(2) Structures for human occupancy, with the exception of either of the following:

(A) Single-family wood-frame or steel-frame dwellings to be built on parcels of land for which geologic reports have been approved pursuant to paragraph (1).

(B) A single-family wood-frame or steel-frame dwelling not exceeding two stories when that dwelling is not part of a development of four or more dwellings.

(b) For the purposes of this chapter, a mobilehome whose body width exceeds eight feet shall be considered to be a single-family wood-frame dwelling not exceeding two stories.

**2621.7.** This chapter, except Section 2621.9, shall not apply to any of the following:

(a) The conversion of an existing apartment complex into a condominium.

(b) Any development or structure in existence prior to May 4, 1975, except for an alteration or addition to a structure that exceeds the value limit specified in subdivision (c).

(c) An alteration or addition to any structure if the value of the alteration or addition does not exceed 50 percent of the value of the structure.

(d) (1) Any structure located within the jurisdiction of the City of Berkeley or the City of Oakland which was

---

<sup>1</sup> Known as the Alquist-Priolo Special Studies Zones Act prior to January 1, 1994.

<sup>2</sup> Known as Special Studies Zones prior to January 1, 1994.

<sup>3</sup> State Mining and Geology Board.

damaged by fire between October 20, 1991, and October 23, 1991, if granted an exemption pursuant to this subdivision.

- (2) The city may apply to the State Geologist for an exemption and the State Geologist shall grant the exemption only if the structure located within the earthquake fault zone is not situated upon a trace of an active fault line, as delineated in an official earthquake fault zone map or in more recent geologic data, as determined by the State Geologist.
- (3) When requesting an exemption, the city shall submit to the State Geologist all of the following information:
  - (A) Maps noting the parcel numbers of proposed building sites that are at least 50 feet from an identified fault and a statement that there is not any more recent information to indicate a geologic hazard.
  - (B) Identification of any sites within 50 feet of an identified fault.
  - (C) Proof that the property owner has been notified that the granting of an exemption is not any guarantee that a geologic hazard does not exist.
- (4) The granting of an exemption does not relieve a seller of real property or an agent for the seller of the obligation to disclose to a prospective purchaser that the property is located within a delineated earthquake fault zone, as required by Section 2621.9.
  - (e) (1) Alterations which include seismic retrofitting, as defined in Section 8894.2 of the Government Code, to any of the following listed types of buildings in existence prior to May 4, 1975:
    - (A) Unreinforced masonry buildings, as described in subdivision (a) of Section 8875 of the Government Code.
    - (B) Concrete tilt-up buildings, as described in Section 8893 of the Government Code.
    - (C) Reinforced concrete moment resisting frame buildings as described in Applied Technology Council Report 21 (FEMA Report 154).
- (2) The exemption granted by paragraph (1) shall not apply unless a city or county acts in accordance with all of the following:
  - (A) The building permit issued by the city or county for the alterations authorizes no greater human occupancy load, regardless of proposed use, than that authorized for the existing use permitted at the time the

city or county grants the exemption. This may be accomplished by the city or county making a human occupancy load determination that is based on, and no greater than, the existing authorized use, and including that determination on the building permit application as well as a statement substantially as follows: "Under subparagraph (A) of paragraph (2) of subdivision (e) of Section 2621.7 of the Public Resources Code, the occupancy load is limited to the occupancy load for the last lawful use authorized or existing prior to the issuance of this building permit, as determined by the city or county."

(B) The city or county requires seismic retrofitting, as defined in Section 8894.2 of the Government Code, which is necessary to strengthen the entire structure and provide increased resistance to ground shaking from earthquakes.

(C) Exemptions granted pursuant to paragraph (1) are reported in writing to the State Geologist within 30 days of the building permit issuance date.

- (3) Any structure with human occupancy restrictions under subparagraph (A) of paragraph (2) shall not be granted a new building permit that allows an increase in human occupancy unless a geologic report, prepared pursuant to subdivision (d) of Section 3603 of Title 14 of the California Code of Regulations in effect on January 1, 1994, demonstrates that the structure is not on the trace of an active fault, or the requirement of a geologic report has been waived pursuant to Section 2623.
- (4) A qualified historical building within an earthquake fault zone that is exempt pursuant to this subdivision may be repaired or seismically retrofitted using the State Historical Building Code, except that, notwithstanding any provision of that building code and its implementing regulations, paragraph (2) shall apply.

**2621.8.** Notwithstanding Section 818.2 of the Government Code, a city or county which knowingly issues a permit that grants an exemption pursuant to subdivision (e) of Section 2621.7 that does not adhere to the requirements of paragraph (2) of subdivision (e) of Section 2621.7, may be liable for earthquake-related injuries or deaths caused by failure to so adhere.

**2621.9.** (a) A person who is acting as an agent for a transferor of real property that is located within a delineated earthquake fault zone, or the transferor, if he or she is acting without an agent, shall disclose to any prospective transferee the fact that the property is located within a delineated earthquake fault zone.

(b) Disclosure is required pursuant to this section only when one of the following conditions is met:

- (1) The transferor, or the transferor's agent, has actual knowledge that the property is within a delineated earthquake fault zone.
- (2) A map that includes the property has been provided to the city or county pursuant to Section 2622, and a notice has been posted at the offices of the county recorder, county assessor, and county planning agency that identifies the location of the map and any information regarding changes to the map received by the county.

(c) In all transactions that are subject to Section 1103 of the Civil Code, the disclosure required by subdivision (a) of this section shall be provided by either of the following means:

- (1) The Local Option Real Estate Transfer Disclosure Statement as provided in Section 1102.6a of the Civil Code.
- (2) The Natural Hazard Disclosure Statement as provided in Section 1103.2 of the Civil Code.

(d) If the map or accompanying information is not of sufficient accuracy or scale that a reasonable person can determine if the subject real property is included in a delineated earthquake fault hazard zone, the agent shall mark "Yes" on the Natural Hazard Disclosure Statement. The agent may mark "No" on the Natural Hazard Disclosure Statement if he or she attaches a report prepared pursuant to subdivision (c) of Section 1103.4 of the Civil Code that verifies the property is not in the hazard zone. Nothing in this subdivision is intended to limit or abridge any existing duty of the transferor or the transferor's agents to exercise reasonable care in making a determination under this subdivision.

(e) For purposes of the disclosures required by this section, the following persons shall not be deemed agents of the transferor:

- (1) Persons specified in Section 1103.11 of the Civil Code.
- (2) Persons acting under a power of sale regulated by Section 2924 of the Civil Code.

(f) For purposes of this section, Section 1103.13 of the Civil Code shall apply.

(g) The specification of items for disclosure in this section does not limit or abridge any obligation for disclosure created by any other provision of law or that may exist in order to

avoid fraud, misrepresentation, or deceit in the transfer transaction.

**2622.** (a) In order to assist cities and counties in their planning, zoning, and building-regulation functions, the State Geologist shall delineate, by December 31, 1973, appropriately wide earthquake fault zones to encompass all potentially and recently active traces of the San Andreas, Calaveras, Hayward, and San Jacinto Faults, and such other faults, or segments thereof, as the State Geologist determines to be sufficiently active and well-defined as to constitute a potential hazard to structures from surface faulting or fault creep. The earthquake fault zones shall ordinarily be one-quarter mile or less in width, except in circumstances which may require the State Geologist to designate a wider zone.

(b) Pursuant to this section, the State Geologist shall compile maps delineating the earthquake fault zones and shall submit the maps to all affected cities, counties, and state agencies, not later than December 31, 1973, for review and comment. Concerned jurisdictions and agencies shall submit all comments to the State Mining and Geology Board for review and consideration within 90 days. Within 90 days of such review, the State Geologist shall provide copies of the official maps to concerned state agencies and to each city or county having jurisdiction over lands lying within any such zone.

(c) The State Geologist shall continually review new geologic and seismic data and shall revise the earthquake fault zones or delineate additional earthquake fault zones when warranted by new information. The State Geologist shall submit all revised maps and additional maps to all affected cities, counties, and state agencies for their review and comment. Concerned jurisdictions and agencies shall submit all comments to the State Mining and Geology Board for review and consideration within 90 days. Within 90 days of that review, the State Geologist shall provide copies of the revised and additional official maps to concerned state agencies and to each city or county having jurisdiction over lands lying within the earthquake fault zone.

(d) In order to ensure that sellers of real property and their agents are adequately informed, any county that receives an official map pursuant to this section shall post a notice within five days of receipt of the map at the offices of the county recorder, county assessor, and county planning commission, identifying the location of the map and the effective date of the notice.

**2623.** (a) The approval of a project by a city or county shall be in accordance with policies and criteria established by the State Mining and Geology Board and the findings of the State Geologist. In the development of such policies and criteria, the State Mining and Geology Board shall seek the comment and advice of affected cities, counties,

and state agencies. Cities and counties shall require, prior to the approval of a project, a geologic report defining and delineating any hazard of surface fault rupture. If the city or county finds that no undue hazard of that kind exists, the geologic report on the hazard may be waived, with the approval of the State Geologist.

(b) After a report has been approved or a waiver granted, subsequent geologic reports shall not be required, provided that new geologic data warranting further investigations is not recorded.

(c) The preparation of geologic reports that are required pursuant to this section for multiple projects may be undertaken by a geologic hazard abatement district.

**2624.** Notwithstanding any provision of this chapter, cities and counties may do any of the following:

- (1) Establish policies and criteria which are stricter than those established by this chapter.
- (2) Impose and collect fees in addition to those required under this chapter.

- (3) Determine not to grant exemptions authorized under this chapter.

**2625.** (a) Each applicant for approval of a project may be charged a reasonable fee by the city or county having jurisdiction over the project.

(b) Such fees shall be set in an amount sufficient to meet, but not to exceed, the costs to the city or county of administering and complying with the provisions of this chapter.

(c) The geologic report required by Section 2623 shall be in sufficient detail to meet the criteria and policies established by the State Mining and Geology Board for individual parcels of land.

**2630.** In carrying out the provisions of this chapter, the State Geologist and the board shall be advised by the Seismic Safety Commission.

SIGNED INTO LAW DECEMBER 22, 1972; AMENDED SEPTEMBER 16, 1974, MAY 4, 1975, SEPTEMBER 28, 1975, SEPTEMBER 22, 1976, SEPTEMBER 27, 1979, SEPTEMBER 21, 1990, JULY 29, 1991, AUGUST 16, 1992, JULY 25, 1993, OCTOBER 7, 1993, AND OCTOBER 7, 1997



## Appendix B

### POLICIES AND CRITERIA OF THE STATE MINING AND GEOLOGY BOARD

#### With Reference to the Alquist-Priolo Earthquake Fault Zoning Act

(Excerpts from the California Code of Regulations, Title 14, Division 2)

#### **3600. Purpose.**

It is the purpose of this subchapter to set forth the policies and criteria of the State Mining and Geology Board, hereinafter referred to as the "Board," governing the exercise of city, county, and state agency responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults in accordance with the provisions of Public Resources Code Section 2621 et seq. (Alquist-Priolo Earthquake Fault Zoning Act). The policies and criteria set forth herein shall be limited to potential hazards resulting from surface faulting or fault creep within earthquake fault zones delineated on maps officially issued by the State Geologist.

NOTE: Authority cited: Section 2621.5, Public Resources Code. Reference: Sections 2621-2630, Public Resources Code.

#### **3601. Definitions.**

The following definitions as used within the Act and herein shall apply:

(a) An "active fault" is a fault that has had surface displacement within Holocene time (about the last 11,000 years), hence constituting a potential hazard to structures that might be located across it.

(b) A "fault trace" is that line formed by the intersection of a fault and the earth's surface, and is the representation of a fault as depicted on a map, including maps of earthquake fault zones.

(c) A "lead agency" is the city or county with the authority to approve projects.

(d) "Earthquake fault zones" are areas delineated by the State Geologist, pursuant to the Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code Section 2621 et seq.) and this subchapter, which encompass the traces of active faults.

(e) A "structure for human occupancy" is any structure used or intended for supporting or sheltering any

use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year.

(f) "Story" is that portion of a building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost story shall be that portion of a building included between the upper surface of the topmost floor and the ceiling or roof above. For the purpose of the Act and this subchapter, the number of stories in a building is equal to the number of distinct floor levels, provided that any levels that differ from each other by less than two feet shall be considered as one distinct level.

NOTE: Authority cited: Section 2621.5, Public Resources Code. Reference: Sections 2621-2630, Public Resources Code.

#### **3602. Review of Preliminary Maps.**

(a) Within 45 days from the issuance of proposed new or revised preliminary earthquake fault zone map(s), cities and counties shall give notice of the Board's announcement of a ninety (90) day public comment period to property owners within the area of the proposed zone. The notice shall be by publication, or other means reasonably calculated to reach as many of the affected property owners as feasible. Cities and counties may also give notice to consultants who may conduct geologic studies in fault zones. The notice shall state that its purpose is to provide an opportunity for public comment including providing to the Board geologic information that may have a bearing on the proposed map(s).

(b) The Board shall also give notice by mail to those California Registered Geologists and California Registered Geophysicists on a list provided by the State Board of Registration for Geologists and Geophysicists. The notice shall indicate the affected jurisdictions and state that its purpose is to provide an opportunity to present written technical comments that may have a bearing on the proposed zone map(s) to the Board during a 90-day public comment period.

(c) The Board shall receive public comments during the 90-day public comment period. The Board shall

conduct at least one public hearing on the proposed zone map(s) during the 90-day public comment period.

(d) Following the end of the 90-day public comment period, the Board shall forward its comments and recommendations with supporting data received to the State Geologist for consideration prior to the release of official earthquake fault zone map(s).

NOTE: Authority cited: Section 2621.5, Public Resources Code. Reference: Section 2622, Public Resources Code.

### **3603. Specific Criteria.**

The following specific criteria shall apply within earthquake fault zones and shall be used by affected lead agencies in complying with the provisions of the Act:

(a) No structure for human occupancy, identified as a project under Section 2621.6 of the Act, shall be permitted to be placed across the trace of an active fault. Furthermore, as the area within fifty (50) feet of such active faults shall be presumed to be underlain by active branches of that fault unless proven otherwise by an appropriate geologic investigation and report prepared as specified in Section 3603(d) of this subchapter, no such structures shall be permitted in this area.

(b) Affected lead agencies, upon receipt of official earthquake fault zones maps, shall provide for disclosure of delineated earthquake fault zones to the public. Such disclosure may be by reference in general plans, specific plans, property maps, or other appropriate local maps.

(c) No change in use or character of occupancy, which results in the conversion of a building or structure from one not used for human occupancy to one that is so used, shall be permitted unless the building or structure complies with the provisions of the Act.

(d) Application for a development permit for any project within a delineated earthquake fault zone shall be accompanied by a geologic report prepared by a geologist registered in the State of California, which is directed to the problem of potential surface fault displacement through the project site, unless such report is waived pursuant to Section 2623 of the Act. The required report shall be based on a geologic investigation designed to identify the location, recency, and nature of faulting that may have affected the project site in the past and may affect the project site in the future. The report may be combined with other geological or geotechnical reports.

(e) A geologist registered in the State of California, within or retained by each lead agency, shall evaluate the geologic reports required herein and advise the lead agency.

(f) One (1) copy of all such geologic reports shall be filed with the State Geologist by the lead agency within thirty (30) days following the report's acceptance. The State Geologist shall place such reports on open file.

NOTE: Authority cited: Section 2621.5, Public Resources Code. Reference: Sections 2621.5, 2622, 2623, and 2625(c), Public Resources Code.

ADOPTED NOVEMBER 23, 1973; REVISED JULY 1, 1974, AND JUNE 26, 1975.  
CODIFIED IN CALIFORNIA CODE OF REGULATIONS JANUARY 31, 1979;  
REVISED OCTOBER 18, 1984, JANUARY 5, 1996, AND APRIL 1, 1997.

## Appendix C

### GUIDELINES FOR EVALUATING THE HAZARD OF SURFACE RUPTURE

(These guidelines, also published as DMG Note 49 (1997), are not part of the Policies and Criteria of the State Mining and Geology Board. Similar guidelines were adopted by the Board for advisory purposes in 1996.)

These guidelines are to assist geologists who investigate faults relative to the hazard of surface fault rupture. Subsequent to the passage of the Alquist-Priolo Earthquake Fault Zoning Act (1972), it became apparent that many fault investigations conducted in California were incomplete or otherwise inadequate for the purpose of evaluating the potential of surface fault rupture. It was further apparent that statewide standards for investigating faults would be beneficial. These guidelines were initially prepared in 1975 as DMG Note 49 and have been revised several times since then.

The investigation of sites for the possible hazard of surface fault rupture is a deceptively difficult geologic task. Many active faults are complex, consisting of multiple breaks. Yet the evidence for identifying active fault traces is generally subtle or obscure and the distinction between recently active and long-inactive faults may be difficult to make. It is impractical from an economic, engineering, and architectural point of view to design a structure to withstand serious damage under the stress of surface fault rupture. Once a structure is sited astride an active fault, the resulting fault-rupture hazard cannot be mitigated unless the structure is relocated, whereas when a structure is placed on a landslide, the potential hazard from landsliding often can be mitigated. Most surface faulting is confined to a relatively narrow zone a few feet to a few tens of feet wide, making avoidance (i.e., building setbacks) the most appropriate mitigation method. However, in some cases primary fault rupture or rupture along branch faults can be distributed across zones hundreds of feet wide or manifested as broad warps, suggesting that engineering strengthening or design may be of additional mitigative value (e.g., Lazarte and others, 1994).

No single investigative method will be the best, or even useful, at all sites, because of the complexity of evaluating surface and near surface faults and because of the infinite variety of site conditions. Nonetheless, certain investigative methods are more helpful than others in locating faults and evaluating the recency of activity.

The evaluation of a given site with regard to the potential hazard of surface fault rupture is based extensively on the concepts of *recency* and *recurrence* of faulting along existing faults. In a general way, the more recent the faulting the greater the probability for future faulting (Allen, 1975). Stated another way, faults of known historic activity during the last 200 years, as a class, have a greater probability for future activity than faults classified as Holocene age (last 11,000 years) and a much greater probability of future activity than faults classified as Quaternary age (last 1.6 million years). However, it should be kept in mind that certain faults have recurrent activity measured in tens or hundreds of years whereas other faults may be inactive for thousands of years before being reactivated. Other faults may be characterized by creep-type rupture that is more or less on-going. The magnitude, sense, and nature of fault rupture also vary for different faults or even along different strands of the same fault. Even so, future faulting generally is expected to recur along pre-existing faults (Bonilla, 1970, p. 68). The development of a new fault or reactivation of a long-inactive fault is relatively uncommon and generally need not be a concern in site development.

As a practical matter, fault investigations should be directed at the problem of locating existing faults and then attempting to evaluate the recency of their activity. Data should be obtained both from the site and outside the site area. The most useful and direct method of evaluating recency is to observe (in a trench or road cut) the youngest geologic unit faulted and the oldest unit that is not faulted. Even so, active faults may be subtle or discontinuous and consequently overlooked in trench exposures (Bonilla and Lienkaemper, 1991). Therefore, careful logging is essential and trenching needs to be conducted in conjunction with other methods. For example, recently active faults may also be identified by direct observation of young, fault-related geomorphic (i.e., topographic) features in the field or on aerial photographs. Other indirect and more interpretive methods are identified in the outline below. Some of these methods are discussed in Bonilla (1982), Carver and McCalpin (1996), Hatheway and Leighton (1979), McCalpin

(1996a, b, c), National Research Council (1986), Sherard and others (1974), Slemmons (1977), Slemmons and dePolo (1986), Taylor and Cluff (1973), the Utah Section of the Association of Engineering Geologists (1987), Wallace (1977), Weldon and others (1996), and Yeats and others (1997). McCalpin (1996b) contains a particularly useful discussion of various field techniques. Many other useful references are listed in the bibliographies of the references cited here.

The purpose, scope, and methods of investigation for fault investigations will vary depending on conditions at specific sites and the nature of the projects. Contents and scope of the investigation also may vary based on guidelines and review criteria of agencies or political organizations having regulatory responsibility. However, there are topics that should be considered in all comprehensive fault investigations and geologic reports on faults. For a given site some topics may be addressed in more detail than at other sites because of the difference in the geologic and/or tectonic setting and/or site conditions. These investigative considerations should apply to any comprehensive fault investigation and may be applied to any project site, large or small. Suggested topics, considerations, and guidelines for fault investigations and reports on faults are provided in the following annotated outline. Fault investigations may be conducted in conjunction with other geologic and geotechnical investigations (see DMG Notes 42 and 44; also California Department of Conservation, Division of Mines and Geology, 1997). Although not all investigative techniques need to be or can be employed in evaluating a given site, the outline provides a checklist for preparing complete and well-documented reports. Most reports on fault investigations are reviewed by local or state government agencies. Therefore it is necessary that the reports be documented adequately and written carefully to facilitate that review. The importance of the review process is emphasized here, because it is the reviewer who must evaluate the adequacy of reports, interpret or set standards where they are unclear, and advise the governing agency as to their acceptability (Hart and Williams, 1978; DMG Note 41).

The scope of the investigation is dependent not only on the complexity and economics of a project, but also on the level of risk acceptable for the proposed structure or development. A more detailed investigation should be made for hospitals, high-rise buildings, and other critical or sensitive structures than for low-occupancy structures such as wood-frame dwellings that are comparatively safe. The conclusions drawn from any given set of data, however, must be consistent and unbiased. Recommendations must be clearly separated from conclusions, because recommendations are not totally dependent on geologic factors. The final decision as to whether, or how, a given project should be

developed lies in the hands of the owner and the governing body that must review and approve the project.

## CONTENTS OF GEOLOGIC REPORTS ON FAULTS

Suggested topics, considerations, and guidelines for investigations and reports

The following topics should be considered and addressed in detail where essential to support opinions, conclusions, and recommendations, in any geologic report on faults. It is not expected that all of the topics or investigative methods would be necessary in a single investigation. In specific cases it may be necessary to extend some of the investigative methods well beyond the site or property being investigated. Particularly helpful references are cited parenthetically below.

### I. Text.

- A. Purpose and scope of investigation; description of proposed development.
- B. Geologic and tectonic setting. Include seismicity and earthquake history.
- C. Site description and conditions, including dates of site visits and observations. Include information on geologic units, graded and filled areas, vegetation, existing structures, and other factors that may affect the choice of investigative methods and the interpretation of data.
- D. Methods of investigation.
  1. Review of published and unpublished literature, maps, and records concerning geologic units, faults, ground-water barriers, and other factors.
  2. Stereoscopic interpretation of aerial photographs and other remotely sensed images to detect fault-related topography (geomorphic features), vegetation and soil contrasts, and other lineaments of possible fault origin. The area interpreted usually should extend beyond the site boundaries.
  3. Surface observations, including mapping of geologic and soil units, geologic structures, geomorphic features and surfaces, springs, deformation of engineered structures due to fault creep, both on and beyond the site.
  4. Subsurface investigations.

- a. Trenching and other excavations to permit detailed and direct observation of continuously exposed geologic units, soils, and structures; must be of adequate depth and be carefully logged (see Taylor and Cluff, 1973; Hatheway and Leighton, 1979; McCalpin, 1996b).
  - b. Borings and test pits to permit collection of data on geologic units and ground water at specific locations. Data points must be sufficient in number and spaced adequately to permit valid correlations and interpretations.
  - c. Cone penetrometer testing (CPT) (Grant and others, 1997; Edelman and others, 1996). CPT must be done in conjunction with continuously logged borings to correlate CPT results with on-site materials. The number of borings and spacing of CPT soundings should be sufficient to adequately image site stratigraphy. The existence and location of a fault based on CPT data are interpretative.
5. Geophysical investigations. These are indirect methods that require a knowledge of specific geologic conditions for reliable interpretations. They should seldom, if ever, be employed alone without knowledge of the geology (Chase and Chapman, 1976). Geophysical methods alone never prove the absence of a fault nor do they identify the recency of activity. The types of equipment and techniques used should be described and supporting data presented (California Board of Registration for Geologists and Geophysicists, 1993).
- a. High resolution seismic reflection (Stephenson and others, 1995; McCalpin, 1996b).
  - b. Ground penetrating radar (Cai and others, 1996).
  - c. Other methods include: seismic refraction, magnetic profiling, electrical resistivity, and gravity (McCalpin, 1996b).
6. Age-dating techniques are essential for determining the ages of geologic units, soils, and surfaces that bracket the time(s) of faulting (Pierce, 1986; Birkeland and others, 1991; Rutter and Catto, 1995; McCalpin, 1996a).
- a. Radiometric dating (especially  $^{14}\text{C}$ ).
  - b. Soil-profile development.
  - c. Rock and mineral weathering.
  - d. Landform development.
  - e. Stratigraphic correlation of rocks/minerals/fossils.
  - f. Other methods -- artifacts, historical records, tephrochronology, fault scarp modeling, thermoluminescence, lichenometry, paleomagnetism, dendrochronology, etc.
7. Other methods should be included when special conditions permit or requirements for critical structures demand a more intensive investigation.
- a. Aerial reconnaissance overflights.
  - b. Geodetic and strain measurements.
  - c. Microseismicity monitoring.
- E. Conclusions.
1. Location and existence (or absence) of hazardous faults on or adjacent to the site; ages of past rupture events.
  2. Type of faults and nature of anticipated offset, including sense and magnitude of displacement, if possible.
  3. Distribution of primary and secondary faulting (fault zone width) and fault-related deformation.
  4. Probability of or relative potential for future surface displacement. The likelihood of future ground rupture seldom can be stated mathematically, but may be stated in semiquantitative terms such as low, moderate, or high, or in terms of slip rates determined for specific fault segments.
  5. Degree of confidence in and limitations of data and conclusions.



## F. Recommendations.

1. Setback distances of proposed structures from hazardous faults. The setback distance generally will depend on the quality of data and type and complexity of fault(s) encountered at the site. In order to establish an appropriate setback distance from a fault located by indirect or interpretative methods (e.g. borings or cone penetrometer testing), the area between data points also should be considered underlain by a fault unless additional data are used to more precisely locate the fault. State and local regulations may dictate minimum distances (e.g., Sec. 3603 of California Code of Regulations, Appendix B).
2. Additional measures (e.g., strengthened foundations, engineering design, flexible utility connections) to accommodate warping and distributive deformation associated with faulting (Lazarte and others, 1994).
3. Risk evaluation relative to the proposed development.
4. Limitations of the investigation; need for additional studies.

traverses, locations of faults, and other data; recommended scale is 1:2,400 (1 inch equals 200 feet), or larger.

- C. Geologic map -- show distribution of geologic units (if more than one), faults and other structures, geomorphic features, aerial photographic lineaments, and springs; on topographic map 1:24,000 scale or larger; can be combined with III(A) or III(B).
- D. Geologic cross-sections, if needed, to provide 3-dimensional picture.
- E. Logs of exploratory trenches and borings -- show details of observed features and conditions; should not be generalized or diagrammatic. Trench logs should show topographic profile and geologic structure at a 1:1 horizontal to vertical scale; scale should be 1:60 (1 inch = 5 feet) or larger.
- F. Geophysical data and geologic interpretations.

IV. Appendix: Supporting data not included above (e.g., water well data, photographs, aerial photographs).

V. Authentication: Investigating geologist's signature and registration number with expiration date.

## II. References.

- A. Literature and records cited or reviewed; citations should be complete.
- B. Aerial photographs or images interpreted -- list type, date, scale, source, and index numbers.
- C. Other sources of information, including well records, personal communications, and other data sources.

## III. Illustrations -- these are essential to the understanding of the report and to reduce the length of text.

- A. Location map -- identify site locality, significant faults, geographic features, regional geology, seismic epicenters, and other pertinent data; 1:24,000 scale is recommended. If the site investigation is done in compliance with the Alquist-Priolo Act, show site location on the appropriate Official Map of Earthquake Fault Zones.
- B. Site development map -- show site boundaries, existing and proposed structures, graded areas, streets, exploratory trenches, borings, geophysical

## REFERENCES

- Allen, C.R., 1975, Geologic criteria for evaluating seismicity: Geological Society of America Bulletin, v. 86, p. 1041-1056.
- Birkeland, P.W., Machette, M.N., and Haller, K.M., 1991, Soils as a tool for applied Quaternary geology: Utah Geological and Mineral Survey Miscellaneous Publication 91-3, 63 p.
- Bonilla, M.G., 1970, Surface faulting and related effects, *in* Wiegel, R.L., editor, Earthquake Engineering, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, p. 47-74.
- Bonilla, M.G., 1982, Evaluation of potential surface faulting and other tectonic deformation: U.S. Geological Survey Open-File Report 82-732, 58 p.
- Bonilla, M.G., and Lienkaemper, J.J., 1991, Factors affecting the recognition of faults in exploratory trenches: U.S. Geological Survey Bulletin 1947, 54 p.
- Cai, J., McMecham, G.A., and Fisher, M.A., 1996, Application of ground-penetrating radar to investigation

- of near-surface fault properties in the San Francisco bay region: *Bulletin of the Seismological Society of America*, v. 86, p. 1459-1470.
- California Department of Conservation, Division of Mines and Geology DMG Notes:
- DMG NOTE 41 - General guidelines for reviewing geologic reports, 1997.
- DMG NOTE 42 - Guidelines to geologic/seismic reports, 1986.
- DMG NOTE 44 - Recommended guidelines for preparing engineering geologic reports, 1986.
- DMG NOTE 49 - Guidelines for evaluating the hazard of surface fault rupture, 1997.
- California Department of Conservation, Division of Mines and Geology, 1997, Guidelines for evaluating and mitigating seismic hazards in California: Special Publication 117, 74 p.
- California State Board of Registration for Geologists and Geophysicists, 1993, Guidelines for geophysical reports, 5 p.
- Carver, G.A., and McCalpin, J.P., 1996, Paleoseismology of compressional tectonic environments, *in* McCalpin, J.P., editor, *Paleoseismology*: Academic Press, p. 183-270.
- Chase, G.W. and Chapman, R.H., 1976, Black-box geology -- uses and misuses of geophysics in engineering geology: *California Geology*, v. 29, p. 8-12.
- Edelman, S.H., and Holguin, A.R., 1996 (in press), Cone Penetrometer Testing for characterization and sampling of soil and groundwater, *in* Morgan, J.H., editor, *Sampling Environmental Media ASTM STP 1282*: American Society for Testing Materials, Philadelphia, Pennsylvania.
- Grant, L.B., Waggoner, J.T., Rockwell, T.K., and von Stein, C., 1997, Paleoseismicity of the North Branch of the Newport-Inglewood fault zone in Huntington Beach, California, from cone penetrometer test data: *Bulletin of the Seismological Society of America*, v. 87, no. 2, p. 277-293.
- Hart, E.W., and Williams, J.W., 1978, Geologic review process, *California Geology*, v. 31, n. 10, p. 235-236.
- Hatheway, A.W., and Leighton, F.B., 1979, Trenching as an exploratory tool, *in* Hatheway, A.W. and McClure, C.R., Jr., editors, *Geology in the siting of nuclear power plants*: Geological Society of America Reviews in Engineering Geology, v. IV, p. 169-195.
- Lazarte, C.A., Bray, J.D., Johnson, A.M., and Lemmer, R.E., 1994, Surface breakage of the 1992 Landers earthquake and its effects on structures: *Bulletin of the Seismological Society of America*, v. 84, p. 547-561.
- McCalpin, J.P. (editor), 1996a, *Paleoseismology*: Academic Press, 588 p.
- McCalpin, J.P., 1996b, Field techniques in paleoseismology, *in* McCalpin, J.P., editor, *Paleoseismology*: Academic Press, p. 33-83.
- McCalpin, J.P., 1996c, Paleoseismology in extensional environments, *in* McCalpin, J.P., editor, *Paleoseismology*: Academic Press, p. 85-146.
- National Research Council, 1986, *Studies in geophysics -- active tectonics*: National Academy Press, Washington, D.C., 266 p. (Contains several articles evaluating active faulting).
- Pierce, K.L., 1986, Dating Methods, *in* *Studies in geophysics -- active tectonics*: National Academy Press, Washington, D.C., p. 195-214.
- Rutter, N.W., and Catto, N.R., 1995, Dating methods for Quaternary deposits: *Geological Society of Canada, GEOTEXT 2*, 308 p.
- Sherard, J.L., Cluff, L.S., and Allen, C.R., 1974, Potentially active faults in dam foundations: *Geotechnique*, Institute of Civil Engineers, London, v. 24, n. 3, p. 367-428.
- Slemmons, D.B., 1977, State-of-the-art for assessing earthquake hazards in the United States: Report 6, faults and earthquake magnitude: U.S. Army Engineer Waterways Experiment Station Miscellaneous Paper S-73-1, 129 p. with 37 p. appendix.
- Slemmons, D.B. and dePolo, C.M., 1986, Evaluation of active faulting and associated hazards, *in* *Studies in geophysics -- active tectonics*: National Academy Press, Washington, D.C., p. 45-62.
- Stephenson, W.J., Rockwell, T.K., Odum, J.K., Shedlock, K.M., and Okaya, D.A., 1995, Seismic reflection and geomorphic characterization of the onshore Palos Verdes fault zone, Los Angeles, California: *Bulletin of the Seismological Society of America*, v. 85, p. 943-950.

- Taylor, C.L., and Cluff, L.S., 1973, Fault activity and its significance assessed by exploratory excavation, *in* Proceedings of the Conference on tectonic problems of the San Andreas fault system: Stanford University Publication, Geological Sciences, v. XIII, September 1973, p. 239-247.
- Utah Section of the Association of Engineering Geologists, 1987, Guidelines for evaluating surface fault rupture hazards in Utah: Utah Geological and Mineral Survey Miscellaneous Publication N, 2 p.
- Wallace, R.E., 1977, Profiles and ages of young fault scarps, north-central Nevada: Geological Society of America Bulletin, v. 88, p. 1267-1281.
- Weldon, R.J., II, McCalpin, J.P., and Rockwell, T.K., 1996, Paleoseismology of strike-slip tectonic environments, *in* McCalpin, J.P., editor, Paleoseismology: Academic Press, p. 271-329.
- Yeats, R.S., Sieh, K.E., and Allen, C.A., 1997, Geology of Earthquakes: Oxford University Press, New York, N.Y., 576 p.

## Appendix D

### GENERAL GUIDELINES FOR REVIEWING GEOLOGIC REPORTS

(These general guidelines are published as DMG Note 41 (1997). Similar guidelines were adopted by the State Mining and Geology Board for advisory purposes in 1996).

The purpose of this article is to provide general guidance for those geologists who review geologic reports of consultants on behalf of agencies having approval authority over specific developments. These general guidelines are modified from an article titled, "Geologic Review Process" by Hart and Williams (1978).

The geologic review is a critical part of the evaluation process of a proposed development. It is the responsibility of the reviewer to assure that each geologic investigation, and the resulting report, adequately addresses the geologic conditions that exist at a given site. In addition to geologic reports for tentative tracts and site development, a reviewer evaluates Environmental Impact Reports, Seismic Safety and Public Safety Elements of General Plans, Reclamation Plans, as-graded geologic reports, and final, as-built geologic maps and reports. In a sense, the geologic reviewer enforces existing laws, agency policies, and regulations to assure that significant geologic factors (hazards, mineral and water resources, geologic processes) are properly considered, and potential problems are mitigated prior to project development. Generally, the reviewer acts at the discretion or request of, and on behalf of a governing agency -- city, county, regional, state, federal -- not only to protect the government's interest but also to protect the interest of the community at large. Examples of

the review process in a state agency are described by Stewart and others (1976). Review at the local level has been discussed by Leighton (1975), Berkland (1992), Larson (1992), and others. Grading codes, inspections, and the review process are discussed in detail by Scullin (1983). Nelson and Christenson (1992) specifically discuss review guidelines for reports on surface faulting.

### THE REVIEWER

#### Qualifications

In order to make appropriate evaluations of geologic reports, the reviewer should be an experienced geologist familiar with the investigative methods employed and the techniques available to the profession. Even so, the reviewer must know his or her limitations, and at times ask for the opinions of others more qualified in specialty fields (e.g., geophysics, mineral exploitation and economics, ground water, foundation and seismic engineering, seismology). In California, the reviewer must be licensed by the State Board of Registration for Geologists and Geophysicists in order to practice (Wolfe, 1975). The Board also certifies engineering geologists and hydrogeologists, and licenses geophysicists. Local and regional agencies may have additional requirements.

The reviewer must have the courage of his or her convictions and should not approve reports if an inadequate investigation has been conducted. Like any review process, there is a certain “give-and-take” involved between the reviewer and investigator. If there is clear evidence of incompetence or misrepresentation in a report, this fact should be reported to the reviewing agency or licensing board. California Civil Code Section 47 provides an immunity for statements made “in the initiation or course of any other proceedings authorized by law.” Courts have interpreted this section as providing immunity to letters of complaint written to provide a public agency or board, including licensing boards, with information that the public board or agency may want to investigate (see *King v. Borges*, 28 Cal. App. 3d 27 [1972]; and *Brody v. Montalbano*, 87 Cal. App. 3d 725 [1978]). Clearly, the reviewer needs to have the support of his or her agency in order to carry out these duties.

The reviewer should bear in mind that some geologic investigators are not accomplished writers, and almost all are working with restricted budgets. Also, the reviewer may be limited by their agency’s policies, procedures, and fee structures. Thus, while a reviewer should demand that certain standards be met, he or she should avoid running rough-shod over the investigator. The mark of a good reviewer is the ability to sort out the important from the insignificant and to make constructive comments and recommendations.

A reviewer may be employed full time by the reviewing agency or part-time as a consultant. Also, one reviewing agency (such as a city) may contract with another agency (such as a county) to perform geologic reviews. The best reviews generally are performed by experienced reviewers. Thus, the use of multiple, part-time reviewers by a given agency tends to prevent development of consistently high-quality and efficient reviews. One of the reasons for this is that different reviewers have different standards, which results in inconsistent treatment of development projects. The primary purpose of the review procedure should always be kept in mind -- namely, to assure the adequacy of geologic investigations.

### Other Review Functions

Aside from his or her duties as a reviewer, the reviewing geologist also must interpret the geologic data reported to other agency personnel who regulate development (e.g., planners, engineers, inspectors). Also, the reviewing geologist sometimes is called upon to make investigations for his or her own agency. This is common where a city or county employs only one geologist. In fact, some reviewers routinely divide their activities between

reviewing the reports of others and performing one or several other tasks for the employing agency (such as advising other agency staff and boards on geologic matters; making public presentations) (see Leighton, 1975).

### Conflict of Interest

In cases where a reviewing geologist also must perform geologic investigations, he or she should never be placed in the position of reviewing his or her own report, for that is no review at all. A different type of conflict commonly exists in a jurisdiction where the geologic review is performed by a consulting geologist who also is practicing commercially (performing geologic investigations) within the same jurisdictional area. Such situations should be avoided, if at all possible.

## GEOLOGIC REVIEW

### The Report

The critical item in evaluating specific site investigations for adequacy is the resulting geologic report. A report that is incomplete or poorly written cannot be evaluated and should not be approved. As an expediency, some reviewers do accept inadequate or incomplete reports because of their personal knowledge of the site. However, unless good reasons can be provided in writing, it is recommended that a report not be accepted until it presents the pertinent facts correctly and completely.

The conclusions presented in the report regarding the geologic hazards or problems must be separate from and supported by the investigative data. An indication regarding the level of confidence in the conclusions should be provided. Recommendations based on the conclusions should be made to mitigate those geology-related problems which would have an impact on the proposed development. Recommendations also should be made concerning the need for additional geologic investigations.

### Report Guidelines and Standards

An investigating geologist may save a great deal of time (and the client’s money), and avoid misunderstandings, if he or she contacts the reviewing geologist at the initiation of the investigation. The reviewer should not only be familiar with the local geology and sources of information, he or she also should be able to provide specific guidelines for investigative reports and procedures to be followed. Guidelines and check-lists for geologic or geotechnical reports have been prepared by a number of reviewing agencies and are available to assist the reviewer in his or her evaluation of reports (e.g., DMG Notes 42, 44, 46, 48, and 49; California Department of Conservation, Division of

Mines and Geology, 1997). A reviewer also may wish to prepare his or her own guidelines or check-lists for specific types of reviews.

If a reviewer has questions about an investigation, these questions must be communicated in writing to the investigator for response. After the reviewer is satisfied that the investigation and resulting conclusions are adequate, this should be clearly indicated in writing to the reviewing agency so that the proposed development application may be processed promptly. The last and one of the more important responsibilities of the reviewer should be implementation of requirements assuring report recommendations are incorporated and appropriate consultant inspections are made.

The biggest problem the reviewer faces is the identification of standards. These questions must be asked: "Are the methods of investigation appropriate for a given site?" and "Was the investigation conducted according to existing standards of practice?" Answers to these questions lie in the report being reviewed. For example, a reported landslide should be portrayed on a geologic map of the site. The conclusion that a hazard is absent, where previously reported or suspected, should be documented by stating which investigative steps were taken and precisely what was seen. The reviewer must evaluate each investigative step according to existing standards. It should be recognized that existing standards of practice generally set minimum requirements (Keaton, 1993). Often the reviewer is forced to clarify the standards, or even introduce new ones, for a specific purpose.

### **Depth (Intensity) of Review**

The depth of the review is determined primarily by the need to assure that an investigation and resulting conclusions are adequate, but too often the depth of review is controlled by the time and funds available. A report on a subdivision (e.g., for an EIR or preliminary report) may be simply evaluated against a check-list to make certain it is complete and well-documented. Additionally, the reviewer may wish to check cited references or other sources of data, such as aerial photographs and unpublished records.

Reviewers also may inspect the development site and examine excavations and borehole samples. Ideally, a field visit may not be necessary if the report is complete and well-documented. However, field inspections are of value, and generally are necessary to determine if field data are reported accurately and completely. Also, if the reviewer is not familiar with the general site conditions, a brief field visit provides perspective and a visual check on the reported conditions. Whether or not on-site reviews are made, it is

important to note that the geologic review process is not intended to replace routine grading inspections that may be required by the reviewing agency to assure performance according to an approved development plan.

### **Review Records**

For each report and development project reviewed, a clear, concise, and logical written record should be developed. This review record may be as detailed as is necessary, depending upon the complexity of the project, the geology, and the quality and completeness of the reports submitted. At a minimum, the record should:

1. Identify the project, permits, applicant, consultants, reports, and plans reviewed;
2. Include a clear statement of the requirements to be met by the parties involved, data required, and the plan, phase, project, or report being considered or denied;
3. Contain summaries of the reviewer's field observations, associated literature and aerial photographic review, and oral communications with the applicant and the consultant;
4. Contain copies of any pertinent written correspondence; and
5. The reviewer's name and license number(s), with expiration dates.

The report, plans, and review record should be kept in perpetuity to document that compliance with local requirements was achieved and for reference during future development, remodeling, or rebuilding. Such records also can be a valuable resource for land-use planning and real-estate disclosure.

### **Appeals**

In cases where the reviewer is not able to approve a geologic report, or can accept it only on a conditional basis, the developer may wish to appeal the review decision or recommendations. However, every effort should be made to resolve problems informally prior to making a formal appeal. An appeal should be handled through existing local procedures (such as a hearing by a County Board of Supervisors or a City Council) or by a specially appointed Technical Appeals and Review Panel comprised of geoscientists, engineers, and other appropriate professionals. Adequate notice should be given to allow time for both sides to prepare their cases. After an



appropriate hearing, the appeals decision should be in writing as part of the permanent record.

Another way to remedy conflicts between the investigator and the reviewer is by means of a third party review. Such a review can take different paths ranging from the review of existing reports to in-depth field investigations. Third party reviews are usually done by consultants not normally associated with the reviewing/permitting agency.

## REFERENCES

- Berkland, J.O., 1992, Reviewing the geologic review process at the county level, *in* Stout, M.L., editor, Association of Engineering Geologists Proceedings, 35th Annual Meeting, p. 333-336.
- California Department of Conservation, Division of Mines and Geology DMG Notes:
- DMG NOTE 41 - General guidelines for reviewing geologic reports, 1997.
- DMG NOTE 42 - Guidelines to geologic/seismic reports, 1986.
- DMG NOTE 44 - Recommended guidelines for preparing engineering geologic reports, 1986.
- DMG NOTE 46 - Guidelines for geologic/seismic considerations in environmental impact reports, 1986.
- DMG NOTE 48 - Checklists for the review of geologic/seismic reports for California public schools, hospitals and essential services buildings, 1997.
- DMG NOTE 49 - Guidelines for evaluating the hazard of surface fault rupture, 1997 (see Appendix C).
- California Department of Conservation, Division of Mines and Geology, 1997, Guidelines for evaluating and mitigating seismic hazards in California: Special Publication 117, 74 p.
- Hart, E.W., and Williams, J.W., 1978, Geologic review process: *California Geology*, v. 31, p. 235-236.
- Keaton, J.R., 1993, Environmental and engineering geology practice from the technical-professional society perspective: *AEG News*, Fall 1993, v. 36, no. 4, p. 19-21.
- Larson, R.A., 1992, A philosophy of regulatory review, *in* Stout, M.L., editor, Association of Engineering Geologists Proceedings, 35th Annual Meeting, p. 224-226.
- Leighton, F.B., 1975, Role of geotechnical consultants and reviewers for the County of San Mateo: *California Geology*, v. 28, p. 178-181.
- Nelson, C.V., and Christenson, G.E., 1992, Establishing guidelines for surface fault rupture hazard investigations -- Salt Lake County, Utah, *in* Stout, M.L., editor, Association of Engineering Geologists Proceedings, 35th Annual Meeting, p. 242-249.
- Rogers, J.D., and Olshansky, R.B., 1992, Science versus advocacy -- the reviewers role to protect the public interest, *in* Stout, M.L., editor, Association of Engineering Geologists Proceedings, 35th Annual Meeting, p. 371-378.
- Scullin, C.M., 1983, Excavation and grading code administration, inspection, and enforcement: Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 405 p.
- Stewart, R.M., Hart, E.W., and Animoto, P.Y., 1976, The review process and the adequacy of geologic reports: *Bulletin of the International Association of Engineering Geology*, n. 14, p. 83-88. (Reprinted in *California Geology*, October 1977, v. 30, p. 224-229).
- Wolfe, J., 1975, More on registration: *California Geology*, v. 28, p. 155-156.

## Appendix E

### PRODUCTS OF THE FAULT EVALUATION AND ZONING PROGRAM

Since the passage of the AP Act, staff of the Fault Evaluation and Zoning Program have published numerous reports on the Act and the surface fault rupture hazard. These, as well as unpublished files of geologic information, are listed below. A notation next to each entry is the publication number: CD – California Geological Survey compact disc, CG -- California Geology, N – DMG/CGS Note, SP -- Special Publication, SR -- Special Report, o.p. -- report is out of print, \* -- an outside publication not available from CGS. Numbers alone (e.g., 89-16) are Open-File Report numbers. The publications are listed chronologically by groups below.

#### AVAILABILITY

Reports listed here are available for reference at offices of the California Geological Survey in Sacramento, Menlo Park, and Los Angeles. Some reports are also available for reference at county and university libraries. Copies of available CGS reports may be purchased by mail order or over-the-counter from any office (see exceptions below):

#### OFFICES OF THE CALIFORNIA GEOLOGICAL SURVEY

##### GEOLOGIC INFORMATION AND PUBLICATIONS

801 K Street, MS 14-34  
Sacramento, CA 95814  
(916) 445-5716

##### BAY AREA REGIONAL OFFICE

345 Middlefield Road, MS 520  
Menlo Park, CA 94025  
(650) 688-6327

##### SOUTHERN CALIFORNIA REGIONAL OFFICE

888 South Figueroa Street, Suite 475  
Los Angeles, CA 90017  
(213) 239-0878

#### IMPLEMENTATION OF THE ALQUIST-PRIOLO ACT

**Official Maps of Earthquake Fault Zones**, by California Geological Survey, 1974-2007. As of August 2007, 547 new and revised Official APEFZ maps have been issued. Special Publication 42 provides an index to these maps and describes how they can be purchased.

- SP 42** **Fault-rupture hazard zones in California**, by W.A. Bryant and E.W. Hart, 2007, 42 p. (pdf version only). Includes an index map which identifies all 7.5-minute topographic maps in which AP Earthquake Fault Zones are located. (Revised periodically).
- CG** **Zoning for surface fault hazards in California -- The New Special Studies Zones maps**, by E.W. Hart, 1974: v. 27, n. 10, p. 227-230.
- SP 47** **Active fault mapping and evaluation program -- 10-year program to implement Alquist-Priolo Special Studies Zones Act, 1976.**  
o.p.
- CG** **The review process and the adequacy of geologic reports**, by R.M. Stewart, E.W. Hart, and P.Y. Animoto, 1976: Bulletin of the International Association of Engineering Geology, n. 14, p. 83-88. (Reprinted in California Geology, v. 30, n. 10, p. 224-229).
- CG** **Geologic review process**, by E.W. Hart and J.W. Williams, 1978: v. 31, n. 10, p. 235-236.
- \*** **Zoning for the hazard of surface fault rupture in California**, by E.W. Hart, 1978, *in* Proceedings of the Second International Conference on Microzonation, San Francisco, November 26-December 1, 1978: NSF Special Publication, p. 635-645.
- CG** **Fault Evaluation and Zoning Program**, by E.W. Hart, 1980: v. 33, n. 7, p. 147-152.
- \*** **Zoning for surface-faulting in California**, by E.W. Hart, 1986, *in* Proceedings of Conference XXXII -- Workshop on future directions in evaluating earthquake hazards in southern California, November 12-13, 1985: U.S. Geological Survey Open-File Report 86-401, p. 74-83.
- 90-18** **A study of the effectiveness of the Alquist-Priolo Program**, by R. Reitherman and D.J. Leeds, 1990.
- N 41** **General guidelines for reviewing geologic reports**, by E.W. Hart and W.A. Bryant, 1997. (Also Appendix D in SP 42).

**N 49 Guidelines for evaluating the hazard of surface fault rupture**, by E.W. Hart and W.A. Bryant 1997. (Also Appendix C in SP 42).

**CD 2000-03 - Digital images of official maps of Alquist-Priolo Earthquake Fault Zones of California, Southern Region**, by DMG staff, 2000.

**CD 2000-04 - Digital images of official maps of Alquist-Priolo Earthquake Fault Zones of California, Central Coastal Region**, by DMG staff, 2000.

**CD 2000-05 - Digital images of official maps of Alquist-Priolo Earthquake Fault Zones of California, Northern and Eastern Region**, by DMG staff, 2000.

**CD 2001-04 - GIS files of official Alquist-Priolo Earthquake Fault Zones, Central Coastal Region**, developed by W.A. Bryant, R. Martin, P.Wong, D. Maldonado, J. Wampole, and D. Dixon, 2001.

**CD 2001-05 - GIS files of official Alquist-Priolo Earthquake Fault Zones, Southern Region**, developed by W.A. Bryant, R. Martin, P.Wong, D. Maldonado, J. Wampole, and D. Dixon, 2001.

**CD 2001-06 - GIS files of official Alquist-Priolo Earthquake Fault Zones, Northern and Eastern Region**, developed by W.A. Bryant, R. Martin, P.Wong, D. Maldonado, J. Wampole, and D. Dixon, 2001.

## POST-EARTHQUAKE INVESTIGATIONS

**CG Ground rupture associated with faulting -- Oroville earthquake, August 1975**, by E.W. Hart, 1975: v. 28, p. 274-276.

**SR 124 Ground rupture along the Cleveland Hill fault**, by E.W. Hart and J.S. Rapp, 1975, *in* Sherburne, R.W. and Hauge, C.J., editors, Oroville, California, Earthquake 1 August 1975, p. 61-72.

**\* Geologic setting, historical seismicity and surface effects of the Imperial Valley earthquake, October 15, 1979, Imperial County, California**, by E. Leivas, E.W. Hart, R.D. McJunkin, and C.R. Real, 1980, *in* Imperial County, California, Earthquake October 15, 1979: EERI Reconnaissance Report, February 1980, p. 5-19.

**81-5 Preliminary map of October 1979 fault rupture, Imperial and Brawley faults, Imperial County, California**, by E.W. Hart, 1981.

**80-12 Preliminary map of surface rupture associated with the Mammoth Lakes earthquakes, May 25 and 27, 1980**, by W.A. Bryant, G.C. Taylor, E.W. Hart, and J.E. Kahle, 1980.

**SR 150 Surface rupture associated with the Mammoth Lakes earthquakes of 25 and 27 May, 1980**, by G.C. Taylor and W.A. Bryant, 1980, *in* Sherburne, R.W., editor, Mammoth Lakes, California earthquakes of May 1980, p. 49-67.

**SR 150 Rockfalls generated by the Mammoth Lakes earthquakes of May 25 and 27, 1980**, by W.A. Bryant, 1980, *in* Sherburne, R.W., editor, Mammoth Lakes, California earthquakes of May 1980, p. 69-73.

**SR 150 Planned zoning of active faults associated with the Mammoth Lakes earthquakes of May 1980**, by E.W. Hart, 1980, *in* Sherburne, R.W., editor, Mammoth Lakes, California earthquakes of May 1980, p. 137-141.

**CG Ground rupture, Coalinga earthquake of 10 June 1983**, by R.D. McJunkin and E.W. Hart, 1983: v. 36, n. 8, p. 182-184.

**SP 66 Surface faulting northwest of Coalinga, California, June and July 1983**, by E.W. Hart and R.D. McJunkin, 1983, *in* Bennett, J.H. and Sherburne, R.W., editors, The 1983 Coalinga, California earthquakes, p. 201-219.

**SP 68 Evidence for surface faulting associated with the Morgan Hill earthquake of April 24, 1984**, by E.W. Hart, 1984, *in* Bennett, J.H. and Sherburne, R.W., editors, The 1984 Morgan Hill, California earthquake, p. 161-173.

**CG Fault rupture associated with the July 21, 1986 Chalfant Valley Earthquake, Mono and Inyo counties, California**, by J.E. Kahle, W.A. Bryant, and E.W. Hart, 1986: v. 39, n. 11, p. 243-245.

**CG Magnitude 5.9 North Palm Springs earthquake, July 8, 1986, Riverside County, California: Lifeline damage**, by G. Borchardt and M.W. Manson, 1986: v. 39, n. 11, p. 248-252.

**CG Preliminary report: Surface rupture, Superstition Hills earthquakes of November 23 and 24, 1987**, by J.E. Kahle, C.J. Wills, E.W. Hart, J.A. Treiman, R.B. Greenwood, and R.S. Kaumeyer, 1988: v. 41, n. 4, p. 75-84.

- CG Liquefaction at Soda Lake: Effects of the Chittenden earthquake swarm of April 18, 1990, Santa Cruz County, California**, by C.J. Wills and M.W. Manson, 1990: v. 43, n. 10, p. 225-232.
- \* Surface fissures and the mapping of CDMG Special Studies Zones**, by E.W. Hart, 1990, *in* Reid, G., editor, What we have learned from the October 17, 1989 7.1M Loma Prieta earthquake: 16th Annual Saber Society Symposium Proceedings Volume, p. 87-99.
- SP 104 The search for fault rupture and the significance of ridge-top fissures, Santa Cruz Mountains, California**, by E.W. Hart, W.A. Bryant, C.J. Wills, and J.A. Treiman, 1990, *in* McNutt, S.R. and Sydnor, R.H., editors, The Loma Prieta Earthquake of October 17, 1989, p. 83-94.
- CG The Mono Lake earthquake of October 23, 1990**, by S.R. McNutt, W.A. Bryant, and R. Wilson, 1991: v. 44, n. 2, p. 27-32.
- \* Eureka Peak and Burnt Mountain faults, two "new" faults in Yucca Valley, San Bernardino County, California**, by J.A. Treiman, *in* Landers earthquake of June 28, 1992, San Bernardino County, California, Field Trip Guidebook: Southern California Section of Association of Engineering Geologists, 1992, p. 19-22.
- CG Surface faulting associated with the June 1992 Landers earthquake, California**, by E.W. Hart, W.A. Bryant, and J.A. Treiman, 1993, v. 46, p. 10-16.
- SP 116 The search for fault rupture after the Northridge earthquake**, by E.W. Hart, J.A. Treiman, and W.A. Bryant, 1995, *in* Woods, M.C. and Seiple, W.R., editors, The Northridge, California, earthquake of 17 January 1994, p. 89-101.
- SP 116 Surface faulting near Santa Clarita**, by J.A. Treiman, 1995, *in* Woods, M.C. and Seiple, W.R., editors, The Northridge, California, earthquake of 17 January 1994, p. 103-110.
- \* Primary surface rupture associated with the Mw 7.1 October 1999 Hector Mine earthquake, San Bernardino County, California**, by J.A. Treiman, K.J. Kendrick, W.A. Bryant, T.K. Rockwell, and S.F. McGill, 2002, Bulletin of the Seismological Society of America, v. 92, p. 1171-1191.
- \* Surface fault slip associated with the 2004 Parkfield, California, earthquake**, by M.J. Rymer, J.C. Tinsley III, J.A. Treiman, J.R. Arrowsmith, K.B. Clahan, A.M. Rosinski, W.A. Bryant, A. Snyder, G.S.

Fuis, N.A. Toke, and G.W. Bawden, 2006, Bulletin of the Seismological Society of America, v. 96, p. S11-S27.

## STUDIES OF INDIVIDUAL FAULTS

- FERs Fault Evaluation Reports**, by Fault Evaluation and Zoning Project Staff, 1976-2007, copies of the FERs are available for reference in the Bay Area and Southern California regional offices of CGS. An index to FERs and copies of FERs through 1989 on microfiche are available as Open-File Reports 90-9 to 90-14 (see below). FERs completed through 2000 have been digitally archived and are available for purchase (see below).
- 81-6 Evidence of Holocene movement of the San Andreas fault zone, northern San Mateo County, California**, by T.C. Smith, 1981.
- 81-7 Sargent, San Andreas, and Calaveras fault zones: Evidence for recency in the Watsonville East, Chittenden and San Felipe quadrangles, California**, by W.A. Bryant, D.P. Smith, and E.W. Hart, 1981.
- 81-8 Recently active strands of the Greenville fault, Alameda, Contra Costa and Santa Clara counties, California**, by E.W. Hart, 1981.
- 81-9 Evidence for recent faulting, Calaveras and Pleasanton faults, Diablo and Dublin quadrangles, California**, by E.W. Hart, 1981.
- SP 62 Southern Hayward fault zone, Alameda and Santa Clara counties, California**, by W.A. Bryant, 1982, *in* Proceedings -- Conference on earthquake hazards of the eastern San Francisco Bay area, p. 35-44.
- \* Self-guided field trip No. 4 -- Fault creep along the Hayward fault in the Richmond-San Pablo area**, by T.C. Smith, 1982, *in* Conference on earthquake hazards of the [eastern] San Francisco Bay area, Field Trip Guidebook: California State University, Hayward.
- 84-54 Evidence of recent faulting along the Owens Valley, Round Valley, and White Mountains fault zones, Inyo and Mono counties, California**, by W.A. Bryant, 1984.
- 84-55 Evidence of recent faulting along the Mono Lake fault zone, Mono County, California**, by W.A. Bryant, 1984.

- 84-56 Evidence of recent faulting along the Antelope Valley fault zone, Mono County, California**, by W.A. Bryant, 1984.
- 88-14 Recently active traces of the Newport-Inglewood fault zone, Los Angeles and Orange counties, California**, by W.A. Bryant, 1988.
- CG A neotectonic tour of the Death Valley fault zone**, by C.J. Wills, 1989: v. 42, n. 9, p. 195-200.
- CG Deep Springs fault, Inyo County, California, An example of the use of relative-dating techniques**, by W.A. Bryant, 1989: v. 42, n. 11, p. 243-255.
- \* The Rose Canyon fault zone; a historical review**, by J.A. Treiman, 1989, *in* Seismic risk in the San Diego region, a workshop on the Rose Canyon fault system: Proceedings volume of a workshop sponsored by the Southern California Earthquake Preparedness Project, June 29-30, 1989.
- 90-9 Index to fault evaluation reports prepared 1976-1989 under the Alquist-Priolo Special Studies Zones Act**, by C.J. Wills, P. Wong, and E.W. Hart, 1990.
- 90-10 Microfiche copies of Fault Evaluation Reports for northern California**, by Division of Mines and Geology staff.
- 90-11 Microfiche copies of Fault Evaluation Reports for the southern Coast Ranges**, by Division of Mines and Geology staff.
- 90-12 Microfiche copies of Fault Evaluation Reports for the Transverse Ranges**, by Division of Mines and Geology staff.
- 90-13 Microfiche copies of Fault Evaluation Reports for the Peninsular Ranges**, by Division of Mines and Geology staff.
- 90-14 Microfiche copies of Fault Evaluation Reports for eastern California**, by Division of Mines and Geology staff.
- CG Active faults north of Lassen Volcanic National Park**, by C.J. Wills, 1991, v. 44, p. 51-58.
- \* The Green Valley Fault**, by W.A. Bryant, *in* Field trip guide to the geology of western Solano County: Northern California Geological Society, 1991, p. 1-10.
- SP 113 Progress in understanding the Concord fault through site specific studies**, by C.J. Wills and E.W. Hart, *in* Proceedings -- Conference on earthquake hazards in the eastern San Francisco Bay area, 1992, p. 311-317.
- SP 113 The elusive Antioch fault**, by C.J. Wills, *in* Proceedings -- Conference on earthquake hazards in the eastern San Francisco Bay area, 1992, p. 325-331.
- SP 113 Pseudo-mole tracks from clay beds east of Healdsburg**, by M.D. Malone, G. Borchardt, E.W. Hart, and S.R. Korbay, *in* Proceedings -- Conference on earthquake hazards in the eastern San Francisco Bay area, 1992, p. 419-425.
- 92-7 Recently active traces of the Rodgers Creek fault, Sonoma County, California**, by E.W. Hart, 1992, 14 p.
- 93-2 The Rose Canyon fault zone, southern California**, by J.A. Treiman, 1993, 45 p.
- \* Holocene slip rate and earthquake recurrence on the Honey Lake fault zone, northeastern California**, by C.J. Wills and G. Borchardt, 1993, *Geology*, v. 21, p. 853-856.
- CD 2002-01 - Fault evaluation reports prepared under the Alquist-Priolo Earthquake Fault Zoning Act, Region 1 – Central California**, developed by W.A. Bryant and P. Wong, 2002.
- CD 2002-02 - Fault evaluation reports prepared under the Alquist-Priolo Earthquake Fault Zoning Act, Region 2 – Southern California**, developed by W.A. Bryant and P. Wong, 2002.
- CD 2002-03 - Fault evaluation reports prepared under the Alquist-Priolo Earthquake Fault Zoning Act, Region 3 – Northern and Eastern California**, developed by W.A. Bryant and P. Wong, 2002.

## REGIONAL SUMMARY REPORTS

- 77-8 Summary report -- Fault evaluation program, 1976 area (western Transverse Ranges)**, by E.W. Hart, E.J. Bortugno, and T.C. Smith, 1977.
- 78-10 Summary report -- Fault evaluation program, 1977 area (Los Angeles Basin region)**, by E.W. Hart, D.P. Smith, and T.C. Smith, 1978.
- 79-10 Summary report -- Fault evaluation program, 1978 area (Peninsular Ranges-Salton Trough region)**, by E.W. Hart, D.P. Smith, and R.B. Saul, 1979.

- 81-3 Summary report -- Fault evaluation program, 1979-1980 area (southern San Francisco Bay region),** by E.W. Hart, W.A. Bryant, and T.C. Smith, 1981.
- SP 62 California's fault evaluation program -- southern San Francisco Bay region,** by E.W. Hart, T.C. Smith, and W.A. Bryant, 1982, *in* Proceedings -- Conference on earthquake hazards in the eastern San Francisco Bay area, p. 395-404.
- 83-10 Summary report -- Fault evaluation program, 1981-1982 area (northern Coast Ranges region),** by E.W. Hart, W.A. Bryant, and T.C. Smith, 1983.
- 84-52 Summary report -- Fault evaluation program, 1983 area (Sierra Nevada region),** by E.W. Hart, W.A. Bryant, and T.C. Smith, 1984.
- 86-3 Summary report -- Fault evaluation program, 1984-1985, southern Coast Ranges region and other areas,** by E.W. Hart, W.A. Bryant, M.W. Manson, and J.E. Kahle, 1986.
- 88-1 Summary report -- Fault evaluation program, 1986-1987, Mojave Desert region and other areas,** by E.W. Hart, W.A. Bryant, J.E. Kahle, M.W. Manson, and E.J. Bortugno, 1987.
- 89-16 Summary report -- Fault evaluation program, 1987-1988, southwestern Basin and Range region and supplemental areas,** by E.W. Hart, W.A. Bryant, C.J. Wills, J.A. Treiman, and J.E. Kahle, 1989.
- 91-9 Summary report -- Fault evaluation program, 1989-1990, northeastern California and supplemental areas,** by E.W. Hart, W.A. Bryant, J.A. Treiman, C.J. Wills, and R.H. Sydnor, 1991.
- are available for purchase (see below). Reports filed after 2000 are available for reference at the Geologic Information and Publications Office in Sacramento.
- C File,** reports by consulting geologists that predate the Earthquake Fault Zones or are outside the Zones at the time of the study. Over 600 reports on file. Reports are available for reference at the Bay Area and Southern California regional offices of CGS, and the Geologic Information and Publications Office in Sacramento.
- 77-6 Index to geologic reports for sites within Special Studies Zones,** by W.Y.C. Lo and J.G. Moreno, 1977 o.p. (superseded by OFR 84-31).
- 84-31 Index to geologic reports for sites within Special Studies Zones,** by P. Wong, 1984. (Index map to the AP File reports).
- 89-5 Index to geologic reports for development sites within Special Studies Zones in California, July 1, 1984 to December 31, 1988,** by P. Wong, 1989. (Update for OFR 84-31).
- 90-15 Directory of fault investigation reports for development sites within Special Studies Zones in California, 1974-1988,** by P. Wong, E.W. Hart, and C.J. Wills, 1990. (Listing of all AP File reports through December 1988).
- 95-9 Index to geologic reports for development sites within Earthquake Fault Zones in California, January 1, 1989 to December 31, 1994,** by P. Wong, 1995 (Update for OFR 89-5).
- CD 2003-01 - Fault investigation reports for development sites within Alquist-Priolo Earthquake Fault Zones in Northern California, 1974-2000,** developed by P. Wong, W.A. Bryant, and J.A. Treiman, 2003.

### CONSULTANTS REPORTS

**A-P File,** reports by consulting geologists, 1974-2007; reports for sites within Earthquake Fault Zones submitted to the California Geological Survey in compliance with the APEFZ Act. Over 4,000 reports on file. Reports filed with CGS through 2000 have been digitally archived and

**CD 2003-02 - Fault investigation reports for development sites within Alquist-Priolo Earthquake Fault Zones in Southern California, 1974-2000,** developed by P. Wong, W.A. Bryant, and J.A. Treiman, 2003.



## Appendix F

### WAIVER PROCEDURE FOR THE ALQUIST-PRIOLO ACT

Section 2623 of the Act states, "If the city or county [having jurisdiction over the lands] finds that no undue [fault] hazard...exists, the geologic report on such hazard may be waived, with approval of the State Geologist." The location of the proposed development or structure may be approved following such waiver.

The State Geologist will review waiver requests only after receiving the Waiver Form completed by the city or county geologist and the property owner, and accompanied by supporting statements and data in writing that would justify approval of the waiver request.

<b>WAIVER FORM FOR THE ALQUIST-PRIOLO ACT</b> (Pursuant to Chapter 7.5, Div. 2, California Public Resources Code)					
<b>1. City or County Geologist, State Registered</b>					
I, _____, Registered Geologist, <div style="text-align: center; font-size: small;">(Print Name)</div> representing _____, recommend that the <div style="text-align: center; font-size: small;">(City/County)</div> property: _____ <div style="text-align: center; font-size: small;">(Description, size, proposed development)</div> _____ <div style="text-align: center; font-size: small;">(Location of Site - also show location on "Earthquake Fault Zones" maps)</div> _____, be granted a waiver from geologic studies <div style="text-align: center; font-size: small;">(Permit Number)</div> relating to active faults*. Supporting statements that no undue hazard relative to faults exists at the site are attached to this form in writing on City or County letterhead with the City or County Geologist's signature and registration number, and that the Geologist representing the City or County is in agreement with the data:					
Attached Data Includes:	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>	
1. Geologic Fault Map(s)	_____	_____	4. Aerial Photo(s)	_____	_____
2. Geologic Report(s)	_____	_____	5. Reference to Report(s)	_____	_____
3. Subsurface Geologic Data	_____	_____	6. Other information	_____	_____
_____ <div style="text-align: center; font-size: small;">(City or County Registered Geologist's Signature)</div>		_____ <div style="text-align: center; font-size: small;">(R.G. No.)</div>		_____ <div style="text-align: center; font-size: small;">(Date)</div>	
<b>2. Owner of the Property</b>					
I, _____, acknowledge that the property is within an Earthquake Fault Zone associated with the _____ fault.  <div style="display: flex; justify-content: space-between; width: 80%; margin-left: auto; margin-right: auto;"> <div style="text-align: center; width: 45%;">_____ <div style="text-align: center; font-size: small;">(Owner's Signature)</div></div> <div style="text-align: center; width: 45%;">_____ <div style="text-align: center; font-size: small;">(Date)</div></div> </div>					
<b>3. State Geologist</b>					
Date Received by CGS _____ <div style="text-align: center; font-size: small;">(Date)</div> Reviewer _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: auto; margin-right: auto;"> <div style="text-align: center; width: 45%;">_____ <div style="text-align: center; font-size: small;">(Registered Geologist's Signature)</div></div> <div style="text-align: center; width: 45%;">_____ <div style="text-align: center; font-size: small;">(R.G. No.)</div></div> <div style="text-align: center; width: 45%;">_____ <div style="text-align: center; font-size: small;">(Date)</div></div> </div> Recommendation of Waiver:      Approved: <input type="checkbox"/> Not Approved: <input type="checkbox"/> (Explanation attached)					
State Approval of Review: _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: auto; margin-right: auto;"> <div style="text-align: center; width: 45%;">_____ <div style="text-align: center; font-size: small;">(State Geologist)</div></div> <div style="text-align: center; width: 45%;">_____ <div style="text-align: center; font-size: small;">(Date)</div></div> </div> *Defined in Policies and Criteria of the State Mining and Geology Board (See Appendix B)					
Mail form to: <b>State Geologist</b> <b>California Geological Survey</b> <b>801 K Street, MS 12-30</b> <b>Sacramento, California 95814-3531</b>					





**MAP EXPLANATION**

**Potentially Active Faults**

Faults considered to have been active during Holocene time and to have a relatively high potential for surface rupture, solid line where accurately located, long dash where approximately located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by creep or possible creep.

**Special Studies Zone Boundaries**

- These are delineated as straight-line segments that connect encircled turning points so as to define special studies zone segments.
- Seaward projection of zone boundary.

**STATE OF CALIFORNIA  
SPECIAL STUDIES ZONES**

Delineated in compliance with  
Chapter 7.5, Division 2 of the California Public Resources Code  
(Alquist-Priolo Special Studies Zones Act)

**HOLLYWOOD QUADRANGLE**

**REVISED OFFICIAL MAP**

Effective: July 1, 1986

*James F. Davis* State Geologist

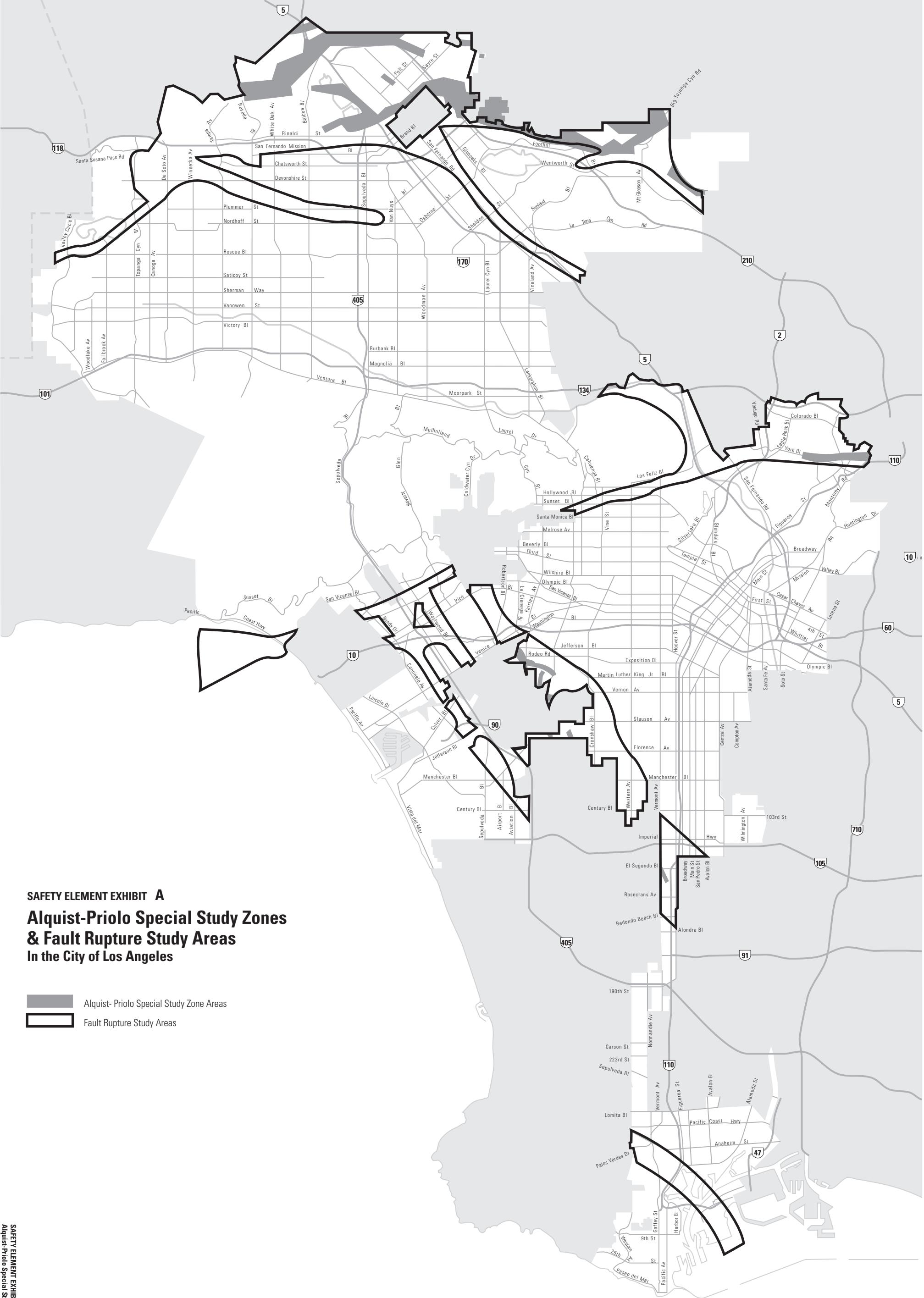
**REFERENCES USED TO COMPILE FAULT DATA**

- Hollywood Quadrangle
- Bryant, R.A., 1965, Western Newport-Inglewood fault zone, Los Angeles County, California: Division of Mines and Geology, Fault Evaluation Report (FAR-23) (unpublished).
- Castle, R.O. and Burke, R.P., 1976, Recent surface movements on the Baldwin Hills, Los Angeles County, California: U.S. Geological Survey Professional Paper 882, 123 p., 4 plates, scale 1:12,500.
- For additional information on faults in this map area, the information used for locating and additional references obtained, refer to unpublished Fault Evaluation Reports on file at the DMG office in Pleasant Hill.

**IMPORTANT - PLEASE NOTE**



- 1) This map may not show all faults that have the potential for surface fault rupture, either within the special studies zones or outside their boundaries.
- 2) Faults shown are the basis for establishing the boundaries of the special studies zones.
- 3) The identification and location of these faults are based on the best available data. However, the quality of data used is varied. Traces have been drawn as accurately as possible at this map scale.
- 4) Fault information on this map is not sufficient to serve as a substitute for the geologic site investigations (special studies) required under Chapter 7.5 of Division 2 of the California Public Resources Code.





SAFETY ELEMENT EXHIBIT A

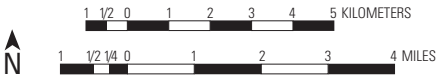
# Alquist-Priolo Special Study Zones & Fault Rupture Study Areas In the City of Los Angeles

-  Alquist- Priolo Special Study Zone Areas
-  Fault Rupture Study Areas

**NOTES**  
The Safety Element seismic and landslide exhibits, along with any official geologic or seismic hazard maps prepared by the State Geologist and any other potential hazard areas identified by the City Building Safety Department are used in determining if additional soils and geology reports should be prepared to help assess potential hazards and mitigations, as a part of the development permit process.

Sources: California Environmental Impact Report, Framework Element, Los Angeles City General Plan, May 1995; California Environmental Quality Act of 1970 (CEQA), Public Resources Code 21000 *et. seq.* as amended 1992, Alquist-Priolo Special Study Zone Act, Public Resources Code 2621-2630 and 2690-2699.6 as amended 1993, State of California Special Studies Zone maps for the following USGS quadrangles: Oat Mountain (1-1-76) San Fernando (1-1-79), Sunland (1-1-79), Burbank (1-1-79), Beverly Hills (6-1-86), Hollywood (6-1-86), Los Angeles (1-1-77), Inglewood (6-1-86), Torrance (6-1-86), Long Beach (6-1-86), as prepared by the State Geologist pursuant to the Alquist-Priolo Special Study Zones Act, City of Los Angeles Seismic Safety Plan Element of the General Plan Council file 74-3401, September 10, 1975.

Prepared by the General Plan Framework Section • City of Los Angeles Planning Department • Citywide Graphics • March 1994 • Council File No. 89-2104



GUIDELINES FOR EVALUATING THE  
HAZARD OF SURFACE FAULT RUPTURE

GUIDELINES FOR EVALUATING THE HAZARD OF SURFACE FAULT RUPTURE  
(Similar guidelines were adopted by the State Mining and Geology Board for advisory purposes in 1996.)

These guidelines are to assist geologists who investigate faults relative to the hazard of surface fault rupture. Subsequent to the passage of the Alquist-Priolo Earthquake Fault Zoning Act (1972), it became apparent that many fault investigations conducted in California were incomplete or otherwise inadequate for the purpose of evaluating the potential of surface fault rupture. It was further apparent that statewide standards for investigating faults would be beneficial. These guidelines were initially prepared in 1975 and have been revised several times since then.

The investigation of sites for the possible hazard of surface fault rupture is a deceptively difficult geologic task. Many active faults are complex, consisting of multiple breaks. Yet the evidence for identifying active fault traces is generally subtle or obscure and the distinction between recently active and long-inactive faults may be difficult to make. It is impractical from an economic, engineering, and architectural point of view to design a structure to withstand serious damage under the stress of surface fault rupture. Once a structure is sited astride an active fault, the resulting fault-rupture hazard cannot be mitigated unless the structure is re-located, whereas when a structure is placed on a landslide, the potential hazard from landsliding often can be mitigated. Most surface faulting is confined to a relatively narrow zone a few feet to few tens of feet wide, making avoidance (i.e., building setbacks) the most appropriate mitigation method. However, in some cases primary fault rupture along branch faults can be distributed across zones hundreds of feet wide or manifested as broad warps, suggesting that engineering strengthening or design may be of additional mitigative value (e.g., Lazarte and others, 1994).

No single investigative method will be the best, or even useful, at all sites, because of the complexity of evaluating surface and near surface faults and because of the infinite variety of site conditions. Nonetheless, certain investigative methods are more helpful than others in locating faults and evaluating the recency of activity.

The evaluation of a given site with regard to the potential hazard of surface fault rupture is based extensively on the concepts of recency and recurrence of faulting along existing faults. In a general way, the more recent the faulting the greater the probability for future faulting (Allen, 1975). Stated another way, faults of known historic activity during the last 200 years, as a class, have a greater probability for future activity than faults classified as Holocene age (last 11,000 years), and a much greater probability of future activity than faults classified as Quaternary age (last 1.6 mil-

lion years). However, it should be kept in mind that certain faults have recurrent activity measured in tens or hundreds of years whereas other faults may be inactive for thousands of years before being reactivated. Other faults may be characterized by creep-type rupture that is more or less ongoing. The magnitude, sense, and nature of fault rupture also vary for different faults or even along different strands of the same fault. Even so, future faulting generally is expected to recur along pre-existing faults (Bonilla, 1970). The development of a new fault or reactivation of a long-inactive fault is relatively uncommon and generally need not be a concern in site development.

As a practical matter, fault investigation should be directed at the problem of locating existing faults and then attempting to evaluate the recency of their activity. Data should be obtained both from the site and outside the site area. The most useful and direct method of evaluating recency is to observe (in a trench or road cut) the youngest geologic unit faulted and the oldest unit that is not faulted. Even so, active faults may be subtle or discontinuous and consequently overlooked in trench exposures (Bonilla and Lienkaemper, 1991). Therefore, careful logging is essential and trenching needs to be conducted in conjunction with other methods. For example, recently active faults may also be identified by direct observation of young, fault-related geomorphic (i.e., topographic) features in the field or on aerial photographs. Other indirect and more interpretive methods are identified in the outline below. Some of these methods are discussed in Bonilla (1982), Carver and McCalpin (1996), Hatheway and Leighton (1979), McCalpin (1996a, b, c), National Research Council (1986), Sherard and others (1974), Slemmons (1977), Slemmons and dePolo (1986), Taylor and Cluff (1973), the Utah Section of the Association of Engineering Geologists (1987), Wallace (1977), Weldon and others (1996), and Yeats and others (1997). McCalpin (1996b) contains a particularly useful discussion of various field techniques. Many other useful references are listed in the bibliographies of the references cited here.

The purpose, scope, and methods of investigation for fault investigations will vary depending on conditions at specific sites and the nature of the projects. Contents and scope of the investigation may also vary based on guidelines and review criteria of agencies or political organizations having regulatory responsibility. However, there are topics that should be considered in all comprehensive



Revised 5/2002

fault investigations and geologic reports on faults. For a given site some topics may be addressed in more detail than at other sites because of the difference in the geologic and/or tectonic setting and/or site conditions. These investigative considerations should apply to any comprehensive fault investigation and may be applied to any project site, large or small. Suggested topics, considerations, and guidelines for fault investigations and reports on faults are provided in the following annotated outline. Fault investigations may be conducted in conjunction with other geologic and geotechnical investigations (DMG Notes 42 and 44). Although not all investigative techniques need to be or can be employed in evaluating a given site, the outline provides a checklist for preparing complete and well-documented reports. Most reports on fault investigations are reviewed by local or state government agencies. Therefore it is necessary that the reports be documented adequately and written carefully to facilitate that review. The importance of the review process is emphasized here, because it is the reviewer who must evaluate the adequacy of reports, interpret or set standards where they are unclear, and advise the governing agency as to their acceptability (Hart and Williams, 1978; DMG Note 41).

The scope of the investigation is dependent not only on the complexity and economics of a project, but also on the level of risk acceptable for the proposed structure or development. A more detailed investigation should be made for hospitals, high-rise buildings, and other critical or sensitive structures than for low-occupancy structures such as wood-frame dwellings that are comparatively safe. The conclusion drawn from any given set of data, however, must be consistent and unbiased. Recommendations must be clearly separated from conclusions, because recommendations are not totally dependent on geologic factors. The final decision as to whether, or how, a given project should be developed lies in the hands of the owner and the governing body that must review and approve the project.

## CONTENTS OF GEOLOGIC REPORTS ON FAULTS

Suggested topics, considerations, and guidelines for investigations and reports

The following topics should be considered and addressed in detail where essential to support opinions, conclusions, and recommendations, in any geologic report on faults. It is not expected that all the topics or investigative methods would be necessary in a single investigation. In specific cases it may be necessary to extend some of the investigative methods well beyond the site or property being investigated. Particularly helpful references are cited parenthetically below.

### I. Text

- A. Purpose and scope of investigation; description of proposed development.
- B. Geologic and tectonic setting. Include seismicity and earthquake history.
- C. Site description and conditions, including dates of site visits and observations. Include information on geologic units, graded and filled areas, vegetation, existing structures, and other factors that may affect the choice of investigative methods and interpretation of data.
- D. Methods of investigation.
  1. Review of published and unpublished literature, maps, and records concerning geologic units, faults, ground-water barriers, and other factors.
2. Stereoscopic interpretation of aerial photographs and other remotely sensed images to detect fault-related topography (geomorphic features), vegetation and soil contrasts, and other lineaments of possible fault origin. The area interpreted usually should extend beyond the site boundaries.
3. Surface observations, including mapping of geologic and soil units, geologic structures, geomorphic features and surfaces, springs, deformation of engineered structures due to fault creep, both on and beyond the site.
4. Subsurface investigations.
  - a. Trenching and other excavations to permit detailed and direct observation of continuously exposed geologic units, soils, and structures; must be of adequate depth and be carefully logged (Taylor and Cluff, 1973; Hatheway and Leighton, 1979; McCalpin, 1996b).
  - b. Borings and test pits to permit collection of data on geologic units and ground water at specific locations. Data points must be sufficient in number and spaced adequately to permit valid correlations and interpretations.
  - c. Cone penetrometer testing (CPT) (Grant and others, 1997; Edelman and others, 1996). CPT must be done in conjunction with continuously logged borings to correlate CPT results with on-site materials. The number of borings and spacing of CPT soundings should be sufficient to adequately image site stratigraphy. The existence and location of a fault based on CPT data are interpretative.
5. Geophysical investigations. These are indirect methods that require a knowledge of specific geologic conditions for reliable interpretations. They should seldom, if ever, be employed alone without knowledge of the geology (Chase and Chapman, 1976). Geophysical methods alone never prove the absence of a fault nor do they identify the recency of activity. The types of equipment and techniques used should be described and supporting data presented (California Board of Registration for Geologists and Geophysicists, 1993).
  - a. High resolution seismic reflection (Stephenson and others, 1995; McCalpin, 1996b).
  - b. Ground penetrating radar (Cai and others, 1996).
  - c. Other methods include: seismic refraction, magnetic profiling, electrical resistivity, and gravity (McCalpin, 1996b).
6. Age-dating techniques are essential for determining the ages of geologic units, soils, and surfaces that bracket the time(s) of faulting (Pierce, 1986; Birkeland and other, 1991; Rutter and Catto, 1995; McCalpin, 1996a).
  - a. Radiometric dating (especially <sup>14</sup>C).
  - b. Soil-profile development.

- c. Rock and mineral weathering.
  - d. Landform development.
  - e. Stratigraphic correlation of rocks/minerals/fossils.
  - f. Other methods — artifacts, historical records, tephrochronology, fault scarp modeling, thermoluminescence, lichenometry, paleomagnetism, dendrochronology, etc.
- 7. Other methods should be included when special conditions permit or requirements for critical structures demand a more intensive investigation.
  - a. Aerial reconnaissance overflights.
  - b. Geodetic and strain measurements.
  - c. Microseismicity monitoring.
- E. Conclusions.
  - 1. Location and existence (or absence) of hazardous faults on or adjacent to the site; ages of past rupture events.
  - 2. Type of faults and nature of anticipated offset, including sense and magnitude of displacement, if possible.
  - 3. Distribution of primary and secondary faulting (fault zone width) and fault-related deformation.
  - 4. Probability of or relative potential for future surface displacement. The likelihood of future ground rupture seldom can be stated mathematically, but may be stated in semi-quantitative terms such as low, moderate, or high, or in terms of slip rates determined for specific fault segments.
  - 5. Degree of confidence in and limitations of data and conclusions.
- F. Recommendations.
  - 1. Setback distances of proposed structures from hazardous faults. The setback distance generally will depend on the quality of data and type and complexity of fault(s) encountered at the site. In order to establish an appropriate setback distance from a fault located by indirect or interpretative methods (e.g., borings or cone penetrometer testing), the area between data points also should be considered underlain by a fault unless additional data are used to more precisely locate the fault. State and local regulations may dictate minimum distances (e.g., Section 3603 of California Code of Regulations in Appendix B in Hart and Bryant, 1997).
  - 2. Additional measures (e.g., strengthened foundations, engineering design, flexible utility connections) to accommodate warping and distributive deformation associated with faulting (Lazarte and others, 1994).
  - 3. Risk evaluation relative to the proposed development.
  - 4. Limitations of the investigation; need for additional studies.
- II. References.
  - A. Literature and records cited or reviewed; citations should be complete.
  - B. Aerial photographs or images interpreted — list type, data, scale, source, and index numbers.
  - C. Other sources of information, including well records, personal communications, and other data sources.
- III. Illustrations — these are essential to the understanding of the report and to reduce the length of text.
  - A. Location map — identify site locality, significant faults, geographic features, regional geology, seismic epicenters, and other pertinent data; 1:24,000 scale is recommended. If the site investigation is done in compliance with the Alquist-Priolo Act, show site location on the appropriate Official Map of Earthquake Fault Zones.
  - B. Site development map — show site boundaries, existing and proposed structures, graded areas, streets, exploratory trenches, borings geophysical traverses, locations of faults, and other data; recommended scale is 1:2,400 (1 inch equals 200 feet), or larger.
  - C. Geologic map — show distribution of geologic units (if more than one), faults and other structures, geomorphic features, aerial photo graphic lineaments, and springs; on topographic map 1:24,000 scale or larger; can be combined with III(A) or III(B).
  - D. Geologic cross sections, if needed, to provide three-dimensional picture.
  - E. Logs of exploratory trenches and borings — show details of observed features and conditions; should not be generalized or diagrammatic. Trench logs should show topographic profile and geologic structure at a 1:1 horizontal to vertical scale; scale should be 1:60 (1 inch = 5 feet) or larger.
  - F. Geophysical data and geologic interpretations.
- IV. Appendix: Supporting data not included above (e.g., water well data, photographs, aerial photographs).
- V. Authentication: Investigating geologist's signature and registration number with expiration data.

## REFERENCES

- Allen, C.R., 1975, Geologic criteria for evaluating seismicity: Geological Society of America Bulletin, v. 86, p. 1041-1056.
- Birkeland, P.W., Machette, M.N., and Haller, K.M., 1991, Soils as a tool for applied Quaternary geology: Utah Geological and Mineral Survey Miscellaneous Publication 91-3, 63 p.
- Bonilla, M.G., 1970, Surface faulting and related effects, in Wiegel, R.L., editor, Earthquake Engineering, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, p. 47-74.
- Bonilla, M.G., 1982, Evaluation of potential surface faulting and other tectonic deformation: U.S. Geological Survey Open-File Report 82-732, 58 p.
- Bonilla, M.G. and Lienkaemper, J.J., 1991, Factors affecting the recognition of faults in exploratory trenches: U.S. Geological Survey Bulletin 1947, 54 p.
- Cai, J., McMecham, G.A., and Fisher, M.A., 1996, Application of ground-penetrating radar to investigation of near-surface fault properties in the San Francisco bay region: Bulletin of the Seismological Society of America, v. 86, p. 1459-1470.
- California Department of Conservation, Division of Mines and Geology DMG Notes:
- \* DMG Note 41 — General guidelines for reviewing geologic reports, 1998.
- \* DMG Note 42 — Guidelines for geologic/seismic reports, 1986.



- \* DMG Note 44 — Recommended guidelines for preparing engineering geologic reports, 1986.
- California Department of Conservation, Division of Mines and Geology, 1997, Guidelines for evaluating and mitigating seismic hazards in California: Special Publication 117, 74 p.
- California State Board of Registration for Geologists and Geophysicists, 1993, Guidelines for geophysical reports, 5 p.
- Carver, G.A. and McCalpin, J.P., 1996, Paleoseismology of compressional tectonic environments, in McCalpin, J.P., editor, Paleoseismology: Academic Press, p. 183-270.
- Chase, G.W. and Chapman, R.H., 1976, Black-box geology — uses and misuses of geophysics in engineering geology: California Geology, v. 29, p. 8-12.
- Edelman, S.H. and Huguin, A.R., 1996 (in press), Cone penetrometer testing for characterization and sampling of soil and groundwater, in Morgan, J.H., editor, Sampling Environmental Media ASTM STP 1282; American Society for Testing Materials, Philadelphia, Pennsylvania.
- Grant, L.B., Waggoner, J.T., Rockwell, T.K., and von Stein, C., 1997, Paleoseismicity of the North Branch of the Newport-Inglewood Fault Zone in Huntington Beach, California, from cone penetrometer test data: Bulletin of the Seismological Society of America, v. 87, no. 2, p. 277-293.
- Hart, E.W. and Bryant, W.A., 1997 (revised), Fault-rupture hazard zones in California: California Department of Conservation, Division of Mines and Geology Special Publication 42, 38 p. (Revised periodically; information on state law and zoning program for regulating development near hazardous faults.)
- Hart, E.W. and Williams, J.W., 1978, Geologic review process, California Geology, v. 31, no. 10, p. 235-236.
- Hatheway, A.W. and Leighton, F.B., 1979, Trenching as an exploratory tool, in Hatheway A.W. and McClure, C.R., Jr., editors, Geology in the siting of nuclear power plants: Geological Society of America Reviews in Engineering Geology, v. IV, p. 169-195.
- Lazarte, C.A., Bray, J.D., Johnson, A.M., and Lemmer, R.E., 1994, Surface breakage of the 1992 Landers earthquake and its effects on structures: Bulletin of the Seismological Society of America, v. 84, p. 547-561.
- McCalpin, J.P., editor, 1996a, Paleoseismology: Academic Press, 588 p.
- McCalpin, J.P., 1996b, Field techniques in paleoseismology, in McCalpin, J.P., editor, 1996a, Paleoseismology: Academic Press, p. 33-83.
- McCalpin, J.P., 1996c, Paleoseismology in extensional environments, in McCalpin, J.P., editor, 1996a, Paleoseismology: Academic Press, p. 85-146.
- National Research Council, 1986, Studies in geophysics — active tectonics: National Academy Press, Washington, DC, 266 p. (Contains several articles evaluating active faulting.)
- Pierce, K.L., 1986, Dating methods, in Studies in geophysics — active tectonics: National Academy Press, Washington, DC, p. 195-214.
- Rutter, N.W. and Catto, N.R., 1995, Dating methods for Quaternary deposits: Geological Society of Canada, Geotext 2, 308 p.
- Sherard, J.L., Cluff, L.S., and Allen, C.R., 1974, Potentially active faults in dam foundations: Geotechnique, Institute of Civil Engineers, London, v. 24, no. 3, p. 367-428.
- Slemmons, D.B., 1977, State-of-the-art for assessing earthquake hazards in the United States: Report 6, faults and earthquake magnitude: U.S. Army Engineer Waterways Experiment Station Miscellaneous Paper S-73-1, 129 p. with 37 p. appendix.
- Slemmons, D.B. and dePolo, C.M., 1986, Evaluation of active faulting and associated hazards, in Studies in geophysics — active tectonics: National Academy Press, Washington, DC, p. 45-62.
- Stephenson, W.J., Rockwell, T.K., Odum, J.K., Shedlock, K.M., and Okaya, D.A., 1995, Seismic reflection and geomorphic characterization of the onshore Palos Verdes Fault Zone, Los Angeles, California: Bulletin of the Seismological Society of America, v. 85, p. 943-950.
- Taylor, C.L. and Cluff, L.S., 1973, Fault activity and its significance assessed by exploratory excavation, in Proceedings of the Conference on tectonic problems of the San Andreas Fault System: Stanford University Publication, Geological Sciences, v. XIII, September 1973, p. 239-247.
- Utah Section of the Association of Engineering Geologists, 1987, Guidelines for evaluating surface fault rupture hazards in Utah: Utah Geological and Mineral Survey Miscellaneous Publication N, 2 p.
- Wallace, R.E., 1977, Profiles and ages of young fault scarps, north-central Nevada: Geological Society of America Bulletin, v. 88, p. 1267-1281.
- Weldon, R.J., II, McCalpin, J.P., and Rockwell, T.K., 1996, Paleoseismology of strike-slip tectonic environments, in McCalpin, J.P., editor, Paleoseismology: Academic Press, p. 271-329.
- Yeats, R.S., Sieh, K.E., and Allen, C.A., 1997, Geology of earthquakes: Oxford University Press, New York, NY, 576 p.

### Offices of the California Geological Survey

#### Publications and Information Office

801 K Street, MS 14-33  
Sacramento, CA 95814-3532  
(916) 445-5716

#### Southern California Regional Office

655 South Hope Street, Suite 700  
Los Angeles, CA 90017-3231  
(213) 239-0878

#### Bay Area Regional Office

185 Berry Street, Suite 210  
San Francisco, CA 94107-1728  
(415) 904-7707

[www.conservation.ca.gov](http://www.conservation.ca.gov)

THE RESOURCES AGENCY  
MARY NICHOLS  
SECRETARY FOR RESOURCES

STATE OF CALIFORNIA  
GRAY DAVIS  
GOVERNOR

DEPARTMENT OF CONSERVATION  
DARRYL YOUNG  
DIRECTOR

**BOARD FOR GEOLOGISTS AND GEOPHYSICISTS**

1625 N. Market Blvd. N-324, SACRAMENTO, CA 95834

TELEPHONE: (916) 574-7749

FAX: (916) 574-7791

E-mail: [geology@dca.ca.gov](mailto:geology@dca.ca.gov)Website: [www.dca.ca.gov/geology](http://www.dca.ca.gov/geology)

# **GEOLOGIC GUIDELINES FOR EARTHQUAKE AND/OR FAULT HAZARD REPORTS**

## **GENERAL INFORMATION**

These guidelines describe the scope of work normally done and suggest a format for reports. They do not include complete listings of techniques or topics, nor should all techniques described be used or all topics listed be dealt with in every project.

These guidelines are informational and are not regulations. Language used has been carefully gleaned of mandatory requirements. The guidelines have no force of law and do not set standards of practice. To be enforceable, the guidelines would have to be adopted as regulations in accordance with the Administrative Procedures Act.

On January 23, 1986, the Board of Registration for Geologists and Geophysicists (Board) passed the following resolution:

**"The Guidelines have been adopted as useful information documents. Not having been adopted as regulations in accordance with the Administrative Procedures Act, the Guidelines are not legally enforceable."**

These guidelines have their roots in eight California Division of Mines and Geology notes, that were published in *California Geology* during 1973-75. The four guidelines that evolved through the Technical Advisory Committee for the Board from 1983 to 1989 are:

Guidelines for Engineering Geologic Reports.

Geologic Guidelines for Earthquake and/or Fault Hazard Reports.

Guidelines for Geophysical Reports.

Guidelines for Groundwater Investigation Reports.

## **I. INTRODUCTION**

These guidelines are prepared by the Technical Advisory Committee of the Board and adopted by the Board on April 18, 1998 to assist those involved in preparing and reviewing earthquake and fault hazard reports. The guidelines describe the general procedures used by geologists carrying out earthquake and fault hazard studies and, while they do not constitute a complete listing of all techniques in such studies, they do attempt to include all major topics.

The investigation of sites for potential earthquake hazards, including possible surface fault rupture, is a difficult geologic task. The professional performing or supervising each investigation

*The Mission of the Board for Geologists and Geophysicists is to Continuously Enhance the Quality, Significance, and Availability of Geological and Geophysical Services Offered to the People of California*

has a responsibility to determine what is appropriate and necessary in each case, and so does the professional who reviews each report.

Many active faults are complex, consisting of multiple breaks. Yet the evidence for identifying active fault traces is generally subtle or obscure and the distinction between recently active and long-inactive faults may be difficult to make. Because of the complexity of evaluating surface and near-surface faults and because of the infinite variety of site conditions, no single investigative method will be the best at every site; indeed, the most useful technique at one site may be inappropriate for another site.

Geologic reports prepared using these guidelines would be expected to be done by or under the direct supervision of registered geologists. Clear descriptions of work and unambiguous presentations of results are encouraged. If the report falls within the scope of the Geologist and Geophysicist Act (Business and Professions Code, Chapter 12.5), the report must be signed by the responsible professional(s). It is important that reports that present conclusions or recommendations based in part on field sampling or field or laboratory testing of samples include the test results with adequate descriptions of the methods employed, and with specific reference to standard sampling and testing methods, where appropriate. Where necessary, technical terms (such as active fault, maximum earthquake, etc.) will need to be defined.

The following is a suggested guide or format for earthquake and fault hazard reports. These reports may be prepared for projects ranging in size from a single lot to a master plan for large acreage, in scope from a single family residence to large engineered structures, and from sites located on an active fault to sites a substantial distance from the nearest known active fault. Because of this wide variation, flexibility in the order, format, and scope of the reports will allow tailoring to the seismic and geologic conditions and intended use of the site. The format is intended to be relatively complete, and not all items will be applicable to small projects or low risk sites. In addition, some items may be covered in separate reports by geotechnical engineers, geophysicists, or structural engineers.

## **II. REPORT CONTENTS**

### **A. Purpose and Scope of the Investigation**

Includes a brief description of proposed or existing site use; may also include a description of limitations of the work and authorization to perform the work. The design lifespan of the proposed project should be implicitly stated.

### **B. Regional Geologic Setting**

May include reference to geologic province and location with respect to major structural features.

### **C. Site Description and Conditions**

Includes information on geologic units, landforms, graded and filled areas, vegetation, existing structures, etc., that may affect the choice of investigative methods and the interpretation of data.

**D. Description of the Investigation**

1. Review of the region's seismic or earthquake history, based primarily on existing maps and technical literature.
  - a. Significant earthquakes during historic time and epicenter locations and magnitudes in the vicinity of the site.
  - b. Location of fault traces that may affect the site, including maps of fault breaks and a discussion of the tectonics and other relationships of significance to the proposed construction.
  - c. Location and chronology of other earthquake-induced features such as landsliding, lurching, settlement and liquefaction, accompanied by:
    - (1) Map showing the location of these features relative to the proposed project.
    - (2) Description of the disturbed zone for each feature.
    - (3) Estimate of the amount of disturbance relative to bedrock and surficial materials.
2. Interpretation of aerial photographs and other remotely sensed images relative to fault-related topography, vegetation, and soil contrasts, and other lineaments of possible fault origin.
3. Surface investigation.
  - a. Mapping of geologic units and structures, topographic features, deformation of man made structures, etc., both on and beyond the site (sag ponds, spring alignments, offset bedding and man made features, disrupted drainage systems, offset ridges, faceted spurs, dissected alluvial fans, scarps, landslide alignments, vegetation patterns).
  - b. Review of local groundwater data (water-level fluctuations, groundwater impediments, water quality variations, or anomalies indicating possible faults).
  - c. Description of the distribution, depth, thickness, and nature of the various earth materials, including subsurface water, which may affect the seismic response and damage potential at the site.
4. Subsurface investigation.

- a. Trenching and any other excavation (with appropriate logging and documentation, including method of cleaning wall) to permit the detailed and direct observation of continuously exposed geologic units and features. This would include trenching done across any known active faults and suspicious zones to determine the location and recency of movement, the width of disturbance, the physical condition of fault zone materials, the type of displacement, the geometry of fault features, and recurrence interval, if known.
  - b. Borings drilled and test pits excavated to permit the collection of data needed to evaluate the depth and types of materials and groundwater and to verify fault-plane geometry. Data points sufficient in number and adequately spaced will permit valid correlations and interpretations.
  - c. Geophysical surveys conducted to facilitate the evaluation of the types of site materials and their physical properties, groundwater conditions, and fault displacements, including a description of the types of equipment and techniques used, such as seismic refraction, magnetic, electrical resistivity, seismic refraction, magnetic, electrical resistivity, seismic reflection, and gravity.
5. Other special methods (used when special conditions permit or critical structures demand a more intensive investigation).
- a. Aerial reconnaissance overflights, including special photography.
  - b. Geodetic and strain measurements, microseismicity monitoring, or other monitoring techniques.
  - c. Radiometric analysis (e.g., C14, K-Ar), stratigraphic correlation (fossils, mineralogy), soil profile development, paleomagnetism, or other age-dating techniques to identify the age of faulted or unfaulted units or surfaces.

## **E. Conclusions**

- 1. Regarding areas of high risk and potential hazards relative to the intended land use or development (made in conjunction with the geotechnical engineering study) and a statement of the degree of confidence in, and limitations of, the data and conclusions.
  - a. Presence or absence (including location and age) of active or potentially active faults on or adjacent to the site or in the region of the site if they could affect it (through ground shaking).
  - b. Types and probability of, or relative potential for, future surface displacement within or immediately adjacent to the site, including the direction of relative displacement and the maximum possible displacement.
  - c. Secondary effects, such as: liquefaction of sediments and soils, shallow

ground rupture, settlement of soils, earthquake-induced landslides, and lurching.

- d. Estimates of maximum earthquake, upper bound earthquake, or other definitions of earthquakes if required by statute or regulation for the specific type of project.

#### **F. Recommendations**

1. Mitigative measures that provide appropriate protection of the health, safety and welfare of the public.
2. Effect of fault locations on proposed structures at the site. Federal, state and local law may dictate minimum standards.
3. Risk evaluations, if appropriate, relative to the proposed development.
4. Other recommendations as appropriate for the proposed project.

#### **G. References**

1. Literature and records cited and reviewed.
2. Aerial photographs or images interpreted, listing the type, scale, source, index numbers, etc.
3. Compiled data, maps, or plates included or referenced.
4. Other sources of information, including well records, personal communications, or other data sources.

#### **H. Illustrations**

1. Location map to identify the site locality, significant faults, fault strain and/or creep, geographic features, seismic epicenters, and other pertinent data.
2. Site development map, at an appropriate scale, to show the site boundaries, existing and proposed structures, graded areas, streets, exploratory trenches, borings, geophysical traverses, and other data.
3. Geologic map to show the distribution of geologic units (if more than one), faults and other structures, geomorphic features, aerial photo lineaments, and springs. The geologic map may be combined with the location and site development maps. A clear distinction should be made on the map and within the report between observed and inferred geologic features and relationships.
4. Geologic cross-sections illustrating displacement and/or rupture, if needed to



provide a three-dimensional picture.

5. Logs of exploratory trenches and borings to show the details of observed features and conditions.
6. Geophysical data and the geologic interpretations of those data.

**I. Supporting data not already provided**

1. Water well data.

**J. Signature and registration number of the responsible professional(s)**

1. Registered Geologist, Certified Engineering Geologist.

### **SELECTED REFERENCES**

California Department of Conservation, Division of Mines and Geology, 1997, Guidelines for Evaluating and Mitigating Seismic Hazards in California, DMG Special Publication 117, 71 p.

California Department of Conservation, Division of Mines and Geology, 1986 (revised), Guidelines for preparing engineering geologic reports: DMG Note 44.

California Department of Conservation, Division of Mines and Geology, 1986 (revised), Guidelines to geologic and seismic reports: DMG Note 42.

Geophysics Study Committee of the National Research Council, 1986. Active Tectonics, National Academy Press, Washington, D.C., p. 266.

Hart, E. W., 1992, Fault Hazard Zones in California, Revised 1992; California Division of Mines and Geology Special Publication 42.

Hatheway, A. W., and Leighton, F.B., 1979, Trenching as an exploratory tool: in Hatheway, A. W., and McClure, C.R., Jr., Editors, Geology in the siting of nuclear power plants: Geologic Society of American Reviews in Engineering Geology, v. IV, p. 169-195.

Hoose, S.N., Ed., 1993, Professional Practice Handbook: Association of Engineering Geologists, Special Publication #4.

Krinitzsky, E.L., Gould, J.P., and Edinger, P.H., 1994, Fundamentals of Earthquake Resistant Construction: John Wiley, New York.

McCalpin, J.P., Ed., 1996, Paleoseismology: Academic Press, 588 p.

Petersen, M.D., Bryant, W.A., Cramer, C.H., Cao, T., Reichle, M.S., Frankel, A.D., Lienkaemper, J.J., McCrory, P.A., and Schwartz, D.P., 1996, Probabilistic seismic hazard assessment for the State of California: California Department of Conservation, Division of Mines and Geology Open-File Report 96-

08, 59 p.

Scholl, R. E. (project manager), 1986. Reducing earthquake hazards: Lessons learned from earthquakes. Earthquake Engineering Research Institute Publication 86-02, p. 208.

Schwartz, D. P., and Coppersmith, K. J., 1984. Fault behavior and characteristic earthquakes: Examples from the Wasatch and San Andreas fault zones. *Journal of Geophysical Research*, v. 89, no. B7, pp. 5681-5698.

Schwartz, D. P., 1987. Earthquakes of the Holocene. *Reviews of Geophysics*, v. 25, no. 6, pp. 1197-1202.

*Seismological Research Letters*, 1997, v. 68, p. 9-222 (Special issue on attenuation relations).

Selby, M.J., 1993, *Hillslope Materials and Processes*, Oxford University Press, New York, 451 p.

Wells, D.L. and Coppersmith, K.J., 1994, New empirical relationships among magnitude, rupture length, rupture width, rupture area, and surface displacement: *Bulletin of the Seismological Society of America*, v. 84, p. 974-1002.

Yeats, R.S., Sieh, K.E., and Allen, C.R., 1997, *The geology of earthquakes*: Oxford University Press, 568 p.

Youd, T.L. and Hoose, S.N., 1978, Historic ground failures in northern California triggered by earthquakes: U.S. Geological Survey Professional Paper 993, 177 p.

(Rev. 7/98)

# Active tectonics, paleoseismology, and seismic hazards of the Hollywood fault, northern Los Angeles basin, California

James F. Dolan<sup>\*†</sup>  
Kerry Sieh<sup>†</sup>

*Seismological Laboratory, California Institute of Technology, Pasadena, California 91125*

Thomas K. Rockwell<sup>†</sup>

*Department of Geological Sciences, San Diego State University, San Diego, California 92182*

Paul Gupitill

*Geosyntec Consultants, Huntington Beach, California 92648*

Grant Miller

*Advanced Earth Sciences, Irvine, California 92618*

## ABSTRACT

Data from geotechnical boreholes and trenches, in combination with geomorphologic mapping, indicate that the Hollywood fault is an oblique, reverse–left-lateral fault that has undergone at least one surface-rupturing earthquake during latest Pleistocene to middle or late Holocene time. Geomorphologic observations show that the fault extends for 14 km along the southern edge of the eastern Santa Monica Mountains, from the Los Angeles River westward through downtown Hollywood to northwestern Beverly Hills, where the locus of active deformation steps 1.2 km southward along the West Beverly Hills lineament to the Santa Monica fault. Rupture of the entire Hollywood fault, by itself, could produce a  $M_w \sim 6.6$  earthquake, similar in size to the highly destructive, 1994 Northridge earthquake, but even closer to more densely urbanized areas. Assuming a 0.35 mm/yr minimum fault-slip rate consistent with available geologic data, we calculate an average maximum recurrence interval for such moderate events of  $\leq 4000$  yr. Although occurrence of such moderate events is consistent with the elapsed time since the poorly constrained age of the most recent surface rupture, the data do not preclude a longer quiescent interval suggestive of larger earthquakes. If earthquakes much larger than  $M_w \sim 6.6$  occurred in the past, we

speculate that they may have been generated by the Hollywood fault together with other faults in the Transverse Ranges Southern Boundary fault system.

## INTRODUCTION

During the past decade ideas about the seismic hazards facing urban Los Angeles have undergone dramatic revision and refinement. Earlier earthquake scenarios for the metropolitan region focused primarily on the effects of a great ( $M_w$  7.7 to 7.9) earthquake generated by the San Andreas fault, which is located more than 50 km northeast of downtown Los Angeles (Fig. 1). Not until the mid-1980s (e.g., Wesnousky, 1986; Topozada, 1988) did attention turn to the potential hazards posed by faults directly beneath the metropolitan area. The 1987  $M_w$  6.0 Whittier Narrows earthquake and the 1994  $M_w$  6.7 Northridge earthquake clearly demonstrated the seismic hazards associated with these urban faults. More recent seismic hazard assessments incorporate the possibility of large urban earthquakes, as well as the recurrence of a major earthquake on the San Andreas fault (e.g., Working Group on California Earthquake Probabilities, 1995). Because of their proximity to metropolitan Los Angeles, moderately large to large earthquakes ( $M_w$  7.0 to 7.5) generated by the urban faults could cause at least as much, and possibly more damage, than a much larger earthquake occurring on the San Andreas fault (Working Group on California Earthquake Probabilities, 1995; Dolan et al., 1995; Heaton et al., 1995). At least two such large earthquakes have occurred during historic time in southern California on faults similar to those that underlie the metropolitan region: the December 21, 1812,  $M \sim 7.1$  Santa Barbara Channel earthquakes (Topozada, 1981) and the

July 21, 1952,  $M_w$  7.5 Kern County event (Hanks et al., 1975; Stein and Thatcher, 1981; Wallace, 1988; Ellsworth, 1990). Neither of these earthquakes resulted in widespread damage or major loss of life, because both regions were relatively sparsely populated at the time of the earthquakes.

Despite a heightened awareness of the potential for destructive earthquakes from faults beneath metropolitan Los Angeles, as well as numerous recent studies that have illuminated the active tectonics of the region (e.g., Hauksson, 1990; Wright, 1991; Shaw and Suppe, 1996), too little information exists about the earthquake histories and recent kinematics of these faults to construct realistic probabilistic hazard maps for the metropolitan region. Specifically, we have only sparse data concerning recurrence intervals, dates and sizes of past events, slip rates, and kinematics for many faults. Furthermore, we do not know the exact nature and surficial location of many of these faults. Knowledge of these fault parameters is essential for constructing realistic probabilistic seismic hazard models for southern California.

Over the past several years we have been studying the active tectonics and paleoseismology of the northern Los Angeles metropolitan region; the area extends from Pacific Palisades and Santa Monica on the coast, eastward through Beverly Hills, Hollywood, downtown Los Angeles, and east Los Angeles to Whittier Narrows (Fig. 1). In this paper we discuss our results from the Hollywood fault, which extends for 14 km through this densely urbanized region (Fig. 2). We first describe the results of our geomorphologic and paleoseismologic studies of the fault and then discuss the implications of these data for seismic hazard assessment in the metropolitan Los Angeles region. In addition to the implications of these results for seismic hazard analysis, data from this and similar studies of

<sup>\*</sup>Present Address: Department of Earth Sciences, University of Southern California, Los Angeles, California 90089-0740; e-mail: dolan@earth.usc.edu.

<sup>†</sup>Dolan, Sieh, and Rockwell are members of the Fault Zone Geology Group, Southern California Earthquake Center, University of Southern California, Los Angeles, California 90089-0740.

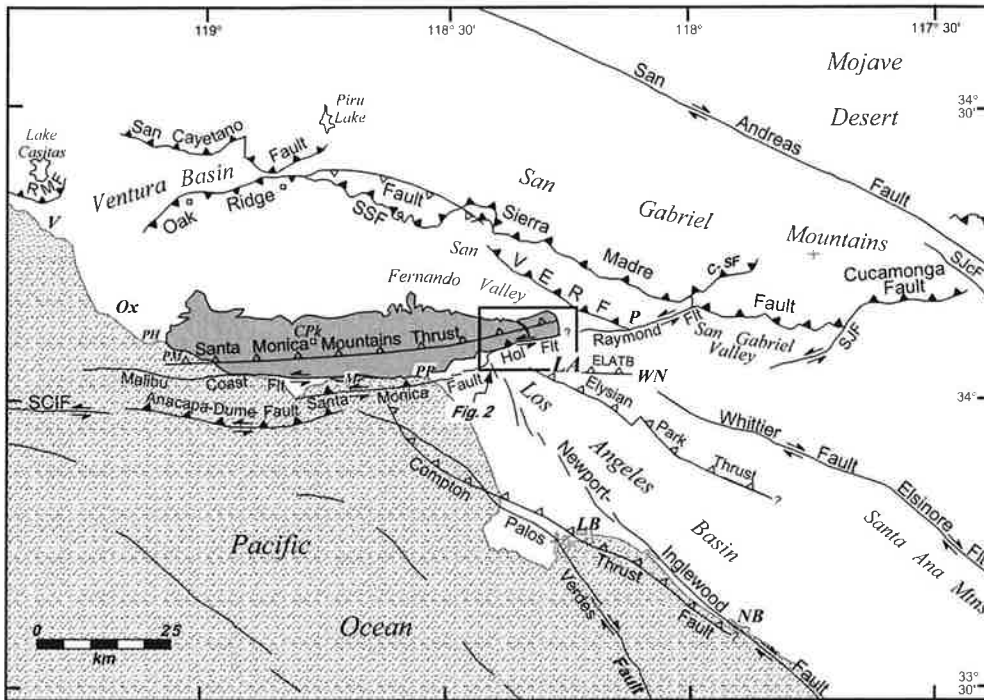


Figure 1. Regional neotectonic map for metropolitan southern California showing major active faults. Fault locations are from Ziony and Jones (1989), Vedder et al. (1986), and Dolan and Sieh (1992). Santa Rosa Island fault is off figure to west. Closed teeth denote reverse-fault surface traces; open teeth show upper edges of blind thrust-fault ramps. Strike-slip fault surface traces are identified by double arrows. Small open squares denote Global Positioning System (GPS) stations discussed in text (locations were provided by A. Donnellan, JPL Geodesy group, 1996, personal commun.). CPk—Castro Peak GPS station; ELATB—East Los Angeles thrust belt; Hol Flt—Hollywood fault; RMF—Red Mountain fault; SCIF—Santa Cruz Island fault; SJF—San Jose fault; SSF—Santa Susana fault; VERF—Verdugo-Eagle Rock fault; LA—Los Angeles; LB—Long Beach; M—Malibu; NB—Newport Beach; Ox—Oxnard; P—Pasadena; PH—Port Hueneme; PM—Point Mugu; PP—Pacific Palisades; SJcF—San Jacinto fault; V—Ventura; WN—Whittier Narrows. Dark shading shows Santa Monica Mountains.

numerous other active southern California faults will ultimately provide information about the long-term and long-distance interactions between these faults.

Studying a fault in such a densely urbanized setting presents many difficulties, perhaps the most challenging being logistical limitations on available trench sites. Because we could not choose the optimal trench site along the Hollywood fault, some aspects of the data set, in particular the slip rate and slip vector of the fault, could not be measured directly and are therefore not as well constrained as they might have been were the fault not in an urban setting. Nonetheless, the data presented below provide constraints on the location, kinematics, and earthquake history of the Hollywood fault, parameters that are critical for integrating this potentially hazardous fault into realistic probabilistic seismic hazard models. We conclude by using estimates of the slip rate and fault-plane area that are consistent with known geologic data to discuss plausible sizes and repeat times of future earthquakes on the Hollywood fault.

## REGIONAL GEOLOGY

The Hollywood fault is part of a system of east-trending reverse, oblique-slip, and left-lateral strike-slip faults that extends for >200 km along the southern edge of the Transverse Ranges, an east-west belt of ranges that developed in response to north-south compression that began ca. 2.5 to 5 Ma (Fig. 1; e.g., Barbat, 1958; Davis et al., 1989; Wright, 1991; Shaw and Suppe, 1996; Schneider et al., 1996; Tsutsumi, 1996). We refer to these faults collectively as the Transverse Ranges Southern Boundary fault system. Within the fault system, left-lateral and oblique-reverse, left-lateral motion on a subsystem comprising the Raymond (Crook et al., 1987; Jones et al., 1990), Hollywood (Dolan et al., 1993; this study), Santa Monica (Dolan et al., 1992), Anacapa-Dume (Stierman and Ellsworth, 1976; Ellsworth, 1990), Malibu Coast (Drumm, 1992; Treiman, 1994), Santa Cruz Island (Patterson, 1978; Pinter and Sorlien, 1991; Pinter et al., 1995), and Santa Rosa Island faults (Colson et al., 1995) accommodates relative westward motion of the Transverse

Ranges block. Paleomagnetic studies of upper Pliocene strata (1 to 3 Ma) reveal 20° of clockwise rotation of parts of the western Transverse Ranges block (Liddicoat, 1992), suggesting that left-lateral motion is accompanied by active clockwise rotation of the western Transverse Ranges.

The Hollywood fault extends east-northeast along the southern edge of the Santa Monica Mountains, the southernmost of the Transverse Ranges (Fig. 2). The range exhibits an asymmetric, south-vergent anticlinal structure, which has been interpreted as a fault-propagation fold above a gently north-dipping blind thrust fault (Fig. 3; Davis et al., 1989; Davis and Namson, 1994). The basic structure of the Hollywood area was revealed during extensive oil exploration, which began during the early 1900s and continued through the 1980s (see Wright, 1991, for a comprehensive review). These data show that the steeply north-dipping Hollywood fault juxtaposes Cretaceous quartz diorite and predominantly Miocene volcanic and sedimentary rocks of the Santa Monica Mountains against Quaternary and Tertiary sedimentary rocks to the south

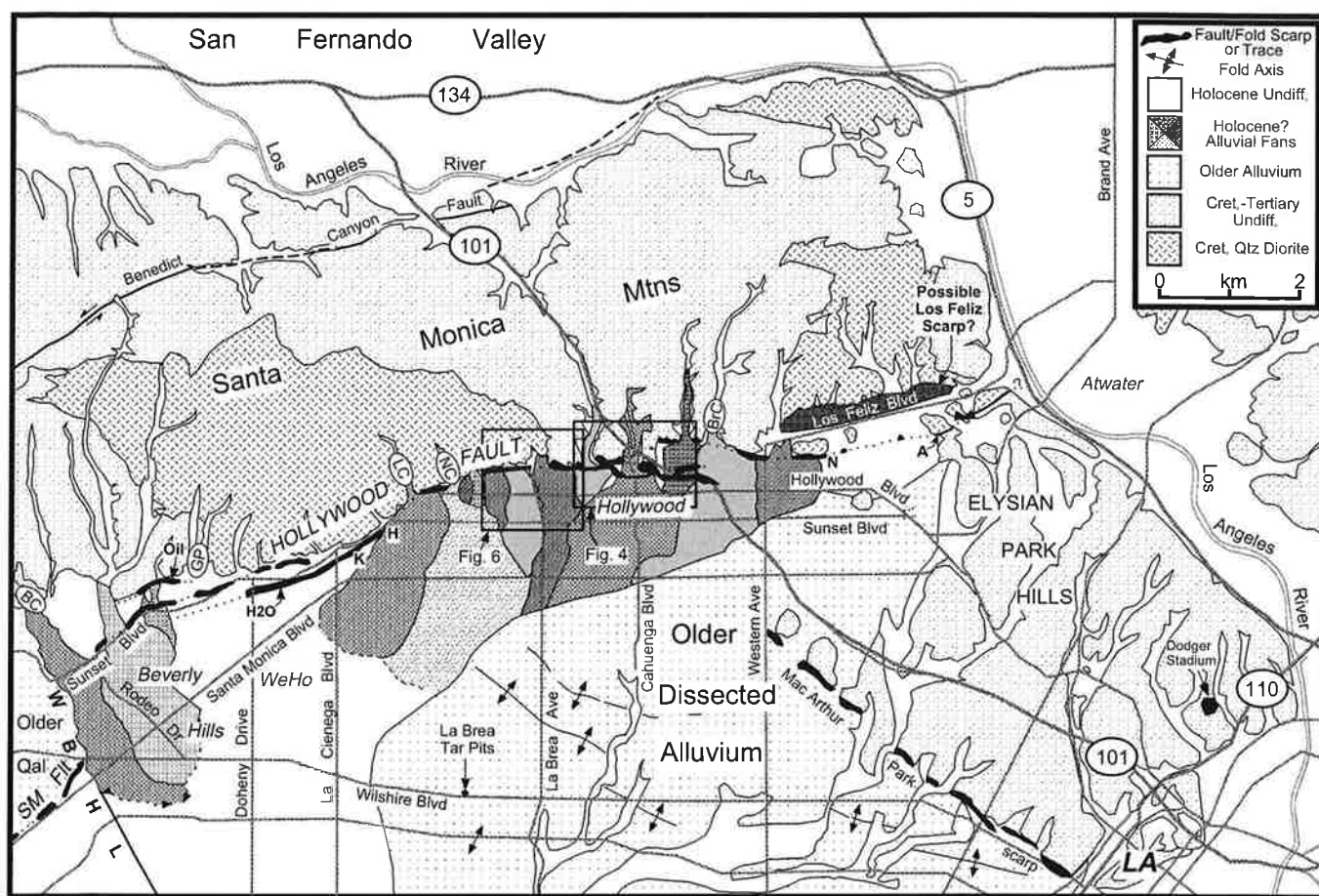


Figure 2. Map of the Hollywood fault zone, showing surficial geology and major tectonic and sedimentary landforms. Major fault and fold scarps are shown in black. Faults are dotted where inferred beneath recent alluvium. Bedrock geology is from Dibblee (1991a, 1991b). Lines with opposing double arrows are crests of youthful folds on the ground surface. The word *Hollywood* is centered on the main business district of downtown Hollywood, which extends approximately from La Brea Avenue eastward to Western Avenue and from Santa Monica Boulevard northward to the mountain front. A—bedrock fault in Elysian Park Hills (Lamar, 1970); H—eastern end of the Sunset Strip at intersection of Sunset Boulevard and Havenhurst Drive; H2O—shallow ground water along Hollywood fault (F. Denison, 1991, personal commun.); K—Kings Road–Sunset Boulevard intersection; N—intersection of Normandie and Franklin Avenues; Oil—linear oil and water seeps at Greystone Park (Crook and Proctor, 1992); SM Flt—Santa Monica fault; BC—Benedict Canyon; BrC—Brushy Canyon; GP—Greystone Park; LC—Laurel Canyon; NC—Nichols Canyon; WBHL—West Beverly Hills lineament; WeHo—West Hollywood.

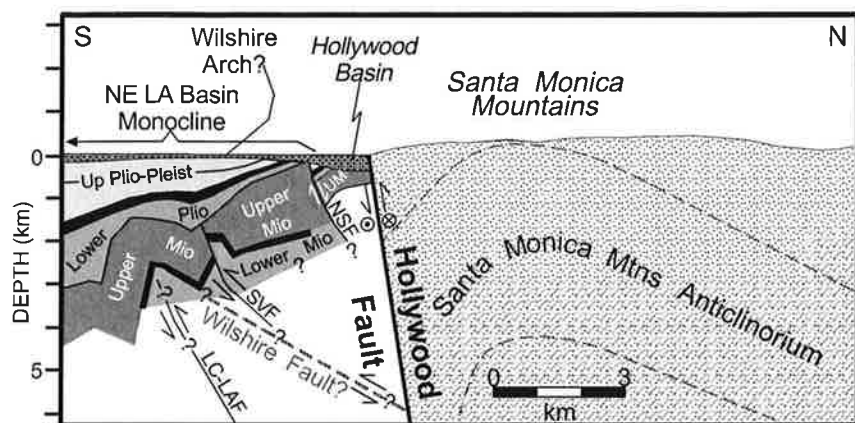
(Figs. 2 and 3). The fault is marked by a narrow, steeply southward-sloping gravity gradient that is most pronounced in the downtown Hollywood area (Chapman and Chase, 1979).

The Hollywood fault defines the northern edge of the 300-m-deep Hollywood basin, which extends parallel to the fault for >10 km, from east of downtown Hollywood to northwestern Beverly Hills (Fig. 3; Hill et al., 1979; Wright, 1991; Hummon et al., 1994). The basin is generally interpreted as being asymmetric, deepening toward the Hollywood fault along its northern flank. The North Salt Lake fault, which is interpreted as a steeply north-dipping normal fault, extends west-

ward along the southern margin of the basin, ~1.5 km south of, and parallel to, the Hollywood fault (Schneider et al., 1996; Tsutsumi, 1996). The North Salt Lake fault can be traced to within 500 m of the surface, but it has not been shown to displace late Quaternary strata (Fig. 3; Schneider et al., 1996; Tsutsumi, 1996), and it does not exhibit any surface geomorphic expression.

To the south of the Hollywood basin is an expanse of dissected, older (Pleistocene?) alluvium. Differential stream incision identified on serial topographic and stream profiles across this older alluvium reveals several very low-amplitude, northwest-trending anticlines that warp the allu-

vial surfaces (Fig. 2; Dolan and Sieh, 1992). The older alluvium overlies the northeast Los Angeles basin monocline, a south-dipping sequence of strata that is interpreted to have been tilted during reverse slip on the postulated Los Angeles fault, an ~60° north-dipping downward extension of the blind Las Cienegas reverse fault (Fig. 3; Schneider et al., 1996; Tsutsumi, 1996). Hummon et al. (1994) hypothesized the existence of the Wilshire arch in this same region, a gentle, east-trending anticline that they interpret to have formed during the past ~0.8 to 1 Ma above the postulated Wilshire fault, a gently north-dipping blind thrust fault (Fig. 3).



**Figure 3.** Generalized north-south cross section through downtown Hollywood area showing major tectonic features of the region, including the Hollywood fault, North Salt Lake fault (NSF), Hollywood basin, Santa Monica Mountains anticlinorium, northeast Los Angeles basin monocline (NE LA monocline in figure), Las Cienegas fault and its postulated downdip extension (Los Angeles fault; LC-LAF), San Vicente fault (SVF), and the postulated Wilshire fault and associated Wilshire arch. The latter is from Hummon et al. (1994). Geology south of Hollywood fault is generalized from Tsutsumi (1996) and Schneider et al. (1996). North Salt Lake fault is based on Schneider et al. (1996). Form lines (dashed gray lines) showing postulated late Cenozoic convergent structure in undifferentiated crystalline basement and Mesozoic-Tertiary sedimentary rocks of Santa Monica Mountains anticlinorium are from Davis and Namson (1994). Active and potentially active faults are shown by thick black lines. Up—Upper; LM—lower Miocene.

## GEOMORPHOLOGIC EXPRESSION OF THE HOLLYWOOD FAULT

The sharply defined southern margin of the eastern Santa Monica Mountains (also known as the Hollywood Hills) represents one of the most pronounced topographic features of the Los Angeles region, and it has long been hypothesized to be the locus of a fault (e.g., Lawson, 1908; Hoots, 1931). Other than knowledge of its approximate location, however, little has been known specifically about the fault's location, geometry, and earthquake history.

Because of the limited use of geomorphology during mapping by earlier workers, the exact location of the Hollywood fault had been identified at only a few sites during the course of geotechnical investigations, notably early exploration for the Metropolitan Transit Authority subway currently under construction (e.g., Converse Consultants, Earth Sciences Associates, and Geo/Resource Consultants, 1981; Crook and Proctor, 1992). None of these studies exposed the fault directly. As part of a paleoseismological study conducted during the early 1980s, Crook et al. (1983; Crook and Proctor, 1992) excavated several sites along the mountain front. However, they did not expose any active strands of the fault. Prior to this study no paleoseismological evidence of fault activity had been documented for the Hollywood fault.

In spite of the dense urbanization of the area,

most alluvial, fluvial, and fault-related landforms (e.g., fans, channels, fault scarps, and faceted mountain spurs) are surprisingly well preserved. The high degree of preservation of these geomorphic features is the result of urbanization of this part of the city primarily during the 1910s and 1920s, before the widespread use of mechanized grading equipment. Rather than leveling building plots as would be done now, the builders simply draped the city across the existing landscape with minimal cutting and filling. Our analysis of tectonic landforms along the fault trace was greatly facilitated by a series of 1:24 000 topographic maps constructed for all of Los Angeles County by the U.S. Geological Survey during the mid-1920s. We conducted our initial geomorphic analysis of the Hollywood area using these highly detailed maps, which have a 5 ft (1.5 m) contour interval on relatively gentle terrain, and a 25 ft (7.6 m) interval in mountainous areas. We later field checked all suspected tectonic landforms. The field analyses allowed us to distinguish many features related to grading during road construction. Our geomorphologic observations, in conjunction with the geotechnical data presented below, provide the basis for construction of the first detailed map of the most recently active surficial trace of the Hollywood fault zone (Fig. 2).

Linear scarps and faceted south-facing ridges confirm that recent activity on the Hollywood

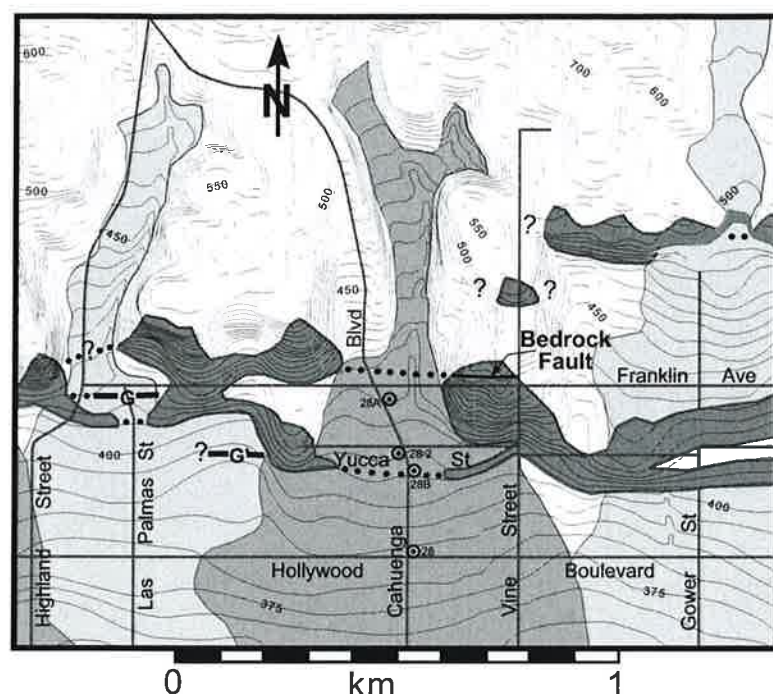
fault is concentrated along the southern edge of the Hollywood Hills in Hollywood and Beverly Hills. The continuity of the scarps is interrupted by numerous recently active alluvial fans along the mountain front. The absence of any significant fan incision or segmentation implies recent uplift of the Hollywood Hills at the mountain front. Along much of the fault, particularly west of downtown Hollywood, the numerous small fans coalesce downslope into a nearly uninterrupted alluvial apron, which merges southward with two gently sloping alluvial plains in southern Beverly Hills—West Hollywood and south-central Hollywood (Fig. 2).

## Downtown Hollywood

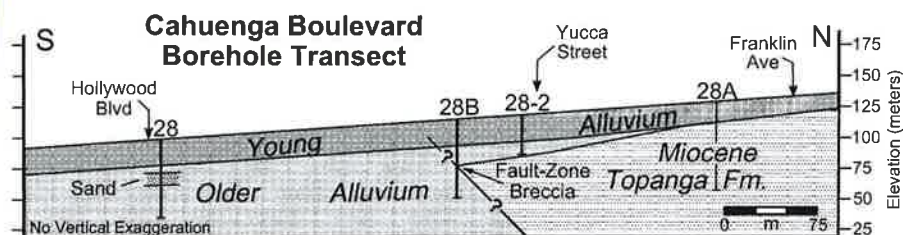
In downtown Hollywood the fault exhibits several parallel, locally overlapping south-facing scarps that indicate a wide, complex zone of surficial faulting (Fig. 4). Data from previous geotechnical and ground-water studies, in combination with our geomorphologic results, confirm that the fault comprises at least three major splays through much of downtown Hollywood (Converse Consultants, Earth Sciences Associates, and Geo/Resource Consultants, 1981; Crook and Proctor, 1992; F. Denison, 1991, personal commun.). The most prominent scarp in the downtown area, which we refer to as the Franklin Avenue strand, extends for ~2 km along and just south of Franklin Avenue, from ~250 m east of La Brea Avenue to just east of Gower Street (Figs. 2 and 4). Two 1991 foundation boreholes excavated just south of Franklin Avenue on Las Palmas Street confirm that a fault exists beneath the prominent scarp (G' in Fig. 4; R. Slade, 1992, personal commun. in Crook and Proctor, 1992). These boreholes reveal a pronounced ground-water barrier that correlates with the prominent south-facing scarp (G in Fig. 4). Ground water on the north side of the fault was encountered at 4.6 m, whereas south of the fault it occurred at 13.7 m. The dotted and dashed lines through G in Figure 4 show the probable trace of this fault strand. Farther east, the Franklin Avenue strand is defined by pronounced scarps just east and west of Cahuenga Boulevard and by a fault mapped in Miocene bedrock near Vine Street (Fig. 4; Dibblee, 1991a).

At least two other fault strands occur in Hollywood, one to the south (Yucca Street strand) and one to the north (northern strand) of the Franklin Avenue strand (Fig. 4). West of the Cahuenga alluvial fan, the Yucca Street strand exhibits a 5–6-m-high scarp. East of the fan the Yucca Street scarp merges with the Franklin Avenue scarp. The lack of topographic scarps across the 300 m width of the fan suggests that surficial displacements on the fault have been obscured during at least the past few thousand





**Figure 4.** Detailed map of the Hollywood fault zone and related fault scarps, ground-water barriers, and alluvial fans in downtown Hollywood. Darkest shaded areas are inferred fault scarps. Lighter shading denotes recently active alluvial fans and drainages. Fault locations dotted where inferred, and dashed where based on ground-water barriers. Bull's-eyes denote boreholes (Converse Report, 1981; Crook and Proctor, 1992). Location is shown in Figure 2. Bedrock fault north of Franklin Avenue from Dibblee (1991a). Ground-water barriers along fault are denoted by G (R. Slade, cited in Crook and Proctor, 1992) and G' (F. Denison, 1991, personal commun.). Topography redrafted from Burbank and Hollywood 1:24 000 6' USGS quadrangles (1926). Contour interval is 1.5 m (5 ft) up to the 500 ft contour, above which the interval is 7.6 m (25 ft).



**Figure 5.** Cross section inferred from boreholes along Cahuenga Boulevard in downtown Hollywood (data from Converse Report, 1981; see Crook and Proctor, 1992, for alternative interpretation). Location is shown in Figure 4. Crook and Proctor (1992) show a fault displacement between 28-2 and 28A. We observe no evidence for this strand, and we do not show it in the figure. Fault dip is not constrained by data; we show an arbitrary 45°N dip. See text for discussion.

years by fluvial deposition and/or erosion. Westward of a point ~300 m west of Cahuenga Boulevard the Yucca Street strand does not exhibit a surficial scarp. However, ~375 m west of Cahuenga Boulevard the fault acts as a ground-water barrier; much shallower ground-water levels are observed in building excavations north of the fault (5 m depth) than to the south (>12 m depth) (G' in Fig. 4; F. Denison, 1991, personal commun.).

The stratigraphy of four boreholes drilled during 1981 along Cahuenga Boulevard confirms that the Yucca Street scarps mark a fault (Converse Consultants, Earth Sciences Associates, and Geo/Resource Consultants, 1981). These data indicate a major north-side-up displacement of the Miocene Topanga Formation south of borehole 28A (Figs. 4 and 5). Direct evidence for the Yucca Street strand was encountered in borehole 28B, which penetrated 3.4 m of fault breccia, composed of phacoids of Miocene sandstone and siltstone, at 37 to 40 m depth. Crook and Proctor (1992) used these data to suggest two closely spaced, north-dipping faults in this area, but we see no compelling evidence for the existence of their more northerly strand, which would project to the surface just south of Yucca Street.

Because of the wide spacing of the boreholes and the absence of trench data from this site, the dip of the fault is poorly constrained. In contrast to Crook and Proctor (1992), who showed the faults as shallowly dipping (23°) thrust faults, we show the fault as dipping moderately north, on the basis of the well-determined, steep northward dip of the fault observed in three excavations 1 km to the west (discussed in the following).

The northern strand is defined by discontinuous scarps at the topographic mountain front that extend eastward from Vine Street (Fig. 4). This scarp disappears eastward beneath the Brushy Canyon fan (Fig. 2). East of the fan the well-developed scarp extends eastward along the northern edge of Franklin Avenue for ~1 km (to north in Fig. 2; Normandie Avenue intersection). The possible terminations of the northern strand near Vine Street and the Franklin Avenue strand beneath the Brushy Canyon fan may indicate that the fault exhibits an ~350-m-wide left step between the two strands in downtown Hollywood.

Although the east-northeast-trending mountain front along Los Feliz Boulevard northeast of downtown Hollywood exhibits a linear, south-facing slope (Fig. 2), we are uncertain whether this represents a surficial fault trace. The gentle southward slope of the alluvial apron there (~5° to 8°S) does not resemble the more steeply sloping scarps that we observed elsewhere along the fault, and we speculate that this slope may represent alluvial strata that have been tilted southward above a near-surface thrust fault.

## West of Downtown Hollywood

West of downtown Hollywood, between La Brea Avenue and Laurel Canyon, the fault traverses an area of recent alluvial sedimentation on small, young alluvial fans that emanate from numerous small-canyon sediment sources. The lack of pronounced scarps along this reach of the fault suggests that sedimentation has buried all evidence of recent fault activity (Figs. 2 and 6). Geotechnical data from this area provide evidence to support this interpretation. Near Nichols Canyon the fault changes strike westward from N85°E to N55°–N60°E (Fig. 2). This more northeasterly trend extends for ~1.6 km between Nichols Canyon and the intersection of Sunset Boulevard and Havenhurst Drive, the far eastern end of the famed Sunset Strip (H in Fig. 2). Along the western part of the Sunset Strip,

west of La Cienega Boulevard, the fault may exhibit two main strands: a weakly defined northern strand that lies approximately at the mountain front, generally north of Sunset Boulevard, and a better defined southern strand in the alluvial apron ~50 to 150 m south of Sunset Boulevard (Fig. 2).

The scarp of the southern strand is particularly well-developed where it crosses Doheny Drive ~150 m south of Sunset Boulevard. The topographic expression of the southern strand appears to die out west of Doheny Drive, although differential stream incision of the alluvial apron ~850 m west of Doheny Drive suggests recent warping and possible faulting of the fan surface. Shallow ground water was encountered in a foundation excavation ~600 m east of Doheny Drive; the clayey granitic soil there is greenish gray, in marked contrast to the beige and brown of most alluvium in the area (H2O in Fig. 2; F. Denison,

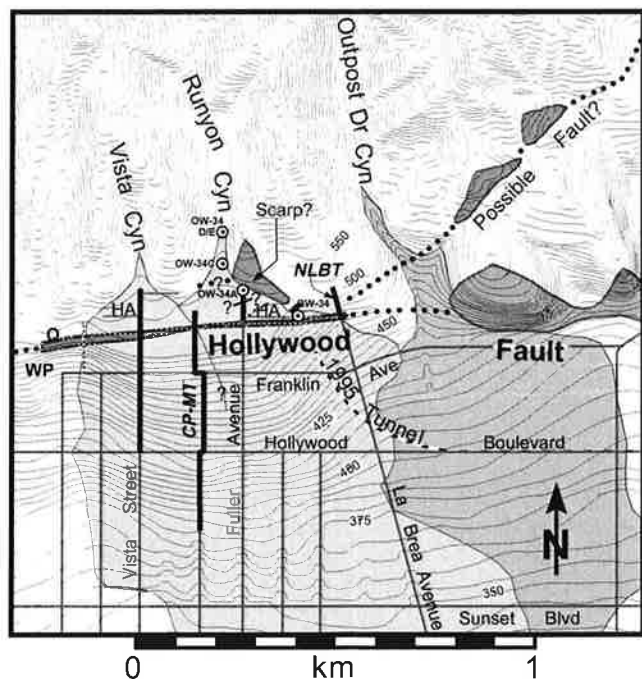
1991, personal commun.). The presence of shallow ground water suggests that there may be a fault to the south, although the absence of excavations to the south precludes assessment of whether this represents the northern part of a true ground-water barrier caused by a fault.

The hills along the north edge of Sunset Boulevard consist of quartz diorite, whereas the steep slopes along the southern edge of the road are underlain by alluvium. A 1974 borehole ~200 m east of La Cienega Boulevard and ~50 m south of Sunset Boulevard penetrated >60 m of alluvium (G. Brown, 1993, personal commun.). This borehole and outcrops of quartz diorite ~10 m south of Sunset Boulevard confirm that the main strand of the Hollywood fault lies either directly beneath or just south of Sunset Boulevard (Fig. 2). The very steep slopes of the alluvial fan apron south of Sunset Boulevard (up to 17°) are too steep to be purely depositional, and probably reflect tectonic disruption, indicating recent north-side-up displacement along the fault. About 300 m east of La Cienega Boulevard shallow ground water was encountered just south of Sunset Boulevard (K in Fig. 2; King's Road intersection), but was not encountered in excavations 160 m to the south, suggesting that the fault forms a ground-water barrier in the steep slope along the southern edge of the boulevard (F. Denison, 1991, personal commun.). West of La Cienega Boulevard, the sharp break in slope at the southern edge of bedrock outcrops suggests the presence of a northern strand of the fault, which is probably located just north of, and subparallel to Sunset Boulevard. This strand is much less well defined geomorphically than the southern strand in this reach.

West of Doheny Drive a third, northernmost splay appears to split off from the main fault. This strand, which is defined by a linear zone of oil and gas seeps at the south end of Greystone Park (Oil in Fig. 2; Crook and Proctor, 1992) and discontinuous scarps, can be traced for only ~500 m. Excavations of this feature in Greystone Park encountered sheared Miocene and Mesozoic bedrock, but no evidence of recent faulting (Crook and Proctor, 1992).

The Hollywood fault zone can be traced as a nearly continuous geomorphic feature westward to the east edge of the Benedict Canyon drainage in northwestern Beverly Hills, near the corner of Sunset Boulevard and Rodeo Drive (Fig. 2). There the pronounced south-facing scarps terminate. However, the mountain front to the west of Benedict Canyon in northern Westwood and Brentwood is locally quite linear and may represent the trace of an older (or much less active) westward continuation of the Hollywood fault.

At Benedict Canyon the belt of most prominent surficial deformation steps southward ~1.2



**Figure 6.** Geologic map of young features within our detailed study area west of downtown Hollywood. Runyon Canyon, Vista Street, and Outpost Drive fans are shown in shades of gray. Narrow, dark gray horizontal swath shows location of Hollywood fault inferred from subsurface data. Fault scarps inferred from topography are shown by medium gray shading. No scarps are discernible across the recently active parts of the fans. Thick black north-south lines show locations of trenches and borehole transects discussed in text. Secondary strand of Hollywood fault encountered in Fuller Avenue trench is shown by short black line immediately south of borehole OW-34A. Location of Metropolitan Transit Authority subway tunnel excavated as of July 1995 is shown as a dashed line. Triangular facets in northeast corner of figure show possible northeast-trending fault strand. CP-MT—Camino Palmero—Martel Avenue Transect; HA—Hillside Avenue; NLBT—North La Brea transect; WP—Wattles Park; Q shows location of near-surface (<1 m depth) quartz diorite from Crook and Proctor (1992). Topography redrafted from Burbank and Hollywood 1:24 000 6' USGS quadrangles (~1926). Contour interval is 1.5 m (5 ft) up to the 500 ft contour, above which the interval is 7.6 m (25 ft).

km to the Santa Monica fault (Figs. 1 and 2). This left step in the fault system corresponds to a pronounced east-facing, north-northwest-trending topographic scarp that we refer to as the West Beverly Hills lineament (Dolan and Sieh, 1992). The lineament, which separates a region of highly dissected older alluvium to the west from the young Beverly Hills alluvial plain to the east, may represent an east-dipping normal fault associated with extension along the left step between the Hollywood and Santa Monica faults. Continuation of this feature to the south of the fault stepover, however, suggests the alternative possibility that, at least south of the stepover, the lineament is the surficial expression of a complex, oblique reverse-right-lateral, north-northwest-trending fault system, encompassing both the Newport-Inglewood right-lateral strike-slip fault system and a northern extension of the Compton blind thrust system (Dolan and Sieh, 1992). The West Beverly Hills lineament may be a fold scarp along the northern extension of the back limb of the Compton blind thrust anticline, which was identified farther to the south by Shaw and Suppe (1996). That is, the surface slope of the lineament scarp may be a dip slope along the east-dipping backlimb of a fold, the base of which is overlapped by young, flat-lying alluvium of the Beverly Hills plain (Dolan and Sieh, 1992). Another possibility is that the lineament is cut by a probable right-lateral strike-slip fault, which we have interpreted as the northernmost of a series of left-stepping, en echelon right-lateral fault segments that make up the northern Newport-Inglewood fault zone (Figs. 1 and 2; Dolan and Sieh, 1992).

### East of Downtown Hollywood

East of downtown Hollywood, geomorphic data indicate that the Hollywood fault extends generally along the mountain front about to Western Avenue, where it diverges from the mountain front and continues eastward into the bedrock of the northern Elysian Park Hills (Fig. 2). Between downtown Hollywood and Western Avenue the fault exhibits a discontinuous, 8–25-m-high, south-facing scarp. The easternmost documented expression of the Hollywood fault occurs in the Elysian Park Hills northwest of downtown Los Angeles, where Lamar (1970) reported a bedrock fault that juxtaposes quartz diorite and upper Miocene (Mohnian) sandstone (A in Fig. 2). Although this bedrock fault does not displace late Quaternary strata, it is along trend with the young Hollywood fault scarp at Normandie Avenue, and thus may represent the bedrock expression of the active fault. Weber et al. (1980) reported scarps in the eastern flood plain of the Los Angeles River in the Atwater

area and suggested that they represent the eastward continuation of the Hollywood fault. However, because these scarps are parallel to an east-trending reach of the main river channel just to the south, we suggest that it is likely that they are fluvial terrace risers, rather than fault scarps. We cannot trace the geomorphic expression of the Hollywood fault across the flood plain and into the hills northeast of the Los Angeles River. Gravity data, however, suggest that at least the bedrock expression of the fault extends eastward across the river toward the Raymond fault (Chapman and Chase, 1979).

### DETAILED STUDY AREA WEST OF DOWNTOWN HOLLYWOOD

Geotechnical investigations for the subway tunnel through the Santa Monica Mountains and two storm-drain trenches excavated by Los Angeles County provide detailed data on the geometry, kinematics, and earthquake history of the Hollywood fault in a 700-m-wide area just west of downtown Hollywood (Figs. 2 and 6). The study area, bounded on the east by North La Brea Avenue and on the west by Wattles Park, encompasses two small alluvial fans emanating from canyons draining the Hollywood Hills—the Runyon Canyon fan, and a fan emanating from a canyon 215 m to the west (Fig. 6), which we refer to as Vista canyon; we refer to the associated fan as the Vista fan. Downslope, the Vista and Runyon Canyon fans merge into a larger, composite fan. Sediment input from Runyon Canyon appears to dominate this composite fan, as would be expected from the much larger catchment of Runyon Canyon (Fig. 6).

The youngest significant alluvial deposition on the Runyon Canyon and Vista fans appears to be recent, and no surficial scarps of the Hollywood fault are discernible crossing these deposits. The Hollywood Hills in this area are composed of mid-Cretaceous, coarse-grained quartz diorite (Hoots, 1931; Dibblee, 1991a; Wright, 1991), and most of the strata exposed in boreholes and excavations into the fans consist of sand and gravel derived from erosion of the plutonic rocks. Quartz diorite crops out at the northern end of Fuller Avenue and was encountered within 1 m of the surface in excavations at the northern ends of La Brea Avenue and Vista Street.

### Continuously Cored Boreholes

We completed 30 continuously cored boreholes along two north-south transects (Fig. 6). The western transect was 525 m long and consisted of 25 boreholes that extended southward from the mountain front along Camino Palmero and Martel Avenue. The eastern transect con-

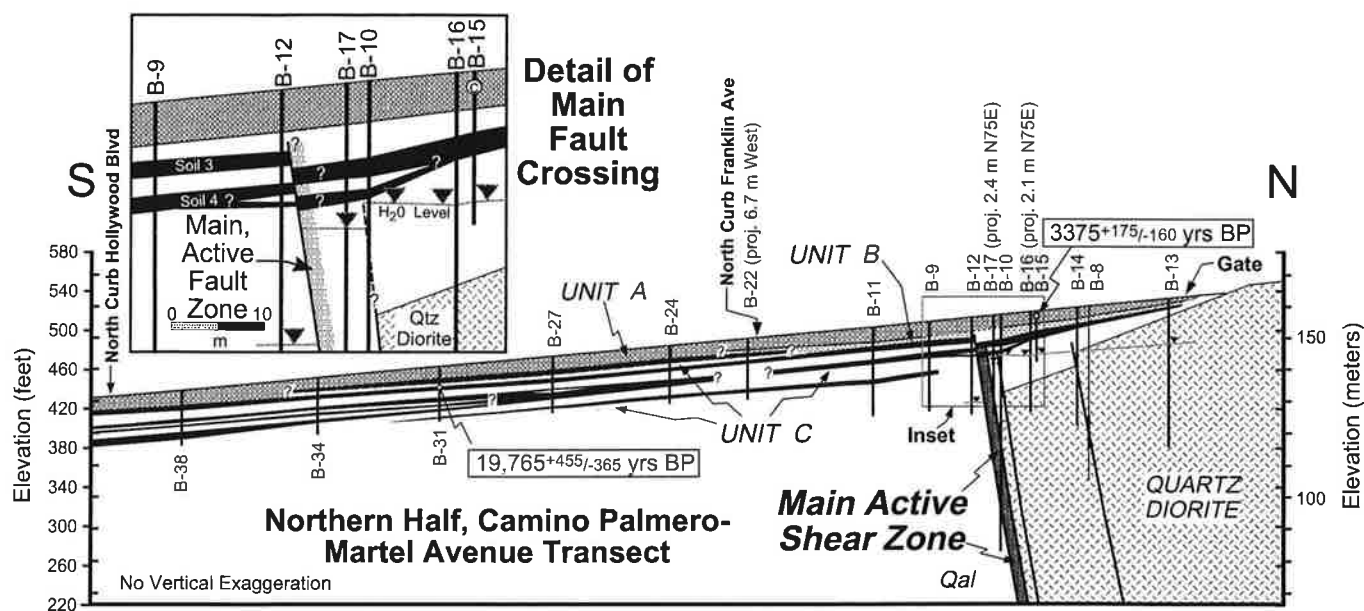
sisted of 5 closely spaced boreholes along La Brea Avenue 375 m east of the Camino Palmero transect. The boreholes along the two transects ranged from 14 to 73 m in depth and all but one was continuously cored to produce 9 cm diameter cores. The cores were hand scraped to remove the drilling rind of disturbed material.

Most of the cores were recovered using a hollow-stem auger; the deeper parts of several deep holes (B-10, B-13, B-14, SM-1, SM-1A, and SM-1B) were drilled using a rotary core-mud system. The upper ~1.5 m (5 ft) of the holes were not cored due to the friable nature of the material, but the loose sand and minor gravel from these intervals was recovered during drilling. Core recovery was generally very good in all holes, and recovery in most intervals exceeded 90%. However, isolated intervals of nonrecovery as thick as 50 cm were common throughout many cores. A few rare intervals of nonrecovery were as much as 1.5 m thick. Hole B-15 was a 70-cm-diameter bucket-auger hole, which we examined directly by being lowered by winch into the hole.

**Camino Palmero–Martel Avenue Transect.** Boreholes along the Camino Palmero–Martel Avenue transect were drilled just west of the Runyon Canyon fan axis during the summer of 1992 (Fig. 6). The northernmost boreholes penetrated quartz diorite (Fig. 7). The upper surface of the quartz diorite, which dips southward 20°, more steeply than the 6° dip of the alluvial fan surface, is overlapped by young alluvial deposits.

The oldest alluvial deposits, herein referred to as unit C, consist of generally massive, beige to brown alluvial sand and minor gravel and clayey silt interlayered with several dark brown buried soils. In order to correlate these buried soils from core to core, we laid out all of the cores simultaneously in a parking lot. We correlated soils in adjacent holes on the basis of color, texture, the presence of buried A and argillic (Bt) horizons, and the thickness of these horizons relative to intervening intervals that did not exhibit any soil development. We were careful to keep track of the locations of unrecovered intervals and did not let these intervals influence our correlations. The correlations reveal that all of the buried soils dip gently southward, parallel to the recent fan surface (Fig. 7).

In order to determine an approximate accumulation rate on the Runyon Canyon fan, we conducted detailed analyses of the six soils exposed in core B-31. These analyses, which included particle-size analysis and estimates of the mean horizon index (MHI) and soil development index (SDI) for each soil, are described in the Appendix. Our results show that the surface soil (soil 1) and the shallowest buried soil (soil 2) exhibit relatively weak soil development, whereas the lower four soils (soils 3 through 6) exhibit mod-



**Figure 7.** Cross section of the northern half of Camino Palmero-Martel Avenue borehole transect. Thick vertical lines denote continuously cored boreholes; thinner lines show sections of B-8 that were not cored. Subhorizontal black lines denote A and Bt horizons of buried soil horizons of unit C. White zones between these buried soils denote C horizons of buried soils and unaltered sedimentary strata that do not exhibit any soil development. Small triangles and gray lines denote ground-water level in boreholes during 1992. Open circles show locations of two accelerator mass spectrometry-dated detrital charcoal samples discussed in text. Locations of boreholes B-17 and B-16 are projected due east to the line of the cross section. Because of uncertainty of the fault strike, only water-level data from these two boreholes are shown in the figure; stratigraphic data from these holes are not shown in the figure. Modified from detailed borehole logs in Earth Technology Report (1993).

erate soil development. Collectively, the surface soil and the five buried soils are estimated to record ~150 000 (based on MHI) to 170 000 (based on SDI) years of soil development, providing a minimum age for the sediments at the base of B-31 at 16.6 m. These data yield an overall minimum late Pleistocene-Holocene average accumulation rate of ~0.1 mm/yr at B-31. This is a minimum estimate because: (1) there may have been minor erosion of several of the buried soils (Appendix); and (2) we assume that the duration of sediment accumulation between periods of nonsedimentation and soil development is very short, relative to the duration of periods of soil development. We consider this a reasonable assumption in this proximal alluvial fan setting, where most sediment was probably deposited very rapidly.

Accelerator mass spectrometer (AMS) radiocarbon analysis of a charcoal fragment recovered in B-31 at 6.55 m depth from the A horizon of buried soil 3 yielded an age of  $19\,765^{+455}_{-365}$  yr B.P. (Table 1; Fig. 7; all radiocarbon samples were prepared by Beta Analytic, Inc. and were analyzed at the Lawrence Livermore Laboratory reactor). Because the charcoal fragment was recovered from the A horizon of the buried soil, we consider it likely that it was incorporated into the

soil profile during development of soil 3. The charcoal may have had a preburial age. Thus, the ca. 20 000 yr date represents a maximum burial age for buried soil 3, and the combined age of the two overlying soils (1 and 2) must be  $\leq$  ca. 20 000 yr. The combined preferred MHI estimates for soils 1 and 2 total ca. 18 000 yr (Appendix), in very close agreement with the charcoal age. Because the combined preferred SDI ages overestimate the duration of soil 1 and 2 development at ca. 30 000 yr (Appendix), we have more confidence in the MHI method for estimating soil ages in this area. On the basis of the similar age estimates for soils 1 and 2, we estimate that the top of unit C is ca. 6000 to 10 000 yr old at B-31 (Appendix). Buried soil 2 is missing north of B-22 and may have been eroded (Fig. 7).

Unit C is overlain by two distinct alluvial units (Fig. 7). The lower, unit B, consists of moderately indurated, brown, massive, slightly clayey silty sand. Unit B is traceable from the north end of the transect southward for ~145 m. The deposit thickens downslope from 1.5 m in B-13 to more than 4.5 m in borehole B-10. The unit A-unit B contact could not be discerned in B-17. Between B-10 and B-12 unit B thins abruptly to ~2 m, in a lateral distance of only 10 m. Downslope from B-12 unit B thins gradually and is not present south

of B-22 (Fig. 7).

In the area of B-12, B-10, B-17, B-15, and B-16, the uppermost alluvial deposit, unit A, consists of yellow-brown silty sand and minor gravel; it is distinguished from unit B by its more friable consistency and absence of clay. A charcoal fragment from the middle of unit A in borehole B-15 (2.1 m depth) yielded an AMS date of  $3375^{+175}_{-160}$  yr B.P. (Fig. 7; Table 1). The absence of soil development within unit A in the area of B-12, B-10, B-17, B-15, and B-16 is in marked contrast to the surface soil (soil 1) developed in the unit downfan at B-31 (Appendix). This suggests that the unit A surface soil 1 was eroded during relatively recent deposition of the friable, late Holocene alluvium encountered north of B-12. Furthermore, the absence of any soil development within unit A in the proximal part of the fan suggests relatively continuous deposition, without any long hiatuses characterized by soil development. Thus, the base of unit A at 4.9 m depth is probably no more than a few thousand years older than the detrital charcoal sample; deposition of the intervening 2.8 m of sediment requiring more than several thousand years would likely have produced detectable soil development. Compounding the uncertainty of the estimated age of the base of unit A is the possibility



TABLE 1. RADIOCARBON SAMPLES AND AGES

Sample number	Lab number	Lawrence Livermore National Lab # (2 $\sigma$ )	Calendric age (2 $\sigma$ )	$^{14}\text{C}$ age (B.P. $\pm 1\sigma$ )	Age B.P. (A.D. 1950)
HF C-2	Beta-57674	CAMS-4148	1,230 $\pm$ 70 yr B.P.	A.D. 786 (A.D. 662–979)	1,165 $\pm$ 125/–195 B.P.
HF C-3	Beta-57675	CAMS-4149	1,230 $\pm$ 70 yr B.P.	A.D. 786 (A.D. 662–979)	1,165 $\pm$ 125/–195 B.P.
HF C-4	Beta-57676	CAMS-4150	300 $\pm$ 70 yr B.P.	A.D. 1641 (A.D. 1446–1954)	309 $\pm$ 195/–315 B.P.
B-15 HF 7'	Beta-57677	CAMS-4151	3,170 $\pm$ 70 yr B.P.	1,424 B.C. (1264–1599 B.C.)	3,375 $\pm$ 175/–160 B.P.
B-31 HF 21'	Beta-57681	CAMS-4152	16,760 $\pm$ 90 yr B.P.	17,814 B.C. (17448–18267 B.C.)	19,765 $\pm$ 455/–365 B.P.

Note: Calendric ages calculated using CALIB 3.0 (Stuiver and Reimer, 1993).

that the charcoal sample had a significant age at burial. On the basis of the limited available evidence, however, our best estimate of the base of unit A is ca. 4000 to 8000 yr B.P. This age is supported by our analysis of the weak surface soil developed through the top of unit A in hole B-31, which suggests that soil 1 required  $\sim 6.5^{+14.8}_{-4.5}$  k.y. to develop there (Appendix).

**Evidence for Faulting.** The cores contain abundant evidence of faulting, within both the quartz diorite and the alluvium. The southern, subsurface limit of the quartz diorite is a steeply north-dipping fault contact. One fundamental observation of this transect is that, in contrast to the wide zone of active faulting in downtown Holly-

wood, all evidence of recently active faulting is located in a narrow zone near the mountain front; no evidence of recent faulting or tectonic warping was observed in the southern 85% of the transect.

The buried soils of unit C are traceable continuously from the south end of the transect northward for >450 m, where their continuity is interrupted between B-12 and B-10,  $\sim 105$  m south of the topographic mountain front. Between these boreholes the upper surface of the unit C buried soil (soil 3 at B-31; Appendix) appears to be displaced down to the north (Fig. 7).

The concentration of boreholes near this zone of displacement allowed us to construct a structure contour map on the top of buried soil 3 (Fig.

8). Because the boreholes were confined to a strike-parallel zone only 10 m wide, the contours of the structure contour map are not fully constrained. In contouring the data we assumed relatively uniform spacing of contours and no abrupt changes in slope, except at the zone of north-side-down displacement. We also assumed that the contours intersect the zone of displacement at the same angle on both sides. Total north-side-down separation of the top of the buried soil 3 is  $\sim 1$  m between B-12 and B-10. We interpret this separation as the result of fault rupture, rather than fluvial incision of the Runyon Canyon fan, because buried soils 3 and 4 are vertically separated down-to-the-north the same amount between B-12 and B-10 (Fig. 7). Thus, the buried, north-facing scarp cannot be ascribed to incision of only the shallowest unit C buried soil (soil 3). This fault strand coincides with a ground-water barrier, which separates a shallow (17 m deep) water table north of the fault from a deeper (27.2 m) water table to the south (Fig. 7).

Farther below the ground surface, the subsurface data indicate the presence of at least four distinct fault strands within a zone  $\sim 30$  m wide (Fig. 7). However, only the single strand just described exhibits any evidence for post-late Pleistocene vertical displacement. The zone of near-surface displacement projects downward into a well-defined, very steeply north-dipping fault zone observed in B-10. The upper part of B-10 penetrated alluvial units A, B, and C in normal stratigraphic succession, as well as the underlying quartz diorite. At 40.8 m depth, however, the borehole again reentered alluvium. After penetrating 12.1 m of alluvium the borehole again encountered quartz diorite at 53.9 m. Below 60 m alluvium was again encountered to a total depth of 73 m. Both of the quartz diorite over alluvium contacts in B-10 are distinct faults (Fig. 7). The entire core, including both quartz diorite intervals, is intensely sheared from 28 to 59 m depth. Shear planes range in dip from  $41^\circ$  to  $124^\circ$  (opposing very steep dips occur in continuous core segments at many intervals). The predominant dip of the shear fabric is  $70^\circ$  to  $85^\circ$ , and 75% of the 200 dip measurements are  $\geq 70^\circ$ ; the average dip is  $\sim 77^\circ$  (Fig. 9). Because the core, which was not oriented with respect to map directions, is

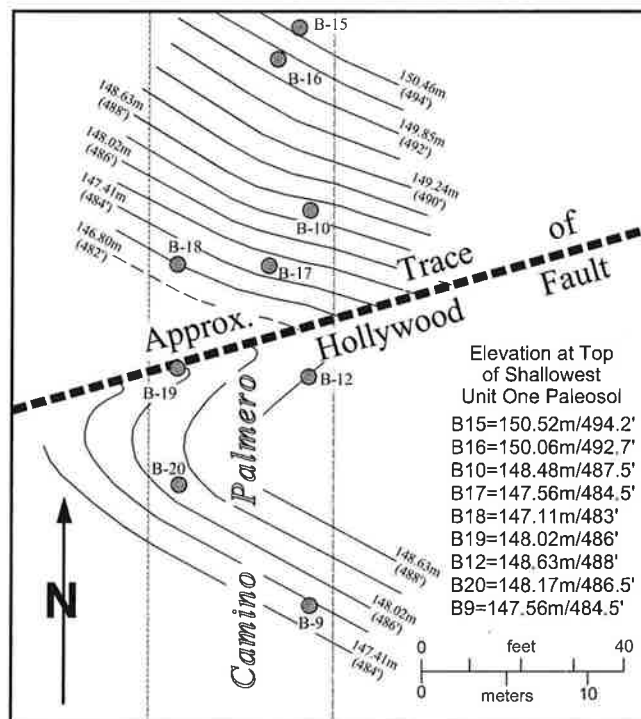
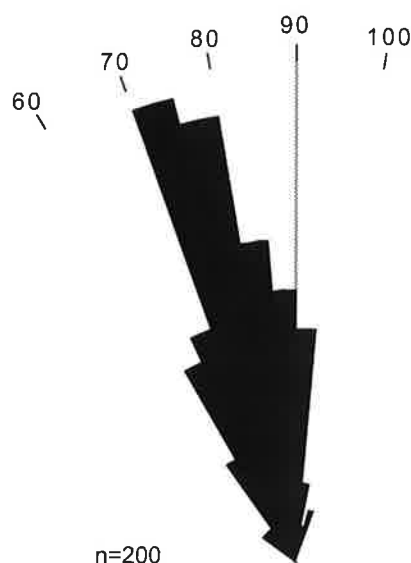


Figure 8. Structure-contour map of the top of the uppermost buried soil of unit C (soil 3) in the area of the most recently active fault strand at Camino Palmero. Contours are in feet (1 ft = 0.3 m). Numbered dots indicate the locations of boreholes. Vertical separation across fault is  $\sim 5$  ft (1.5 m) and is mountain-side down.



**Figure 9. Rose diagram showing dips of shears in borehole B-10. Because the core was not oriented with respect to map directions, all measurements  $<90^\circ$  have a bimodal distribution. However, we only show one of the two possible dips in order to emphasize opposing dips ( $>90^\circ$ ) observed in continuous core sections. The predominant dip of the shear fabric is  $\sim 70^\circ$  to  $85^\circ$ .**

typically broken up into 5–30-cm-long drill biscuits, many of the steep dips may actually be  $>90^\circ$ ; we plotted  $>90^\circ$  dips only where they were observed in continuous core fragments with oppositely dipping shears. Thus, the true dip of the shear zone is probably steeper than the  $\sim 77^\circ$  average dip shown in Figure 9.

The  $<1$ - to 14-mm-thick shear planes are defined both by white carbonate veins and clay gouge. One particularly well-exposed example in silty alluvium at 41 m depth contains a vertical shear highlighted by white carbonate veining that extends down the center of the 9 cm diameter core over  $\sim 90$  cm. The steeply dipping sheared contacts of the quartz diorite intervals encountered in B-10 suggest that they are fault-bounded lenses. We therefore interpret the southern edge of the quartz diorite at Camino Palmero as a several-meter-wide fault zone that probably dips at the predominant  $70^\circ$  to  $85^\circ$  dip of the shear fabric observed in B-10. We show an average dip of  $77^\circ$  in Figure 7. The buried soils south of the fault are parallel to the present fan surface, indicating that there is no dip-slip fault to the south of the steeply dipping strand between B-12 and B-10. We therefore interpret the steeply dipping

fault as the main active strand of the Hollywood fault at Camino Palmero.

Fault gouge and the geometry of the quartz diorite reveal at least two other fault strands north of the main active strand between B-12 and B-10 (Fig. 7). Neither of these faults exhibits any vertical separation of either the youngest buried soils or the overlying Holocene alluvial units. If the upper surface of the quartz diorite unit is a planar feature with a nearly uniform dip, as it is in the Fuller Avenue trench to the east (discussed in the following), then it has apparently been displaced up-to-the-north between B-10 and B-16. This postulated fault strand projects upward to a ground-water barrier between B-10 and B-17, indicating the presence of a latest Pleistocene fault extending to within 13 m of the ground surface, the depth to ground water on the north side of the fault in B-10. This strand is  $\sim 10$  m north of the main strand observed between B-10 and B-12, suggesting a recently active fault zone of at least this width. Because the northern strand exhibits no discernible vertical displacement, it either (1) has very minor displacement, sufficient to generate a fault plane capable of acting as a ground-water barrier but not to create discernible stratigraphic separation, or (2) has predominantly strike-slip motion.

The northernmost fault strand is revealed by 3 m of fault gouge in the quartz diorite penetrated by boreholes B-8 and B-14, as well as by an apparent abrupt shallowing of the upper surface of the quartz diorite between B-14 and B-16. The absence of a ground-water barrier above this strand suggests that it may not have ruptured up into the shallower parts of the overlying alluvium.

**Age of Most Recent Faulting.** The precise age of the most recent faulting event cannot be determined from available data. However, stratigraphic relationships observed in Camino Palmero boreholes allow us to bracket the age of most recent faulting. The ca. 20 000 yr age of the charcoal sample recovered from the faulted, buried soil 3 is a maximum age for the most recent surface displacement. At Camino Palmero the unit A-unit B contact, for which we estimate a mid-Holocene age of ca. 4000 to 8000 yr, is not discernible in borehole B-17, so it remains unknown whether this interface is displaced vertically. However, the contact projects as a continuous planar surface across the zone of displacement, suggesting that it has not been displaced vertically (Fig. 7). The most recent fault movement may therefore predate deposition of the base of unit A. Thus, the most recent Hollywood fault earthquake probably occurred between ca. 20 000 and ca. 4000 yr ago. However, the minimum date is somewhat problematic, because if recent motion along the Hollywood fault is predominantly left-lateral strike slip, then the

lack of appreciable vertical separation of the unit A-unit B contact may have no relevance to dating the most recent fault movement. We consider this possibility unlikely, however, in light of the clear vertical displacements associated with earlier earthquakes on this strand.

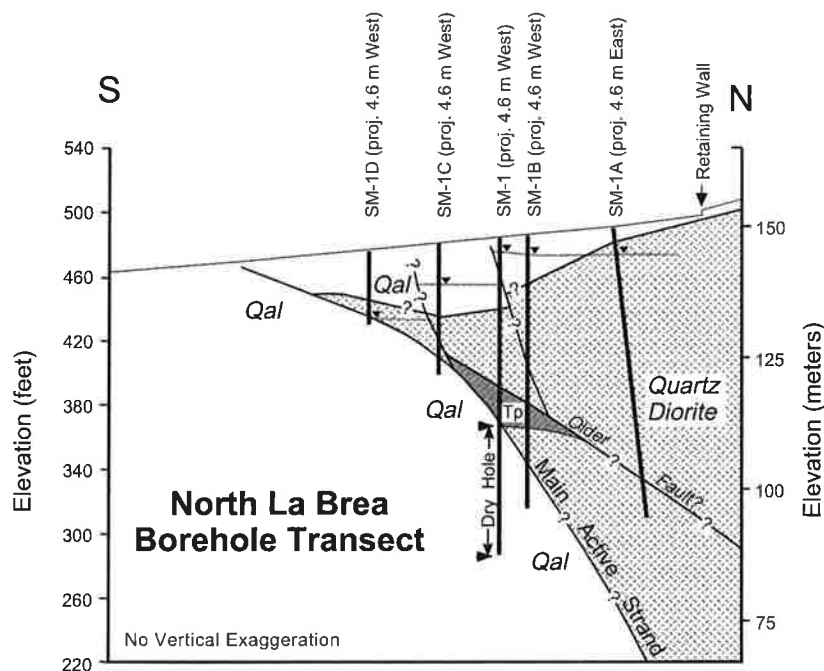
**North La Brea Avenue Transect.** The continuously cored boreholes along this north-south transect were drilled at the north end of La Brea Avenue, along the fosse at the east edge of the Runyon Canyon fan, during November–December, 1992 (Fig. 6). No surficial fault scarps exist in the area. As at Camino Palmero, the La Brea boreholes penetrated alluvium that overlies Mesozoic quartz diorite, which in turn overlies more Pleistocene(?) alluvium (Fig. 10). These relationships indicate a component of reverse displacement on the north-dipping fault. Although the gross features of the fault zone are similar in the two transects, the North La Brea transect reveals a more complex near-surface fault geometry than at Camino Palmero.

All five La Brea boreholes encountered quartz diorite at various depths. In contrast to the Camino Palmero transect, the upper surface of the quartz diorite in the La Brea transect is not a planar feature (Fig. 10). The alluvium encountered above the quartz diorite consists predominantly of dark brown to reddish-brown, clayey sand, and rare gravel layers. The relatively high clay content and dark color of the alluvium contrasts markedly with the friable, yellowish-brown sediments encountered in the shallow subsurface at Camino Palmero. The characteristics of the alluvium are similar to the dark brown, shallowest unit C buried soil encountered at 9 m depth in B-10 at Camino Palmero (soil 3). The alluvium encountered below the quartz diorite consists of reddish-brown to brown clayey sand, sandy clay, and clay, and subordinate intervals of friable silty sand, sand, and gravel.

**Evidence for Faulting.** We interpret the contact between bedrock and the underlying alluvium to be the main fault trace. The fault plane steepens with depth from  $\sim 25^\circ$  in the upper 10 m to  $\sim 60^\circ$  at 43 m depth (Fig. 10). A fault-bounded lens of intensely sheared Puente Formation shale of middle to late Miocene age was encountered in boreholes SM-1 and SM-1B (Fig. 10; Earth Technology Report, 1993). The upper surface of this lens dips  $\sim 50^\circ$  north. An internal shear fabric dips between  $40^\circ$  and  $70^\circ$ ; intermediate dips are most common. Because this fault was observed only in the hanging wall of the main fault, we suspect that it may represent an older, inactive strand similar to those observed in the Fuller Avenue and Vista Street trenches (discussed below).

North of, and above, the main fault ground water was encountered at depths of 3 to 13 m, whereas it was not encountered within the depths drilled (61 m) below the lower fault plane. A





**Figure 10.** Cross section of North La Brea Avenue borehole transect shows that the Hollywood fault dips moderately steeply at depth but flattens near the surface. The main fault strand acts as a major ground-water barrier, separating a shallow water table to the north from a much deeper water table to the south. Thick vertical lines denote boreholes. Small triangles and gray lines denote ground-water levels in boreholes. Although ground water was encountered at shallow depth in SM-1, the hole was dry below the main fault plane. Modified from detailed borehole logs in Earth Technology Report (1993).

piezometer installed at the base of SM-1, screened entirely below the main fault in order to measure in situ conditions in the footwall of the fault, was found to be dry several days after installation. These observations indicate that the main fault forms an effective ground-water barrier. A thin wet zone encountered in SM-1D in the alluvium directly beneath the main fault may reflect ground-water flow along the fault or ground water cascading over the fault.

Two additional ground-water barriers in the hanging-wall block of the main fault suggest the presence of at least two additional fault strands. Ground water in SM-1D was encountered at an elevation of 132.5 m, 6.7 m ft deeper than in SM-1C (139.2 m elevation), indicating a barrier between the two boreholes. A second ground-water barrier is between SM-1C and SM-1; ground water in SM-1 was encountered at 144.4 m elevation, 5.2 m shallower than in SM-1C. Development of the topographic depression in the buried surface of the quartz diorite is probably related to displacement along these two fault strands. The

ground-water data suggest that at shallow depths the northern fault lies between SM-1C and SM-1, whereas the southern strand lies between SM-1C and SM-1D. The anomalously steep, 50° dip of the upper surface of the quartz diorite projected between SM-1 and SM-1B suggests that it may record north-side-up fault displacement. A zone of abundant clay-lined shears in the quartz diorite at 25 m depth in SM-1B may be the downward continuation of the northern fault splay, suggesting a steep, northerly dip. Furthermore, a southward dip of the northern splay cannot explain downdropping of the quartz diorite between SM-1B and SM-1. The dip of the southern strand is not well constrained, although it is probably relatively steep. In Figure 10 we show both faults as steeply north-dipping, oblique-reverse faults. The probable northward dip of the northern strand makes alternative interpretations, such as a transtensional flower structure, or a hanging-wall graben related to thrust motion on the main fault, unlikely, because both require a southward-dipping northern strand.

### 1995 MetroRail Boreholes and Subway Tunnel

As part of a tunnel alignment investigation, MetroRail drilled six boreholes at four additional sites during winter–spring 1995. The following description is taken from R. Radwanski (1995, written commun.). Two closely spaced boreholes located along the north edge of Hillside Avenue between Fuller Avenue and La Brea Avenue, OW-34 and E-206 (located 3 m east of OW-34) penetrated only alluvium (predominantly silty sand and clayey sand) to a total depth of 58 m (OW-34; E-206 to 50 m; Fig. 6). The upper surface of the quartz diorite was not encountered, indicating that the boreholes were drilled into the footwall of the fault, which must therefore lie north of the boreholes. This inference is supported by the absence of ground water in the boreholes; no ground water was encountered during drilling, although one week after drilling ground water was measured at 52 m depth in OW-34.

Four other boreholes drilled at three sites extending north from the north end of Fuller Avenue penetrated only quartz diorite. The three boreholes at the southern two sites, OW-34A (located several meters south of the gate at the north end of Fuller Avenue), OW-34B (located 3 m south of OW-34A), and OW-34C (located 90 m north of OW-34A in Runyon Canyon Park), encountered common clay gouge zones intercalated with intensely fractured and disaggregated quartz diorite. In contrast, the northernmost boreholes, OW-34D and E, which were drilled ~85 m north of OW-34C, encountered fractured, but more coherent bedrock with no clay gouge. These observations raise the possibility of a very broad Hollywood fault zone extending northward from just south of Hillside Avenue into the quartz diorite along the mountain front. Much of this faulting, however, could record late Neogene motion not directly related to the current tectonic regime (see Wright, 1991; Tsutsumi, 1996).

During May 1995 MetroRail excavated a subway tunnel northward to the Hollywood fault zone approximately halfway between La Brea and Fuller Avenues (Fig. 6). The main fault zone, which was marked by a 70-cm-wide shear zone juxtaposing alluvium with quartz diorite to the north, was encountered at 52 m depth ~50 m N24°W of the centerline of Hillside Avenue. The fault dips 60° to 70° N and was marked by discontinuous clay gouge.

### Data from Storm Drain Trenches

During fall 1992 and spring 1993 we examined two storm-drain trenches excavated by the Los Angeles County Department of Public Works. Although the county was extremely ac-

commodating of our research interests, our time in the trenches, particularly the Fuller Avenue trench, was very limited because of the rapid pace of construction of the storm-drain pipeline. The Fuller Avenue trench was excavated up the Runyon Canyon fan, just east of the fan axis, whereas the Vista Street trench was excavated up the axis of the Vista fan (Fig. 6). The trenches were 3 to 4.5 m deep and 2 m wide.

**Fuller Avenue Trench.** If the main strand of the Hollywood fault extends as a continuous feature between the subway tunnel and Camino Palmero, it probably crosses Fuller Avenue just south of the Hillside Boulevard intersection (Fig. 6). We were not able to view any part of the Fuller Avenue trench south of Hillside Boulevard. We did, however, map the 60 m of trench north of Hillside Avenue (Fig. 11). The trench exposed three of the four lithologic units encountered at Camino Palmero, the basal quartz diorite and alluvial units A and B (Fig. 11). As at Camino Palmero, the upper surface of the quartz diorite dips shallowly southward at  $\sim 15^\circ$ , somewhat more steeply than the  $6^\circ$  dip of the fan surface.

The quartz diorite is overlain by massive, clayey sand of unit B. AMS dating of a charcoal fragment from within this deposit yielded an age of  $309^{+195}_{-315}$  yr B.P. (Fig. 11; Table 1). This age may not represent the true age of the deposit, because it underlies beds from which older charcoal was recovered (discussed in the following).

Unit B is overlain, along a very sharp, irregular, highly erosionally modified contact, by friable, well-bedded sand and pebble gravel of unit A. Two charcoal fragments from a 3–10-cm-thick clayey horizon near the base of a broad, 8-m-wide channel incised into unit B yielded identical AMS ages of  $1165^{+125}_{-195}$  yr B.P. (Table 1). These AMS ages are in conflict with the younger AMS age of the charcoal sample recovered from underlying unit B. On the basis of the limited number of samples, we cannot determine whether the 1165 yr old samples were reworked from an older deposit, or whether the sample with the younger age was introduced into unit B after deposition. The unit A channel trends S50°E and projects upslope toward

the mouth of Runyon Canyon. The AMS ages suggest that at Fuller Avenue, along the east shoulder of the fan, the base of unit A may be considerably younger than at Camino Palmero, if the deposits at the two sites are truly correlative (Fig. 6).

**Evidence of Recent Faulting.** The Fuller Avenue trench crossed what we interpret as a secondary zone of the Hollywood fault  $\sim 35$  m south of the mountain front (short black line immediately south of OW-34A in Fig. 6). The secondary fault zone, which apparently is at least 40 m north of the main fault, juxtaposes the basal quartz diorite against unit B alluvium (Fig. 11). The main fault splay strikes N59°E, and dips 74°NW at the base of the trench, although several splays of the fault zone roll over into near-horizontal dips just south of the main zone (Fig. 11). North-side-up vertical separation of the contact is  $\sim 35$  cm across the main fault strand, which is characterized by a 5–15-cm-thick gouge zone composed of sheared white carbonate. Other fault strands are defined by 1–12-mm-thick beige clay seams.

The south end of the quartz diorite exposure,  $\sim 1$  m south of the main fault, appears to be a vertical fault that truncates the diorite outcrop, as well as the shallowly north-dipping fault strands that splay off the main northern strand, indicating at least two periods of faulting. Although this planar surface appeared to be a fault, because of our limited time in the trench at the fault crossing ( $<1$  hour), we could not unequivocally exclude the possibility that it was a purely erosional feature. If this feature is a fault, the minimum north-side-up vertical separation across both strands is  $>90$  cm. The upward termination of the inferred southern fault strand could not be determined. In the east wall of the trench another fault strand, located entirely within unit B alluvium, occurs several meters south of the northern strand. On the east wall the southern strand, which appears to trend  $\sim N85^\circ W$  across the trench, may connect with the near-vertical fault strand exposed on the west wall. In the east wall it steepens from a dip of  $\sim 40^\circ N$  at 2.7 m to a near-vertical dip at 3.3 m depth. This strand could not be traced above a

depth of 2.7 m. The northern fault strand extends at least 1 m upward into the alluvium, but we were unable to determine its upward termination because of the massive nature of unit B. Any possible displacement of the sharply defined unit A–unit B contact was obliterated in the west wall of the trench by an earlier excavation for a lateral feeder pipe, which was unfortunately located at exactly the site of any expected displacement (Fig. 11). Compounding the problem, in the east wall of the trench a similar lateral feeder pipe was excavated directly into the northern fault zone, completely obscuring its updip termination. Thus, the evidence necessary to unequivocally determine the updip termination of the fault was destroyed during construction of the storm drain.

The geometry of the channel, however, suggests that the unit A–unit B contact has probably not been displaced vertically. At issue is whether the south-facing scarp observed in the west wall of the trench is a purely erosional feature, or whether it is a fault-modified channel edge. Along the west wall of the trench the northern channel edge corresponds exactly to the expected position of the fault, if it in fact continues upward beyond its recognized extent and displaces the unit A–unit B contact. Because the channel cuts obliquely across the fault, the south-facing channel edge on the eastern wall of the trench is exposed more than 2.5 m south of the fault zone. Although it is cut out by the lateral side pipe at the fault, the unit A–unit B contact on the eastern wall projects across the side pipe as an apparently continuous, relatively planar feature, suggesting that the contact has not been displaced vertically. We could, however, have missed minor vertical separations of the contact up to  $\sim 20$  to 30 cm. The steeper, higher northern edge of the channel might at first appear to suggest that it had been steepened during faulting. However, we suggest that this is simply due to the fact that the channel has cut obliquely across the  $\sim 6^\circ$  dipping fan surface. This geometry requires a higher northern channel margin, and erosion of this higher bank resulted in the steepness of the northern channel margin.

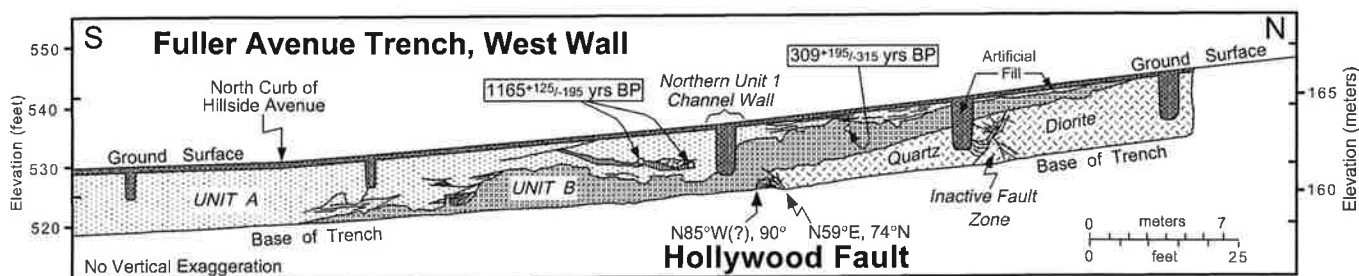


Figure 11. Map of the west wall of the Fuller Avenue trench. Irregular, thin black lines in unit 3 denote bedding. See Figure 6 for location.

**Vista Street Trench.** Although we logged the entire 425 m length of the Vista Street trench from Hollywood Boulevard to north of Hillside Avenue (Fig. 6), we observed no evidence of faulting. At Wattles Park, ~250 west of Vista Street, quartz diorite occurs within 25 cm of the surface just south of the mountain front (Q in Fig. 6; Crook and Proctor, 1992), indicating that the main fault lies south of that point. On the basis of this constraint and the data discussed above, the north-south Vista Street trench must have crossed the east-west trace of the fault, probably between Franklin and Hillside Avenues. Thus, the trench appears to have been too shallow to expose evidence of the most recent surface rupture. In Figure 12 we show only the 35-m-long section of the trench that includes the projected location of the Hollywood fault. Station numbers in the text below and in the figure refer to distance in feet north from the north edge of the sidewalk along the northern edge of Hollywood Boulevard (1 ft = 0.3 m). For example, the north edge of Franklin Avenue is at station 640, which is 640 ft (195 m) north of Hollywood Boulevard, and the south edge of Hillside Avenue is at station 1045, 1045 ft (318 m) north of Hollywood Boulevard.

As at Camino Palmero and Fuller Avenue to the east, the Vista Street trench exposed three alluvial units above the basal quartz diorite (Fig. 12). These alluvial units, however, cannot be correlated directly with any of the units in the eastern excavations. To avoid unintended correlations, we therefore refer to them as units 1 (youngest), 2, and 3 (oldest). Due to the absence of detrital charcoal in the trench, all age estimates are based upon soil analyses, which have much larger error estimates than features dated by radiocarbon methods (Appendix).

The quartz diorite is exposed only in the northern 45 m of the trench, north of Hillside Avenue. It exhibits a highly eroded, irregular upper surface that dips gently south at 2° to 12°, generally slightly more steeply than the 8° to 9° southward dip of the Vista fan surface. The quartz

diorite extends to within 1 m of the surface north of station 1230. The upper surface of the quartz diorite plunges gently below the base of the trench at station 1115.

Unit 3 is a silty to pebbly sand that exhibits weak to moderate pedogenesis. The unit is exposed only discontinuously across the trench due to channelization and its depth below grade. Analysis of the uppermost part of the weakly developed argillic horizon of the buried soil that developed in unit A suggests  $12.6^{+28.0}_{-8.7}$  k.y. of soil development; this soil does not appear to have been eroded where we examined it (Appendix).

Unit 2 consists predominantly of silty sand, with local pebble gravel layers. The unit is characterized by a weakly developed soil that locally exhibits a Bw horizon defined by minor translocated clay (very few thin clay films in pores) below a distinct A horizon. These observations suggest between ~500 to 3000 yr of soil development (Appendix). In the section of the trench shown in Figure 12 the unit is exposed nearly continuously across the trench, interrupted only by local channels from about stations 910 to 915 and from about 930 to 950. Unit 2 is traceable to just south of Franklin Avenue (about station 580), where the upper contact becomes indistinct. The unit is cut out by a fluvial channel north of station 1080.

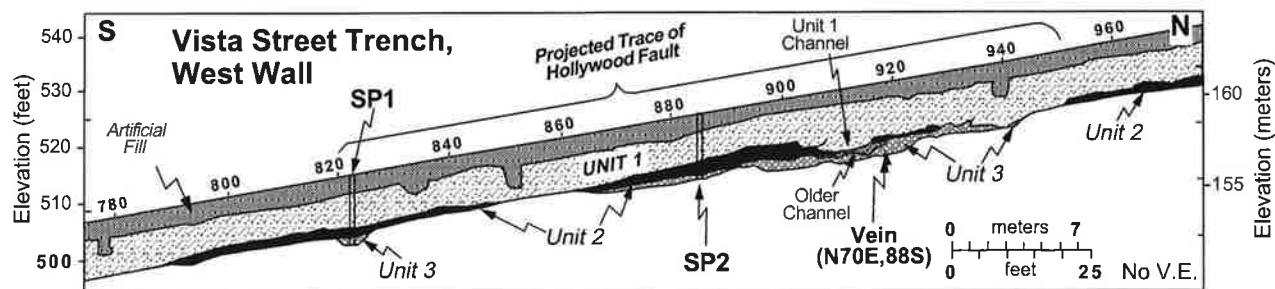
Unit 1 consists of friable, fine- to coarse-grained sand and minor pebble conglomerate. In the section of the trench shown in Figure 12, unit 1 is generally massive, and has local channels; north and south of this part of the trench the unit is locally well-bedded and has numerous channels. Unit 1 exhibits essentially no soil development, although a surficial A horizon could have been destroyed during grading of Vista Street (Appendix). The combined unit 1-unit 2 soil data indicate that the buried soil developed in unit 3 was buried no more than ~3000 yr ago, and could have been buried as recently as ~500 to 1000 yr ago (Appendix).

The only potential direct evidence of surficial faulting that we observed in the entire Vista Street

trench was a vertical carbonate vein exposed in unit 3 at the base of the trench at station 918. The vein trends ~N70°E near the west wall of the trench and bends to a more northerly orientation within the trench floor; it is not exposed in the east trench wall. Despite the highly irregular geometry of the vein, the lack of abundant carbonate in the soil suggests that this may be a fracture fill of tectonic origin, rather than a pedogenic feature. If so, then the shallowest evidence for faulting in the Vista Street trench is in unit A, although this evidence is neither abundant nor clear cut.

At station 1170 in the Vista Street trench (not shown in Fig. 12), an inactive(?), steeply south-dipping (N75°E, 73°S) fault zone separates highly weathered, orange-brown decomposed quartz diorite to the south from firmer, orange-buff quartz diorite in pods within a clay matrix to the north. The fault does not cut the overlying friable, gravelly sand of unit 1.

**Age of Most Recent Surficial Faulting.** The absence of faulting in the Vista trench across the presumed fault crossing (with the possible exception of the vein at station 918), suggests that the shallowest evidence of the most recent surface rupture has either been buried beneath the 3 to 4 m depth of the trench or has been obliterated by soil-forming processes in units 2 and 3. Unit 3 is exposed continuously from stations 860 to 942. Our experience observing similar, moderately well-developed, dark reddish-brown soils at Camino Palmero and Fuller Avenue suggests that faults and fractures should be readily apparent, because most of these features exhibit either a well-defined beige, 1–5-mm-thick oxidized halo, clay gouge, or carbonate shear veins. No such features were observed in unit 3, with the possible exception of the vein at station 918. Even if this vein is a fault, it projects upward into unfaulted unit 2 deposits. Although unit 2 is not exposed over a 7-m-long stretch between stations 930 and 950, we suggest that the unit has not been faulted. The only possible location where faulting of unit 2 might not be discernible is the



**Figure 12.** Map of the west wall of the portion of the Vista Street trench between Franklin and Hillside Avenues, which includes the presumed crossing of the main strand of the Hollywood fault zone. See Figure 6 for projected location of the Hollywood fault zone.

2.5-m-wide interval from stations 942 to 950, where neither units 2 or 3 are exposed. However, unit 2 projects across this unexposed interval with no apparent vertical displacement. Thus, the most recent surface rupture at Vista Street appears to have occurred before deposition of unit 2, and may even be older than deposition of unit 3. Alternatively, it is possible that 1000 to 2000 yr of soil development in soil 2 could have obliterated subtle traces of a surface rupture within unit 2. From this we infer that the weak unit 1 soil and at least most of the unit 2 buried soil have developed since the most recent surface rupture on the Hollywood fault, which therefore probably occurred at least ~500 to 3000 yr ago.

### DISCUSSION: KINEMATICS OF THE HOLLYWOOD FAULT

Because of its location along the southern edge of the Santa Monica Mountains anticlinorium, and the pervasive evidence of contractional deformation in the Transverse Ranges, the Hollywood fault has generally been considered to be a north-dipping reverse fault (e.g., Barbat, 1958; Davis et al., 1989). Displacement of Cretaceous quartz diorite over Pleistocene alluvium at Camino Palmero and La Brea Avenue, and consistently south-facing scarps, confirm a long-term component of reverse motion along the fault. Recent uplift of the mountain front is also suggested by the deposition and lack of incision of the numerous small alluvial fans near the mountain front.

In addition to the north-side-up reverse component of motion, however, several lines of evidence suggest that the Hollywood fault also exhibits a significant, possibly predominant, component of left-lateral strike-slip motion.

(1) The buried, mountain-side-down separation between B-12 and B-10 at Camino Palmero (Fig. 7) is incompatible with pure reverse displacement on the fault and indicates either horizontal offset of irregular topography, or pure normal or oblique-normal displacement along the north-dipping fault. At Camino Palmero the fault displaces a shallowly south-southwest-dipping alluvial surface (Fig. 8). Because the apparent right-lateral offset of the contours is clearly at odds with the abundant data showing left-lateral strike-slip motion along the Transverse Ranges Southern Boundary fault system, including both the Raymond fault to the east (Jones et al., 1990) and the Santa Monica fault to the west (Dolan et al., 1992), recent fault displacement at Camino Palmero is almost certainly not right-lateral strike slip. The geometry of the faulted surface might at first suggest pure normal faulting, possibly along a secondary normal fault formed in the hanging wall of a north-dipping, near-surface thrust fault.

However, the lack of tilting or warping of the buried soils south of the main active strand shows that no recently active contractional structures exist south of B-12. Coupled with evidence for a long-term, north-side-up component of reverse motion along the Hollywood fault, this observation indicates that the main strand at Camino Palmero cannot be explained by pure normal displacement, and that it is probably best explained as an oblique-normal, left-lateral strike-slip fault. The north-side-down sense of vertical separation at Camino Palmero is opposite to that observed in the North La Brea transect to the east. We speculate that this is related to a slightly more northeasterly strike of the fault at Camino Palmero, resulting in a local transtensional environment along a predominantly transpressional fault.

(2) Although the fault exhibits recent mountain-side-down separation at Camino Palmero, at all other sites (Figs. 5, 10, and 11), as well as deeper on the Camino Palmero strand, the fault exhibits recent mountain-side-up separation (Fig. 7). Such apparently contradictory senses of vertical separation are incompatible with pure reverse displacement, but are a common feature of many strike-slip faults (Yeats et al., 1997).

(3) The dip of the Hollywood fault has been directly measured at three localities. At Camino Palmero the main fault zone dips northward at  $\geq 75^\circ\text{N}$  (Figs. 7 and 9). In the North La Brea transect the fault dips  $\sim 60^\circ\text{N}$  at 50 m depth (Fig. 10). Because the fault steepens with depth in the

North La Brea transect, the overall dip of the fault at  $>50$  m depth may be steeper than  $60^\circ$ . In the MetroRail subway tunnel crossing the fault, dips are between  $60^\circ$  and  $70^\circ\text{N}$  at 50 m depth; the fault was only exposed at the tunnel crossing, and thus it is not known if it steepens with depth as it does in the North La Brea transect  $\sim 100$  m to the east. On the basis of these data, we suggest that the overall dip of the Hollywood fault at depth is probably at least  $\sim 70^\circ$  to the north. Such steep dips are generally not associated with pure reverse faults, whereas they are commonly associated with strike-slip and oblique-slip faults (Yeats et al., 1997).

In order to help quantify this assertion, we compared the dips and rakes from focal mechanisms for 26 Cordilleran earthquakes of  $M_w \geq 5.3$  (Fig. 13; Appendix). These data reveal that faults dipping  $\geq 65^\circ$  to  $70^\circ$  exhibit predominantly strike-slip motion. A similar comparison based on a global catalog of 170 earthquakes yielded the same basic result—faults that dip  $\geq 70^\circ$  exhibit strike-slip:dip-slip ratios  $>1$  (Coppersmith, 1991; Wells and Coppersmith, 1991). On the basis of these observations, we suggest that the Hollywood fault probably accommodates more strike-slip than reverse motion.

(4) Inversion of earthquake focal mechanisms indicates that the maximum compressive stress in the Hollywood area is horizontal and trends  $\text{N}12^\circ\text{--N}13^\circ\text{E}$  (Hauksson, 1990). These data are compatible with the strike-slip component on the

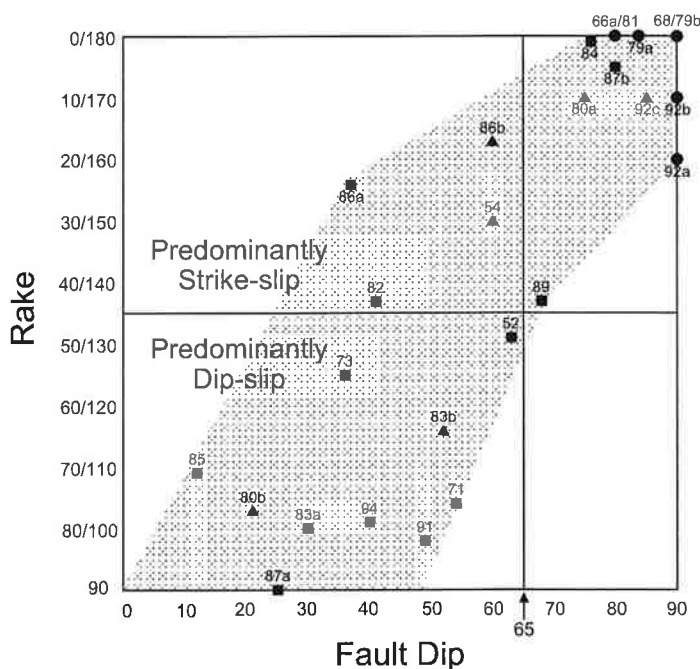


Figure 13. Plot of dip versus rake from focal mechanisms of 26 Cordilleran earthquakes  $M_w \geq 5.3$ . Squares show oblique-reverse-thrust events. Triangles denote oblique-normal earthquakes.

north-northeast-trending Hollywood fault being left lateral. Furthermore, the orientation of the stresses indicates that the more northeast-striking parts of the fault may accommodate a larger component of left-lateral motion than the more easterly trending sections of the fault, such as the reach through downtown Hollywood (Fig. 2). The depth of the Hollywood basin is based on data from only a few wells (Wright, 1991; Hummon et al., 1994; Tsutsumi, 1996), and it is therefore impossible to correlate the depth of this basin with changes in orientation of the Hollywood fault. However, on the basis of the evidence described above for a probable component of left-lateral slip on the Hollywood fault, we speculate that the Hollywood basin has formed at least partially in response to oblique, normal to left-lateral slip along more northeasterly trending stretches of the Hollywood fault, including the ~N60°E trending Nichols Canyon–Sunset Strip releasing bend, the ~N25°E trending Benedict Canyon releasing bend at the western end of the fault, and possibly the 350-m-wide left step between the Franklin and northern strands of the Hollywood fault just east of downtown Hollywood (Fig. 2). We further speculate that extension across the West Beverly Hills lineament at least partially explains the existence of the low-lying Beverly Hills alluvial plain east of the lineament; motion through the Benedict Canyon releasing bend has resulted in increased accommodation space to the east that is filled by alluvium derived from Benedict and Laurel Canyons (Fig. 2).

Our geomorphic analysis failed to provide any direct evidence of left-lateral strike slip along the Hollywood fault, either in the form of offset drainages or displaced fans. We attribute this to rapid aggradation of the alluvial fans, which have buried all potential evidence of strike-slip offsets (e.g., offset streams), and earthquake recurrence intervals that are long relative to the rate of geomorphic activity. For example, at Camino Palmero the displaced top of buried soil 3 at 7 m depth is the shallowest well-documented faulted feature. The apparently unfaulted unit A-unit B contact there lies at a depth of almost 5 m, suggesting that at least that much deposition has occurred since the most recent surface rupture that could have generated any discernible surficial strike-slip offsets. Similarly, evidence of the most recent surface rupture may have been buried beneath trench depth by more than 3 to 4 m of sediment at Vista Street. Furthermore, our data reveal late Holocene sediment accumulation on the fans at the fault crossing, rather than deep incision of channels that might be discernible even through the urban overprint.

We speculate that the lack of discernible large-scale offsets of the fans may be due to a conveyor-belt style of sediment input from the

numerous, closely spaced canyon sediment sources. In this model, strike-slip motion along the fault would continually move the alluvial apron past the sediment sources, preventing the development of very large individual fans at any single canyon input and forming an alluvial apron upon which small fans develop. Such a process may explain the relatively small sizes of the fans observed along the central reach of the Hollywood fault. This hypothesis could be tested by excavating an east-west transect of sites in the footwall of the fault. The transects would be designed to document the three-dimensional transition from fans composed predominantly of sediment eroded from Tertiary sedimentary and volcanic strata exposed in the Hollywood Hills north of downtown Hollywood, to fans composed predominantly of eroded quartz diorite exposed to the west (Fig. 2). In summary, we contend that the lack of offset geomorphologic features does not necessarily preclude a significant component of left-lateral strike-slip motion along the Hollywood fault.

#### Potential Interactions Between the Hollywood Fault and Nearby Faults

Both the Hollywood and Santa Monica faults are interpreted to be north-dipping, oblique-reverse, left-lateral faults (Dolan and Sieh, 1992; Dolan et al., 1992; this study). Coupled with the similar orientations of the two faults, this leads us to interpret them as closely related strands within a single fault system that might rupture together during large earthquakes (Fig. 2). However, the three northeast-trending releasing bends along the Hollywood fault could act as earthquake segment boundaries, as has been shown along other faults (e.g., Sibson, 1985).

Recognition of a component of left-lateral strike slip on the Hollywood fault also raises the possibility that it may directly connect with the left-lateral Raymond fault to the east (Fig. 1). Such a connection has long been postulated on the basis of the similar strike of the two faults (e.g., Barbat, 1958; Lamar, 1961), and gravity data, which suggest overall continuity of basement trends across the Los Angeles River (Chapman and Chase, 1979). However, the area between the southwesternmost well-established location of the Raymond fault ~5 km east of the Los Angeles River (Weber et al., 1980) and the easternmost scarps of the Hollywood fault just west of the Los Angeles River is very complex topographically, and a thoroughgoing east-northeast-trending fault trace cannot be verified on the basis of geomorphic expression (Fig. 1). Rather, it appears that the Raymond fault plays westward into several east-trending, oblique-reverse(?) faults (Weber et al., 1980; Crook et al., 1987). Although left-lateral

slip on the Raymond fault may ultimately be transferred to the Hollywood fault through some unknown mechanism, the Raymond fault may act at least partially as a left-lateral tear fault transferring motion from the Sierra Madre fault to the Verdugo–Eagle Rock fault system (Fig. 1). However, the presence of Pleistocene–Holocene(?) fault scarps of the western Raymond system west of Arroyo Seco, west of the presumed point of interaction with the Verdugo–Eagle Rock fault system, indicates that some slip on the Raymond fault system extends westward toward the Hollywood fault. Trenches excavated across one strand of the Raymond fault at the base of a drained, 5-m-deep reservoir west of Pasadena revealed numerous steeply north-dipping faults (64° to 85°) (Department of Water and Power Report, 1991). The steep dips and contradictory, but predominantly normal, vertical separations across these faults suggest that they are strike-slip faults, indicating that some left-lateral motion is transferred along the Raymond fault west of the Eagle Rock fault intersection.

#### Age of Most Recent Activity of the Hollywood Fault

In the absence of demonstrable evidence for Holocene displacements (Crook et al., 1983; Crook and Proctor, 1992), the Hollywood fault has not been zoned as active by the State of California. Our data indicate that the Hollywood fault has generated at least one surface rupture since latest Pleistocene time, suggesting that it is almost certainly capable of producing damaging earthquakes in the future. The ~500 to 3000 yr interval required to develop the unfaulted Vista Street soils (Fig. 12) represents the minimum interval since the most recent earthquake on the main strand. This estimate is supported by data from the Fuller Avenue trench (Fig. 11), which suggest, but do not prove, that no movement has occurred on the secondary strand of the fault exposed there in at least 1200 yr. An even older minimum age is suggested by the lack of discernible vertical displacement of the ~4000 to 8000 yr old unit A-unit B contact across the main fault zone at Camino Palmero. Although this latter age estimate is poorly constrained, recovery of an ~3500 yr old charcoal fragment from the middle of unit A, 2.8 m above the apparently unfaulted contact, suggests a long period of quiescence since the most recent Hollywood fault surface rupture.

The ca. 20 000 yr B.P. charcoal date from the faulted buried soil 3 at Camino Palmero (Fig. 7) represents a maximum age for the most recent surface displacement on the Hollywood fault. We do not know the exact depth of the upward termination of the most recent surface rupture at Camino Palmero. The shallowest displaced

marker discernible in the cores is the unit B-unit C contact. In the Fuller Avenue trench, however, rupture clearly extended well above the contact, at least 1 m up into unit B (Fig. 11). Thus, if stratigraphic units are correlative between Fuller Avenue and Camino Palmero, the most recent surface rupture may significantly postdate the  $\sim 20\,000$  yr old unit B-C contact. In summary, our best estimate is that the most recent surface rupture on the Hollywood fault occurred during deposition of unit B between ca. 20 000 and 4000 yr ago. Available evidence does not allow us to exclude the possibility that more than one event has occurred during this time interval.

### Constraints on the Slip Rate of the Hollywood Fault

The dense urbanization of the Hollywood area precludes excavation of a three-dimensional network of trenches designed to assess the rate and amount of lateral slip on the Hollywood fault; virtually the entire length of the fault is either paved or covered with buildings. Consequently, the overall slip rate and the relative proportions of lateral to vertical slip have not been directly measured. Nonetheless, we can use a combination of the borehole data, soil analyses, and regional geologic and geodetic information to place constraints on the slip rate and slip vector of the fault.

Despite the mountain-side-down separation of latest Pleistocene(?)–early Holocene(?) deposits at Camino Palmero, the displacement of quartz diorite over alluvium in both borehole transects suggests that the Hollywood fault exhibits a long-term component of reverse displacement. The weakly constrained  $\sim 0.1$  mm/yr late Pleistocene–Holocene sediment-accumulation rate estimated from soil analyses at B-31, when extrapolated up-fan 170 m to just south of the fault crossing, yields an approximate age of ca. 660 000 to 750 000 yr for sediments at 73 m depth (correlative with the base of B-10) (Fig. 7; Appendix). The parallelism of the buried soils with the fan surface implies that the accumulation rate at the fault crossing is similar to that at B-31, and that this is therefore a reasonable extrapolation.

Because the quartz diorite was not observed in the footwall of the fault, the minimum amount of separation across the fault zone equals the vertical distance between the bottom of B-10 and the projection of the planar upper surface of the quartz diorite southward across all four known strands of the fault. Dividing this distance,  $\sim 50$  m, by the sediment age yields a minimum relative uplift rate of  $\sim 0.07$  mm/yr across the fault. For a local fault dip of  $75^\circ$ , this uplift rate yields a weakly constrained, minimum mid-Pleistocene to present dip-slip rate of  $\sim 0.075$  mm/yr. We emphasize, however, that extrapolation of data on

late Pleistocene–Holocene accumulation rates back several hundred thousand years introduces a potentially significant, but unquantifiable, degree of uncertainty in these age estimates, and in the accumulation rates and fault-slip rates that we derive from them.

We can also estimate an approximate maximum, long-term dip-slip rate on the basis of the thickness of Quaternary alluvium filling the Hollywood basin south of the fault. Dividing the presumed maximum 300 m depth to early Quaternary marine gravels at the base of the alluvial section by their estimated ca. 0.8 to 1.2 Ma age (Hummon et al., 1994; D. Ponti, 1995, written commun.) yields a maximum long-term uplift rate of  $\sim 0.3$  to  $0.4$  mm/yr. An overall  $70^\circ$  dip for the Hollywood fault yields a similar dip-slip rate of  $\sim 0.3$  to  $0.4$  mm/yr. This long-term rate is a maximum because: (1) the Hollywood basin probably developed at least partially, and possibly mainly, in response to motion through the Nichols Canyon–Sunset Strip and Benedict Canyon releasing bends; and (2) the bottom of basin may be shallower than 300 m over most of the length of the Hollywood fault. If any of Hollywood basin subsidence is due to strike-slip motion, and we suspect that much of it is, the true reverse dip-slip rate on the Hollywood fault must be slower than the  $\sim 0.3$  to  $0.4$  mm/yr maximum rate. Given the maximum and minimum constraints determined above, in the following discussion we use  $0.25 \pm 0.15$  mm/yr, the average of the minimum ( $\sim 0.1$  mm/yr) and maximum ( $\sim 0.4$  mm/yr) rate estimates, as a reasonable dip-slip rate for the Hollywood fault.

The estimated  $\sim 70^\circ$  overall dip of the fault suggests that it may accommodate more strike-slip than reverse motion. In the following discussion, however, we assume a conservative strike-slip:dip-slip ratio of 1, which yields an overall oblique-slip rate of  $\sim 0.35 \pm 0.2$  mm/yr. This rate is probably a minimum because we suspect that the actual strike-slip rate may be higher, possibly considerably higher, than the dip-slip rate; in the far western part of the Transverse Ranges Southern Boundary fault system, the Santa Cruz Island and Santa Rosa Island faults exhibit left-lateral strike-slip rates of  $\sim 0.75$  and  $\sim 1$  mm/yr, respectively (Pinter et al., 1995; Colson et al., 1995).

A strike-slip rate along the Hollywood fault significantly  $> 0.25$  mm/yr is not precluded by recent geodetic data. Global Positioning System (GPS) geodetic data from four sites northwest of Hollywood (open squares in Fig. 1) show that the western Transverse Ranges, including the Santa Monica Mountains, are moving westward as a block relative to sites in the Los Angeles basin at 0 to 2 mm/yr (A. Donnellan, JPL Geodesy Group, 1996, personal commun.). These data suggest that a major strike-slip fault is between the Santa

Monica Mountains and the Los Angeles basin.

The Hollywood fault is the most likely fault on which this left-lateral strike-slip motion could be accommodated. The only other near-surface fault that has been proposed in the Hollywood area is the North Salt Lake fault, which parallels the Hollywood fault  $\sim 1.5$  km to the south (Fig. 3; Schneider et al., 1996; Tsutsumi, 1996). The North Salt Lake fault, however, exhibits no surface expression and may no longer be active. Available subsurface data do not clearly resolve whether the fault cuts late Quaternary strata (Tsutsumi, 1996). In contrast, the data discussed in this paper show that the Hollywood fault: (1) is well expressed at the surface; (2) has produced at least one earthquake since latest Pleistocene time; (3) is steeply dipping, which implies a strike-slip component of motion; (4) exhibits near-surface deformation at Camino Palmero indicative of strike-slip offset; and (5) has contradictory vertical separations on single strands consistent with predominantly strike-slip motion. On the basis of these observations, we suggest that most, if not all, of the left-lateral strike-slip motion between the Santa Monica Mountains and Los Angeles basin is accommodated along the Hollywood fault. Future GPS data will provide increasingly tighter constraints on the true slip rate of the Hollywood fault during the next decade.

### Size and Frequency of Future Hollywood Fault Earthquakes

Although we have no direct information concerning the recurrence interval for Hollywood fault earthquakes, the probable long duration of the current quiescent period implies that the fault exhibits a recurrence interval measurable in terms of several thousands, rather than hundreds, of years. In the absence of direct recurrence data we can use estimates of the size of the Hollywood fault plane and minimum and maximum inferred slip rates to speculate about the size and frequency of future Hollywood fault earthquakes.

The Hollywood fault is 14 km in length. Assuming an average fault dip of  $70^\circ$  and a thickness of the seismogenic crust of  $\sim 17$  km yields a total fault surface area of  $\sim 250$  km<sup>2</sup>. These data suggest that rupture of the entire Hollywood fault could produce a  $M_w \sim 6.6$  earthquake with  $\sim 1.5$  m of average slip across the rupture plane (Dolan et al., 1995). Assuming an oblique-slip rate for the Hollywood fault of 0.35 mm/yr, which we infer to be a probable minimum, yields a recurrence interval for a  $M_w 6.6$  earthquake of  $\sim 4000$  yr. As discussed above, this slip rate estimate is poorly constrained, and a faster rate would result in a correspondingly shorter expected recurrence interval. The Vista Street trench data indicate that it



has been at least 500 yr, and possibly more than 3000 yr, since the most recent surface rupture on the fault. This minimum age is consistent with the average recurrence interval that we calculate for hypothetical, moderate earthquakes. However, the apparent lack of vertical displacement of the unit A-unit B contact at Camino Palmero suggests that the most recent earthquake occurred even earlier, probably before ~4000 yr ago, and possibly 20 000 yr ago. Although it is possible that a longer quiescent period could simply reflect an anomalously long interval between moderate earthquakes, it is equally possible that the current quiescent period indicates a recurrence interval that is longer than that expected for moderate earthquakes. Thus, the possibility of much less frequent, and therefore probably larger, earthquakes on the Hollywood fault cannot be excluded on the basis of available data. Resolution of this question awaits the results of planned excavations across the Hollywood fault. If such large earthquakes have occurred on the Hollywood fault, we speculate that they could have involved the Hollywood fault together with other transpressional faults in the Transverse Ranges Southern Boundary fault system (e.g., the adjacent Santa Monica and/or Raymond faults).

#### Implications for Seismic Hazard Assessment in Northern Los Angeles Basin

The Hollywood fault appears to be capable of generating an earthquake comparable to the 1994  $M_w$  6.7 Northridge event, which directly caused 31 deaths and resulted in more than 20 billion dollars in damage (Scientists of the USGS/ SCEC, 1994). The Northridge earthquake occurred beneath the San Fernando Valley, a predominantly residential region northwest of downtown Los Angeles (Fig. 1). In contrast, the Hollywood fault traverses a much more densely urbanized region. Of particular concern are the numerous older structures in this section of Los Angeles, including many unreinforced masonry buildings and older high-rise buildings. Many of these buildings sustained damage during the Northridge earthquake, despite the fact that they were located more than

25 km from the nearest part of the rupture plane.

The Northridge earthquake served as a reminder of the importance of source directivity as one of the primary controls on the location and magnitude of strong ground motions and consequent damage (Wald et al., 1996). For example, if a Hollywood fault earthquake initiated near the base of the seismogenic crust and propagated up the fault plane, as occurred at Northridge, much of the energy would be focused directly toward the most densely urbanized part of the Los Angeles metropolitan area. Another concern is that the Hollywood fault, in contrast to the blind thrust fault that produced the Northridge earthquake, ruptures through to the surface in large earthquakes. In addition to the obvious implications for damage to infrastructure associated with potential surface displacements, surface-rupturing earthquakes are likely to excite much stronger long-period surface waves than earthquakes that do not rupture to the surface (e.g., Liu and Heaton, 1984; Vidale and Helmberger, 1988). Such long-period surface waves could represent a significant hazard to the many high-rise buildings in the region (Heaton et al., 1995; Olsen and Archuleta, 1996).

#### CONCLUSIONS

From a seismic hazard perspective, perhaps our most important result is that the Hollywood fault is probably active and capable of producing damaging earthquakes beneath the densely urbanized northern Los Angeles basin. Prior to this study no paleoseismologic information was available for the fault, which is consequently not zoned as active by the State of California. The fault has ruptured to the surface at least once during the past 20 000 yr. Unfaulted deposits that cross the fault indicate that the most recent earthquake occurred at least ~500 to 3000 yr ago. However, stratigraphic relations in several excavations lead us to suspect that the most recent surface rupture probably occurred earlier, possibly during latest Pleistocene to early or mid-Holocene time, between ~4000 and 20 000 yr ago. Although the minimum age of the most re-

cent surface rupture is consistent with the occurrence of moderate ( $M_w$  ~6.6) earthquakes along the Hollywood fault, the poorly constrained age of the most recent event is also consistent with the occurrence of less frequent, and therefore probably larger, earthquakes. We speculate that if such large ruptures have occurred, they may have involved simultaneous rupture of the Hollywood fault and adjacent faults of the Transverse Ranges Southern Boundary fault system.

Although it has generally been considered a reverse fault, recent mountain-side-down displacement documented at one site, coupled with the probable steep overall dip (~70°N) and north-northeast strike of the fault, suggest a significant, possibly predominant, component of left-lateral strike-slip motion along the Hollywood fault. In addition to the strike-slip component, the sparse available data suggest that the Hollywood fault exhibits a component of reverse displacement of ~0.25 mm/yr, indicating that overall motion is oblique reverse, left-lateral strike-slip.

#### ACKNOWLEDGMENTS

This research was supported by grants from the California Department of Transportation, the City of Los Angeles, the County of Los Angeles, and the National Science Foundation, administered by the Southern California Earthquake Center. We thank the Metropolitan Transit Authority Red Line subway project, in particular Richard Radwanski, Timothy Smirnoff, and Tony Stirbys, for helpful discussions and for allowing publication of the borehole data. We also thank the County of Los Angeles Department of Public Works, Gary Johnson in particular, for allowing us access to storm-drain trenches. Frank Denison graciously provided us with important unpublished data from numerous geotechnical studies of the Hollywood fault. We thank also Andrea Donnellan for helpful discussions about recent global positioning system (GPS) results. Anne Lilje generated digital topographic data from 1920s-vintage maps. Steve Wesnousky, Dan Ponti, Tom Wright, and Steve Wells provided useful comments.

TABLE A1. SUMMARY OF MHI AND SDI RESULTS FROM SOILS IN THE VISTA STREET TRENCH AND BOREHOLE B-31

Soil	MHI	SDI	Predicted age (ka) (2 $\sigma$ )	
			MHI	SDI
Vista 2 (buried) (3.4 to ? m depth)	0.31	N.D.	12.6 +28.0/-8.7	N.D.
B-31 (surface/#1)	0.19	42.2	6.5 +14.8/-4.5	14.5 +45.6/-4.6
B-31 (soil #2)	0.29	47.8	11.3 +25.1/-7.8	15.8 +49.7/-5.0
B-31 (soil #3)	0.44	88.3	26.2 +57.0/-17.9	30.1 +93.9/-9.7
B-31 (soil #4)	0.48	108.3	32.8 +71.3/-22.5	41.4 +129.5/-13.2
B-31 (soil #5)	0.53	98.9	43.3 +94.8/-29.7	35.6 +111.3/-11.4
B-31 (soil #6)	0.46	90.4	29.3 +63.7/-20.0	31.1 +97.1/-10.0
Averages (B-31)			149.4 +326.7/-102.4	168.5 +527.1/-53.9

Notes: MHI—maximum horizon index, SDI—soil development index, N.D.—no data

TABLE A2. SOIL DESCRIPTIONS FROM THE VISTA STREET TRENCH AND BOREHOLE B-31

Pedon	Horizon	Depth (cm)	Color	Text	Structure	Consistency	Clay films	Bound.	Sand (%)	Silt (%)	Clay (%)	H.I.	SDI	Notes
Vista 1	Ab?	(94–144)		SL					76	16	8			
	C	(144–322) (195)		LS-SL					82.4	11.5	6.1			
	C	(144–322) (235)		LS					83.1	11	5.9			
	C	(144–322) (290)		SL					78.4	14.5	7.1			
	Bwb?	(322–330+)		SL					72	19	9			
Vista 2	C (undiff.)	0–270	10YR 3/4m, 5/5d	LS-SL	m-sg	so, so, po	n.o.	?	82	11.6	6.4	0.07		Scattered pebbles
	2Ab	270–312	10YR 3/4m, 4/5d	SL	m-1csbk	so-sh, so, ps	n.o.	g, w-s	71.6	19.3	9.1	0.15	6.5	
	2Ab2	312–340	10YR 3/4m, 4/5d	SL	m-1csbk	sh, so-ss, ps	n.o.	g, w	70.1	20.4	9.5	0.18	5.1	
	3Ab	340–371	10YR 3/4m, 3.5/4d	SL	1csbk	h, ss, p	vnpo	c, w	64.8	24.7	10.5	0.29	9.1	
	3Bt	371–400+	10YR 3.5/4m, 4.5/4d	SL	2csbk	vh, s, p	2npo, 1npf, vncl	n.o.	61.3	25.4	13.3	0.41	11.8	
B-31	Gone	0–1.52												
	Btj	1.52–1.83	10YR 5/4d, 4/4m	SL		sp, ss	1-2ncl		64.4	25	10.6	0.19	5.9	
	BC	1.83–2.74	10YR 5/4d, 4/4m	sgSL		so, po	vncl		73.6	17.9	8.5	0.12	10.9	Pebbly SL
	2BC	2.74–2.90	10YR 5/4d, 4/5m	SL		s, p	1copo		56.7	29.9	13.4	0.25	4	Minor clay staining
	3Cox	2.90–3.73	10YR 5/6d, 4.5/3m	SL		ss, sp	n.o.		72.6	18.9	8.4	0.11	9.1	
	4Btjb	3.73–4.27	10YR 5/4d, 4/3m	SL		s, p	1npf&po		64.3	26.8	8.9	0.29	15.7	
	4BC1b	4.27–5.03	10YR 5/4d, 4/3m	SL		ss, po	1npo, 1cocl		65.5	24.3	10.2	0.12	9.1	
	4BC2b	5.03–6.40	10YR 5/4d, 4/4m	SL		ss, po	1ncl		62.1	25.2	12.7	0.12	16.4	
	5Ab	6.40–6.55	9YR 5/4d, 3.5/4m	SL		s, p	n.o.		60.7	27.2	12.1	0.21	3.2	Many v.f. pores, <sup>14</sup> C date @ 17 ka
	5Bt1b	6.55–6.86	10YR 5/4d, 9YR 3/4m	L		s, p	3n&1mkpo, 3ncl		51.2	32.6	16.1	0.44	13.6	
	5Bt2b	6.86–7.32	10YR 5/4d, 4/4m	SL		s, p	2npo&cl		60.3	23.8	15.9	0.33	15.2	
	5BC1b	7.32–7.77	10YR 5/4d, 4/4m	SL		ss, ps	1npo		69.8	19.8	10.4	0.17	7.7	
	5BC2b	7.77–9.75	10YR 5/6d, 4/4m	SL		ss, ps	1npo		67.8	21.6	10.6	0.19	37.6	
	6Ab	9.75–9.91	10YR 4/6d, 3/4m	SL		ss, p	vnpo		57.8	28.4	13.7	0.23	3.7	
	6Btb	9.91–10.36	10YR 4/6d, 7.5YR 3/3m	L		s, p-vp	3npf, 3n&2mkpo		50	33.5	16.5	0.48	21.6	
	6BC	10.36–11.73	10YR 5/5d, 9YR 3/4m	SL		s, p	1-2npo, 2 ncl		55.6	26.7	17.6	0.34	46.6	
	7Btb	11.73–12.34	10YR 4.5/6d, 7.5YR 3/4m	SL		s, p-vp	3npo&pf&cl, 1mkpo					0.53	32.3	
	7BCb	12.34–13.26	10YR 5.5/5d, 4/5m	SL		s, ps	1npo					0.24	22.1	
	8Btb	13.26–13.72	10YR 5/6d, 9YR 4/4m	SCL		s, p	2-3n&mkpo, 3ncl					0.46	21.2	
	9Bcb	13.72–14.78	10YR 4.5/6d, 4/4m	vgSL		ss, ps	2ncl, 1npo&br					0.26	27.6	
	10Bcb	14.78–15.24	10YR 5/5d, 4/5m	SL		ss, ps	vnpo					0.18	8.3	
	11Bcb	15.24–15.70	10YR 4.5/6d, 4/4m	LS-SL		so, po	1ncl, vnpo					0.17	7.8	
	12Bcb	15.70–16.46	7.5–10YR 5/6d, 3/4m	SL		ss, p	vnpo, pf					0.26	19.8	
	13Cb	16.46–16.61+	10YR 5/6d, 4/4m	LS-SL		so, po	n.o.					0.07	1.1	

TABLE A3. MAXIMUM HORIZONTAL INDEX (MHI) DATA FOR SOILS FROM VISTA STREET TRENCH AND BOREHOLE B-31

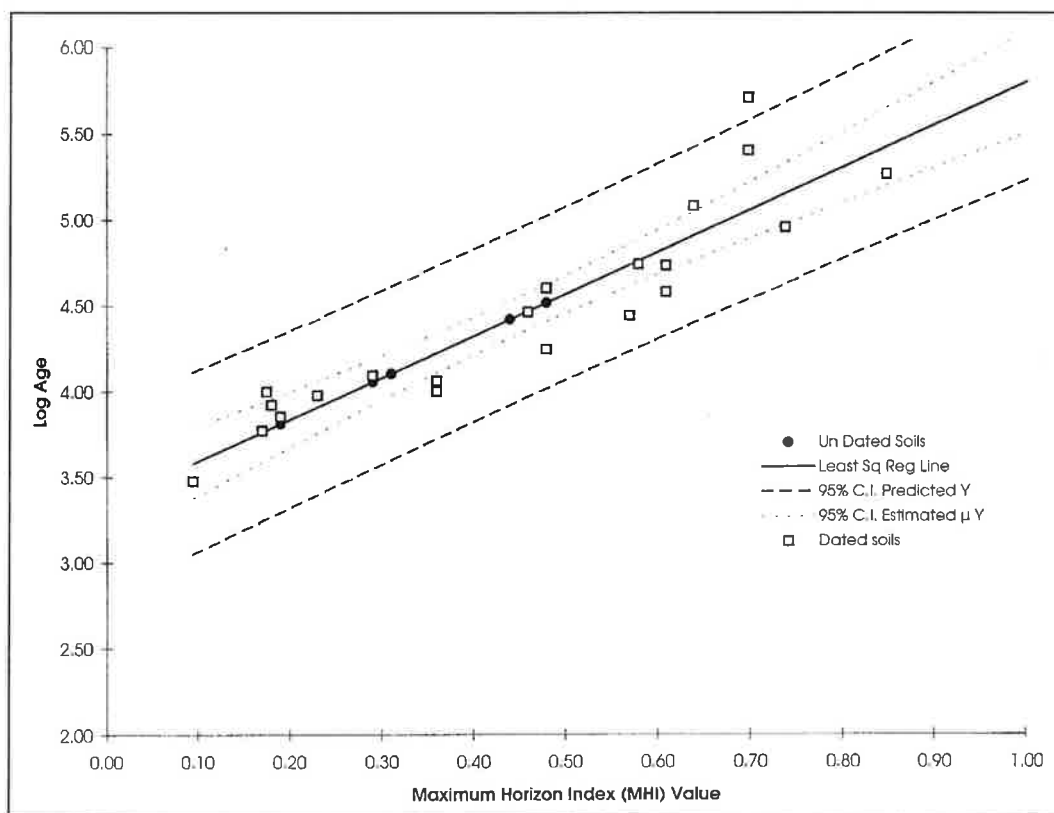
Profile	MHI	Sy'	Conf. int. (0.95)	Log age	Error in $\mu$ of Y		S(y-y')	Conf. int. (0.95)	Error in Y pop.		Age (yr)	95% predicted age C.I.	
					Max.	Min.			Max.	Min.		Max.	Min.
Vista 2	0.31	0.0608	0.1273	4.10	4.23	3.97	0.2420	0.5065	4.61	3.60	12,653	40,616	3942
B31#1	0.19	0.0797	0.1667	3.81	3.98	3.64	0.2474	0.5178	4.33	3.29	6464	21,298	1962
B31#2	0.29	0.0635	0.1329	4.05	4.19	3.92	0.2427	0.5079	4.56	3.55	11,313	36,435	3513
B31#3	0.44	0.0512	0.1071	4.42	4.53	4.31	0.2397	0.5018	4.92	3.92	26,193	83,172	8249
B31#4	0.48	0.0516	0.1079	4.52	4.62	4.41	0.2398	0.5020	5.02	4.01	32,764	104,081	10,314
B31#5	0.53	0.0544	0.1138	4.64	4.75	4.52	0.2404	0.5033	5.14	4.13	43,344	138,100	13,604
B31#6	0.46	0.0512	0.1071	4.47	4.57	4.36	0.2397	0.5018	4.97	3.97	29,295	93,020	9226

TABLE A4. SOIL DEVELOPMENT INDEX (SDI) DATA FOR SOILS FROM VISTA STREET TRENCH AND BOREHOLE B-31

Profile	SDI	Sy'	Conf. int. (0.95)	Log age	Error in $\mu$ of Y		S(y-y')	Conf. int. (0.95)	Error in Y pop.		Age (yr)	95% predicted age C.I.	
					Max.	Min.			Max.	Min.		Max.	Min.
Vista 2	—	—	—	—	—	—	—	—	—	—	—	—	—
B31#1	42.20	0.0611	0.1290	4.16	4.29	4.03	0.2361	0.4982	4.66	3.66	14,488	45,628	4,600
B31#2	47.80	0.0590	0.1245	4.20	4.32	4.08	0.2356	0.4971	4.70	3.70	15,835	49,741	5,041
B31#3	88.30	0.0525	0.1107	4.48	4.59	4.37	0.2341	0.4938	4.97	3.99	30,120	93,903	9,661
B31#4	108.30	0.0557	0.1175	4.62	4.73	4.50	0.2348	0.4954	5.11	4.12	41,377	129,461	13,225
B31#5	98.90	0.0536	0.1132	4.55	4.67	4.44	0.2343	0.4944	5.05	4.06	35,641	111,258	11,417
B31#6	90.40	0.0526	0.1110	4.49	4.60	4.38	0.2341	0.4939	4.99	4.00	31,141	97,101	9,987

TABLE A5. PARAMETERS FOR EARTHQUAKES USED IN CONSTRUCTING FIGURE 13

Date (day-month-year)	Location	Mw	Strike	Dip	Rake	References
07-21-52	Kern County	7.5	50	63	49	Hanks et al. (1975); Stein and Thatcher (1981); Hill et al. (1990)
12-16-54	Fairview Peak, Nevada	7.1	350	60	-150	Doser (1986)
09-12-66a	Truckee	5.9	44	80	0	Hill et al. (1990)
04-09-68	Borrego Mtn.	6.5	132	90	180	Hill et al. (1990)
02-09-71	San Fernando	6.7	290	54	76	Heaton (1982)
02-21-73	Point Mugu	5.3	80	36	55	Stierman and Ellsworth (1976); Hill et al. (1990)
08-06-79a	Coyote Lake	5.7	150	84	180	Hill et al. (1990)
10-15-79b	Imperial Valley	6.5	146*	90	180	*Ekstrom and England (1989); Kanamori and Regan (1982); Hill et al. (1990)
01-24-80a	Livermore	5.8	157	75	-170	Hill et al. (1990)
05-25-80b	Mammoth Lakes	6.2*	331	21	103	Ekstrom and England (1989); *Hill et al. (1990)
09-04-81	N. Santa Barbara Is.	5.9	45	80	0	Hill et al. (1990)
10-25-82	New Idria	5.5	154	41	137	Ekstrom and Dziewonski (1985); Stein and Ekstrom (1992)
05-02-83a	Coalinga	6.5	145	30	100	Kanamori (1983); Eberhart-Phillips (1990); Stein and Ekstrom (1992); *Anderson et al. (1995)
		6.3	140	30	88	Ekstrom and England (1989)
10-28-83b	Borah Peak, Idaho	6.9	151	52	64	Average of 6 values (with nonfixed rake angle) in Richins et al. (1985)
04-24-84	Morgan Hill	6.2	333	76	179	Ekstrom and England (1989); *Anderson et al. (1995); Wells and Coppersmith (1995)
08-04-85	Kettleman Hills	6.1	142	12	109	Ekstrom et al. (1992); Stein and Ekstrom (1992)
07-08-86a	N. Palm Springs	6.1**	114	37	156	Ekstrom and England (1989); *Wells and Coppersmith (1995); **Anderson et al. (1995)
			150	45(55)	180	First motion only; Jones et al. (1986)
07-21-86b	Chalfant Valley	6.3*	149	60	163	Ekstrom and England (1989); Hill et al. (1990)
10-01-87a	Whittier Narrows	6.0	90	25	90	Hauksson (1990); Hartzell and Iida (1990)
11-24-87b	Superstition Hills	6.7*	305/20	80	175	Bent et al. (1989); *Anderson et al. (1995)
			35?	80	0	Hill et al. (1990)
11-18-89	Loma Prieta	6.9	130	68	137	Average of 11 values in Wald et al. (1991)
06-28-91	Sierra Madre	5.6	243	49	82	Wald (1992)
04-23-92a	Joshua Tree	6.1*	160	90	160	Hauksson et al. (1993); *Hough and Dreger (1995)
06-28-92b	Landers	7.3	170	90	170	Hauksson et al. (1993); *average of 5 in Anderson et al. (1995)
06-28-92c	Big Bear	6.2	55	85	10	Hauksson et al. (1993)
01-17-94	Northridge	6.7	122	40	101	Wald, Heaton, Hudnut (BSSA in press); *average of 5 in Anderson (1995)



**Figure A1. Regression of Maximum Horizon Index (MHI) values for undated soils in Vista Street trench and borehole B-31 against data from dated southern California soils.**

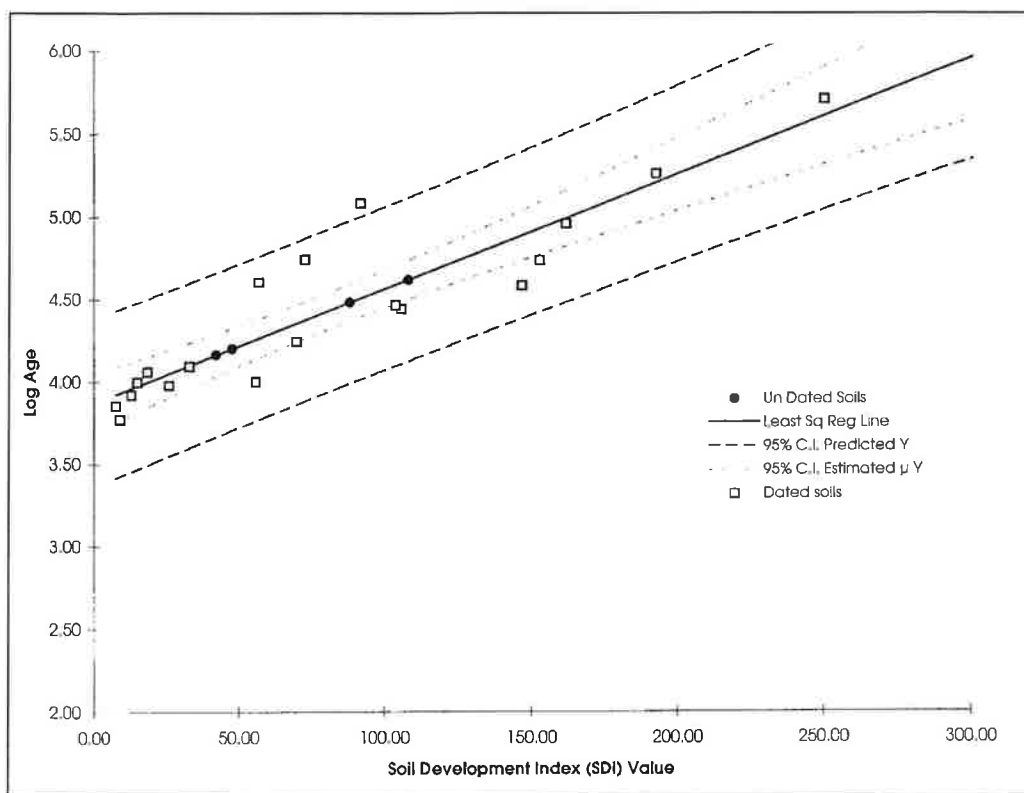


Figure A2. Regression of Soil Development Index (SDI) values for undated soils in Vista Street trench and borehole B-31 against data from southern California soils.

#### APPENDIX. SOIL DESCRIPTIONS FROM BOREHOLE B-31, CAMINO PALMERO BOREHOLE TRANSECT AND FOR VISTA STREET TRENCH

We described one complete and one partial soil profile from the Vista Street trench during the storm drain pipeline excavations (Fig. 12), as well as a sequence of six soils from the core of borehole B-31 at Camino Palmero (Fig. 7). All of these soils were described according to SCS Soil Survey Staff (1975; 1992) (Tables A1 and A2) and samples were collected for particle-size analysis.

##### Vista Street Profiles

The partial profile we described, Vista 1, was located at stations 822-824, whereas profile Vista 2 was located at station 885 (Fig. 12). Vista 2 appeared to expose a complete profile of the soil developed in depositional unit 2. At least three depositional pulses are present in the Vista 2 profile; the upper 2.7 m (unit 1) is characterized by unweathered, essentially raw alluvium. The alluvium between 2.7 and 3.4 m depth (unit 2) appears to have been exposed to the surface for a period of time and has an A horizon developed through it. Vista 2 appeared to expose a complete profile of the soil developed in depositional unit 2. The lower part of the buried A horizon in the Vista 2 exposure graded laterally into a weakly expressed Bwb horizon in the Vista 1 exposure 20 m to the south. Particle size distributions for both of

these units are nearly identical, supporting their correlation. The top of a better developed buried soil (unit 3) is present at ~3.4 m depth at the Vista 2 site. There a buried A horizon overlies a weakly developed argillic (Bt) horizon developed in this lowest stratigraphic unit exposed in the trench.

We compared the Vista 2 and borehole B-31 soils to dated soils elsewhere in southern California as the basis for age estimates. For a buried soil, the age estimate represents only the time that the sediments and soil were exposed at the surface. Thus, because there is no age control on the length of the depositional phase, the cumulative ages represented by the combined ages of the surface and buried soils should be considered a minimum age for the sediments at the base of the trench and borehole.

##### Vista Trench 2

The surface soil and deposit exposed in the trench has essentially no soil development, suggesting a very young age. However, an A horizon may have been present that was disturbed or graded during construction of Vista Street. If not, then the surface alluvium is probably <100 yr in age in that well-formed A horizons are usually evident within 50 to 100 yr in southern California (Rockwell et al., 1985; Harden, 1982; McFadden and Weldon, 1987). Similarly, the shallowest buried soil (unit 2) is represented by only an A horizon (albeit a thick one) in the Vista 2 exposure and pos-

sibly by a cambic (Bw) horizon in the Vista 1 exposure (Fig. 12). The presence of a cambic horizon indicates more development and time than just the presence of an A horizon. Cambic horizons without evidence of translocated clay have formed in sandy alluvium in similar environments in southern California in 500 to 5000 yr (Rockwell et al., 1985; McFadden and Weldon, 1987), although many recent data have been collected from the Los Angeles basin area showing incipient illuviation (clay film development) in fewer than 3000 yr (T. Rockwell, unpub. data). On the basis of these observations, we suggest that the unit 2 is middle to late Holocene in age.

For the lowest buried soil (unit 3) with a weak argillic horizon, the maximum horizon index (MHI) values from the field descriptions were regressed against data from soil profiles in three different chronosequences developed under a xeric (Mediterranean) climate in California. There are minor differences in parent material and climate among these chronosequences (see Rockwell, et al., 1990, for a complete discussion), but they are similar enough for analysis of the Vista Street soil profiles. We also include data from dated soil profiles from within the Los Angeles basin region.

The three chronosequences used are from the Ventura basin (Rockwell, 1983; Rockwell et al., 1985), the central Valley of California (Harden, 1982), and the Cajon Pass area (McFadden and Weldon, 1987) (Figure A1). Only one criterion was used to estimate the age of

the Vista Street trench soils: the maximum horizon index (MHI), as presented in Harden (1982), Ponti (1985), and Rockwell et al. (1994). Two other criteria, the profile mass accumulation of secondary clay, as determined by particle-size analysis, and the soil development index (SDI) of Harden (1982), are usually also used, but only the top of the argillic horizon was exposed, so there are too many assumptions that would have to be made to apply these techniques. The MHI parameter converts field description data of the best-developed horizon (usually the Bt) to numerical values that allow numerical comparison to the dated profiles. We assume that the exposed portion of the Bt horizon that we described is representative of this unit's soil. We understand that such an assumption, if incorrect, could lead to wide significant errors in the age estimate of the soil. We therefore do not use our age estimate of soil 3 for any paleoearthquake calculations.

The MHI data for the three chronosequences, along with the other Los Angeles basin profiles (not presented here; these will form the focus of a future paper), define a log-linear trend with a high  $r^2$  value (0.85; Fig. A1). Regression of the Vista 2 MHI value (0.31) indicates an exposure age of  $12.6^{+28.0}_{-8.7}$  ka.

### Borehole B-31

Borehole B-31 penetrated a sequence of six soils over a vertical thickness of 16.6 m. For these profiles, both MHI and SDI values were calculated and regressed against the same dated soils used for the Vista Street trench (Figs. A1 and A2; Tables A3 and A4). Similar to the MHI, the SDI converts the field description data into numerical values but uses the entire soil profile: they can also be compared to dated soils. The surface soil in B-31 was not described in the upper 5 ft (~1.5 m) due to lack of core recovery. Thus, caution should be used in interpreting the age estimates for the surface soil.

The MHI and SDI values for the six B-31 soils are summarized in Table A1. The minimum likely age for the deepest sediments exposed in the core, calculated by adding the best estimates for each of the surface and buried soils, is ca. 150 000 (MHI) to 170 000 (SDI). As noted above, the one charcoal fragment recovered from B-31 was recovered from the A horizon of soil 3, and was probably added to the soil profile during development of soil 3. Thus, the charcoal AMS age ( $19,765^{+455}_{-365}$  yr B.P.) probably provides a maximum age for the cumulative development of soils 1 and 2. The similarity of this maximum age with the cumulative MHI age estimates for soils 1 and 2 (~18 000 yr) leads us to place more confidence in the MHI estimates of soil ages in B-31 than the SDI estimates.

### REFERENCES CITED

- Anderson, J., Wesnousky, S. G., Stirling, M. W., Sleeman, M. P., and Kumamoto, 1995, Regressions for magnitude of earthquakes incorporating fault slip rate as an independent parameter: University of Nevada, Reno, Mackay School of Mines, Seismological Laboratory and Center for Neotectonic Studies Report 95-01, Nevada, 33 p.
- Barbat, W. F., 1958, The Los Angeles basin area, California, in Weeks, L. G., ed., *Habitat of oil: Tulsa, Oklahoma*, American Association of Petroleum Geologists, p. 62–77.
- Bent, A., Helmlinger, D. V., Stead, R. J., and Ho-Liu, P., 1989, Waveform modeling of the November 1987 Superstition Hills earthquakes: *Seismology Society of America Bulletin*, v. 79, p. 500–514.
- Chapman, R. H., and Chase, G. W., 1979, Geophysical investigations of the Santa Monica-Raymond fault zone, Los Angeles County, California: California Division of Mines and Geology Open-File Report 79-16, p. E-1–E-30.
- Colson, K. B., Rockwell, T. K., Thorup, K. M., and Kennedy, G. L., 1995, Neotectonics of the left-lateral Santa Rosa Island fault, western Transverse Ranges, southern California: Geological Society of America Abstracts with Programs, v. 27, no. 5, p. 11.
- Converse Consultants, Earth Sciences Associates, and Geo/Resource Consultants, 1981, MetroRail geotechnical investigation report: Los Angeles, Southern California Rapid Transit District, v. I and II, 42 p., 4 appendices.
- Coppersmith, K. J., 1991, Seismic source characterization for engineering seismic hazard analysis: Stanford, California, Earthquake Engineering Research Institute, International Conference on Seismic Zonation Proceedings, 4th, v. 1, p. 3–25.
- Crook, R., Proctor, R., and Lindvall, C. E., 1983, Seismicity of the Santa Monica and Hollywood faults determined by trenching: U.S. Geological Survey Final Technical Report, Contract 14-08-0001-20523, 26 p.
- Crook, R., Jr., Allen, C. R., Kamb, B., Payne, C. M., and Proctor, R. J., 1987, Quaternary geology and seismic hazard of the Sierra Madre and associated faults, western San Gabriel Mountains: U.S. Geological Survey Professional Paper 1339, p. 27–63.
- Crook, R., and Proctor, R., 1992, The Hollywood and Santa Monica faults and the southern boundary of the Transverse Ranges province, in Pipkin, B., and Proctor, R., eds., *Engineering geology practice in southern California*: Belmont, California, Star Publishing, p. 233–246.
- Davis, T. L., Namson, J., and Yerkes, R. F., 1989, A cross section of the Los Angeles area: Seismically active fold and thrust belt, the 1987 Whittier Narrows earthquake, and earthquake hazard: *Journal of Geophysical Research*, v. 94, p. 9644–9664.
- Davis, T. L., and Namson, J. S., 1994, A balanced cross section of the 1994 Northridge earthquake, southern California: *Nature*, v. 372, p. 167–169.
- Dibble, T. W., 1991a, Geologic map of the Hollywood-Burbank (south half) quadrangles: Santa Barbara, California, Dibble Geologic Foundation Map DF-30, scale 1:24 000.
- Dibble, T. W., 1991b, Geologic map of the Beverly Hills and Van Nuys (south half) quadrangles: Santa Barbara, California, Dibble Geologic Foundation Map DF-31, scale 1:24 000.
- Dolan, J. F., and Sieh, K., 1992, Tectonic geomorphology of the northern Los Angeles basin: Seismic hazards and kinematics of young fault movement, in Ehlig, P. L., and Steiner, E. A., eds., *Engineering geology field trips: Orange County, Santa Monica Mountains, and Malibu*, Guidebook and Volume: Los Angeles, California, Association of Engineering Geologists, p. B20–B26.
- Dolan, J. F., Sieh, K., and Rockwell, T. K., 1992, Paleoseismology and geomorphology of the northern Los Angeles Basin: Evidence for Holocene activity on the Santa Monica fault and identification of new strike-slip faults through downtown Los Angeles: *Eos (Transaction, American Geophysical Union)*, v. 73, p. 589.
- Dolan, J. F., Sieh, K., Gupta, P., Miller, G., Rockwell, T. K., and Smirnov, T., 1993, Structural geology, fault kinematics, and preliminary paleoseismologic results from the Hollywood fault: New data from continuously cored borings and geotechnical trenches, Hollywood, California: *Eos (Transaction, American Geophysical Union)*, v. 74, p. 427.
- Dolan, J. F., Sieh, K., Rockwell, T. K., Yeats, R. S., Shaw, J., Suppe, J., Huftile, G., and Gath, E., 1995, Prospects for larger or more frequent earthquakes in greater metropolitan Los Angeles, California: *Science*, v. 267, p. 199–205.
- Doser, D. L., 1986, Earth processes in the Rainbow Mountain–Fairview Peak–Dixie Valley, Nevada, region 1954–1959: *Journal of Geophysical Research*, v. 91, p. 12572–12586.
- Drumm, P. L., 1992, Holocene displacement of the central splay of the Malibu Coast fault zone, Latigo Canyon, Malibu, in Pipkin, B., and Proctor, R., eds., *Engineering geology practice in Southern California*: Belmont, California, Star Publishing, p. 247–254.
- Department of Water and Power Report, 1991, Meridian Tank site preliminary geologic report: City of Los Angeles Department of Water and Power Report AX 450-1, December 1991, 2 appendices, 3 plates, 8 p.
- Earth Technology Report, 1993, Investigations of the Hollywood fault: Segment 3, Metro Red Line: Prepared for Engineering Management Consultant, Long Beach, California, and Los Angeles Metropolitan Transit Authority, MetroRail Red Line Project, Los Angeles, California; Project #92-2038, 40 p., 5 appendices.
- Eberhart-Phillips, D., 1990, Three-dimensional  $P$  and  $S$  velocity structure in the Coalinga region, California: *Journal of Geophysical Research*, v. 94, p. 15565–15586.
- Ekstrom, G., and Dziewonski, A. M., 1985, Centroid-moment tensor solutions for 35 earthquakes in western North America (1977–1983): *Seismology Society of America Bulletin*, v. 75, p. 23–29.
- Ekstrom, G., and England, P., 1989, Seismic strain rates in regions of distributed continental deformation: *Journal of Geophysical Research*, v. 94, p. 10231–10257.
- Ekstrom, G., Stein, R. S., and Eberhart-Phillips, D., 1992, Seismicity and geometry of a 110-km-long blind thrust fault. 1. The 1985 Kettleman Hills, California, earthquake: *Journal of Geophysical Research*, v. 97, p. 4843–4864.
- Ellsworth, W. L., 1990, Earthquake history, 1769–1989: U.S. Geological Survey Professional Paper 1515, p. 153–188.
- Hanks, T. C., Hileman, J. A., and Thatcher, W., 1975, Seismic moments of the larger earthquakes of the southern California region: *Geological Society of America Bulletin*, v. 86, p. 1131–1139.
- Harden, J. W., 1982, A quantitative index of soil development from field descriptions: Examples from a chronosequence in central California: *Geoderma*, v. 28, p. 1–28.
- Hartzell, S., and Iida, M., 1990, Source complexity of the 1987 Whittier narrows, California, earthquake from strong ground motion records: *Journal of Geophysical Research*, v. 95, p. 12475–12485.
- Hauksson, E., 1990, Earthquakes, faulting, and stress in the Los Angeles basin: *Journal of Geophysical Research*, v. 95, p. 15365–15394.
- Hauksson, E., Jones, L. M., Hutton, K., and Eberhart-Phillips, D., 1993, The 1992 Landers earthquake sequence: Seismological observations: *Journal of Geophysical Research*, v. 98, p. 19835–19858.
- Heaton, T. H., 1982, The 1971 San Fernando earthquake: A double event?: *Seismological Society of America Bulletin*, v. 72, p. 2037–2062.
- Heaton, T. H., Hall, J. F., Wald, D. J., and Halling, M. W., 1995, Response of high-rise and base-isolated buildings to a hypothetical  $M_w$  7.0 blind thrust earthquake: *Science*, v. 267, p. 206–211.
- Hill, R. L., Sprötte, E. C., Bennett, J. H., Real, C. R., and Slade, R. C., 1979, Location and activity of the Santa Monica fault, Beverly Hills–Hollywood area, California, earthquake hazards associated with faults in the greater Los Angeles metropolitan area, Los Angeles County, including faults in the Santa Monica–Raymond, Verdugo–Eagle Rock, and Benedict Canyon fault zones, California Division of Mines and Geology Open-File 79-16 LA, p. B1–B43.
- Hill, D. P., Eaton, J. P., and Jones, L. M., 1990, Seismicity, 1980–1986: U.S. Geological Survey Professional Paper 1515, p. 115–151.
- Hoots, H. W., 1931, Geology of the eastern part of the Santa Monica Mountains, Los Angeles County: U.S. Geological Survey Professional Paper 165-C, p. 83–134.
- Hough, S., and Dreger, D., 1995, Source parameters of the 23 April 1992 M 6.1 Joshua Tree, California, earthquake and its aftershocks: Empirical Green's function analysis of GEOS and TERRASCOPE data: *Seismology Society of America Bulletin*, v. 85, p. 1576–1590.
- Hummon, C., Schneider, C., Yeats, R., Dolan, J. F., Sieh, K., and Huftile, G., 1994, The Wilshire fault: Earthquakes in Hollywood?: *Geology*, v. 22, p. 291–294.
- Jones, L. M., Hutton, L. K., Given, D. D., and Allen, C. R., 1986, The July 1986 North Palm Springs, California, earthquake: *Seismology Society of America Bulletin*, v. 76, p. 1830–1837.
- Jones, L. M., Sieh, K. E., Hauksson, E., and Hutton, L. K., 1990, The 3 December 1988 Pasadena earthquake: Evidence for strike-slip motion on the Raymond fault: *Seismological Society of America Bulletin*, v. 80, p. 474–482.
- Kanamori, H., 1983, Mechanism of the 1983 Coalinga earthquake determined from long-period surface waves: California Division of Mines and Geology Special Publication 66, p. 233–240.
- Lamar, D. L., 1961, Structural evolution of the northern margin of the Los Angeles basin [Ph.D. dissertation]: Los Angeles, University of California, 106 p.

- Lamar, D. L., 1970, Geology of the Elysian Park–Repetto Hills area, Los Angeles County, California: California Division of Mines and Geology Special Report 101, 45 p.
- Lawson, A. C., 1908, The California earthquake of April 18, 1906, Report of the state earthquake investigation committee: Washington, D.C., Carnegie Institution of Washington Publication 87, v. 1, parts 1–2, 451 p.
- Liddicoat, J. C., 1992, Paleomagnetism of the Pico Formation, Santa Paula Creek, Ventura basin, California: *Geophysical Journal International*, v. 110, p. 267–275.
- Liu, H., and Heaton, T., 1984, Ray analysis of ground velocities and accelerations from the 1971 San Fernando, California, earthquakes: *Seismology Society of America Bulletin*, v. 74, p. 1951–1968.
- McFadden, L. D., and Weldon, R., III, 1987, Rates and processes of soil development on Quaternary terraces in Cajon Pass, California: *Geological Society of America Bulletin*, v. 98, p. 280–293.
- Olsen, K. B., and Archuleta, R. J., 1996, Three-dimensional simulation of earthquakes on the Los Angeles fault system: *Seismology Society of America Bulletin*, v. 86, p. 575–596.
- Patterson, R. H., 1978, Tectonic geomorphology and neotectonics of the Santa Cruz Island fault, Santa Barbara County, California [Master's thesis]: Santa Barbara, University of California, 140 p.
- Pinter, N., and Sorlien, C., 1991, Evidence for latest Pleistocene to Holocene movement on the Santa Cruz Island fault, California: *Geology*, v. 19, p. 909–912.
- Pinter, N., Lueddecke-Pinter, S., Keller, E. A., 1995, Short-term and long-term activity on the Santa Cruz Island fault, California: *Geological Society of America Abstracts with Programs*, v. 27, no. 6, p. A375–A376.
- Ponti, D. J., 1985, The Quaternary alluvial sequence of the Antelope Valley, California: *Geological Society of America Special Paper* 203, p. 79–96.
- Richins, W. D., Smith, R. B., Langer, C. J., Zollweg, J. E., King, J. J., and Pechman, J. C., 1985, The 1983 Borah Peak, Idaho, earthquake: Relationship of aftershocks to the main shock, surface faulting, and regional tectonics: U.S. Geological Survey Open-File Report 85-290, p. 285–310.
- Rockwell, T. K., 1983, Soil chronology, geology, and neotectonics of the north-central Ventura Basin, California [Ph.D. dissert.]: Santa Barbara, University of California, 424 p.
- Rockwell, T. K., Johnson, D. L., Keller, E. A., and Dembroff, G. R., 1985, A late Pleistocene–Holocene soil chronosequence in the central Ventura Basin, southern California, USA, in Richards, K., Amette, R., and Ellis, S., eds., *Geomorphology and soils*: London, George Allen and Unwin, p. 309–327.
- Rockwell, T. K., Loughman, C., and Merfield, P., 1990, Late Quaternary rate of slip along the San Jacinto fault zone near Anza, southern California: *Journal of Geophysical Research*, v. 95, p. 8593–8605.
- Rockwell, T., Vaughan, P., Bickner, F., and Hanson, K. L., 1994, Correlation and age estimates of soils developed in marine terraces across the San Simeon fault zone, central California, in Alterman, I. B., McMullen, R. B., Cluff, L. S., and Slemmons, D. B., eds., *Seismotectonics of the central California Coast Ranges*: Geological Society of America Special Paper 292, p. 151–166.
- Schneider, C., Hummon, C., Yeats, R. S., and Huftile, G. J., 1996, Structural evolution of the northern Los Angeles basin, California, based on growth strata: *Tectonics*, v. 15, p. 341–355.
- Scientists of USGS/SCEC, 1994, The magnitude 6.7 Northridge, California, earthquake of 17 January 1994: *Science*, v. 266, p. 389–397.
- SCS Soil Survey Staff, 1975, Soil taxonomy: Washington, D. C., U.S. Department of Agriculture Handbook 436, 754 p.
- Shaw, J. H., and Suppe, J., 1996, Earthquake hazards of active blind thrust faults under the central Los Angeles Basin, California: *Journal of Geophysical Research*, v. 101, p. 8623–8642.
- Sibson, R. H., 1985, Stopping of earthquake ruptures at dilational fault jogs: *Nature*, v. 316, p. 248–251.
- Stein, R. S., and Thatcher, W., 1981, Seismic and aseismic deformation associated with the 1952 Kern County, California, earthquake and relationship to the Quaternary history of the White Wolf fault: *Journal of Geophysical Research*, v. 86, p. 4913–4928.
- Stein, R. S., and Ekstrom, G., 1992, Seismicity and geometry of a 110-km-long blind thrust fault. 2. Synthesis of the 1982–1985 California earthquake sequence: *Journal of Geophysical Research*, v. 97, p. 4865–4883.
- Stierman, D. J., and Ellsworth, W. L., 1976, Aftershocks of the February 21, 1973 Point Mugu, California earthquake: *Seismology Society of America Bulletin*, v. 66, p. 1931–1952.
- Stuiver, M., and Reimer, P. J., 1993, Extended  $^{14}\text{C}$  data base and revises CALIB 3.0  $^{14}\text{C}$  age calibration program: *Radio-carbon*, v. 35, p. 215–230.
- Topozada, T., 1981, Preparation of isoseismal maps and summaries of reported effects for pre-1900 California earthquakes: California Division of Mines and Geology Open-File Report 81-11, 182 p.
- Topozada, T., 1988, Planning scenario for a major earthquake on the Newport–Inglewood fault zone: San Francisco, California Division of Mines and Geology Special Publication 99, 191 p., 3 appendices.
- Treiman, J. A., 1994, The Malibu Coast fault: San Francisco, California Division of Mines and Geology Fault Evaluation Report FER 229, 42 p.
- Tsutsumi, H., 1996, Evaluation of seismic hazards from the Median Tectonic Line, Japan, and blind thrust faults in the Los Angeles metropolitan area, California [Ph.D. dissert.]: Corvallis, Oregon State University, 129 p.
- Vedder, J. G., Greene, H. G., Clarke, S. H., and Kennedy, M. P., 1986, Geologic map of mid-southern California continental margin (Map 2A), in Greene, H., and Kennedy, M., eds., *California continental margin geologic map series* (area 2 of 7; map sheet 1 of 4): U.S. Geological Survey and California Division of Mines and Geology, scale: 1:250 000.
- Vidale, J. E., and Helmberger, D. V., 1988, Elastic finite-difference modeling of the 1971 San Fernando, California, earthquake: *Seismology Society of America Bulletin*, v. 78, p. 122–141.
- Wald, D. J., 1992, Strong motion and broadband teleseismic analysis of the 1991 Sierra Madre, California, earthquake: *Journal of Geophysical Research*, v. 97, p. 11033–11046.
- Wald, D. J., Heaton, T. H., and Helmberger, D. V., 1991, Rupture model of the 1989 Loma Prieta earthquake from the inversion of strong motion and broadband teleseismic data: *Seismological Society of America Bulletin*, v. 81, p. 1540–1572.
- Wald, D. J., Heaton, T. H., and Hudnut, K. W., 1996, The slip history of the 1994 Northridge, California, earthquake determined from strong ground motion, teleseismic, GPS, and leveling data: *Seismology Society of America Bulletin*, v. 86, p. S49–S70.
- Wallace, T. C., 1988, The seismic source process of the 1952 Kern County, California, earthquake: *Seismological Research Letters*, v. 59, p. 20.
- Weber, F. H., Bennett, J. H., Chapman, R. H., et al., Chase, G. W., and Saul, R. B., 1980, Earthquake hazards associated with the Verdugo–Eagle Rock and Benedict Canyon fault zones, Los Angeles County, California: California Division of Mines and Geology Open File Report 80-10LA, 4 plates, 166 p.
- Wells, D. L., and Coppersmith, K. J., 1991, Analysis of fault dip and sense of slip for historical earthquakes: *Seismological Research Letters*, v. 62, p. 38.
- Wells, D., and Coppersmith, K., 1995, New empirical relationships among magnitude, rupture length, rupture width, rupture area, and surface displacement: *Seismology Society of America Bulletin*, v. 84, p. 974–1002.
- Wesnousky, S., 1986, Earthquakes, Quaternary faults, and seismic hazard in California: *Journal of Geophysical Research*, v. 91, p. 12587–12631.
- Working Group on California Earthquake Probabilities, 1995, Seismic hazards in southern California: Probable earthquakes, 1994–2024: *Seismology Society of America Bulletin*, v. 85, p. 379–439.
- Wright, T. L., 1991, Structural geology and tectonic evolution of the Los Angeles Basin, in Biddle, K. T., ed., *Active-margin basins*: American Association of Petroleum Geologists Memoir 52, p. 35–106.
- Yeats, R. S., Sieh, K., and Allen, C. R., 1997, *The geology of earthquakes*: New York, Oxford University Press, 568 p.
- Ziony, J. I., and Jones, L. M., 1989, Map showing late Quaternary faults and 1978–84 seismicity of the Los Angeles region: U.S. Geological Survey Miscellaneous Field Studies Map MF-1964, scale 1:250 000.

MANUSCRIPT RECEIVED BY THE SOCIETY MAY 9, 1996

REVISED MANUSCRIPT RECEIVED MAY 21, 1997

MANUSCRIPT ACCEPTED JUNE 17, 1997

SOUTHERN CALIFORNIA EARTHQUAKE CENTER PUBLICATION 266

CALIFORNIA INSTITUTE OF TECHNOLOGY PUBLICATION 6210



# THE SANTA MONICA AND HOLLYWOOD FAULTS AND THE SOUTHERN BOUNDARY OF THE TRANSVERSE RANGES PROVINCE

**Richard Crook, Jr.**

Consulting Engineering Geologist  
93 N. Sunnyside Avenue  
Sierra Madre, CA 91024

**Richard J. Proctor**

Consulting Engineering Geologist  
327 Fairview Avenue  
Arcadia, CA 91007

## SUMMARY

Six locations in western Los Angeles and Beverly Hills were investigated by trenching in 1982 to attempt to determine the location, characteristics and most recent time of seismic activity along the Hollywood and Santa Monica faults. In addition, recent subsurface observations by others at seven other localities are included here to present the latest information on these faults.

The Hollywood fault has been located at 8 subsurface points, in addition to the several scarps that define parts of its surface trace. These localities include two trenches, four boring locations, and two building excavations (Fig. 1).

- Wattles Park trench at Franklin and Sierra Bonita Avenue exhibited several thin, mainly southerly-dipping shears with clay gouge in diorite that are believed to be displaced and reoriented by local landsliding in the hanging wall of the fault.
- An excavation at a roadcut at the east side of Greystone Park displayed steep northerly-dipping shears where sandstone juxtaposes slate at a brecciated clay-rich zone.
- 1981-83 borings for the L. A. Metro Rail subway on Cahuenga Boulevard just north of Hollywood Boulevard revealed brecciated Miocene sedimentary rock over old alluvium (Fig. 2).
- 1991-92 borings for the subway at the north end of Camino Palmero showed diorite over gouge and old alluvium.
- At the north end of La Cienega Boulevard a boring on the south side of Sunset Boulevard was more than 200 feet deep in old alluvium, but diorite crops out on the north side of Sunset (Glenn Brown, pers. comm., 1992).
- A 30-foot difference in water levels exists in adjacent borings for a building foundation just south of Franklin Avenue at Las Palmas Avenue (Richard Slade, pers.

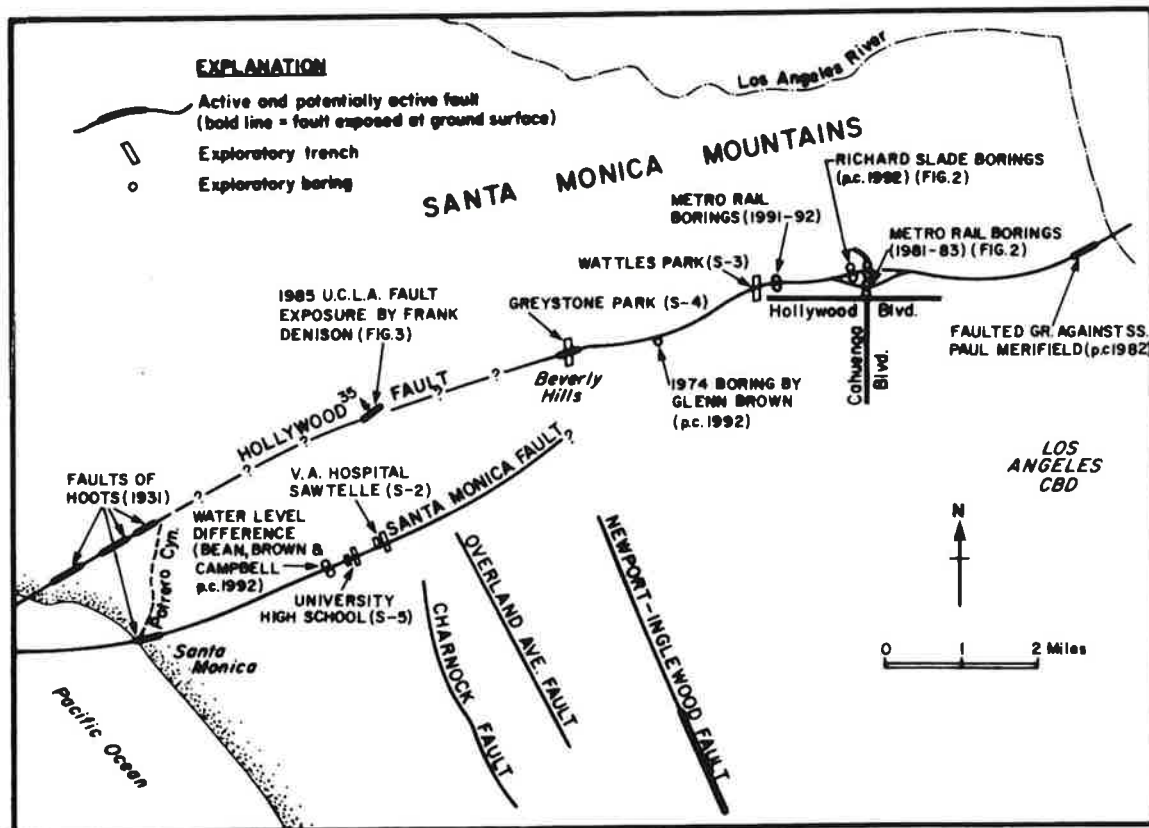


Figure 1. Location map, showing trench and boring locations, and active and potentially active faults.

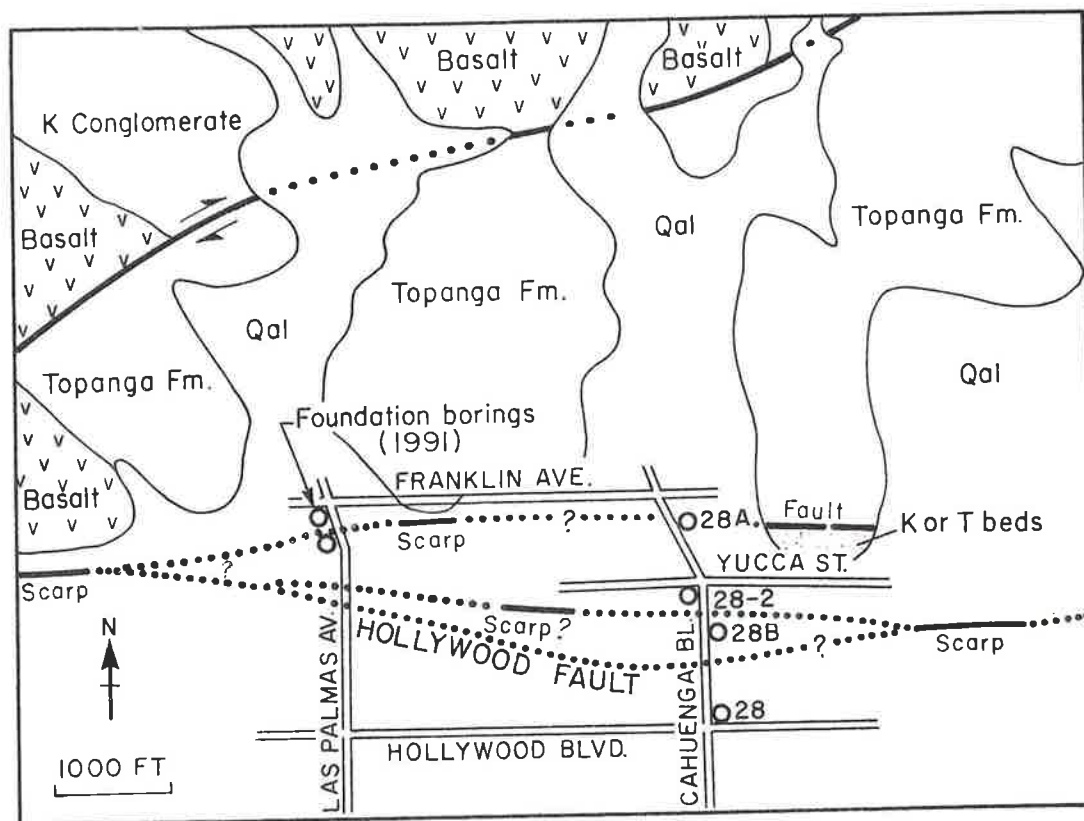


Figure 2a. Geologic map showing location of three branches of the Hollywood fault crossing Cahuenga Boulevard (former Metro subway alignment) based on borings. The borings along Cahuenga are from Converse and others (1981) and the 2 borings near Las Palmas Avenue showed a difference in water levels of 30 feet in borings about 150 feet apart in alluvium (Richard Slade, pers. comm., 1992). Surface geology from Hoots (1931), Weber and others (1980), and Dibblee (1991).

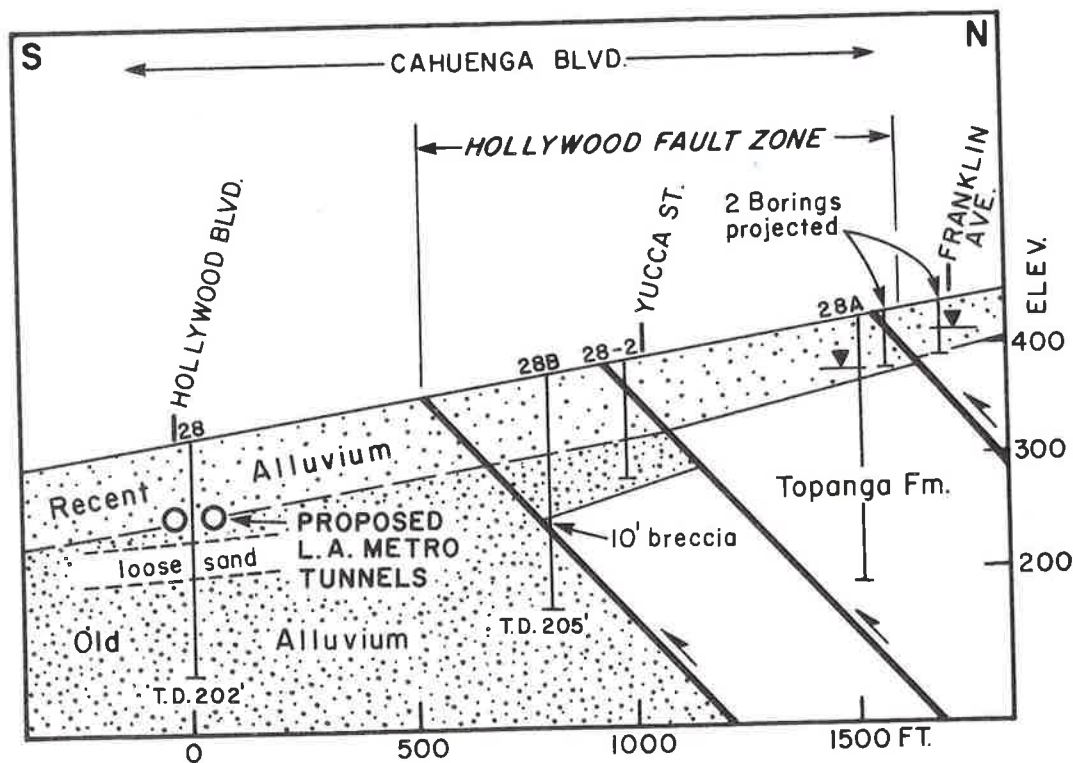


Figure 2b. Geologic section along Cahuenga Boulevard showing two buried Hollywood fault locations from Metro Rail borings, and a third northern branch fault from water level differences in borings projected from near Las Palmas Avenue.

comm., 1992); the northern boring reportedly encountered water at 15 feet and the southern boring at 45 feet (Fig. 3).

- Granite was seen faulted against Puente Formation sandstone in a Los Feliz district residential excavation (Paul Merifield, pers. comm., 1982).
- Frank Denison (pers. comm., 1985) mapped Modelo Formation shale faulted over Pleistocene old alluvium, with the fault striking N60E and dipping an average of 35 degrees north, in a library building excavation at the west part of the UCLA campus north of Gayley Avenue and east of Veteran Avenue (Fig. 3). This exposure is the only hard evidence that a potentially active fault exists in this reach. However, his northeast strike appears to align with a small fault mapped by Hoots (1931, Plate 16), rather than the projected westward trace of the Hollywood fault. We made a long south-trending trench at the north part of the Brentwood Hospital Veterans property, 1000 feet west of UCLA, across a stepped surface of an old fan, but found no fault.

All these localities, except at UCLA, show an 8-mile Hollywood fault segment extending northeasterly from Beverly Hills to the Los Angeles River, defining the south base of the Santa Monica Mountains. West of the west boundary of

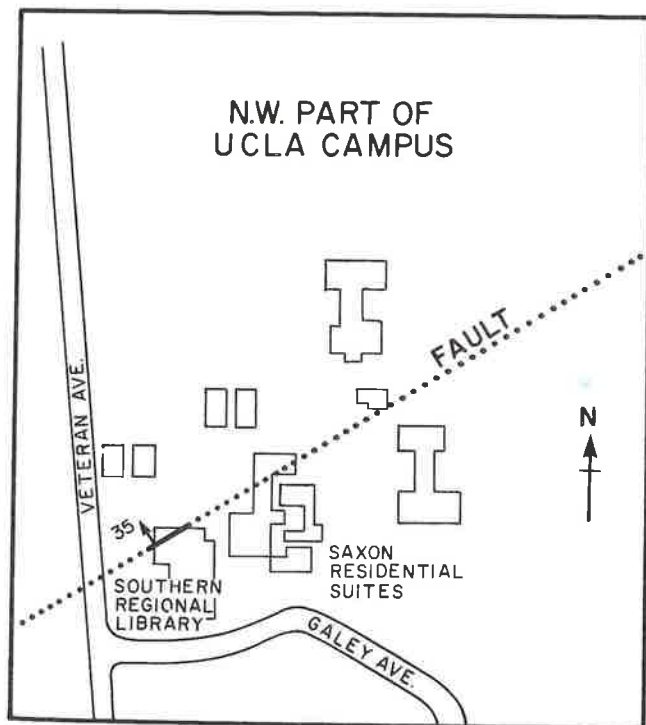


Figure 3a. Location map of western UCLA campus showing (for the first time) the location of the thrust fault exposure in the excavation for the library building mapped by Frank Denison in 1985 (personal communication). Modelo Formation shale overrides old alluvium, with two parallel faults at N60E, 35N. The location of faults in the foundations of adjacent buildings has not been reported.

Beverly Hills, at the mouth of Benedict Canyon, the topography and geology changes to dissected large old alluvial fans, and the fault has not been proven to exist in this 6-mile segment extending to the Pacific Ocean. It should be noted that Hoots (1931) shows faults in three canyons near the coast that seem to line up with a westward extension of the Hollywood fault (Fig. 1).

Recency of displacement on the Hollywood fault could not be absolutely determined, although geomorphic expression (Weber and others, 1980; Dolan and Sieh, 1991) suggests late Quaternary movement.

The Santa Monica fault has several scarps extending 6 miles on-shore from Santa Monica Bay, and is exposed at the mouth of Potrero Canyon north of the City of Santa Monica. It was also exposed in a foundation excavation and by our trenching at two locations:

- A foundation excavation and pumping test at Wilshire Boulevard and Bundy Drive defines a segment of the fault (Robert Bean, Glenn Brown and Alice Campbell, pers. comm., 1992).
- Our trenches at the southwest corner of the U. S. Veterans Administration Sawtelle property exhibited near-vertical to south-dipping normal shear zones with clay gouge trending roughly east-west.
- Trenches at University High School displayed two well-defined steep southerly-dipping normal faults, consisting of 2 to 12 inches of sheared clay, with apparent lateral displacements. No datable materials were found in any displaced units.

Proposed trenching on both the Santa Monica and Hollywood faults by Caltech (James Dolan and Kerry Sieh, pers. comm., 1992) may be completed by the time this paper is printed and may reveal new evidence on recency of faulting. Hauksson and Saldivar (1986) believe the 1930 M5.2 earthquake in Santa Monica Bay was on the Santa Monica fault. West of here, recent work by Rzonca and others (1991) and Drumm (in this chapter) indicates that the Malibu Coast fault moved in Holocene time.

## OVERVIEW AND CONJECTURE ON THE SOUTHERN BOUNDARY OF THE TRANSVERSE RANGES PROVINCE

The Santa Monica fault zone is a portion of the much longer Anacapa-Malibu Coast-Santa Monica-Hollywood-Raymond-Sierra Madre-Cucamonga fault system that stretches more than 100 miles from offshore west of Ventura County to Cajon Pass (Fig. 4). This system of faults roughly defines the southern structural boundary between the Transverse Ranges (mainly left-lateral and thrust faults) and the Peninsular Ranges (mainly steep right-lateral faults) provinces of



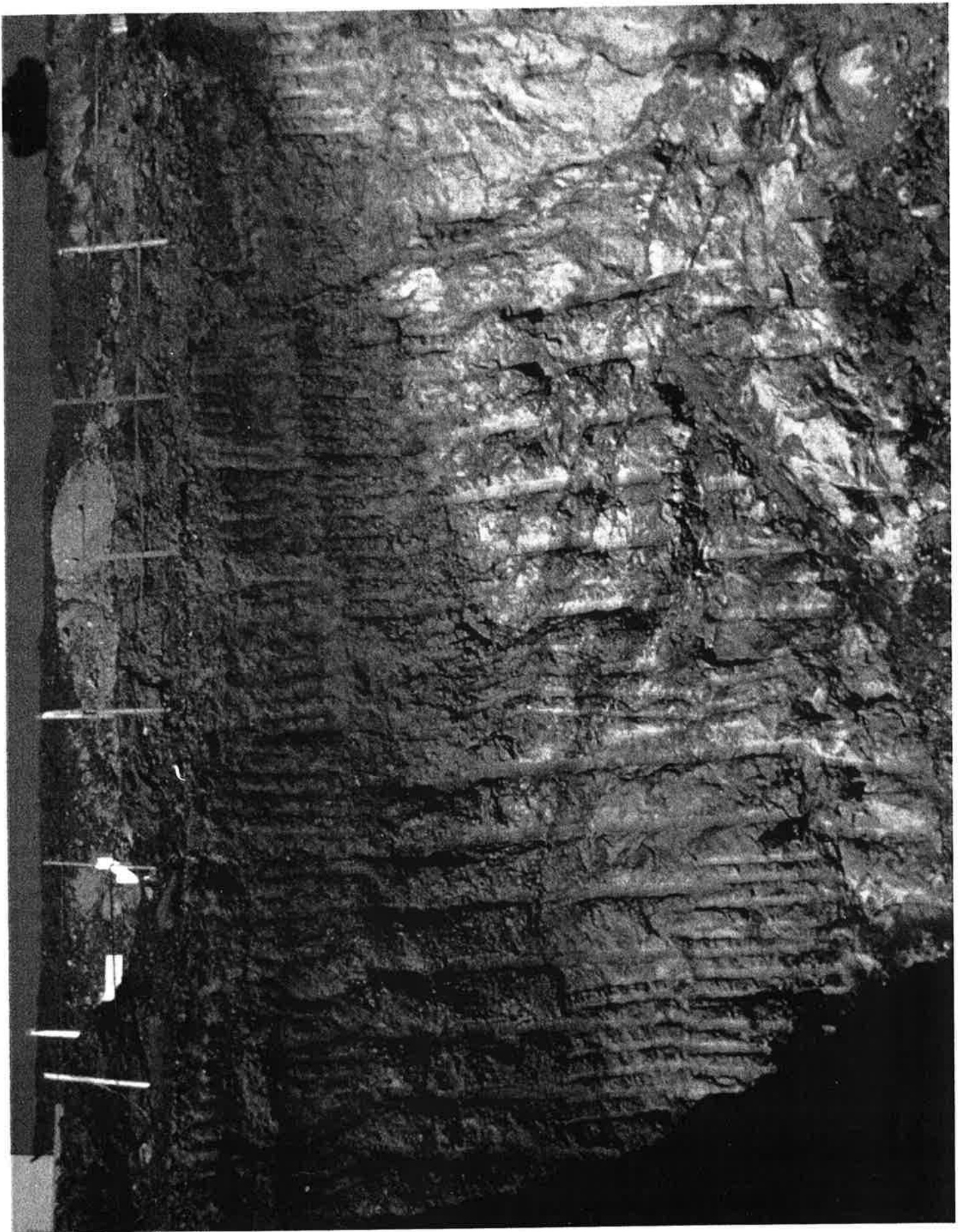


Figure 3b. Photo by Frank Denison, 1985, of faulted old alluvium in north wall of library foundation excavation, western UCLA campus.

southern California. At Cajon Pass, this boundary is right-laterally offset 15 miles along the San Jacinto fault, and resumes eastward as the Banning thrust fault. (See Fig. 5.) Although this fault system may have been a through-going active entity at some time in the past, Yerkes and Lee (1979a, b), Chapman and Chase (1979) and Weber and others (1980) suggest that since late Pleistocene time this is no longer so. Our work at Caltech in 1975-78 (Crook and others, 1987), led us to believe that the Sierra Madre fault zone and the Raymond fault behave as several discrete segments that act independently to local tectonic stresses and that they therefore should be treated as individual segments with regard to future seismic activity. This conclusion is also extended to the Anacapa-Malibu Coast-Santa Monica-Hollywood fault system. Figure 3 shows the interrupted nature of the faults, particularly the nearby Sierra Madre fault zone that is actually a connected series of thrust faults that curve north-eastward to become steep left-slip faults. We believe each thrust segment moves independently to cause typically moderate-sized earthquakes, such as the M 6.5 San Fernando earthquake in 1971.

In our opinion, therefore, a scenario of a long reach of the fault system moving to cause an earthquake with a magnitude approaching 7.5 is unlikely. Bonilla and others (1984) indicate such a large event would rupture the ground surface for almost 50 miles; a long rupture length does not appear to fit the direct arcuate thrust fault traces, nor the local tectonics

(e.g. Allen, 1975; Hauksson, 1990, and Hauksson this volume).

Until approximately 1987 the boundary between the Transverse Ranges and the Peninsular Ranges provinces was considered to be the obvious geomorphic southern limit of the Transverse Ranges. In other words, the southernmost steep parts of the Santa Monica, San Gabriel and San Bernardino mountain ranges. However, work by Davis (1987) suggested that the actual boundary might lie south of these areas as a series of north-dipping blind thrusts. This model appears to have been confirmed by the October 1987 Whittier Narrows earthquake. Geologic and seismic studies of this earthquake by Davis and others (1989) and Hauksson and Jones (1989), and of other subsequent earthquakes (Hauksson, 1990; Hauksson and Jones, 1991), have suggested that the boundary between the two provinces lies south of the Santa Monica-Hollywood-Raymond-Sierra Madre-Cucamonga fault system. The boundary exists as a zone of exposed and buried northeast-trending, left lateral strike-slip faults (San Jose, Indian Hill, Walnut Creek and Red Hill) east of the Los Angeles Basin and a series of northwest- to west-trending blind thrusts (Davis and others, 1989) in the central part of the Los Angeles basin.

At the far western end of the Los Angeles basin this boundary is less defined at present. Here the presently active bounding fault appears to be the Santa Monica fault, although on-shore Holocene movement has yet to be proven.

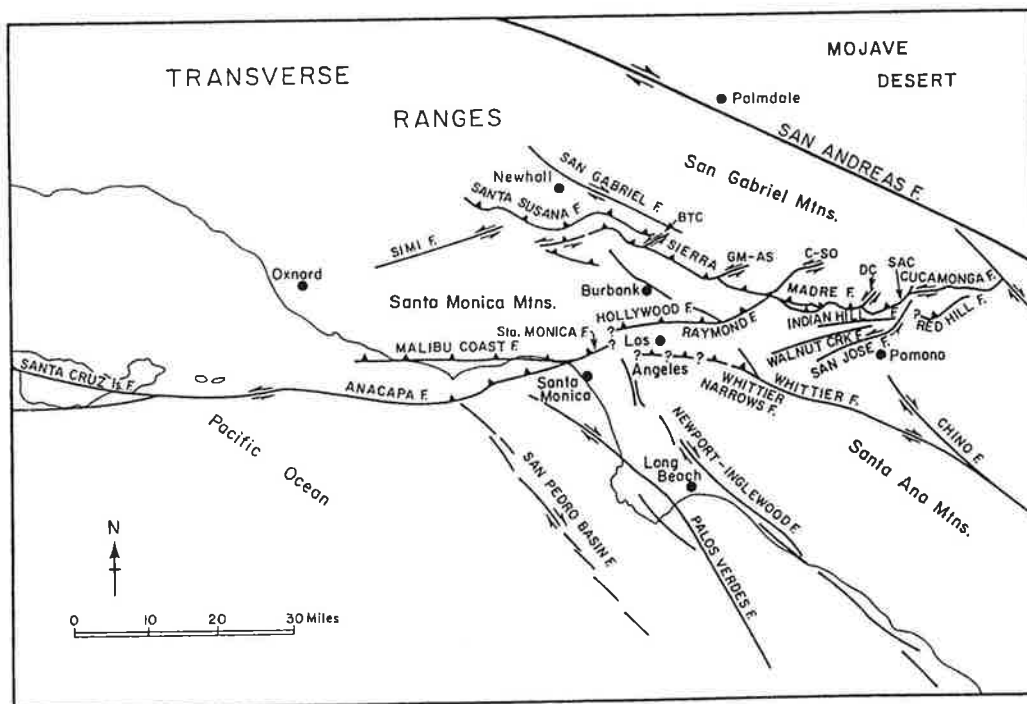


Figure 4. Regional fault map, showing uncertainty of south boundary of Transverse Ranges Province in this part of southern California. Queries indicate doubts as to connection between E-W faults. See text for discussion. The Sierra Madre thrust fault forms distinct segments as it swings NE into canyons and becomes steep left-lateral faults: BTC = Big Tujunga Canyon; GM-AS = Gould Mesa-Arroyo Seco; C-SC = Clamshell-Sawpit Canyon; DC = Dalton Canyon; SAC = San Antonio Canyon.

Work by the authors indicated late Pleistocene movement at two locations (University High School and U. S. Veterans Administration, Sawtelle). More recent field work by Dolan and Sieh (1991) suggests that Holocene movement has indeed occurred on this fault, which they hope to substantiate by their ongoing subsurface investigation.

Curiously, the subsurface evidence for faulting revealed by our 1982 work on the Santa Monica and the Hollywood faults all indicated nearly vertical to south-dipping faults with apparent normal (dip-slip) displacements. Such faulting could be expected within the hanging wall of a deeper blind thrust (Avouac and others, 1992) and might also explain a portion of what Wright (1991) has concluded to be monoclinical folding due to recent extension in this area (Fig. 6a-c).

## HISTORICAL REVIEW

Onshore segments of the Santa Monica and Hollywood faults were first shown on the map prepared by Hoots (1931). His map and text indicate that the only surface trace observed by him on the Santa Monica fault is at the mouth of Potrero Canyon. Hill (1979) and Johnson (1932) reported that two traces are exposed here; one is vertical and the other dips to the north at approximately 45 degrees. The latter trace can be seen to displace terrace deposits thought to be late Pleistocene in age, possibly 125,000 years old (Hill, 1979).

Hill and others (1979), in a review of all studies of these zones up to that time, state that except for an exposure seen by John McGill in Rustic Canyon (quoted in Hill, 1979) no additional site-specific information was available regarding the surficial traces of these two faults. Analyses of oil well and exploratory well data by Lang and Dreesen (1975), Knapp and others (1962), Jacobson and Lindblom (1977), and Wright (1991) indicate that movement on the Santa Monica fault has been negligible since the Pliocene. However, Hill and others (1979), on the basis of their investigation conclude that:

1. The near-surface trace of the Santa Monica fault in the Beverly Hills-Hollywood area is defined by a zone of differential subsidence;
2. The fault has been active during at least part of the Pleistocene time;
3. Holocene movement cannot be precluded on the basis of current knowledge;
4. Subsurface fault traces within the Santa Monica-Raymond fault zone in the eastern part of the Beverly Hills-Hollywood area are actively undergoing tectonic strain accumulation and release.

This last conclusion was partly based on the results of a study of seismicity in this area by Buika and Teng (1978).

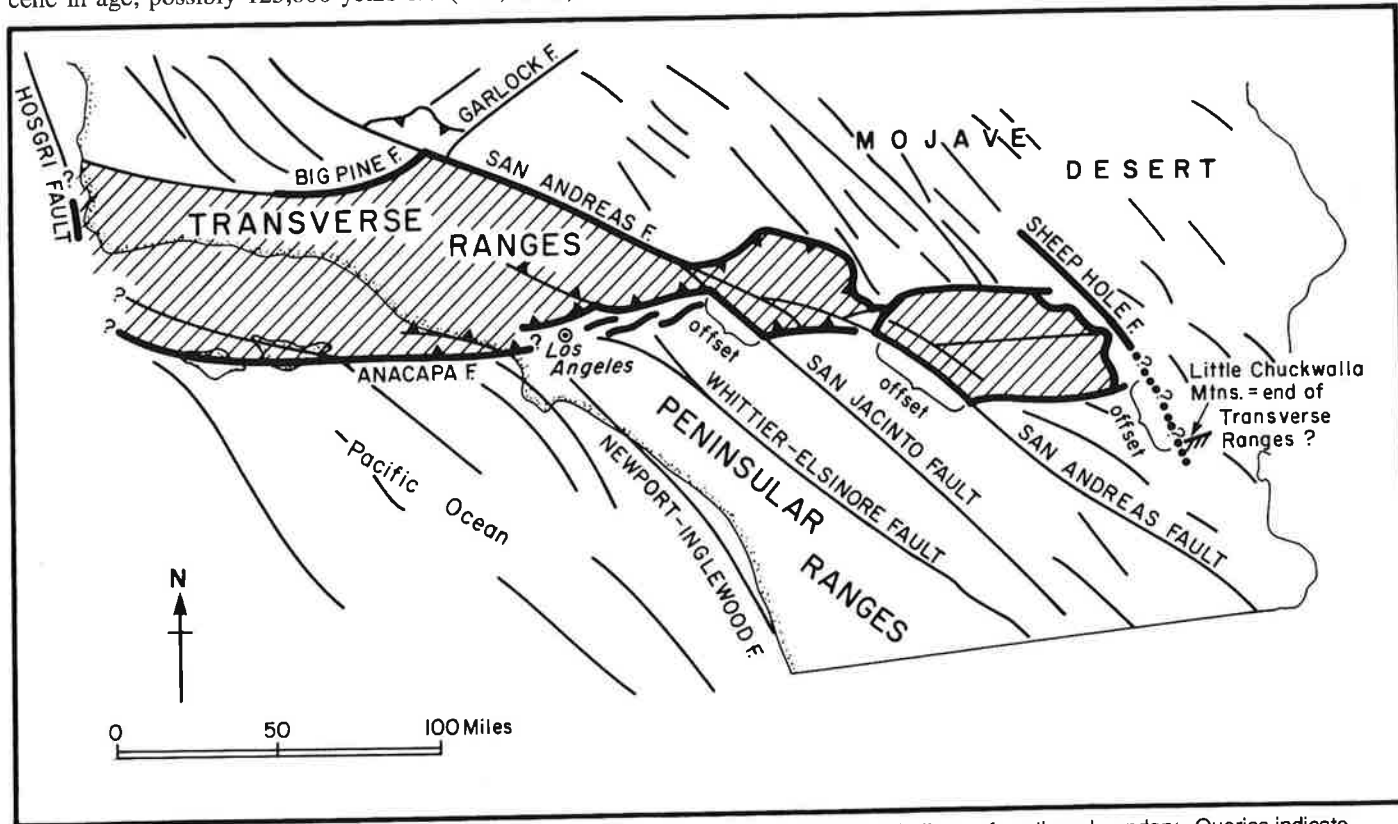


Figure 5. The Transverse Ranges province. See text for comment on apparent right-lateral offsets of southern boundary. Queries indicate unknown end of faults and unknown east and west ends of Transverse Ranges province.



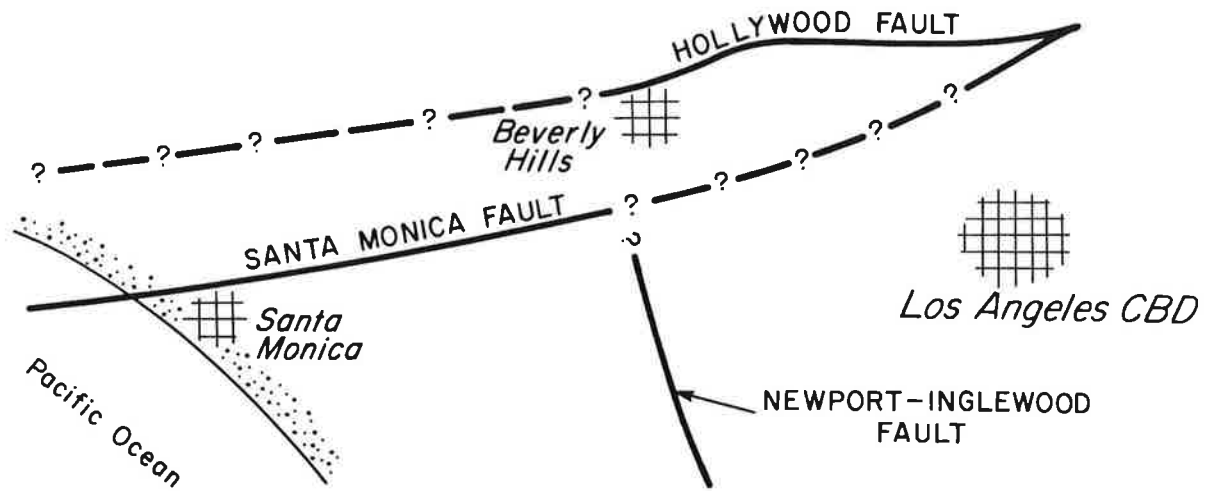


Figure 6a. Fault interpretation shown on many maps to 1980s. Does the Hollywood fault extend westward? does the Santa Monica fault extend eastward?

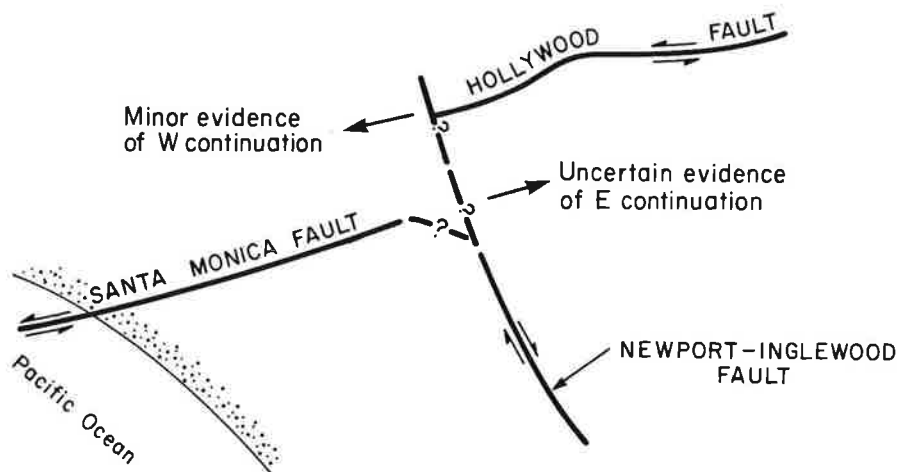


Figure 6b. Possibility of left-stepping separation of 1.5 miles by the right-lateral Newport-Inglewood fault (wrong sense of historic movement); or possibility of merging of Santa Monica and Newport-Inglewood faults as shown by Ziony and Jones (1989), but causing conflicting sense of historic movement on each fault.

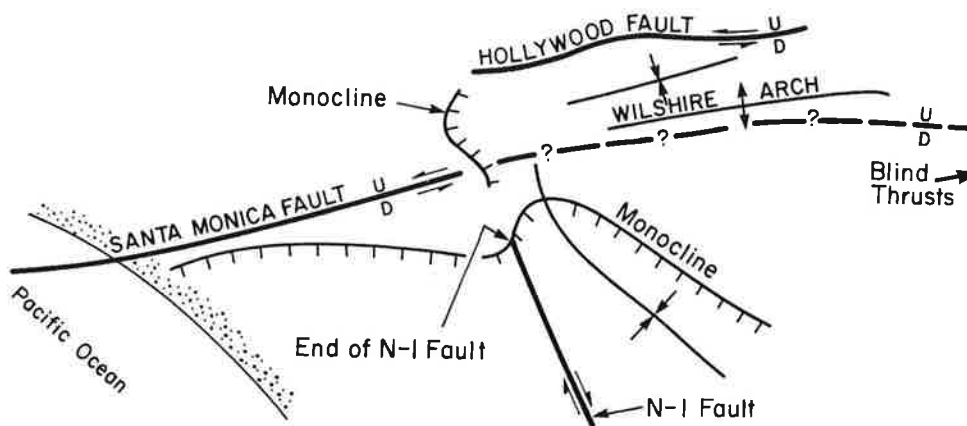


Figure 6c. Two new possibilities: (1) Faults ending in east- and south-dipping monoclines (Wright, 1992, Fig. 16c). (2) Our conjecture of as yet undiscovered buried eastward extension of the Santa Monica fault, possibly associated with the newly discovered Wilshire Arch of Robert S. Yeats (pers. comm., 1992; Hummon and others, 1992), extending eastward to connect to known E-W blind thrusts toward Whittier Narrows.

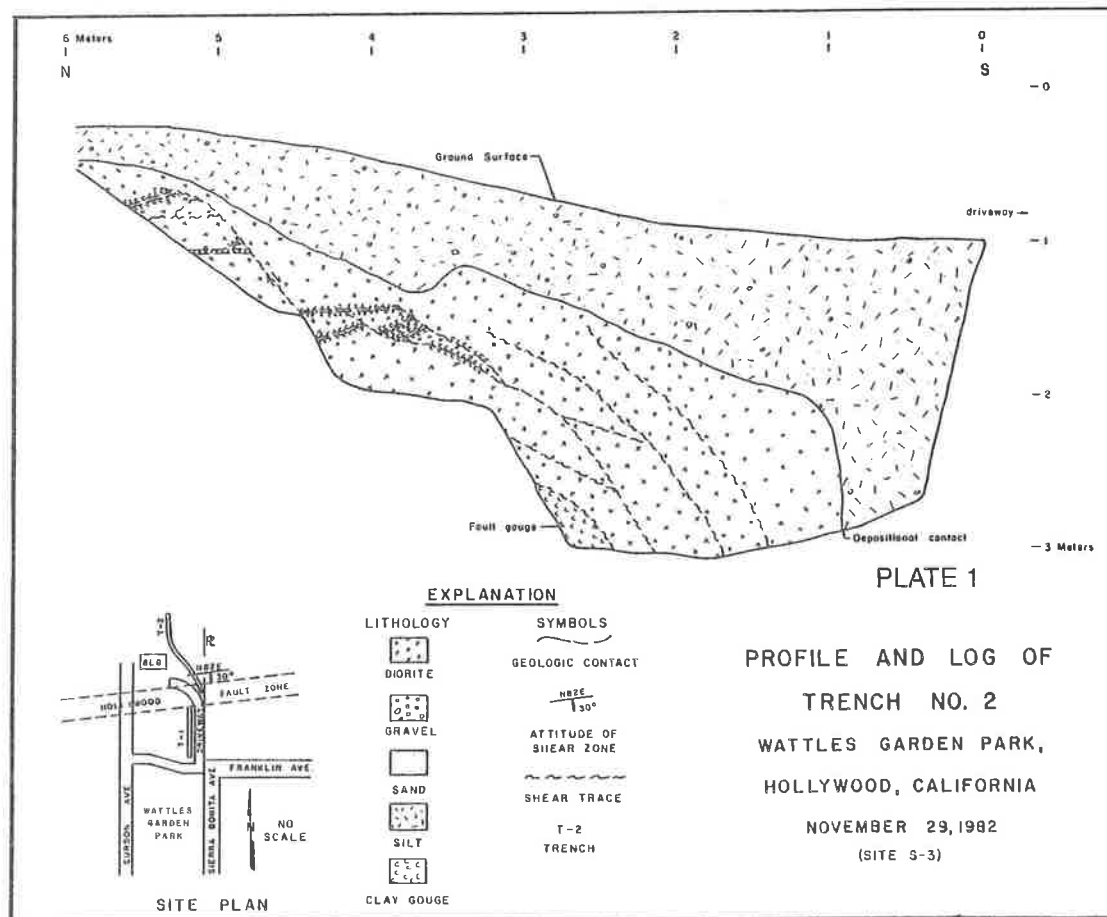
Foundation excavations and borings near the corner of Wilshire Boulevard and Bundy Drive in west Los Angeles yielded evidence of a ground water barrier in late Pleistocene deposits (Glenn Brown and Alice Campbell, pers. comm., 1982). They report that ground water was encountered at a depth of approximately 15 feet under the lot at the northwest corner of the intersection and at depths of up to 70 feet under the lot at the southwest corner. A pump test performed on the latter lot (Robert Bean, pers. comm., 1992) indicated a nearby ground water barrier about 350 feet south of Wilshire.

This location coincides with a geomorphic feature—possibly a scarp on a branch of the Santa Monica fault—as seen on 1927 Fairchild aerial photographs and old topographic maps. It also aligns with a projection of similar geomorphic features at University High School and the U. S. Veterans Administration property within a mile eastward. Current geomorphology studies by Dolan and Sieh (1991, and pers. comm., 1992) are discovering subtle new scarps in this area.

Two sets of older vertical and a series of oblique aerial photographs of the project area were studied to assist in picking fault scarps and prospective trenching sites. The verticals were 1927 and 1928 Fairchild photographs; the obliques were Spence photographs with dates ranging from 1921 to 1931. (These rare photos are preserved at the Whittier College Geology Department.) We located possible fault scarps, then plotted these onto Thomas Guide maps, to help find vacant sites in a densely urbanized area.

Wattles Park, Los Angeles, site S-3, Plate 1. Two trenches were excavated at this site. The first trench was 166 feet long, and exposed massive- to locally crudely-bedded, silty sand colluvium with scattered pebbles and cobbles. No evidence for faulting was encountered in this trench.

The second trench was excavated upslope of the first trench. This trench was started in granodiorite and extended downhill toward Trench No. 1. It was short, by about 6 feet, from overlapping trench No. 1 owing to the existence of a paved driveway. In the southernmost 20 feet of trench several thin gouge layers were exposed that dipped northward into the hill at 10 to 15 degrees. As these layers approached the depositional rock-colluvium contact, they were displaced downward to the south along several south-dipping shears that probably are small landslide planes. A mass of



bluish-green clay gouge at least 2 feet thick was exposed at the bottom of the trench beneath rock displaced along one of the slide planes. It is probable that this gouge is part of the main zone of the Hollywood fault. No datable materials were exposed.

Greystone Park, Beverly Hills, site S-4, Figure 7. Portions of a road cut on Loma Vista Drive north of Doheny Drive were excavated by hand. Materials encountered were the Santa Monica slate and a sedimentary unit consisting of yellow-tan, massive arkosic sandstone with abundant pebble-size fragments of slate. The relationship between the two units was difficult to ascertain. Both units are extremely weathered and clay-rich and generally have a sheared appearance. The contact has the general appearance of being depositional; however, at two locations sheared planar inclusions of sandstone are within the sheared slate, dipping  $72^{\circ}$  and  $75^{\circ}$  north. The age of the sedimentary unit is not known and may be as old as Tertiary. This is based on the highly weathered and clayey state of the material, as well as the well-developed soil at its surface. We also found that on the park grounds there are several oil and water seeps that appear to align with the road cut exposure. It thus appears that the Hollywood fault passes through the Greystone Park property.

#### Santa Monica Fault Trenches

Two sites on the Santa Monica fault were investigated by trenching, these being the U. S. Veterans Administration

property (site S-2) and the University High School property (site S-5).

U. S. Veterans Administration, Sawtelle, site S-2, (Plates 2 and 3). Trench No. 2 at this site was 141 feet long and 12 to 18 feet deep with two approximately 12-foot long gaps due to caving ground and a concrete substructure. Materials encountered in this trench were massive- to crudely-bedded fluvial and sheet-wash fan deposits varying from firm silty clay to loose, coarse, silty and sandy gravel. Contacts were generally gradational and only locally were sharp and well defined. The sharper contacts generally were between deposits with large grain-size difference.

The southern 100 feet of trench consisted primarily of the crudely-bedded fluvial silt, sand and gravel deposits overlying a south-sloping, locally stripped, older alluvial fan surface. No evidence of faulting was observed in this section of trench nor were there any features that might be attributable to liquefaction.

In the northern 30 feet of trench (Plate 2) the "older" fan surface is within 3 feet of the ground surface and most of the exposed deposits were less well-bedded and sorted and much more fine grained and cohesive than those to the south. These materials contained numerous features suggestive of faulting. Some of the features consist of planar zones of gray clay and clay-rich material that coincide with discontinuities in the crudely-bedded material. Two of the zones

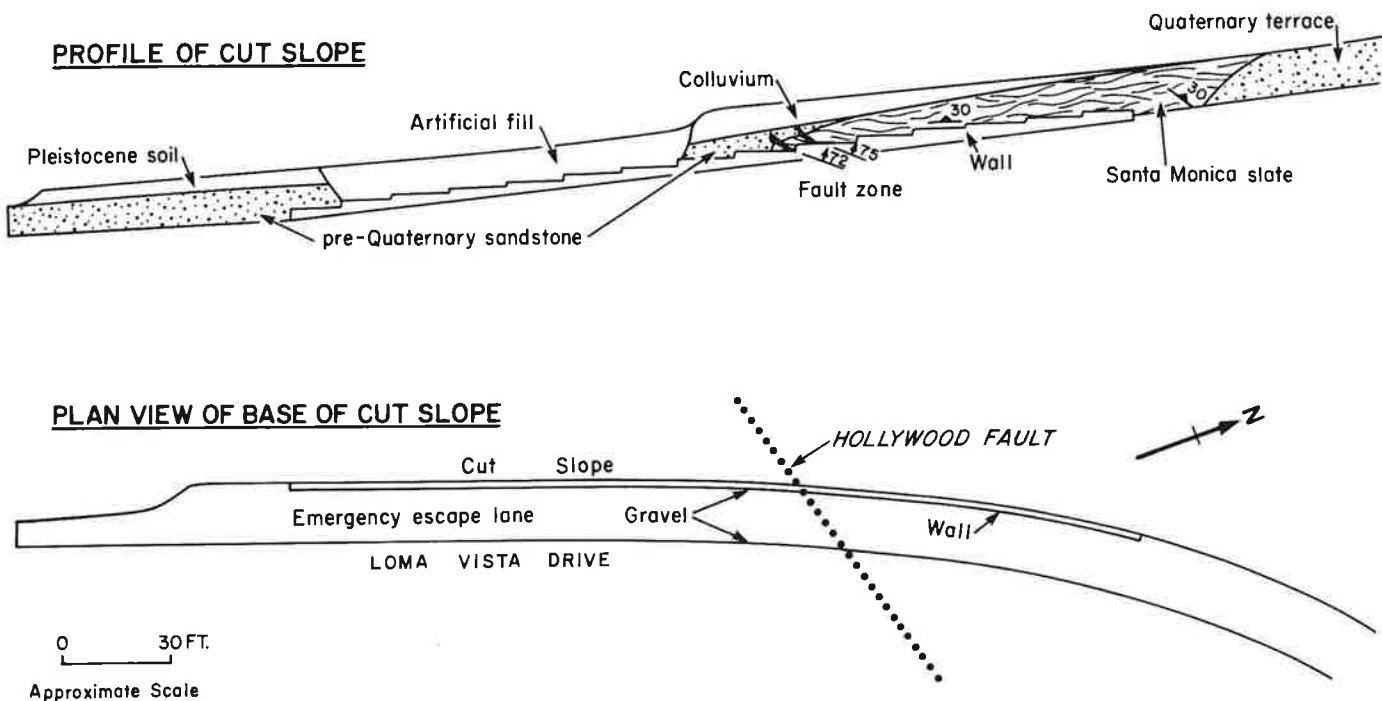
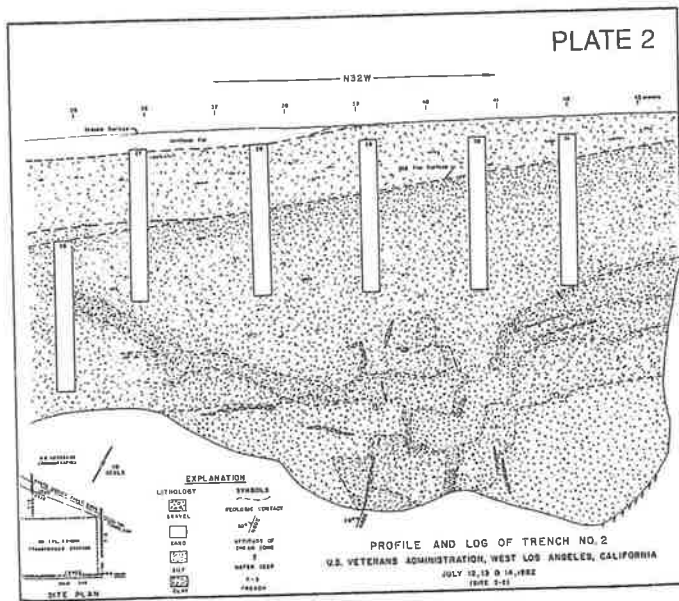


Figure 7. Sketch map of roadcut excavation on Loma Vista Drive (Trench Site S-4) adjacent to Greystone Park, Beverly Hills. The faults in the Santa Monica slate contain sheared pre-Quaternary sandstone.

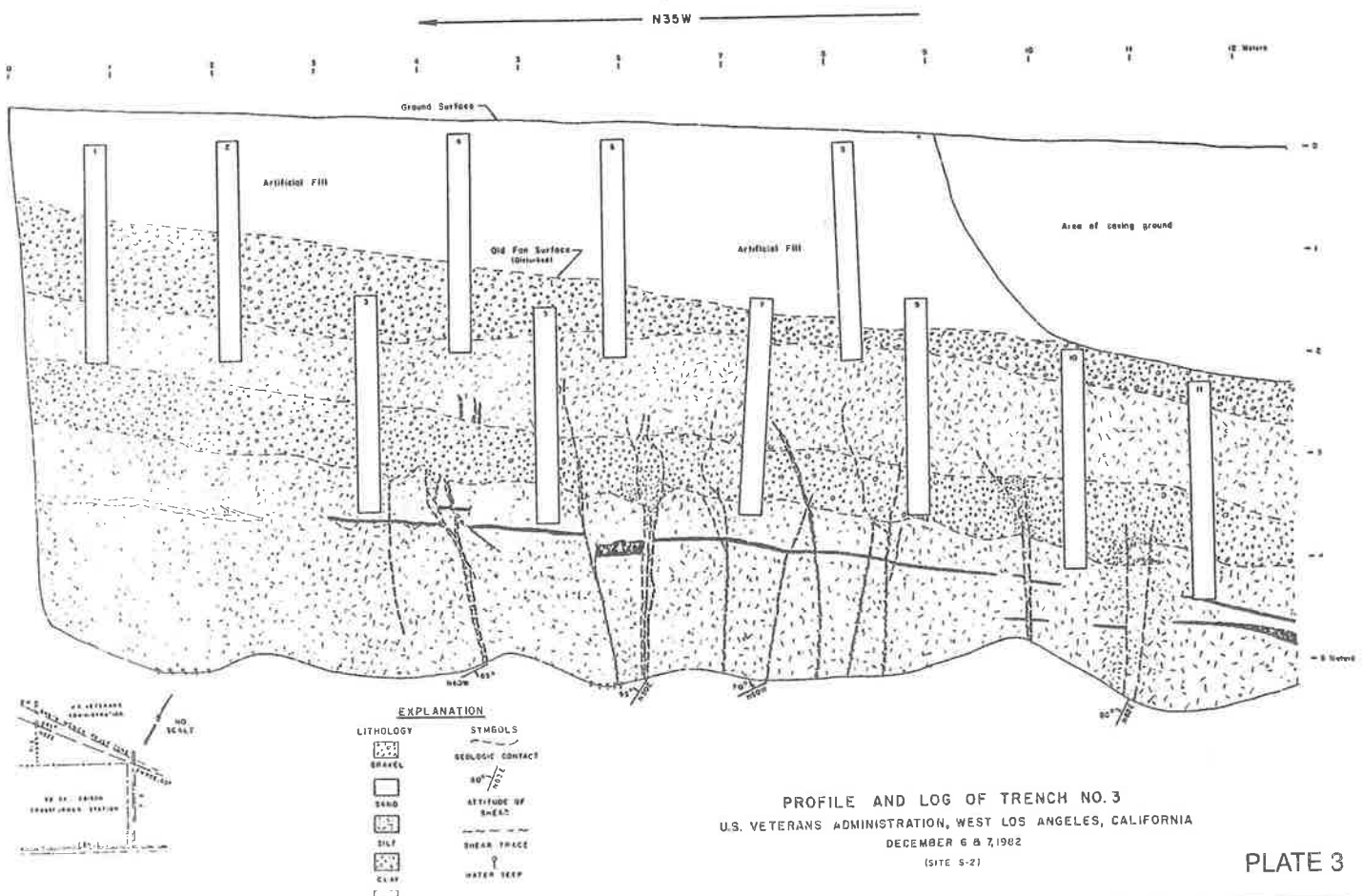


near the bottom of the trench could be found on both trench walls and they defined a strike of N 80 E. Other features include the apparent stepped configuration of some crude bedding and slight warping.

It should be noted that the above described features could suggest normal movement, down to the south, on south-dipping planes as well as north-dipping reverse-slip features.

The above described features are in the "older" alluvial fan whose buried surface appears to become coincident with the ground surface a short distance north of the trench. This fan surface is underlain by an argillic B horizon approximately 2.5-feet thick. Evidence for faulting could not be found within 6 feet of this surface although the massive, heterogeneous nature of the materials within this section might make such evidence difficult to recognize. The fan surface did not appear to be displaced but this could not be confirmed as the surface north of Shoring #27 looks to have been stripped prior to deposition of the overlying deposits. Additionally, the thickness of the argillic horizon did not appear to change above the faulted material.

Trench No. 3 (Plate 3) at this site was excavated approximately 145 feet west of Trench No. 2. The north end of the trench was excavated in the same "older" fan unit seen in Trench No. 2. These materials were crudely-bedded with gradational contacts and consisted of massive heterogeneous units of slightly clayey sand, silt, and silty, sandy gravel.



**PLATE 3**

The lower silt unit contained what appeared to be a burned paleo-fan surface with a peculiar reddish color not attributable to pedogenic processes. The "older" fan surface in this area is overlain by 3 to 6 feet of artificial fill.

Numerous features were exposed in this trench that are attributed to faulting although displacements did not appear to be substantial and were questionable in many instances. All of these features consisted of planar zones of gray, silty, sandy clay in contrast to the brown to yellow-brown silt and gravel units containing them. The thicker zones appeared to have been sheared but the thinner zones appeared to differ from the surrounding material only by color and grain-size distribution. All of these features have steep dips that vary from 80° north through vertical to 80° south.

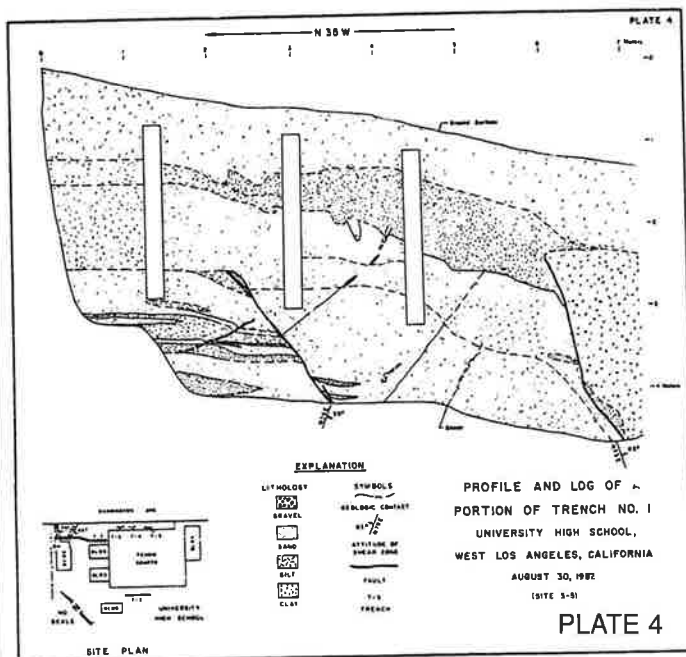
Only the zones beneath Shoring #4 and #6, and possibly the one north of Shoring #10, showed a relatively convincing component of vertical separation. As in Trench No. 2, these features appeared to stop short of the "older" fan surface, in this case by at least 2 feet, and maybe more, depending upon how much of the surface has been removed by erosion.

Although we are confident that the Santa Monica fault was exposed in both Trench No. 2 and No. 3, the geologic features on which we base this conclusion are less than ideal. There was certainly no clear evidence, for example, comparable to that seen in our 1976-78 trenches (Crook and others, 1987) on the Sierra Madre and Raymond faults. In fact, our strongest evidence is that the features attributed to faulting in both trenches lie on a N 80 to 85 E trend that coincides with the geomorphic expression of the scarp-like features through this area.

We propose that sharp, well-defined shears and offsets are lacking because the faulting recorded here occurred at a time when the deposits were far less consolidated than at present. Movement under these conditions would result in more of a mixing process along wide indistinct zones rather than shearing along narrow discrete planes. Similar features were noted in unconsolidated deposits exposed in trenches across some 1971 San Fernando earthquake breaks (Chapter 11 in Oakeshott, 1975; Proctor and others, 1972).

University High School, site S-5, Plate 4. A total of five trenches were excavated at this site and only Trench No. 1 exposed faulted material (Plate 4). This trench was 102 feet long, 9 to 12 feet deep and was excavated on the scarp-like feature crossing the school property.

Materials exposed in this trench varied considerably in grain-size distribution, and hence depositional environment, in the downslope direction. The upslope materials consisted of crudely-bedded to massive and heterogeneous sandy silt, silty clay and slightly clayey, silty, sandy gravel. These materials have the appearance of distal alluvial fan deposits.



These deposits are bound in the downslope direction by a fault that has juxtaposed against them a dark olive-gray to black, massive, heterogeneous, slightly sandy silty clay with scattered pebbles and cobbles. Depositional environment of this material is unknown but judging from the high clay content and color it may have been a sag pond.

Further downslope the dark clay unit grades into a fairly uniform brown, massive, clayey, sandy silt with scattered pebbles. This material has the appearance of colluvium that probably was derived from erosion of the fault scarp upslope. South of this trench this unit is overlain by relatively young, bedded fluvial deposits consisting of unconsolidated silt, sand and gravel.

Two well-defined south-dipping normal faults were exposed in the northernmost 22 feet of this trench, within and bounding the alluvial fan deposits (Plate 4). The northernmost fault is the most sharply defined and consists of a 1/4-inch thick clay layer that truncates several thin gravel and silt layers. It also appears to offset a small north-dipping fault and exhibits an apparent dip-slip component of 13 inches, down to the south. This fault appears to die out upward in a massive silty, sandy clay unit approximately 5 feet below the present ground surface.

The southernmost normal fault is less clearly defined and consists of an approximately 12-inch wide zone of sheared



clay and gravel. The materials on either side of this zone are significantly different suggesting considerably more displacement than on the northernmost fault. The apparent vertical component of displacement is down to the south as suggested by the sense of drag exhibited by depositional contacts in the footwall. Significant lateral slip is suggested by the total lack of similarity of units on either side of the fault. This fault also appears to die out upward approximately 4 feet below the present ground surface and within the central portion of a massive gravel bed; this was seen on both walls of the trench.

Three sub-parallel north-dipping features were exposed in the trench between the two south-dipping faults. Two of these features consist of gray colored streaks with no evidence of shearing or displacement. The third feature consists of a 1/8-inch thick clay layer that contains two thin pods of sand. At its upper end this layer widened to 1/2- to 3/4-inch and extends approximately 2.5 inches into the base of the gravel deposit that is faulted by the southernmost normal fault. No displacement was evident along this feature. Another sub-parallel feature, north of the northernmost normal fault, exhibited a minor amount of reverse displacement in the form of a deformed silt bed.

A peculiar occurrence noted in a portion of the trench is that of abundant calcium carbonate in the form of caliche. These deposits were found only filling pores in the matrix of the uppermost gravel deposit and fractures in the upper portion of the clay unit on the south side of the southernmost normal fault. Caliche was found nowhere else in this trench nor in the other trenches at University High School.

Charcoal was collected from a silty sand layer at depths of 3.5 and 5 feet in Trench No. 2 (log not included herein). Dates were determined by Beta Analytic, Inc., Coral Gables, Florida. The samples yielded radiocarbon dates of  $630 \pm 70$  (Beta-6110) years B.P. and  $380 \pm 130$  (Beta-6111) years B.P. respectively and are in conflict.

## 1981-83 BORINGS FOR L.A. METRO RAIL

Until 1990, the Southern California Rapid Transit District was the public agency designated to design and build a subway system for Los Angeles. During the period 1979-1984, the District convened an eight-person Board of Geotechnical Consultants to prepare an exploration program and to advise on anticipated geologic conditions for subway construction. The geologists on the Board were Ronald Heuer, Richard Jahns, Eric Lindvall and Richard Proctor. Several of the recommended exploratory borings for a proposed subway route along Cahuenga Boulevard have bracketed traces of the Hollywood fault north of Hollywood Boulevard (see Fig. 2). Boring #28 at the south encountered only Quaternary fluvial deposits to a total depth of 202 feet and boring #28A, 1,000 feet north, encountered Tertiary rock at a depth of 63 feet (Converse and others, 1981). The Hollywood fault has to lie

between these two borings. The Board recommended that additional borings be drilled to try to better define the fault location. In February 1983 boring #28B was drilled which encountered the fault as 10 feet of brecciated sandstone, alluvium and siltstone at a depth of 122 feet in a hole otherwise entirely in alluvium to a total depth of 205 feet. From the geologist's log, the breccia is described, from one 8-inch sample, as follows: "Mixed 1" to 2" masses, densely packed at skewed angles. 1. Sandstone fragments, angular, mottled light brown/dark yellowish-orange, fine to medium, cemented, massive. 2. Gravelly sand (1" gravel), light to mod. brown, well-graded, unconsolidated, very dense, with irregular dark reddish-brown stained masses. 3. Siltstone, grayish orange, at near-vertical angle, minor".

## PHYSIOGRAPHY AND AGE OF FAULTING

It appears that the Hollywood fault between Coldwater Canyon on the west and at least to Western Avenue on the east, lies at the break in slope at the south edge of the Santa Monica Mountains. We were unable to ascertain the recency of faulting. It does appear, however, from the steepness of the alluvial fan surfaces in this reach and the lack of significant drainage entrenchment on these surfaces that late Quaternary movement has occurred on this fault.

West of Coldwater Canyon the fan surfaces are older, highly dissected and entrenched, suggesting that the Hollywood fault in this area has not been so recently active, or as Hoots (1931) suggested, the deformation has been by folding rather than faulting. This geomorphic boundary between areas of differing geomorphology also coincides with a northwest projection of the Newport-Inglewood fault zone (Dolan and Sieh, 1991).

The Santa Monica fault through west Los Angeles is fairly well known at depth from oil well data (especially Wright, 1991). The surface expression is best defined by a 2.5-mile long stretch of scarp-like features between Stanford Street and Washington Avenue on the west, and Manning Avenue and Santa Monica Boulevard on the east. These features have the appearance of being relatively old, as compared to the Raymond fault scarp in Arcadia, San Marino and South Pasadena (Crook and others, 1987). Nevertheless, these features were the primary reason for trenching at both University High School and the U. S. Veterans Administration property. We were successful in finding faults at these sites. None of the Holocene fluvial deposits exposed in these trenches exhibited any faults or features attributable to seismic shaking, such as infilled lurch cracks or liquefaction structures.

One surprising feature of the Santa Monica fault is that no evidence was found that would confirm that it is a north-dipping reverse fault. This may be due to either the fact that we did not expose the main fault in any of our trenches and that the features we saw are antithetic faults above a thrust fault

(e.g., Avouac and others, 1992), or that the most recent movement has been predominantly strike-slip along high angle faults.

It might be argued that the scarp on the fan surface east of Potrero Canyon (Hoots, 1931; Hill, 1979) indicates Holocene movement on the Santa Monica fault. The age of the fan surface in that area, however, almost certainly is pre-Holocene.

Obviously a recurrence interval for the Santa Monica fault cannot be determined from our data. Our work also cannot prove Holocene movement on the on-shore portion of this fault, even though the geomorphic evidence suggests it.

## REFERENCES

- Allen, C. R. 1975, Geological criteria for evaluating seismicity: *Geological Society of America Bulletin*, vol. 86, p. 1041-1057.
- Avouac, P. P., Meyer, B., and Tapponnier, P., 1992, On the growth of normal faults and the existence of flats and ramps along the El Asnam active fold and thrust system: *Tectonics*, vol. 11, p. 1-11.
- Bonilla, M. G., Mark, R. K., and Lienkaemper, J. J., 1984, Statistical relations among earthquake magnitude, surface rupture length, and surface fault displacement: *Bull. Seismological Society of America*, vol. 74, no. 6, p. 2379-2441.
- Buika, J. A., and Teng, Ta-liang, 1978, Recent seismicity and fault-plane solutions of Santa Monica Mountains, Santa Monica Bay and northern Los Angeles basin, in *Geologic Guide and Engineering Geology Case Histories Los Angeles Metropolitan Area*, D. L. Lamar, Chairman; Association of Engineering Geologists First Annual California Sections Conference, p. 64-72.
- Chapman, R. H., and Chase, G. W., 1979, Geophysical investigation of the Santa Monica-Raymond fault zone, Los Angeles County, California, in *Earthquake hazards associated with faults in the greater Los Angeles Metropolitan Area*, Los Angeles County, California, including faults in the Santa Monica-Raymond, Verdugo-Eagle Rock, and Benedict Canyon fault zones: California Div. of Mines and Geology, OFR 76-16 LA, Chapter E, p. E-1 to E-30.
- Converse Consultants, Earth Sciences Associates and Geo/Resources Consultants, 1981, Metro Rail Project, Geotechnical Investigation: Report for Southern California Rapid Transit District, Los Angeles, California: Volumes I and II.
- Crook, R. Jr., Allen, C. R., Kamb, B., Payne, C. M., and Proctor, R. J., 1987, Quaternary geology and seismic hazard of the Sierra Madre and associated faults, western San Gabriel Mountains, California: U. S. Geological Survey Professional Paper 1339, p. 27-63, and 1978 California Institute of Technology, Contribution No. 3191.
- Davis, T. L., 1987, Subsurface study of the late Cenozoic structural geology of the Los Angeles Basin: USGS Open-File Report 87-374, p. 143-147.
- Davis, T. L., Namson, J., and Yerkes, R. F., 1989, A cross-section of the Los Angeles area: seismically active fold and thrust belt, the 1987 Whittier Narrows earthquake, and earthquake hazard: *Geophys. Res. vol. 94*, p. 9644-9664.
- Dibblee, T. W., Jr., 1991, *Geologic Map of the Beverly Hills and Van Nuys South Half Quadrangles*: Dibblee Geologic Foundation Map DF-31, P. O. Box 60560, Santa Barbara, CA 93160 (\$10.00).
- Dolan, J. F. and Sieh, K. E., 1991, Structural style and geomorphology of the Santa Monica-Hollywood fault system: Abstract in EOS (Transactions of Amer. Geophys. Union), vol. 72, p. 319-320.
- Durrell, Cordell, 1954, *Geology of the Santa Monica Mountains, Los Angeles and Ventura Counties*, in *Geology of southern California*: California Division of Mines Bulletin 170, Map Sheet 8.
- Elliott, J. L., 1951, *Geology of the eastern Santa Monica Mountains between Laurel Canyon and Beverly Glen Boulevards, Los Angeles County, California*: Unpublished Master's thesis, University of California, Los Angeles, 57 p.
- Ellsworth, W. L., Campbell, R. H., Hill, D. P., and others, 1973, Point Mugu, California, earthquake of 21 February 1973, and its aftershocks: *Science*, vol. 182, p. 1127-1129.
- Erickson, R. C., and Spaulding, A. O., 1975, Urban oil production and subsidence control — a case history, Beverly Hills (east) oil field, California: Society of Petroleum Engineers of the American Institute of Mining, metallurgical and Petroleum Engineers Paper No. SPE 5603, 13 p.
- Hauksson, E., 1990, Earthquakes, faulting and stress in the Los Angeles basin: *J. of Geophys. Res.*, vol. 95, p. 15,365-15,394.
- Hauksson, E., and Jones, L. M., 1989, The 1987 Whittier Narrows earthquake sequence in Los Angeles, southern California: seismological and tectonic analysis: *J. of Geophys. Res.* vol. 94, p. 9569-9589.
- Hauksson, E., and Jones, L. M., 1991, The 1988 and 1990 Upland earthquakes: left-lateral faulting adjacent to the central Transverse Ranges: *J. of Geophys. Res.* vol. 96, p. 8143-8165.
- Hauksson, E., and Saldívar, G. V., 1986, The 1930 Santa Monica and the 1979 Malibu earthquakes: *Bull. Seismological Society of America*, vol. 76, no. 6.
- Hill, R. L., 1979, Potrero Canyon fault and University High School escarpment, in *Field Guide to Selected Engineering Geologic Features, Santa Monica Mountains*, J. R. Keaton, Chairman: Association of Engineering Geologists, Southern California Section, Annual Field Trip, Map 19, p. 83-103.
- Hill, R. L., Sprotte, E. C., Chapman, R. W., and 6 others, 1979, Earthquake hazards associated with faults in the greater Los Angeles metropolitan area, Los Angeles County, California, including faults in the Santa Monica-Raymond, Verdugo-Eagle Rock, and Benedict Canyon fault zones: California Division of Mines and Geology Open File Report 79-16LA, 201 p., 2 plates.
- Hill, R. L., Slade, R. C., Sprotte, E. C., and Bennett, J. H., 1978, Location and activity assessment of the Santa Monica fault, Beverly Hills-Hollywood area, California: in *Geologic Guide and Engineering Geology Case Histories Los Angeles area*, D. L. Lamar, Chairman: AEG First Annual California Sections Conference, Los Angeles, p. 167-174.
- Hoots, H. W., 1931, *Geology of the eastern part of the Santa Monica Mountains, Los Angeles County, California*: U. S. Geological Survey Professional Paper 165-C, p. 83-134.
- Hummon, C., Schneider, C. L. and Yeats, R. S., 1992, late Quaternary deformation of late Pleistocene marine gravels in the northern Los Angeles basin: Abstract, Cordilleran Section Mtg., Geol. Soc. Am., Eugene, OR.
- Jacobson, J. B., and Lindblom, R. G., 1977, Timing - geological and governmental - in urban oil development, Los Angeles, California: *Oil and Gas Journal*, vol. 75, no. 6, p. 160-176.
- Johnson, H. R., 1932, Folio of plates to accompany geologic report, Quelinda Estate: Unpublished report containing 25 plates including annotated photographs, resistivity survey data, geologic maps and palinspastic cross-sections illustrating the geologic history of the Pacific Palisades area.
- Knapp, R. R., Traxler, J. D., Newhill, T. J., Laughlin, D. J., Stewart, R. D., Heath, E. G., Stark, H. E., Wissler, S. G., and Holman, W. H., 1962, Cenozoic correlation sections across the Los Angeles basin from Beverly Hills to Newport, California: American Association of Petroleum Geologists, Pacific Section, scale 1 inch to 1,000 feet vertical, and 1 inch to 5,000 horizontal.
- Lamar, D. L., 1975, Relationship between Hollywood and Raymond Hill faults: Association of Engineering Geologists, Field trip guidebook, John W. Byer, Chairman, Los Angeles, p. 44-45.
- Long, H. R., and Dreesen, R. S., 1975, Subsurface structure of the northwestern Los Angeles basin: California Division of Oil and Gas Technical Papers Report No. TP01, p. 15-21.
- Oakeshott, G., (ed.) 1975, San Fernando, California, earthquake of 9 February 1971: Bulletin 196, California Division of Mines and Geology, 463 p.
- Proctor, R. J., Crook, R. Jr., McKeown, M. H., and Moresco, R. L., 1972, Relation of known faults to surface ruptures, 1971 San Fernando earthquake, southern California: *Geological Society of America Bulletin*, vol. 83, p. 1601-1618.

Rzonca, G. F., H. A. Spellman, E. W. Fall and R. J. Shelmon, 1991, Holocene displacement of the Malibu Coast fault zone, Winter Mesa, Malibu, CA: engineering geologic implications: *Bull. Assoc. Engineering Geologists*, vol. 28, no. 2, p. 147-158.

Weber, F. H., Bennett, J. H., Chapman, R. H., and others, 1980, Earthquake hazards associated with the Verdugo-Eagle Rock and Benedict Canyon fault zones, Los Angeles County, California: California Division of Mines and Geology Open File Report 80-1OLA, 166 p., 4 plates.

Wright, T. L., 1991, Structural geology and tectonic evolution of the Los Angeles Basin: in Biddle, K. T. (ed.) *Active Margin Basins*, American Assoc. Petroleum Geologists Memoir 52, Chapter 3.

Yerkes, R. F., and Lee, W. H. K., 1979a, Late Quaternary deformation in the western Transverse Ranges of California: U. S. Geological Survey Circular 799-B, p. 27-37.

Yerkes, R. F., and Lee, W. H. K., 1979b, Faults, fault activity, epicenters, focal depths, focal mechanisms, 1970-1975 earthquakes, western Transverse Ranges, California: U. S. Geological Survey, Map MF 1032.

Ziony, J. I. (ed.), 1985, Evaluating Earthquake Hazards in the Los Angeles Region: U. S. Geological Survey Professional Paper 1360, 505 p.

Ziony, J. I., and L. M. Jones, 1989, Map showing late Quaternary faults and 1978-84 seismicity of the Los Angeles region, California: U. S. Geological Survey Map MF-1964.

Attachment 11





# MAP EXPLANATION

## Potentially Active Faults

Faults considered to have been active during Holocene time and to have a relatively high potential for surface rupture, solid line where accurately located, long dash where approximately located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by creep or possible creep.

## Special Studies Zone Boundaries

- These are delineated as straight-line segments that connect encircled turning points so as to define special studies zone segments.
- Seaward projection of zone boundary.

## STATE OF CALIFORNIA SPECIAL STUDIES ZONES

Delineated in compliance with  
Chapter 7.5, Division 2 of the California Public Resources Code  
(Alquist-Priolo Special Studies Zones Act)

## HOLLYWOOD QUADRANGLE

## REVISED OFFICIAL MAP

Effective: July 1, 1986

*James F. Davis* State Geologist

## REFERENCES USED TO COMPILE FAULT DATA

- Hollywood Quadrangle
- Bryant, R.A., 1965, Western Newport-Inglewood fault zone, Los Angeles County, California: Division of Mines and Geology, Fault Evaluation Report (FAR-23) (unpublished).
- Castle, R.O. and Burke, R.P., 1976, Recent surface movements on the Baldwin Hills, Los Angeles County, California: U.S. Geological Survey Professional Paper 882, 123 p., 4 plates, scale 1:12,500.
- For additional information on faults in this map area, the information used for locating and additional references obtained, refer to unpublished Fault Evaluation Reports on file at the DMR office in Pleasant Hill.

## IMPORTANT - PLEASE NOTE

- This map may not show all faults that have the potential for surface fault rupture, either within the special studies zones or outside their boundaries.
- Faults shown are the basis for establishing the boundaries of the special studies zones.
- The identification and location of these faults are based on the best available data. However, the quality of data used is varied. Traces have been drawn as accurately as possible at this map scale.
- Fault information on this map is not sufficient to serve as a substitute for the geologic site investigations (special studies) required under Chapter 7.5 of Division 2 of the California Public Resources Code.



Attachment 12



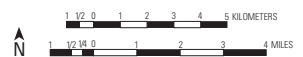
**SAFETY ELEMENT EXHIBIT A**  
**Alquist-Priolo Special Study Zones**  
**& Fault Rupture Study Areas**  
**In the City of Los Angeles**

- Alquist-Priolo Special Study Zone Areas
- Fault Rupture Study Areas

**NOTES**  
 The Safety Element seismic and landslide exhibits, along with any official geologic or seismic hazard maps prepared by the State Geologist and any other potential hazard areas identified by the City Building Safety Department are used in determining if additional soils and geology reports should be prepared to help assess potential hazards and mitigations, as a part of the development permit process.

Sources: California Environmental Impact Report, Framework Element, Los Angeles City General Plan, May 1995; California Environmental Quality Act of 1970 (CEQA), Public Resources Code 21000 as amended 1992; Alquist-Priolo Special Study Zone Act, Public Resources Code 2621-2630 and 2690-2699.6 as amended 1993; State of California Special Studies Zone maps for the following USGS quadrangles: San Fernando (1-1-76) San Fernando (1-1-79), Sunland (1-1-79), Burbank (1-1-79), Beverly Hills (6-1-86), Hollywood (6-1-86), Los Angeles (1-1-77), Inglewood (6-1-88), Torrance (6-1-86), Long Beach (6-1-86), as prepared by the State Geologist pursuant to the Alquist-Priolo Special Study Zones Act, City of Los Angeles Seismic Safety Plan Element of the General Plan Council file 74-3461, September 10, 1975.

Prepared by the General Plan Framework Section • City of Los Angeles Planning Department • Citywide Graphics • March 1994 • Council File No. 89-2104



Attachment 13



# City of Los Angeles Department of City Planning

7/9/2013

## PARCEL PROFILE REPORT

### PROPERTY ADDRESSES

None

### ZIP CODES

None

### RECENT ACTIVITY

CPC-2013-103-DA

Adaptive Reuse Incentive Spec. Plan-  
Ord 175038

Hollywood Signage SUD

CPC-2008-3440-ZC-CUB-CU-ZV-HD

### CASE NUMBERS

CPC-2007-5866-SN

CPC-2005-6082-CPU

CPC-2003-2115-CRA

CPC-2002-4173-SUD

CPC-1999-324-ICO

CPC-1999-2293-ICO

CPC-1997-43-CPU

CPC-1986-835-GPC

ORD-182173-SA4:3

ORD-176172

ORD-173562

ORD-165659-SA180

VTT-71837-CN

ENV-2011-675-EIR

ENV-2005-2158-EIR

ENV-2003-1377-MND

### Address/Legal Information

PIN Number	150A187 363
Lot/Parcel Area (Calculated)	848.6 (sq ft)
Thomas Brothers Grid	PAGE 593 - GRID F4
Assessor Parcel No. (APN)	5546004032
Tract	HOLLYWOOD
Map Reference	M R 28-59/60
Block	21
Lot	FR 1
Arb (Lot Cut Reference)	None
Map Sheet	150A187

### Jurisdictional Information

Community Plan Area	Hollywood
Area Planning Commission	Central
Neighborhood Council	Hollywood United
Council District	CD 13 - Mitch O'Farrell
Census Tract #	1902.01
LADBS District Office	Los Angeles Metro

### Planning and Zoning Information

Special Notes	None
Zoning	[Q]C4-2D-SN
Zoning Information (ZI)	ZI-2374 LOS ANGELES STATE ENTERPRISE ZONE ZI-2331 Hollywood Signage Supplemental Use District (CRA Area) ZI-2423 Hollywood Community Plan Update ZI-2427 Freeway Adjacent Advisory Notice for Sensitive Uses ZI-2277 Hollywood Redevelopment Project ZI-1352 Hollywood Redevelopment Project
General Plan Land Use	Regional Center Commercial
General Plan Footnote(s)	Yes
Hillside Area (Zoning Code)	No
Baseline Hillside Ordinance	No
Baseline Mansionization Ordinance	No
Specific Plan Area	None
Special Land Use / Zoning	None
Design Review Board	No
Historic Preservation Review	Yes
Historic Preservation Overlay Zone	None
Other Historic Designations	None
Other Historic Survey Information	None
Mills Act Contract	None
POD - Pedestrian Oriented Districts	None
CDO - Community Design Overlay	None
NSO - Neighborhood Stabilization Overlay	No
Streetscape	No
Sign District	Hollywood Signage Supplemental Use District (CRA Area)
Adaptive Reuse Incentive Area	Adaptive Reuse Incentive Areas Specific Plan
CRA - Community Redevelopment Agency	Hollywood Redevelopment Project

Central City Parking	No
Downtown Parking	No
Building Line	None
500 Ft School Zone	No
500 Ft Park Zone	No

#### Assessor Information

Assessor Parcel No. (APN)	5546004032
APN Area (Co. Public Works)*	0.002 (ac)
Use Code	300V - Vacant Land (Industrial)
Assessed Land Val.	\$42,685
Assessed Improvement Val.	\$0
Last Owner Change	12/31/86
Last Sale Amount	\$162,001
Tax Rate Area	200
Deed Ref No. (City Clerk)	5-821
	369943
	360417
	1854536
	1430463
Building 1	No data for building 1
Building 2	No data for building 2
Building 3	No data for building 3
Building 4	No data for building 4
Building 5	No data for building 5

#### Additional Information

Airport Hazard	None
Coastal Zone	None
Farmland	Area Not Mapped
Very High Fire Hazard Severity Zone	No
Fire District No. 1	Yes
Flood Zone	None
Watercourse	No
Hazardous Waste / Border Zone Properties	No
Methane Hazard Site	None
High Wind Velocity Areas	No
Special Grading Area (BOE Basic Grid Map A-13372)	Yes
Oil Wells	None

#### Seismic Hazards

##### Active Fault Near-Source Zone

Nearest Fault (Distance in km)	0.4759769
Nearest Fault (Name)	Hollywood Fault
Region	Transverse Ranges and Los Angeles Basin
Fault Type	B
Slip Rate (mm/year)	1
Slip Geometry	Left Lateral - Reverse - Oblique
Slip Type	Poorly Constrained
Down Dip Width (km)	14
Rupture Top	0
Rupture Bottom	13
Dip Angle (degrees)	70
Maximum Magnitude	6.4
Alquist-Priolo Fault Zone	No
Landslide	No
Liquefaction	No

This report is subject to the terms and conditions as set forth on the website. For more details, please refer to the terms and conditions at [zimas.lacity.org](http://zimas.lacity.org)  
 (\*) - APN Area is provided "as is" from the Los Angeles County's Public Works, Flood Control, Benefit Assessment.

Tsunami Inundation Zone	No
-------------------------	----

#### **Economic Development Areas**

Business Improvement District	HOLLYWOOD ENTERTAINMENT DISTRICT
Renewal Community	No
Revitalization Zone	Central City
State Enterprise Zone	LOS ANGELES STATE ENTERPRISE ZONE
State Enterprise Zone Adjacency	No
Targeted Neighborhood Initiative	None

#### **Public Safety**

##### **Police Information**

Bureau	West
Division / Station	Hollywood
Reporting District	636

##### **Fire Information**

Division	3
Batallion	5
District / Fire Station	27
Red Flag Restricted Parking	No



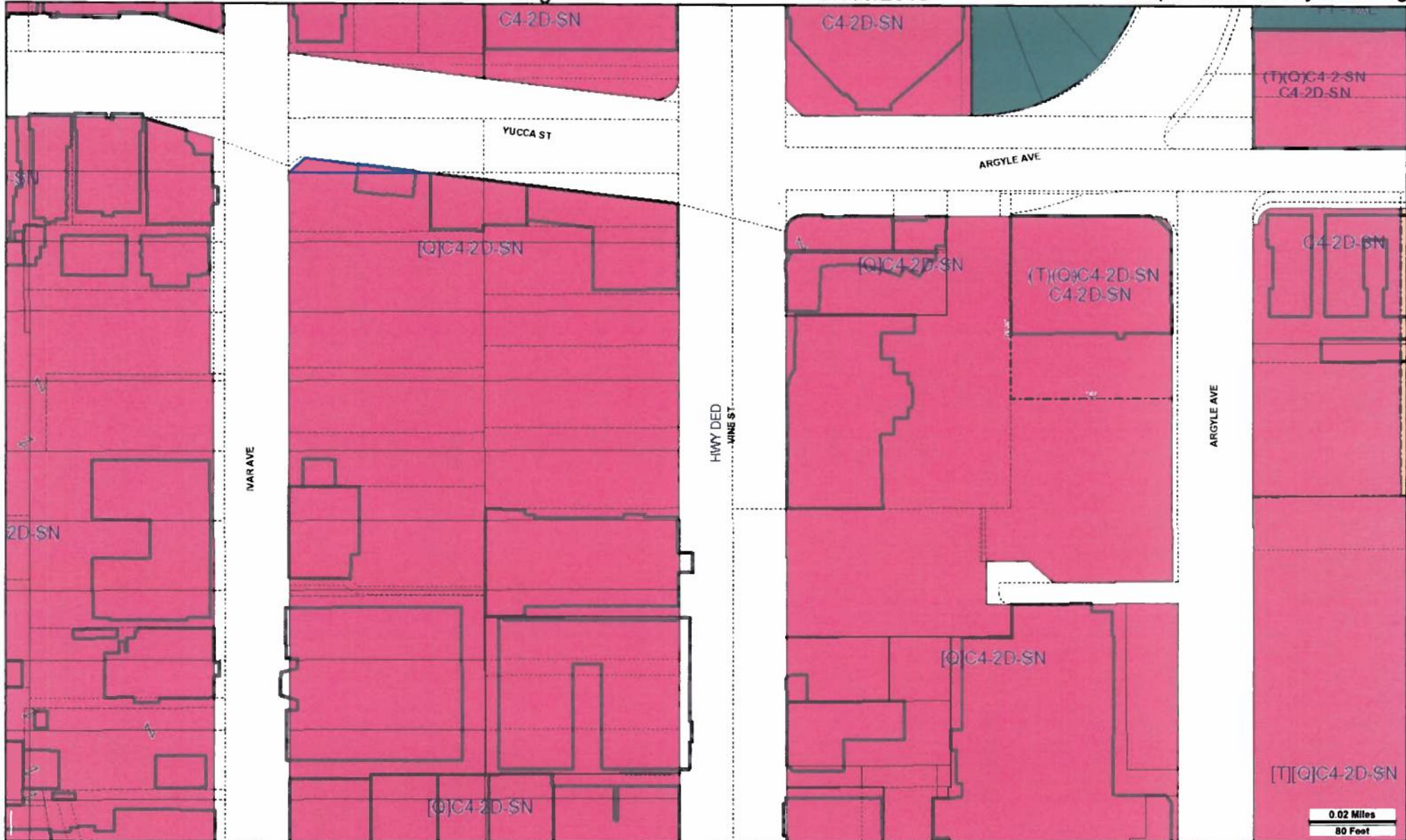
## CASE SUMMARIES

Note: Information for case summaries is retrieved from the Planning Department's Plan Case Tracking System (PCTS) database.

Case Number:	CPC-2007-5866-SN
Required Action(s):	SN-SIGN DISTRICT
Project Descriptions(s):	HOLLYWOOD SIGN SUD AMENDMENT
Case Number:	CPC-2005-6082-CPU
Required Action(s):	CPU-COMMUNITY PLAN UPDATE
Project Descriptions(s):	Data Not Available
Case Number:	CPC-2003-2115-CRA
Required Action(s):	CRA-COMMUNITY REDEVELOPMENT AGENCY
Project Descriptions(s):	First Amendment to the Hollywood Redevelopment Plan
Case Number:	CPC-2002-4173-SUD
Required Action(s):	SUD-SUPPLEMENTAL USE DISTRICT ("K" DIST., "O" DISTRICT, ETC.)
Project Descriptions(s):	Data Not Available
Case Number:	CPC-1999-324-ICO
Required Action(s):	ICO-INTERIM CONTROL ORDINANCE
Project Descriptions(s):	
Case Number:	CPC-1999-2293-ICO
Required Action(s):	ICO-INTERIM CONTROL ORDINANCE
Project Descriptions(s):	INTERIM CONTROL ORDINANCE.
Case Number:	CPC-1997-43-CPU
Required Action(s):	CPU-COMMUNITY PLAN UPDATE
Project Descriptions(s):	COMMUNITY PLAN UPDATE FOR HOLLYWOOD WHICH IDENTIFIES AND REDEFINES OUTDATED LAND USE ISSUES AND INCONSISTENT ZONING, REVIEWS POLICIES AND PROGRAMS, AS WELL AS REVISING AND UPDATING THE PLAN MAP AND TEXT
Case Number:	CPC-1986-835-GPC
Required Action(s):	GPC-GENERAL PLAN/ZONING CONSISTENCY (AB283)
Project Descriptions(s):	PLAN AMENDMENTS AND ZONE CHANGES FOR THE HOLLYWOOD COMMUNITY PLAN REVISION/ZONING CONSISTENCY PROGRAM
Case Number:	VTT-71837-CN
Required Action(s):	CN-NEW CONDOMINIUMS
Project Descriptions(s):	
Case Number:	ENV-2011-675-EIR
Required Action(s):	EIR-ENVIRONMENTAL IMPACT REPORT
Project Descriptions(s):	MIXED USE OFFICE, HOTEL, COMMERCIAL, RESIDENTIAL ZONE CHANGE, HEIGHT DISTRICT CHANGE, CONDITIONAL USE ALCOHOLIC BEVERAGE (GLOBAL LICENSE), SUBTERRANEAN AND ABOVE GRADE PARKING, PARKING VARIANCE, VARIANCE FOR ABOVE GROUND PATIO ALCOHOLIC BEVERAGE SERVICE.
Case Number:	ENV-2005-2158-EIR
Required Action(s):	EIR-ENVIRONMENTAL IMPACT REPORT
Project Descriptions(s):	COMMUNITY PLAN UPDATE FOR HOLLYWOOD WHICH IDENTIFIES AND REDEFINES OUTDATED LAND USE ISSUES AND INCONSISTENT ZONING, REVIEWS POLICIES AND PROGRAMS, AS WELL AS REVISING AND UPDATING THE PLAN MAP AND TEXT
Case Number:	ENV-2003-1377-MND
Required Action(s):	MND-MITIGATED NEGATIVE DECLARATION
Project Descriptions(s):	

## DATA NOT AVAILABLE

ORD-182173-SA4:3  
ORD-176172  
ORD-173562  
ORD-165659-SA180



Address: undefined  
APN: 5546004032  
PIN #: 150A187 363

Tract: HOLLYWOOD  
Block: 21  
Lot: FR 1  
Arb: None

Zoning: [Q]C4-2D-SN  
General Plan: Regional Center Commercial





# LEGEND

## GENERALIZED ZONING

- OS
- A, RA
- RE, RS, R1, RU, RZ, RW1
- R2, RD, RMP, RW2, R3, R4, R5
- CR, C1, C1.5, C2, C4, C5, CW, ADP, LASED, CEC, USC
- CM, MR, WC, CCS, M1, M2, M3, SL
- P, PB
- PF
- HILLSIDE

## GENERAL PLAN LAND USE

### LAND USE

#### RESIDENTIAL

- Minimum Residential
- Very Low / Very Low I Residential
- Very Low II Residential
- Low / Low I Residential
- Low II Residential
- Low Medium / Low Medium I Residential
- Low Medium II Residential
- Medium Residential
- High Medium Residential
- High Density Residential
- Very High Medium Residential

#### COMMERCIAL

- Limited Commercial
- Limited Commercial - Mixed Medium Residential
- Highway Oriented Commercial
- Highway Oriented and Limited Commercial
- Highway Oriented Commercial - Mixed Medium Residential
- Neighborhood Office Commercial
- Community Commercial
- Community Commercial -Mixed High Residential
- Regional Center Commercial

### FRAMEWORK

#### COMMERCIAL

- Neighborhood Commercial
- General Commercial
- Community Commercial
- Regional Mixed Commercial

#### INDUSTRIAL

- Commercial Manufacturing
- Limited Manufacturing
- Light Manufacturing
- Heavy Manufacturing

#### PARKING

- Parking Buffer

#### PORT OF LOS ANGELES

- General / Bulk Cargo - Non Hazardous (Industrial / Commercial)
- General / Bulk Cargo - Hazard
- Commercial Fishing
- Recreation and Commercial
- Intermodal Container Transfer Facility Site

#### LOS ANGELES INTERNATIONAL AIRPORT

- Airport Landside
- Airport Airside
- Airport Northside

#### OPEN SPACE / PUBLIC FACILITIES

- Open Space
- Public / Open Space
- Public / Quasi-Public Open Space
- Other Public Open Space
- Public Facilities

#### INDUSTRIAL

- Limited Industrial
- Light Industrial



# City of Los Angeles Department of City Planning

7/9/2013

## PARCEL PROFILE REPORT

### PROPERTY ADDRESSES

1730 N VINE ST

### ZIP CODES

90028

### RECENT ACTIVITY

CPC-2013-103-DA

### CASE NUMBERS

CPC-2007-5866-SN  
CPC-2005-6082-CPU  
CPC-2003-2115-CRA  
CPC-2002-4173-SUD  
CPC-1999-324-ICO  
CPC-1999-2293-ICO  
CPC-1997-43-CPU  
CPC-1986-835-GPC  
ORD-182173-SA4:3  
ORD-176172  
ORD-173562  
ORD-165659-SA180  
ZA-9658  
ZA-4720  
ZA-4647  
ZA-2908  
ZA-12951  
YD-2870  
AA-2000-5027-COC  
VTT-71837-CN  
AA-2001-1814-COC  
AA-2000-5025-COC  
ENV-2011-675-EIR  
ENV-2005-2158-EIR  
ENV-2003-1377-MND  
AF-95-853223-MB  
AF-01-1243919  
AF-01-0528740  
AF-01-0390387  
PRIOR-07/29/1962

### Address/Legal Information

PIN Number	148-5A189 349
Lot/Parcel Area (Calculated)	22,893.6 (sq ft)
Thomas Brothers Grid	PAGE 593 - GRID F4
Assessor Parcel No. (APN)	5546030034
Tract	TR 18237
Map Reference	M B 529-10/11
Block	None
Lot	LT 1
Arb (Lot Cut Reference)	4
Map Sheet	148-5A189

### Jurisdictional Information

Community Plan Area	Hollywood
Area Planning Commission	Central
Neighborhood Council	Hollywood United
Council District	CD 13 - Mitch O'Farrell
Census Tract #	1910.00
LADBS District Office	Los Angeles Metro

### Planning and Zoning Information

Special Notes	None
Zoning	[Q]C4-2D-SN
Zoning Information (ZI)	ZI-2374 LOS ANGELES STATE ENTERPRISE ZONE ZI-2331 Hollywood Signage Supplemental Use District (CRA Area) ZI-1352 Hollywood Redevelopment Project ZI-2277 Hollywood Redevelopment Project ZI-1812 ZI-2427 Freeway Adjacent Advisory Notice for Sensitive Uses ZI-2423 Hollywood Community Plan Update
General Plan Land Use	Regional Center Commercial
General Plan Footnote(s)	Yes
Hillside Area (Zoning Code)	No
Baseline Hillside Ordinance	No
Baseline Mansionization Ordinance	No
Specific Plan Area	None
Special Land Use / Zoning	None
Design Review Board	No
Historic Preservation Review	Yes
Historic Preservation Overlay Zone	None
Other Historic Designations	None
Other Historic Survey Information	None
Mills Act Contract	None
POD - Pedestrian Oriented Districts	None
CDO - Community Design Overlay	None
NSO - Neighborhood Stabilization Overlay	No
Streetscape	No
Sign District	Hollywood Signage Supplemental Use District (CRA Area)
Adaptive Reuse Incentive Area	Adaptive Reuse Incentive Areas Specific Plan

CRA - Community Redevelopment Agency	Hollywood Redevelopment Project
Central City Parking	No
Downtown Parking	No
Building Line	None
500 Ft School Zone	No
500 Ft Park Zone	No

#### Assessor Information

Assessor Parcel No. (APN)	5546030034
APN Area (Co. Public Works)*	0.737 (ac)
Use Code	2700 - Parking Lot (Patron or Employee)
Assessed Land Val.	\$9,799,000
Assessed Improvement Val.	\$1,000
Last Owner Change	02/12/07
Last Sale Amount	\$12,000,120
Tax Rate Area	200
Deed Ref No. (City Clerk)	9-378
	727375
	586543
	528739;41
	528739, 41
	4-904
	3179-80
	310419
	299138-44
	2798631
	2713045
	2592142
	2515425
	2515424-5
	230626
	2071235
	1406965-68
	1246

#### Building 1

Year Built	1938
Building Class	CX
Number of Units	0
Number of Bedrooms	0
Number of Bathrooms	0
Building Square Footage	453.0 (sq ft)

Building 2	No data for building 2
Building 3	No data for building 3
Building 4	No data for building 4
Building 5	No data for building 5

#### Additional Information

Airport Hazard	None
Coastal Zone	None
Farmland	Area Not Mapped
Very High Fire Hazard Severity Zone	No
Fire District No. 1	Yes
Flood Zone	None
Watercourse	No
Hazardous Waste / Border Zone Properties	No
Methane Hazard Site	None
High Wind Velocity Areas	No

This report is subject to the terms and conditions as set forth on the website. For more details, please refer to the terms and conditions at [zimas.lacity.org](http://zimas.lacity.org)  
 (\*) - APN Area is provided "as is" from the Los Angeles County's Public Works, Flood Control, Benefit Assessment.



Special Grading Area (BOE Basic Grid Map A-13372) Yes

Oil Wells None

#### Seismic Hazards

##### Active Fault Near-Source Zone

Nearest Fault (Distance in km)	0.6044922
Nearest Fault (Name)	Hollywood Fault
Region	Transverse Ranges and Los Angeles Basin
Fault Type	B
Slip Rate (mm/year)	1
Slip Geometry	Left Lateral - Reverse - Oblique
Slip Type	Poorly Constrained
Down Dip Width (km)	14
Rupture Top	0
Rupture Bottom	13
Dip Angle (degrees)	70
Maximum Magnitude	6.4

Alquist-Priolo Fault Zone No

Landslide No

Liquefaction No

Tsunami Inundation Zone No

#### Economic Development Areas

Business Improvement District	HOLLYWOOD ENTERTAINMENT DISTRICT
Renewal Community	No
Revitalization Zone	Central City
State Enterprise Zone	LOS ANGELES STATE ENTERPRISE ZONE
State Enterprise Zone Adjacency	No
Targeted Neighborhood Initiative	None

#### Public Safety

##### Police Information

Bureau	West
Division / Station	Hollywood
Reporting District	637

##### Fire Information

Division	3
Battalion	5
District / Fire Station	82
Red Flag Restricted Parking	No

## CASE SUMMARIES

Note: Information for case summaries is retrieved from the Planning Department's Plan Case Tracking System (PCTS) database.

Case Number:	CPC-2007-5866-SN
Required Action(s):	SN-SIGN DISTRICT
Project Descriptions(s):	HOLLYWOOD SIGN SUD AMENDMENT
Case Number:	CPC-2005-6082-CPU
Required Action(s):	CPU-COMMUNITY PLAN UPDATE
Project Descriptions(s):	Data Not Available
Case Number:	CPC-2003-2115-CRA
Required Action(s):	CRA-COMMUNITY REDEVELOPMENT AGENCY
Project Descriptions(s):	First Amendment to the Hollywood Redevelopment Plan
Case Number:	CPC-2002-4173-SUD
Required Action(s):	SUD-SUPPLEMENTAL USE DISTRICT ("K" DIST., "O" DISTRICT, ETC.)
Project Descriptions(s):	Data Not Available
Case Number:	CPC-1999-324-ICO
Required Action(s):	ICO-INTERIM CONTROL ORDINANCE
Project Descriptions(s):	
Case Number:	CPC-1999-2293-ICO
Required Action(s):	ICO-INTERIM CONTROL ORDINANCE
Project Descriptions(s):	INTERIM CONTROL ORDINANCE.
Case Number:	CPC-1997-43-CPU
Required Action(s):	CPU-COMMUNITY PLAN UPDATE
Project Descriptions(s):	COMMUNITY PLAN UPDATE FOR HOLLYWOOD WHICH IDENTIFIES AND REDEFINES OUTDATED LAND USE ISSUES AND INCONSISTENT ZONING, REVIEWS POLICIES AND PROGRAMS, AS WELL AS REVISING AND UPDATING THE PLAN MAP AND TEXT
Case Number:	CPC-1986-835-GPC
Required Action(s):	GPC-GENERAL PLAN/ZONING CONSISTENCY (AB283)
Project Descriptions(s):	PLAN AMENDMENTS AND ZONE CHANGES FOR THE HOLLYWOOD COMMUNITY PLAN REVISION/ZONING CONSISTENCY PROGRAM
Case Number:	AA-2000-5027-COC
Required Action(s):	COC-CERTIFICATE OF COMPLIANCE
Project Descriptions(s):	
Case Number:	VTT-71837-CN
Required Action(s):	CN-NEW CONDOMINIUMS
Project Descriptions(s):	
Case Number:	AA-2001-1814-COC
Required Action(s):	COC-CERTIFICATE OF COMPLIANCE
Project Descriptions(s):	
Case Number:	AA-2000-5025-COC
Required Action(s):	COC-CERTIFICATE OF COMPLIANCE
Project Descriptions(s):	VESTING TENTATIVE MAP FOR A MIXED-USE DEVELOPMENT, INCLUDING 95-RESIDENTIAL CONDOMINIUMS AND 10-COMMERCIAL CONDOMINIUMS ON 0.58 ACRES OF LAND WITHIN THE C4-2D ZONE.
Case Number:	ENV-2011-675-EIR
Required Action(s):	EIR-ENVIRONMENTAL IMPACT REPORT
Project Descriptions(s):	MIXED USE OFFICE, HOTEL, COMMERCIAL, RESIDENTIAL ZONE CHANGE, HEIGHT DISTRICT CHANGE, CONDITIONAL USE ALCOHOLIC BEVERAGE (GLOBAL LICENSE), SUBTERRANEAN AND ABOVE GRADE PARKING, PARKING VARIANCE, VARIANCE FOR ABOVE GROUND PATIO ALCOHOLIC BEVERAGE SERVICE.
Case Number:	ENV-2005-2158-EIR
Required Action(s):	EIR-ENVIRONMENTAL IMPACT REPORT
Project Descriptions(s):	COMMUNITY PLAN UPDATE FOR HOLLYWOOD WHICH IDENTIFIES AND REDEFINES OUTDATED LAND USE ISSUES AND INCONSISTENT ZONING, REVIEWS POLICIES AND PROGRAMS, AS WELL AS REVISING AND UPDATING THE PLAN MAP AND TEXT
Case Number:	ENV-2003-1377-MND
Required Action(s):	MND-MITIGATED NEGATIVE DECLARATION
Project Descriptions(s):	

## DATA NOT AVAILABLE

This report is subject to the terms and conditions as set forth on the website. For more details, please refer to the terms and conditions at [zimas.lacity.org](http://zimas.lacity.org)  
 (\*) - APN Area is provided "as is" from the Los Angeles County's Public Works, Flood Control, Benefit Assessment.

ORD-182173-SA4:3  
ORD-176172  
ORD-173562  
ORD-165659-SA180  
ZA-9658  
ZA-4720  
ZA-4647  
ZA-2908  
ZA-12951  
YD-2870  
AF-95-853223-MB  
AF-01-1243919  
AF-01-0528740  
AF-01-0390387  
PRIOR-07/29/1962





Address: 1730 N VINE ST

APN: 5546030034

PIN #: 148-5A189 349

Tract: TR 18237

Block: None

Lot: LT 1

Arb: 4

Zoning: [Q]C4-2D-SN

General Plan: Regional Center Commercial



# LEGEND

## GENERALIZED ZONING

- OS
- A, RA
- RE, RS, R1, RU, RZ, RW1
- R2, RD, RMP, RW2, R3, R4, R5
- CR, C1, C1.5, C2, C4, C5, CW, ADP, LASED, CEC, USC
- CM, MR, WC, CCS, M1, M2, M3, SL
- P, PB
- PF
- HILLSIDE

## GENERAL PLAN LAND USE

### LAND USE

#### RESIDENTIAL

- Minimum Residential
- Very Low / Very Low I Residential
- Very Low II Residential
- Low / Low I Residential
- Low II Residential
- Low Medium / Low Medium I Residential
- Low Medium II Residential
- Medium Residential
- High Medium Residential
- High Density Residential
- Very High Medium Residential

#### COMMERCIAL

- Limited Commercial
- Limited Commercial - Mixed Medium Residential
- Highway Oriented Commercial
- Highway Oriented and Limited Commercial
- Highway Oriented Commercial - Mixed Medium Residential
- Neighborhood Office Commercial
- Community Commercial
- Community Commercial - Mixed High Residential
- Regional Center Commercial

#### INDUSTRIAL

- Commercial Manufacturing
- Limited Manufacturing
- Light Manufacturing
- Heavy Manufacturing

#### PARKING

- Parking Buffer

#### PORT OF LOS ANGELES

- General / Bulk Cargo - Non Hazardous (Industrial / Commercial)
- General / Bulk Cargo - Hazard
- Commercial Fishing
- Recreation and Commercial
- Intermodal Container Transfer Facility Site

#### LOS ANGELES INTERNATIONAL AIRPORT

- Airport Landside
- Airport Airside
- Airport Northside

#### OPEN SPACE / PUBLIC FACILITIES

- Open Space
- Public / Open Space
- Public / Quasi-Public Open Space
- Other Public Open Space
- Public Facilities

### FRAMEWORK

#### COMMERCIAL

- Neighborhood Commercial
- General Commercial
- Community Commercial
- Regional Mixed Commercial

#### INDUSTRIAL

- Limited Industrial
- Light Industrial



Attachment 14

This “worst-case impact envelope” approach complies with CEQA, which allows a lead agency to approve a project that varies from the project described in the EIR, so long as all of the impacts are disclosed. *Dusek v. Redevelopment Agency*, 173 Cal. App. 3d 1029, 1041 (1985); *County of Inyo v. City of Los Angeles*, 71 Cal. App. 3d 185, 190 (1977) (elastic project description not per se violation of CEQA, provided impacts analysis comprehends all potential impacts, lead agency may describe a project more broadly than the project actually approved).

Further, CEQA does not require that detailed engineering design be presented in the EIR. To the contrary, CEQA Guideline Section 15124 provides: “The description of the project . . . should not supply extensive detail beyond that needed for evaluation and review of environmental impact.” See also, *Dry Creek Citizens Coalition v. County of Tulare*, 70 Cal. App. 4th 20, 27-28 (1990) (conceptual design satisfies CEQA’s requirement for a general description of the project, and precise engineering design is not required).

Therefore, the Project Description in the EIR includes a range of options that could result from the Project. CEQA does not prohibit an EIR from analyzing a range of potential options for a single project. As such, the City does not need to require the Project Applicant to put forth an “actual, finite development proposal” and the Draft EIR does not need to be revised and recirculated.

See Response to Comment No. 81-2 (Reznik, Benjamin (#2)) for additional information as to the Project Description’s adequacy under CEQA.

#### **Comment No. 81-9**

### **II. The DEIR Fails to Adequately identify and Analyze the Significant Environmental Impacts of Removing the Zoning Restrictions and Amending the Community Plan.**

The DEIR notes that the Property is within a C4-2D-SN zone, with a “D” development limitation that restrict the total floor area on the Property to a floor area ratio (“FAR”) of 3:1 (Ord. No. 165659). (DEIR, III-25) The Property has a Regional Center Commercial land use designation. On June 19, 2012, the City Council approved a Community Plan Update that increased the FAR on the site to 4.5: 1. Subsequently, several neighborhood groups sued the City over the Community Plan Update in response to the proposed increase in density. These include *Save Hollywood.org v. City of Los Angeles* (BS 138370), *Fix the City, Inc. v. City of Los Angeles* (BS138580), and *La Mirada Neighborhood Association of Hollywood* (BS138369). These complaints allege violations of CEQA for failure to properly evaluate the increase in density, among other issues. These cases have been consolidated and are being heard by Judge Goodman in Los Angeles Superior Court, with yet unknown outcome. The Hollywood Chamber of Commerce intervened in the case, and is represented by Sheppard Mullin Richter & Hampton, the same attorneys that represent the developer of the Hollywood Millennium Project. A Motion to Compel documents is calendared for December 14, 2012. Possible outcomes of the litigation include a stay on issuing permits under the new 4.5:1 FAR density, or an order for additional environmental review under CEQA. As such, the DEIR must evaluate the Project under the existing FAR of 3:1, or provide a caveat

that if the court issues a petition for writ of mandate requiring additional CEQA review for the Community Plan Update, the Project will also require subsequent CEQA review.

The Project includes an increase in FAR from 3:1 to 6:1, which is double the currently permitted density on the site. The DEIR states that the Redevelopment Plan allows an increase in FAR from 4.5:1 to 6:1, if the proposed development furthers the goals and intent of the Redevelopment Plan and the Community Plan. (DEIR, III-26) However, the DEIR does not evaluate the increase in FAR from the existing permitted FAR of 3:1 to 4.5: 1, in the event that the Community Plan Update is not upheld in the court. Therefore, the DEIR must fully evaluate the land use impacts of doubling the density on the Property.

#### **Response to Comment No. 81-9**

The commenter is correct that a possible outcome of the litigation could include a stay on issuing permits under the newly proposed 4.5:1 FAR, however, the Project analyzes and discusses potential Project impacts under a 6:1 FAR, whether existing FAR is 3:1 per the “D” Limitation, or the modified FAR of 4.5:1 per the Hollywood Community Plan Update. The Draft EIR also evaluates the Project’s consistency with both the 1988 Hollywood Community Plan and the Hollywood Community Plan Update, so if the litigation results in a stay or negates the implementation of the Hollywood Community Plan Update, the Project has already been evaluated based on the 1988 Hollywood Community Plan and no subsequent CEQA review is required. See pages IV.G.35-48 of the Draft EIR for the analysis of the Project’s consistency with both the 1988 Hollywood Community Plan and the Hollywood Community Plan Update.

Further, as discussed in Section II, Project Description and Section IV.G, Land Use Planning, of the Draft EIR, the Project Applicant is requesting the removal of the “D” Limitation from the Project Site's zoning designation, thereby resulting in a FAR of 6:1. As such, the Project Applicant is not relying in any way on the Hollywood Community Plan Update for additional FAR. Further, the Regional Center Commercial land use designation allows for the construction of commercial, parking, and high-density multi-family residential uses. Development of the Project would include multi-family residential, retail, restaurant and commercial land uses, in addition to the Capitol Records Complex, which would be retained as part of the Project. Contrary to the commenter’s statement that the Project is not consistent with zoning designations, this type of development would be consistent with the Regional Center Commercial land use designation of the 1988 Hollywood Community Plan and the Hollywood Community Plan Update.

#### **Comment No. 81-10**

##### **III. The DEIR Does Not Evaluate Any Impacts Related to a Conditional Use Permit for the Sale of Alcoholic Beverages or Live Entertainment.**

The DEIR lists one of the proposed uses of the DEIR as a "Conditional Use Permit for limited sale and on-site consumption of alcoholic beverages, live entertainment, and floor area ratio averaging in a unified

Attachment 15

ORDINANCE NO. \_\_\_\_\_

An ordinance amending Section 12.04 of the Los Angeles Municipal Code by amending the zoning map.

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Section 1. Section 12.04 of the Los Angeles Municipal Code is hereby amended by changing the zones and zone boundaries shown upon a portion of the zone map attached thereto and made a part of Article 2, Chapter 1 of the Los Angeles Municipal Code, so that such portion of the zoning map shall be as follows:



## **CONDITIONS FOR EFFECTUATING TENTATIVE (T) CLASSIFICATION REMOVAL**

Pursuant to Los Angeles Municipal Code Section 12.32 G, the "T" Tentative Classification shall be removed by the recordation of a final tract map or by posting guarantees satisfactory to the City Engineer to secure the following without expense to the City of Los Angeles, with copies of any approval or guarantees provided to the Planning Department for attachment to the subject City Plan Case.

1. **Dedications and Improvements.** Prior to the issuance of any building permit, public improvements and dedications for streets and other rights of way adjoining the subject property shall be guaranteed to the satisfaction of the Bureau of Engineering, Department of Transportation, Fire Department (and other responsible City, regional and federal government agencies, as may be necessary), the following:

- A. **Responsibilities/Guarantees.**

- (1) As part of early consultation, plan review, and/or project permit review, the applicant/ developer shall contact the responsible agencies to ensure that any necessary dedications and improvements are specifically acknowledged by the applicant/developer.
- (2) Prior to the issuance of sign-offs for final site plan approval and/or project permits by the Department of City Planning, the applicant/developer shall provide written verification to the Department of City Planning from the responsible agency acknowledging the agency's consultation with the applicant/developer. The required dedications and improvements may necessitate redesign of the project. Any changes to the project design required by a public agency shall be documented in writing and submitted for review by the Department of City Planning.

- B. **Street Dedications**

- (1) That the subdivider make a request to the Central District Office of the Bureau of Engineering to determine the capacity of existing sewers in this area.
- (2) That a set of drawings for airspace lots be submitted to the City Engineer showing the following.
  - a. Plan view at different elevations.
  - b. Isometric views.
  - c. Elevation views.
  - d. Section cuts all locations where airspace lot boundaries change.
- (3) That the owners of the property record an agreement satisfactory to the City Engineer stating that they will grant the necessary private easements for ingress and egress purposes to serve the proposed airspace lots to use upon the sale of the respective lots and they will maintain the private

easements free and clear of obstructions and in safe conditions for use at all times.

C. Street Improvements

- 1) Improve the alley adjoining the subdivision by the reconstruction of any off-grade concrete pavement and also if necessary reconstruction of the alley intersection with Argyle Avenue including any necessary removal and reconstruction of the existing improvements all satisfactory to the Central District Engineering Office.
- 2) That necessary grading and soil reports be submitted to the Geotechnical Engineering Division of Bureau of Engineering for review and approval.

2. Building & Safety – Grading.

- A. Prior to the issuance of any Building or Grading Permits, or the Recordation of the Tract map, additional boring shall be required for the property located at 6334 West Yucca Street and 1770 North Ivar Avenue (where the Enterprise Rent-a-Car property is currently located).
- B. Prior to issuance of any Building or Grading Permits, or the Recordation of the Tract Map, a comprehensive Geotechnical report as discussed in the Department Review Letter dated May 23, 2012, shall be submitted to the Department for review including detailed geotechnical recommendations for the proposed development.
- C. Additional fault exploration will be required if in the future it is determined that a structure or a part of it is proposed within the area located north of the "Northern Limit of Fault Exploration" line depicted on Drawing No. 5 of the report dated November 30, 2012 (where the Enterprise Rent-a-Car property is currently located).

3. Building and Safety – Zoning. The Building and Safety, Zoning Divisions shall certify that no Building or Zoning Code violations exist on the subject site. In addition, the following items shall be satisfied.

- A. Provide a copy of building records, plot plan, and certification of occupancy of all existing structures to verify the last legal use and the number of parking spaces required and provided on each site.
- B. Obtain permits for the demolition or removal of all existing structures on the site. Accessory structures and uses are not permitted to remain on lots without a main structure or use. Provide copies of the demolition permits and signed inspection cards to show completion of the demolition work.
- C. The legal description and lot numbers on the submitted Map do not agree with each other and with ZIMAS. Revise the Map to address the discrepancy to correctly label the lot numbers per Tract 18237.
- D. Provide a copy of Certificate of Compliance for the lot cut of Lot 1 of Tract 18237.

- E. Provide a copy of affidavit AFF-20478, AFF-20772, AFF-35097, AFF-35104, AFF-43826, AFF-001966012, AF-95-853223-MB, AF-96-2071235-GD, AF-98-0492383-GD, AF-01-0390387, and AF-1243919. Show compliance with all the conditions/requirements of the above affidavits as applicable. Termination of above affidavits may be required after the Map has been recorded. Obtain approval from the Department, on the termination form, prior to recording.
- F. The Department of Building and Safety recommends that the front, side and rear lot line locations be designated by the Advisory Agency for the residential and hotel uses.
- G. Show all street dedications as required by Bureau of Engineering and provide net lot area after all dedication. "Area" requirements shall be re-checked as per net lot area after street dedication. Yard setback requirements shall be required to comply with current code as measured from new property lines after dedications.
- H. Record a Covenant and Agreement to treat the buildings and structures located in an Air Space Subdivision as if they were within a single lot.

4. **Department of Transportation.**

- A. A parking area and driveway plan shall be submitted to the Citywide Planning Coordination Section of the Department of Transportation (DOT) for approval prior to submittal of building permit plans for plan check by the Department of Building and Safety. Transportation approvals are conducted at 201 N. Figueroa Street, Suite 400, Station 3.
- B. The applicant shall comply with the recommendations of the DOT letter dated August 16, 2012 attached to the case file for VTT-71837-CN.
- C. That a fee in the amount of \$197 be paid for the Department of Transportation as required per Ordinance No. 185042 and LAMC Section 19.15. Note: the applicant may be required to comply with any other applicable fees per this new ordinance.

5. **Department of Fire.** A suitable arrangement shall be made satisfactory to the Fire Department, binding the subdivider and all successors to the following:

- A. Adequate off-site public and on-site private fire hydrants may be required. Their number and location to be determined after the Fire Department's review of the plot plan.
- B. The width of private roadways for general access use and fire lanes shall not be less than 20 feet, and the fire lane must be clear to the sky.
- C. Fire lanes, where required and dead ending streets shall terminate in a cul-de-sac or other approved turning area. No dead ending street or fire lane shall be greater than 700 feet in length or secondary access shall be required.
- D. No proposed development utilizing cluster, group, or condominium design of one or two family dwellings shall be more than 150 feet from the edge of the roadway of an improved street, access road, or designated fire lane.

- E. All access roads, including fire lanes, shall be maintained in an unobstructed manner, removal of obstructions shall be at the owner's expense. The entrance to all required fire lanes or required private driveways shall be posted with a sign no less than three square feet in area in accordance with Section 57.09.05 of the Los Angeles Municipal Code.
- F. Fire lane width shall not be less than 20 feet. When a fire lane must accommodate the operation of Fire Department aerial ladder apparatus or where fire hydrants are installed, those portions shall not be less than 28 feet in width.
- G. Where above ground floors are used for residential purposes, the access requirement shall be interpreted as being the horizontal travel distance from the street, driveway, alley, or designated fire lane to the main entrance of individual units.
- H. The entrance or exit of all ground dwelling units shall not be more than 150 feet from the edge of a roadway of an improved street, access road, or designated fire lane.
- I. Access for Fire Department apparatus and personnel to and into all structures shall be required.
- J. The Fire Department may require additional vehicular access where buildings exceed 28 feet in height.
- K. Any required fire hydrants to be installed shall be fully operational and accepted by the Fire Department prior to any building construction.
- L. All parking restrictions for fire lanes shall be posted and/or painted prior to any Temporary Certificate of Occupancy being issued.
- M. Plans showing areas to be posted and/or painted, "FIRE LANE NO PARKING" shall be submitted and approved by the Fire Department prior to building permit application sign-off.
- N. Where rescue window access is required, provide conditions and improvements necessary to meet accessibility standards as determined by the Los Angeles Fire Department.
- O. All public street and fire lane cul-de-sacs shall have the curbs painted red and/or be posted "No Parking at Any Time" prior to the issuance of a Certificate of Occupancy or Temporary Certificate of Occupancy for any structures adjacent to the cul-de-sac.
- P. Building designs for multi-storied residential buildings shall incorporate at least one access stairwell off the main lobby of the building; But, in no case greater than 150 feet horizontal travel distance from the edge of the public street, private street or Fire Lane. This stairwell shall extend unto the roof.
- Q. Entrance to the main lobby shall be located off the address side of the building.

- R. Any required Fire Annunciator panel or Fire Control Room shall be located within 50 feet visual line of site of the main entrance stairwell or to the satisfaction of the Fire Department.

6. **Department of Water and Power.**

- A. Upon compliance with these conditions and requirements, the LADWP's Water Services Organization (WSO) will forward the necessary clearances to the Bureau of Engineering after receiving the final tract map.

- (1) Install new fire hydrant: 1-2 ½" X4" DFH on E/S Ivar Ave, S/O Yucca St
- (2) Arrange for the Department to install Fire Hydrants
- (3) Conditions under which water service will be rendered:
  - i. Plumbing for all buildings must be sized in accordance with the Los Angeles City Plumbing Code for a minimum pressure range of 30 to 45 psi at the building pad elevation.
  - ii. Pressure regulators will be required in accordance with the Los Angeles City Plumbing Code for all buildings where pressures exceed 80 psi at the building pad elevation.
- (4) Los Angeles City Fire Department Requirements:
  - i. New fire hydrants and/or top upgrades to existing fire hydrants are required in accordance with the Los Angeles Fire Code: Install 1-2 ½" X4" DH on E/S Ivar Ave, S/O Yucca St.
- (5) New Easements Are Required: It is required that easements be dedicated for water line purposes to the City of Los Angeles for the use of the Department of Water and Power and shown as such on the subdivision map:
  - i. The Department's standard Dedication Certificate must be incorporated as part of the Ownership Certificate and executed by the owner of the Subdivision prior to the recording of the subdivision map. A copy of the Dedication Certificate has been forwarded to the subdivision engineer.

7. **Bureau of Street Lighting.**

- A. No street lighting improvements if no street widening per BOE improvement conditions. Otherwise, relocate and upgrade street lights as follows:
- (1) Three (3) on Ivar Avenue;
  - (2) Four (4) on Yucca Street;
  - (3) Seven (7) on Vine Street;
  - (4) Three (3) on Argyle Avenue; and,



(5) Four (4) on Hollywood Boulevard.

8. **Street Trees.** Construction of tree wells and planting of street trees and parkway landscaping to the satisfaction of the Street Tree Division of the Bureau of Street Maintenance.
9. **Sewers.** Construct sewers to the satisfaction of the City Engineer.
10. **Drainage.** Construct drainage facilities to the satisfaction of the City Engineer.
11. **Recreation and Parks Dedication/Fee.** Per Section 12.33 of the Municipal Code, the applicant shall dedicate land for park or recreational purposes or pay the applicable Quimby fees for the construction of condominiums, or Recreation and Park fees for construction of apartment buildings.
12. **Schools.** The applicant shall make payment to the Los Angeles Unified School District to offset the impact of additional student enrollment at schools serving the project area.
13. **Cable Television.** The applicant shall make necessary arrangements with the appropriate cable television franchise holder to assure that cable television facilities will be installed in City rights-of-way in the same manner as is required of other facilities, pursuant to Municipal Code Section 17.05.N, to the satisfaction of the Information Technology Agency.
14. **Police.** The building plans shall incorporate design guidelines relative to security, semi-public and private spaces (which may include but not be limited to access control to building), secured parking facilities, walls/fences with key systems, well-illuminated public and semipublic space designed with a minimum of dead space to eliminate areas of concealment, location of toilet facilities and building entrances in high-foot traffic areas, and provision of security guard patrol throughout the project site if needed. Refer to Design out Crime Guidelines: Crime Prevention Through Environmental Design published by the Los Angeles Police Department's Community Relations Section (located at 100 W. 1<sup>st</sup> Street, Suite 250, Los Angeles, Phone: 213-485-6000). These measures shall be approved by the Police Department prior to the issuance of building permits.

## **(Q) QUALIFIED CONDITIONS OF APPROVAL**

Pursuant to Section 12.32.G of the Municipal Code, the following limitations are hereby imposed upon the use of the subject property, subject to the "Q" Qualified classification.

### **Entitlement Conditions**

1. **Permitted Use.** The use of the subject property shall be limited to those uses permitted in the Land Use Equivalency Program, attached as Exhibit D or as permitted in the C2 Zone as defined in Section 12.16.A of the L.A.M.C.
2. **Site Development.** Prior to the issuance of any permits for the subject project, detailed development plans, including a complete landscape and irrigation plan, shall be submitted for review and approval by the Department of City Planning – Major Project Section for verification of compliance with the Development Regulations attached as Exhibit C.
3. **Maximum Height.** The project shall be limited to no more than 39 stories on the East Site and no more than 35 stories on the West Site, with development of the project to comply with the Development Regulations (Exhibit C).
4. **Minimum Tower Height.** No tower, as defined in the attached Development Regulations (Exhibit C), on the subject property shall be constructed less than 220 feet in height.
5. **Maximum Podium Height.** No podium, as defined in the attached Development Regulations (Exhibit C), on the subject property, shall be greater than 120 feet in height for towers greater than 220 feet in height.
6. **Multiple Tower Heights.** The tallest tower on any one site (East or West Site) shall be within 35 percent of the tallest height on the other site (East or West) in order for the subsequent site to be developed.

Note: For example, if a tower measures 585 feet on the East site, then the West site shall have a tower no less than 380 feet in height (35% less than 585 feet). The height differential will be calculated relative to the tallest tower in the project.

7. **Floor Area.** The floor area of all buildings in total shall be in conformance with the Height District No. 2, permitting a Floor Area Ratio not to exceed 6:1, as approved by the City Planning Commission, or City Council on appeal. The FAR shall be averaged across the East and West Sites as a Unified Development as defined in Section 12.24-W,19 of the Los Angeles Municipal Code. The applicant shall file a Covenant and Agreement per Condition No. 1 under Conditions of Approval (Page C-1).
8. **Residential Density.** 492 residential dwelling units, or as permitted by the Land Use Equivalency Program (Exhibit D), may be constructed on the subject site.
9. **Parking.** Project parking shall include 1,918 parking spaces or as permitted by the Development Regulations, shall be provided and shared among all the uses on the site.
  - a. The residential parking shall be sold and/or leased separately from each residential dwelling unit.

- b. All visitor spaces shall be readily accessible, conveniently located, posted and maintained satisfactory to the Department of Building and Safety. Visitor parking can be accommodated by providing visitor parking passes that permit parking within the public parking areas on the site.
  - c. If visitor parking spaces are gated, a voice response system, or other system or process to provide access, shall be installed at the gate. Directions to guest parking spaces shall be clearly posted. Tandem parking spaces shall not be used for visitor parking unless a valet service is provided.
  - d. Prior to issuance of a building permit, a parking plan showing off-street parking spaces, as required by the Advisory Agency, shall be submitted for review and approval by the Department of City Planning (200 No. Spring Street, Room 750).
10. **Above Grade Parking.** Parking above grade shall be limited to no more than three stories.
11. **Construction Related Parking.** No employees or subcontractor shall be allowed to park on surrounding residential streets for the duration of all construction activities. There shall be no staging or parking of heavy construction vehicles along Hollywood Boulevard before 9:00 AM or after 4:00 PM, Monday through Friday. All construction vehicles shall be stored on-site unless returned to their owner's base of operations.

#### **Traffic Conditions**

12. **Truck Traffic Restricted Hours.** Truck traffic directed to the project site for the purpose of delivering materials or construction-machinery shall be limited to the hours beginning at 9:00 AM and ending at 4:00 PM, and beginning at 6:30 PM and ending at 9:00 PM Monday through Friday, and Saturday through Sunday from 8:00 AM to 6:00 PM. No truck deliveries shall occur outside of that time period. No truck queuing related to such deliveries to the project site shall occur on any street within the project vicinity outside of that time period.
13. **Loading.** Loading and unloading activities shall not interfere with traffic on any public street. Public sidewalks, alleys, and/or other public rights-of-way shall not be used for the parking or loading and unloading of vehicles. The location of loading areas shall be clearly identified on the site plan to the satisfaction of the Department of City Planning.
14. **Maintenance.** The subject property including the associated parking facilities, sidewalks, outdoor areas, and landscaping adjacent to the site shall be maintained in an attractive condition and shall be kept free of trash and debris. Trash receptacles shall be located throughout the site.
15. **Dust Walls.** During construction, temporary dust walls (e.g., Visqueen plastic screening or other suitable product, not less than 8 feet in height shall be installed and maintained along the property line between the site and adjoining lots as necessary to preclude dust dispersion from the project site to adjacent uses.
16. **Community Relations.** During construction, a 24-hour "hot-line" phone number for the receipt of construction-related complaints from the community shall be provided to

immediate neighbors. The applicant shall be required to respond within 24 hours of any complaint received on this hotline.

17. **Posting of Construction Activities.** The property owners and/or managers of immediately adjacent structures shall be given regular notification of major construction activities and their duration. A visible and readable sign (At a distance of 50 feet) shall be posted on the construction site identifying a telephone number for inquiring about the construction process and to register complaints.
18. **Employee Transportation Demand Management.** The applicant shall implement trip reduction strategies in accordance with Section 12.6-J of the Los Angeles Municipal Code, that would encourage and incentivize project employees to carpool, vanpool, or take transit or other modes. Such strategies can include, but not be limited to, the following: shuttles from remote parking, bicycle amenities like racks and showers, guaranteed ride home program, partially or fully subsidized, monthly, or annual transit passes provided to all eligible project employees, rideshare matching, administrative support for formation of carpools/vanpools, bike and walk to work promotions, and preferential loading and unloading of parking location for ride-sharing.
19. **Bicycle Standards.** The applicant shall provide short- and long-term bicycle parking spaces as well as bicycle facilities in accordance with standards established pursuant to Ordinance No. 182,836.
20. **Construction Impacts.** Prior to the issuance of a demolition permit, the applicant shall submit a construction work site traffic control plan to DOT for review and approval. The plan should show the location of any roadway or sidewalk closures, traffic detours, haul routes, hours of operation, protective devices, warning signs and access to abutting properties. DOT also recommends that all construction related traffic be restricted to off-peak hours to the extent feasible. The applicant shall minimize temporary construction impacts to traffic by implementing the following strategies.
  - a. Identify truck staging areas, and implement efficient management of truck access/egress routes.
  - b. Develop worksite traffic control plans.
  - c. Develop a construction worker transportation demand management plan to encourage the use of transit/ridesharing and to minimize parking demand.
  - d. Schedule construction-related deliveries, to the extent feasible, to occur during off-peak travel hours.
  - e. Develop and submit a Freeway Truck Management Plan to Caltrans.
  - f. Coordinate with LA County Metro to minimize inconvenience to transit users caused by any temporary bus stop relocations and bus line re-routings.
  - g. All temporary construction traffic control plans in the City involving temporary traffic signal modifications, the relocation of any signal equipment, and the installation of crash cushions or temporary roadway striping shall be prepared, submitted and signed by a registered Civil or Traffic Engineer in the state of

California, on DOT standard plan format, for review and approval by DOT's Design Division.

- h. Additionally, all other temporary construction traffic control proposals in the City involving the use of flashing arrow boards, traffic cones, barricades, delineators, construction signage, etc., shall require the review and approval by DOT's Central District Office.

**21. General Conditions.**

- a. All transportation improvements and associated traffic signal work within the City of Los Angeles must be guaranteed through the B-Permit process of the Bureau of Engineering, prior to the issuance of any building permit and shall be completed prior to the issuance of the first certificate of occupancy for the project. Temporary certificates of occupancy may be granted in the event of any delay through no fault of the applicant, provided that, in each case, the applicant has demonstrated reasonable efforts and due diligence to the satisfaction of DOT.
- b. If a proposed traffic mitigation measure does not receive the required approval, a substitute mitigation measure may be provided subject to the approval of DOT or other governing agency with jurisdiction over the mitigation location, upon demonstration that the substitute measure is equivalent or superior to the original measure in mitigating the project's significant traffic impact.
- c. Any improvements along state highways and at freeway ramps require approval from the State of California Department of Transportation (Caltrans). The applicant may be required to obtain an encroachment permit or other approval from Caltrans for each of these improvements before the issuance of any building permits, to the satisfaction of Caltrans, DOT, and the Bureau of Engineering.

The City Planning Commission considered and approved additional conditions presented at the hearing on March 28, 2013. At the Planning and Land Use Management Committee hearing on June 18, 2013, the applicant presented changes to the conditions reflecting the subsequent input of Metro (MTA) on the previous conditions related to public transit. The following conditions are included as consistent with the Planning and Land Use Management Committee's recommendation.

- 22. Circulation Shuttle.** Prior to the issuance of the first final certificate of occupancy, the developer shall procure and thereafter operate a shuttle service, for a fifteen (15) year term, providing for service between the project and residential areas within a two mile radius of the project. Such shuttle service will be operated either on an "on call" basis or a recurring periodic basis, as determined by the developer, during reasonable hours, generally consistent with DASH operations. Such service is intended to improve pedestrian circulation from the residential neighborhoods in vicinity of the project that are currently underserved by the DASH routes, to the project and the public transportation access points within two blocks of the project site. As such, the service will not be required to accommodate linkages between the project and areas already adequately served by DASH and Metro. Developer shall not be obligated to expend more than \$250,000 per year for the operation of such service.



23. **Bicycle Amenities Plan.** Commencing upon the issuance of the first final certificate of occupancy, for a fifteen (15) year term, the developer shall maintain bicycle amenities at the project. Bicycle amenities in the first phase of the project shall include, in addition to the bicycle parking facilities required by the Development Regulations, a kiosk or tenant space comprising not less than 200 square feet for the provision by Bicycle Kitchen or other non-profit organization, for bicycle repair services. No rent shall be charged to any such non-profit organization, but the developer may require such non-profit bicycle repair service to enter into a lease or license agreement on other commercially available terms (including, without limitation, operating hours, use limits, insurance, indemnity, signage). If, despite use of its commercially reasonable efforts, developer is unable to procure the services of a non-profit bicycle service provider, the developer shall have the right to cause such space or kiosk to be leased or licensed to a for-profit bicycle service provider on commercially reasonable terms, including the payment of rent. In addition, each initial phase of the project on the east site and west site shall include, in addition to the bicycle repair facilities required in the Development Regulations, dedicated bicycle ways between the public streets and such facilities and wayfinding signage directing bicycle users to such facilities. The plans submitted by the developer for plan check with the City shall include plans for such bicycle facilities, which shall be reviewed by the Director of Planning.
24. **Parking Tracking Services.** Prior to the issuance of the first final certificate of occupancy, the developer shall provide a fixed-fee contribution to supplement the City's Department of Transportation's Express Park program that will provide new parking meter technology, vehicle sensors, a central management system, and real-time parking guidance for motorists in the vicinity of the project. The contribution shall be in the amount of \$50,000 to be paid to the City Department of Transportation.
25. **Metro Passes.** Commencing upon the issuance of the first final certificate of occupancy for the project, for a fifteen (15) year term, the developer shall provide within the project, either by machine or through its management office, for the sale of Los Angeles County Metropolitan Transportation Authority (Metro) passes to project residents, tenants, and their employees.
26. **Metro Passes (Non-vehicular Parking for Project Residents).** The developer shall work with Metro to create a program whereby the developer shall pay \$50,000 per year to supplement 50% of the cost towards the purchase of 400 Metro passes per year for a term of ten (10) years.
27. **Monthly Parking Leases for Metro Commuters.** Commencing upon the issuance of the first final certificate of occupancy, the developer shall provide, for a fifteen (15) year term, within each publicly accessible parking area in the project, not less than fifty (50) "Park and Ride" spaces for monthly lease to persons who are not tenants or occupants of the project who use the spaces and then transfer to a Metro commuter train or bus for transportation to their place of employment. In the initial year of operation of such "Park and Ride" spaces, the monthly charge to the user of each space shall not exceed \$50.00 per month; thereafter, such monthly charge may be increased each calendar year by not more than three percent (3%) per calendar year. Developer shall establish and maintain a monitoring and reporting program to reasonably assure that such parking continues to meet such condition.
28. **Daily Parking Discount for Metro Commuters.** Commencing upon issuance of the first final certificate of occupancy, for a fifteen (15) year term, the developer shall provide

each holder of a Metro pass who parks in any publicly accessible transient or daily parking area in the project, a ten percent (10%) discount off the developer's regularly daily parking fees, otherwise payable for such parking. Developer shall establish and maintain a monitoring and reporting program of the use of such discounts to reasonably assure that such parking discount continues to be offered as required, which reports shall be provided to the Department of Transportation and/or the Department of City Planning upon request.

29. **Shared Vehicle Parking.** Commencing upon issuance of the first final certificate of occupancy for the project, for a fifteen (15) year term, developer shall maintain ten (10) parking spaces within the non-residential parking areas of the project for a shared vehicle service and shall use its commercially reasonable efforts to cause the same to be at all times operated by a reputable shared car service provider selected by the developer, which may include Zipcar, Inc.; Avis Budget group, Inc./Avis on Location; Hertz Global Holdings, Inc./Hertz on Demand; Uhaul/U Car Share; Enterprise Rent-A-Car/We Car; Daimler/Car2Go N.A. LLC; City CarShare; Mint/Cars on Demand; Center for Neighborhood Technology/I-Go; RelayRides; Getaround or other reasonably similar organization or program. Notwithstanding the foregoing, City acknowledges that the Developer's failure to cause such service to be provided within the Project (i) for any 180 day period following termination of contract between developer and such operator while a replacement operator is sought, or (ii) during any period in which such no reputable car sharing service provider is operating a car sharing service in the Hollywood area, or (iii) if developer's selected operator is unwilling or unable to operate all ten (10) spaces, will not constitute a default of developers obligations under this condition.
30. **Vine Street Medians.** The developer shall engage an urban planning and/or traffic consulting firm reasonably acceptable to the Director of Planning, DOT, and the 13<sup>th</sup> Council District Councilmember to prepare a study of the design, efficacy, potential cost, feasibility and impact on vehicular and pedestrian circulation from the installation of landscaped medians in Vine Street between Sunset Boulevard and Franklin Street. Such study shall be completed and delivered to the Department of City Planning not later than, and as a condition to, the issuance of the first building permit for the first phase of the project.

#### **Administrative Conditions Of Approval**

31. **Approval, Verification and Submittals.** Copies of any approvals, guarantees or verification of consultations, review or approval, plans, etc., as may be required by the subject conditions, shall be provided to the Department of City Planning for placement in the subject file.
32. **Code Compliance.** Area, height, and use regulations of the zone classification of the subject property shall be complied with, except where herein conditions may vary.
33. **Covenant.** Prior to the issuance of any permits relative to this matter, an agreement concerning all the information contained in these conditions shall be recorded in the County Recorder's Office. The agreement shall run with the land and shall be binding on any subsequent property owners, heirs or assigns. The agreement shall be submitted to the Department of City Planning for approval before being recorded. After recordation, a copy bearing the Recorder's number and date shall be provided to the Department of City Planning for attachment to the file.

Notice: Certificates of Occupancies for the subject properties will not be issued by the City until the construction of all the public improvements (streets, sewers, storm drains, etc.), as required herein, are completed to the satisfaction of the City Engineer.

34. **Definition.** Any agencies, public officials or legislation referenced in these conditions shall mean those agencies, public officials or legislation or their successors, designees or amendment to any legislation.
35. **Enforcement.** Compliance with these conditions and the intent of these conditions shall be to the satisfaction of the Department and any designated agency, or the agency's successor and in accordance with any stated laws or regulations, or any amendments thereto.
36. **Building Plans.** Page 1 of the grant and all the conditions of approval shall be printed on the buildings submitted to the Department of City Planning and the Department of Building and Safety.
37. **Corrective Conditions.** The authorized use shall be conducted at all times with due regard for the character of the surrounding district, and the right is reserved to the City Planning Commission, or the Director of Planning, pursuant to Section 12.27.1 of the Municipal Code, to impose additional corrective conditions, if in the decision makers opinion, such actions are proven necessary for the protection of persons in the neighborhood or occupants of adjacent property.
38. **Mitigation Monitoring.** The applicant shall identify mitigation monitors who shall provide periodic status reports on the implementation of the Environmental Conditions specified herein (Mitigation Monitoring and Reporting Program – MMRP), as to area of responsibility, and phase of intervention (pre-construction, construction, post-construction/maintenance) to ensure continued implementation of the Environmental Conditions.
39. **Indemnification.** The applicant shall defend, indemnify and hold harmless the City, its agents, officers, or employees from any claim, action, or proceeding against the City or its agents, officers, or employees to attack, set aside, void or annul this approval which action is brought within the applicable limitation period. The City shall promptly notify the applicant of any claim, action, or proceeding and the City shall cooperate fully in the defense. If the City fails to promptly notify the applicant of any claim, action, or proceeding, or if the City fails to cooperate fully in the defense, the applicant shall not thereafter be responsible to defend, indemnify, or hold harmless the City.

#### **Mitigation Monitoring and Reporting Program (MMRP)**

- A.1-1** Construction equipment, debris, and stockpiled equipment shall be enclosed within a fenced or visually screened area to effectively block the line of sight from the ground level of neighboring properties. Such barricades or enclosures shall be maintained in appearance throughout the construction period. Graffiti shall be removed immediately upon discovery.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Field inspection sign-off

- A.1-2** The Project shall be developed in conformance with the Millennium Hollywood Development Standards, including, but not limited to, the Density Standards, the Building Height Standards, the Tower Massing Standards, and Building and Streetscape Standards. Prior to construction, Site Plans and architectural drawings shall be submitted to the Department of City Planning to assess compatibility with the Development Standards.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of City Planning

**Monitoring Agency:** Department of City Planning

**Action Indicating Compliance:** Plan approval

- A.1-3** The Project shall include low-level directional lighting at ground, open terrace and tower levels of the exterior of the proposed structures to ensure that architectural, parking and security lighting does not spill onto adjacent residential properties. The Project's lighting shall be in conformance with the lighting requirements of the City of Los Angeles Green Building Code to reduce light pollution.

**Monitoring Phase:** Pre-Construction (Design Phase); Pre-Occupancy

**Enforcement Agency:** Department of City Planning

**Monitoring Agency:** Department of City Planning

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off

- A.1-4** The Project's façades and windows shall be constructed or treated with low-reflective materials such that glare impacts on surrounding residential properties and roadways are minimized.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of City Planning

**Monitoring Agency:** Department of City Planning

**Action Indicating Compliance:** Plan Approval

- A.2-1** The Project shall conform to the Tower Massing Standards as identified in Section 6 of the Millennium Hollywood Development Regulations which include, but are not limited to, the following Tower Lot Coverage standards identified in Table 6.1.1, Tower Massing Standards: 48% tower lot coverage between 150 and 220 feet above curb level, 28% tower lot coverage between 151 and 400 feet above curb level, 15% tower lot coverage between 151 and 550 feet above curb level, and 11.5% tower lot coverage between 151 and 585 feet above curb level. The Project shall also conform to Standard 6.1.3, which states that at least 50% of the total floor area shall be located below 220 feet.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of City Planning

**Monitoring Agency:** Department of City Planning

**Action Indicating Compliance:** Plan approval

- A.2-2** The Project shall conform to the Tower Massing Standards as identified in Section 7 of the Millennium Hollywood Development Regulations which include, but are not limited to, the following Standards: (7.3.1) A tower 220 feet or greater in height above curb level shall be located with its equal or longer dimension parallel to the north-south streets; (7.5.1) Towers shall be spaced to provide privacy, natural light, and air, as well as to

contribute to an attractive skyline; and (7.5.2) Generally, any portion of a tower shall be spaced at least 80 feet from all other towers on the same parcel, except the following which shall meet Municipal Code: 1) the towers are offset (staggered), 2) the largest windows in primary rooms are not facing one another, or 3) the towers are curved or angled.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of City Planning

**Monitoring Agency:** Department of City Planning

**Action Indicating Compliance:** Plan approval

- B.1-1** The Project Applicant shall include in construction contracts the control measures required and/or recommended by the SCAQMD at the time of development, including but not limited to the following:

*Rule 403 - Fugitive Dust*

- Use watering to control dust generation during demolition of structures or break-up of pavement;
- Water active grading/excavation sites and unpaved surfaces at least three times daily;
- Cover stockpiles with tarps or apply non-toxic chemical soil binders;
- Limit vehicle speed on unpaved roads to 15 miles per hour;
- Sweep daily (with water sweepers) all paved construction parking areas and staging areas;
- Provide daily clean-up of mud and dirt carried onto paved streets from the Site;
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 15 miles per hour over a 30-minute period or more; and
- An information sign shall be posted at the entrance to each construction site that identifies the permitted construction hours and provides a telephone number to call and receive information about the construction project or to report complaints regarding excessive fugitive dust generation. Any reasonable complaints shall be rectified within 24 hours of their receipt.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Quarterly compliance report submitted by contractor

- B.1-2** To reduce on-site construction related air quality emissions, the Project Applicant shall ensure all construction equipment meet or exceed Tier 3 off-road emission standards.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Quarterly compliance report submitted by contractor

- B.1-3** Haul truck fleets during demolition and grading excavation activities shall use newer truck fleets (e.g., alternative fueled vehicles or vehicles that meet 2010 model year United States Environmental Protection Agency NOX standards), where commercially available. At a minimum, truck fleets used for these activities shall use trucks that meet EPA 2007 model year NOx emissions requirements.



**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Quarterly compliance report submitted by contractor

**B.1-4** The Project shall meet the requirements of the City of Los Angeles Green Building Code. Specifically, as it relates to the reduction of air quality emissions, the Project shall:

- Be designed to exceed Title 24 2008 Standards by 15%;
- Reduce potable water consumption by 20% through the use of low-flow water fixtures;
- Provide readily accessible recycling areas and containers. It is estimated this shall achieve a minimum 10% reduction of solid waste deposited at local landfills; and
- All residential grade equipment and appliances provided and installed shall be ENERGY STAR labeled if ENERGY STAR is applicable to that equipment or appliance.

**Monitoring Phase:** Pre Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off

**B.1-5** The Project shall incorporate residential air filtration systems with filters meeting or exceeding the ASHRAE 52.2 Minimum Efficiency Reporting Value (MERV) of 13, to the satisfaction of the Department of Building and Safety. The CC&Rs recorded for the residential units on the Project Site shall incorporate this measure. High efficiency filters shall be installed and maintained for the life of the Project.

**Monitoring Phase:** Pre Construction (Design Phase); Construction; Occupancy

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off; Annual compliance report submitted by building management

**B.1-6** Heating Ventilation and Air Conditioning (HVAC) air intakes shall be located either on the roof of structures or within areas of the Project Site that are distant from the 101 Freeway to the extent that such placement is compatible with final site design.

**Monitoring Phase:** Pre Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off;

**B.1-7** For portions of new structures that contain sensitive receptors and are located within 500-feet of the 101 Freeway, the project design shall limit the use of operable windows and/or the orientation of outdoor balconies.

**Monitoring Phase:** Pre Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off;

- B.1-8** The Project shall provide electric outlets on residential balconies and common areas for electric barbeques to the extent that such uses are permitted on balconies and common areas per the Covenants, Conditions and Restrictions recorded for the property.

**Monitoring Phase:** Pre Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off;

- B.1-9** The Project shall use electric lawn mowers and leaf blowers, electric or alternatively fueled sweepers with HEPA filters, and use water-based or low VOC cleaning products for maintenance of the building.

**Monitoring Phase:** Occupancy

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Annual compliance report submitted by building management

- C-1** The Project Applicant shall prepare a plan to ensure the protection and preservation of any portions of the Hollywood Walk of Fame that are threatened with damage during construction. This plan shall conform to the performance standards contained in the Hollywood Walk of Fame Terrazzo Pavement, Installation and Repair Guidelines as adopted by the City in March of 2011, and be approved to the satisfaction of the Department of City Planning Office of Historic Resources prior to any construction activities.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of City Planning

**Monitoring Agency:** Department of City Planning, Office of Historic Resources

**Actions Indicating Compliance:** Approval of Hollywood Walk of Fame plan; Field inspection sign-off

- C-2** The Project Applicant shall prepare an adjacent structure monitoring plan to ensure the protection of adjacent historic resources during construction from damage due to underground excavation, and general construction procedures to mitigate the possibility of settlement due to the removal of adjacent soil. Particular attention shall be paid to maintaining the Capitol Records Building underground recording studios and their special acoustic properties. The adjacent structure monitoring plan shall be approved to the satisfaction of the Department of City Planning, Office of Historic Resources and Department of Building and Safety prior to any construction activities.

The performance standards of the adjacent structure monitoring plan shall include the following: All new construction work shall be performed so as not to adversely impact or cause loss of support to neighboring/bordering structures. Preconstruction conditions documentation shall be performed to document conditions of the neighboring/bordering buildings, including the historic structures that are on or adjacent to the Project Site, prior to initiating construction activities. As a minimum, the documentation shall consist of video and photographic documentation of accessible and visible areas on the exterior and select interior façades of the buildings immediately bordering the Project Site. A

registered civil engineer or certified engineering geologist shall develop recommendations for the adjacent structure monitoring program that shall include, but not be limited to, vibration monitoring, elevation and lateral monitoring points, crack monitors and other instrumentation deemed necessary to protect adjacent building and structure from construction-related damage. The monitoring program shall include vertical and horizontal movement, as well as vibration thresholds. If the thresholds are met or exceeded, work shall stop in the area of the affected building until measures have been taken to stabilize the affected building to prevent construction related damage to adjacent structures.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of City Planning; Department of Building and Safety

**Monitoring Agency:** Department of City Planning, Office of Historic Resources

**Actions Indicating Compliance:** Approval of adjacent structure monitoring plan; Field inspection sign-off

- C-3** There are currently no plans to renovate the Capitol Records Building as part of the Project. However in the event any structural improvements are made to the Capitol Records Building during the life of the Project, such improvements shall be conducted in accordance with the Secretary of the Interior's Standards for Rehabilitation. Compliance with this measure shall be subject to the satisfaction of the Department of City Planning, Office of Historic Resources prior to any rehabilitation activities associated with the Capitol Records Building.

**Monitoring Phase:** Construction; Occupancy (any improvements to Capitol Records Building)

**Enforcement Agency:** Department of City Planning, Office of Historic Resources

**Monitoring Agency:** Department of City Planning, Office of Historic Resources

**Action Indicating Compliance:** Plan approval

- C-4** There are currently no plans to renovate the Gogerty Building as part of the Project. However, in the event any structural improvements are made to the Gogerty Building during the life of the Project, such improvements shall be conducted in accordance with the Secretary of the Interior's Standards for Rehabilitation. Compliance with this measure shall be subject to the satisfaction of the Department of City Planning, Office of Historic Resources prior to any rehabilitation activities associated with the Gogerty Building.

**Monitoring Phase:** Construction; Occupancy (any improvements to the Gogerty Building)

**Enforcement Agency:** Department of City Planning, Office of Historic Resources

**Monitoring Agency:** Department of City Planning, Office of Historic Resources

**Action Indicating Compliance:** Plan approval

- C-5** Prior to construction, the environs of the Project Site (i.e., Project Site and surrounding area) shall be documented with at least twenty-five images in accordance with Historic American Building Survey (HABS) standards. Compliance with this measure shall be demonstrated through a written documentation to the satisfaction of the Department of City Planning, Office of Historic Resources prior to any construction.

**Monitoring Phase:** Pre-Construction

**Enforcement Agency:** Department of City Planning, Office of Historic Resources

**Monitoring Agency:** Department of City Planning, Office of Historic Resources

**Action Indicating Compliance:** Written approval from the Office of Historic Resource

**C-6** If any archaeological materials are encountered during the course of Project development, all further development activity shall halt and:

- a. The services of an archaeologist shall then be secured by contacting the South Central Coastal Information Center (657-278-5395) located at California State University Fullerton, or a member of the Register of Professional Archaeologists (ROPA) or a ROPA-qualified archaeologist, who shall assess the discovered material(s) and prepare a survey, study or report evaluating the impact;
- b. The archaeologist's survey, study or report shall contain a recommendation(s), if necessary, for the preservation, conservation, or relocation of the resource;
- c. The Project Applicant shall comply with the recommendations of the evaluating archaeologist, as contained in the survey, study or report; and
- d. Project development activities may resume once copies of the archaeological survey, study or report are submitted to the SCCIC Department of Anthropology. Prior to the issuance of any building permit, the Project Applicant shall submit a letter to the case file indicating what, if any, archaeological reports have been submitted, or a statement indicating that no material was discovered.
- e. A covenant and agreement binding the Project Applicant to this condition shall be recorded prior to issuance of a grading permit.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of City Planning

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Archaeologist field inspection sign-off

**C-7** If any paleontological materials are encountered during the course of Project development, all further development activities shall halt and:

- a. The services of a paleontologist shall then be secured by contacting the Center for Public Paleontology - USC, UCLA, California State University Los Angeles, California State University Long Beach, or the Los Angeles County Natural History Museum – who shall assess the discovered material(s) and prepare a survey, study or report evaluating the impact;
- b. The paleontologist's survey, study or report shall contain a recommendation(s), if necessary, for the preservation, conservation, or relocation of the resource;
- c. The Project Applicant shall comply with the recommendations of the evaluating paleontologist, as contained in the survey, study or report; and
- d. Project development activities may resume once copies of the paleontological survey, study or report are submitted to the Los Angeles County Natural History Museum. Prior to the issuance of any building permit, the Project Applicant shall submit a letter to the case file indicating what, if any, paleontological reports have been submitted, or a statement indicating that no material was discovered.
- e. A covenant and agreement binding the Project Applicant to this condition shall be recorded prior to issuance of a grading permit.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of City Planning

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Paleontologist field inspection sign-off

- C-8** If human remains are discovered at the Project Site during construction, work at the specific construction site at which the remains have been uncovered shall be suspended, and the City of L.A. Public Works Department and County Coroner shall be immediately notified. If the remains are determined by the County Coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety; Los Angeles County Coroner

**Action Indicating Compliance:** Public Works Department or Native American Heritage Commission sign-off

- D-1** The design and construction of the Project shall conform to the Uniform Building Code seismic standards as approved by the Department of Building and Safety.

**Monitoring Phase:** Pre-Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off

- D-2** Prior to the issuance of building or grading permits, the Project Applicant shall submit a final geotechnical report prepared by a registered civil engineer or certified engineering geologist to the written satisfaction of the Department of Building and Safety. The final geotechnical report shall ensure adequate geotechnical support for the proposed structures given the existing geologic conditions on the Project Site. The final geotechnical report shall make final design-level recommendations regarding liquefaction, expansive soils, soil strength loss, estimation of settlement, lateral movement and reduction in foundation soil-bearing capacity, as well as carry forward the applicable recommendations contained in the preliminary geotechnical report. The final geotechnical report shall include additional borings, test pits, groundwater monitoring wells, subsurface shear wave velocity testing, and laboratory testing that shall ensure adequate geotechnical support for the Project's proposed structures and inform compliance with all applicable building codes.

**Monitoring Phase:** Pre-Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Written satisfaction of Department of Building and Safety

- D-3** Towers and other very heavily loaded structures shall be supported by a mat foundation, CIDH pile foundation, an ACIP pile, or a combination of a mat and pile foundation system. Drilled pile bearings within the Old Alluvium shall range from approximately 24 to 36 inches in diameter and shall be designed for loads between approximately 300 to 1,000 kips per pile or higher. Preliminary shallow foundation net bearing capacities in the Old Alluvium shall range from about 6,000 to 10,000 psf.

**Monitoring Phase:** Pre-Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety



**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off

- D-4** Lighter low-rise structures shall be supported on individual spread footings bearing in the Young Alluvium designed for bearing pressures from about 2,000 to 4,000 psf.

**Monitoring Phase:** Pre-Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off

- D-5** Floor slabs shallower than el 347 on the West Site shall be designed as slab-on-grade. Subject to final design-level geotechnical considerations, a pressure slab and waterproofing shall be required for the East Site.

**Monitoring Phase:** Pre-Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off

- D-6** Laterally-braced below-grade walls shall be designed for at-rest earth pressures. Below-grade walls free to rotate at the top shall be designed for active soil pressures. Seismic earth pressure and surcharge pressures shall be accounted for in the below-grade wall design. Hydrostatic pressures shall be accounted for in the design for walls below el 347. Subject to final design-level geotechnical considerations, an equivalent fluid pressure of 60 pcf shall be assumed for non-yielding below grade walls.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Plan approval

- D-7** A wall drainage system shall be installed behind below-grade walls to minimize the potential accumulation of hydrostatic pressure behind the walls. Waterproofing shall be required for walls below about el 347.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Plan approval

- D-8** Temporary excavation support, likely soldier beams, and lagging with tiebacks shall be required to facilitate the proposed deep below-grade excavation.

**Monitoring Phase:** Pre-Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off

- D-9** Underpinning of the buildings bordering the East Site and West Site shall be required depending on final new building below-grade footprint limits and proximity to these structures.

Monitoring Phase: Pre-Construction (Design Phase); Construction  
Enforcement Agency: Department of Building and Safety  
Monitoring Agency: Department of Building and Safety  
Actions Indicating Compliance: Plan approval; Field inspection sign-off

- D-10** Pre-construction conditions documentation shall be performed to document conditions of the neighboring/bordering buildings, including the historic structures that are on or adjacent to the Project Site, prior to construction activities. An adjacent structure monitoring program shall be developed for implementation and monitoring during construction.

The performance standards of the adjacent structure monitoring plan shall include the following:

All new construction work shall be performed so as not to adversely impact or cause loss of support to neighboring/bordering structures. Pre-construction conditions documentation shall be performed to document conditions of the neighboring/bordering buildings, including the historic structures that are on or adjacent to the Project Site, prior to initiating construction activities.

As a minimum, the documentation shall consist of video and photographic documentation of accessible and visible areas on the exterior and select interior facades of the buildings immediately bordering the Project Site. A registered civil engineer or certified engineering geologist shall develop recommendations for the adjacent structure monitoring program that shall include, but not be limited to, vibration monitoring, elevation and lateral monitoring points, crack monitors and other instrumentation deemed necessary to protect adjacent building and structure from construction-related damage. The monitoring program shall include vertical and horizontal movement, as well as vibration thresholds. If the thresholds are met or exceeded, work shall stop in the area of the affected building until measures have been taken to stabilize the affected building to prevent construction related damage to adjacent structures.

**Monitoring Phase:** Pre-Construction; Construction  
**Enforcement Agency:** Department of Building and Safety  
**Monitoring Agency:** Department of Building and Safety  
**Actions Indicating Compliance:** Approval of adjacent structure monitoring plan; Field inspection sign-off

- E-1** Before subsurface excavation, the Project Applicant shall conduct a Phase II Subsurface Investigation, in areas identified as being previously used for automobile fueling operations, to determine the extent to which soil or groundwater contamination, if any, beneath the Property has been impacted by historical activities. Any soil contamination and underground storage tanks associated with such historical usage shall be abated in accordance with all applicable City, state, and federal regulations.

**Monitoring Phase:** Pre-Construction  
**Enforcement Agency:** Department of Building and Safety  
**Monitoring Agency:** Department of Building and Safety  
**Actions Indicating Compliance:** Submittal of Phase II Subsurface Investigation; Documentation of abatement of any soil contamination and USTs

- E-2** Prior to demolition of any existing on-site structures, all asbestos-containing materials identified on the properties shall be abated in accordance with all applicable City, state, and federal regulations.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Plan approval and issuance of demolition permit

- E-3** Prior to the issuance of a demolition permit for any existing on-site structure, all lead-based paint identified on the properties shall be abated in accordance with all applicable City, state, and federal regulations.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Plan approval and issuance of demolition permit

- E-4** Before subsurface excavation, the Project Applicant shall conduct a subsurface investigation of the suspected subsurface steel structure (located on the 1720 North Vine Street parcel) noted during the geophysical survey to ensure proper removal or treatment of the structure during development activities. Any removal or treatments implemented shall be in accordance with all applicable City, state, and federal regulations.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Submittal of subsurface investigation; Field inspection sign-off

- E-5** Before subsurface excavation, the Project Applicant shall conduct a subsurface investigation of the suspected USTs (located on the 1749 North Vine Street parcel) to ensure proper removal or treatment of the structures during development activities. Any removal or treatments implemented shall be in accordance with all applicable City, state, and federal regulations.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Submittal of subsurface investigation; Field inspection sign-off

- F-1** Excavation and grading activities shall be scheduled during dry weather periods, to the extent feasible. If grading occurs during the rainy season (October 15 through April 1), diversion dikes shall be constructed to channel runoff around the Project Site. Channels shall be lined with grass or roughened pavement to reduce runoff velocity.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Field inspection sign-off

- F-2** Appropriate erosion control and drainage devices shall be provided to the satisfaction of the Building and Safety Department. These measures include interceptor terraces, berms, veechannels, and inlet and outlet structures, as specified by Section 91.7013 of the Los Angeles Building Code, including planting fast-growing annual and perennial grasses in areas where construction is not immediately planned.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicated Compliance:** Field inspection sign-off

- F-3** Stockpiles and excavated soil shall be covered with secured tarps or plastic sheeting

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Field inspection sign-off

- F-4** All waste shall be disposed of properly. Use appropriately labeled recycling bins to recycle construction materials including: solvents, water-based paints, vehicle fluids, broken asphalt and concrete, wood, and vegetation. Non-recyclable materials/wastes shall be taken to an appropriate landfill. Toxic wastes shall be discarded at a licensed regulated disposal site.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Quarterly compliance report submitted by contractor

- F-5** Leaks, drips, and spills shall be cleaned up immediately to prevent contaminated soil on paved surfaces that can be washed away into the storm drains.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicated Compliance:** Quarterly compliance report submitted by contractor

- F-6** Pavement shall not be hosed down at material spills. Dry cleanup methods shall be used whenever possible.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Quarterly compliance report submitted by contractor

- F-7** Dumpsters shall be covered and maintained. Uncovered dumpsters shall be placed under a roof or be covered with tarps or plastic sheeting.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Field inspection sign-off

- F-8** The Project Applicant shall implement storm water best management practices (BMPs) to treat and infiltrate the runoff from a storm event producing 0.75 inch of rainfall in a 24-hour period. The design of structural BMPs shall be in accordance with the Development Best Management Practices Handbook, Part B, Planning Activities. A signed certificate from a California licensed civil engineer or licensed architect that the proposed BMPs meet this numerical threshold standard shall be required.

**Monitoring Phase:** Pre-Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Submittal of certificate; Field inspection sign-off

- F-9** Post-development peak storm water runoff discharge rates shall not exceed the estimated predevelopment rate.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Plan approval

- F-10** The amount of impervious surface shall be reduced to the extent feasible by using permeable pavement materials where appropriate, including: pervious concrete/asphalt, unit pavers (e.g., turf block), and granular materials (e.g., crushed aggregates, cobbles, etc.).

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Plan approval

- F-11** A roof runoff system shall be installed, as feasible, where the site is suitable for installation.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of Public Works

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Plan approval

- F-12** All storm drain inlets and catch basins within the Project area shall be stenciled with prohibitive language (such as NO DUMPING - DRAINS TO OCEAN) and/or graphical icons to discourage illegal dumping.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Public Works

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Field inspection sign-off



- F-13** Legibility of stencils and signs shall be maintained.

**Monitoring Phase:** Occupancy  
**Enforcement Agency:** Department of Public Works  
**Monitoring Agency:** Department of Building and Safety  
**Action Indicating Compliance:** Field inspection sign-off

- F-14** Materials with the potential to contaminate storm water shall be placed in an enclosure, such as a cabinet or shed or similar structure that prevents contact with or spillage to the storm water conveyance system.

**Monitoring Phase:** Construction; Occupancy  
**Enforcement Agency:** Department of Building and Safety  
**Monitoring Agency:** Department of Building and Safety  
**Action Indicating Compliance:** Field inspection sign-off

- F-15** Storage areas shall be paved and sufficiently impervious to contain leaks and spills.

**Monitoring Phase:** Pre-Construction (Design Phase)  
**Enforcement Agency:** Department of Building and Safety  
**Monitoring Agency:** Department of Building and Safety  
**Action Indicating Compliance:** Plan approval

- F-16** An efficient irrigation system shall be designed and implemented by a certified landscape contractor to minimize runoff including: drip irrigation for shrubs to limit excessive spray; a SWAT-tested weather-based irrigation controller with rain shutoff; matched precipitation (flow) rates for sprinkler heads; rotating sprinkler nozzles; minimum irrigation system distribution uniformity of 75 percent; and flow reducers.

**Monitoring Phase:** Pre-Construction (Design Phase); Construction  
**Enforcement Agency:** Department of Building and Safety  
**Monitoring Agency:** Department of Building and Safety  
**Actions Indicating Compliance:** Plan approval; Field inspection sign-off

- F-17** The Owner(s) of the property shall prepare and execute a covenant and agreement (Planning Department General form CP-6770) satisfactory to the Planning Department binding the Owner(s) to post construction maintenance on the structural BMPs in accordance with the Standard Urban Stormwater Mitigation Plan and or per manufacturer's instructions.

**Monitoring Phase:** Occupancy  
**Enforcement Agency:** Department of City Planning; Department of Building and Safety  
**Monitoring Agency:** Department of City Planning  
**Actions Indicating Compliance:** Approval of Form CP-6770; Field inspections sign-off

- F-18** Toxic wastes shall be discarded at a licensed regulated disposal site.

**Monitoring Phase:** Construction  
**Enforcement Agency:** Department of Building and Safety  
**Monitoring Agency:** Department of Building and Safety  
**Action Indicating Compliance:** Quarterly compliance report submitted by contractor

- F-19** The Project Applicant shall comply with all mandatory storm water permit requirements (including, but not limited to SWPPP and SUSMP requirements) at the Federal, State and local level.

**Monitoring Phase:** Pre-Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Quarterly compliance report submitted by contractor

- H-1** The Project shall comply with the City of Los Angeles Noise Ordinance No. 144331 and 161574, and any subsequent ordinances, which prohibit the emission or creation of noise beyond certain levels at adjacent uses unless technically infeasible.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off;

- H-2** Construction and demolition shall be restricted to the hours of 7:00 AM to 6:00 PM Monday through Friday, and 8:00 AM to 6:00 PM on Saturday or national holidays. No construction activities shall occur on any Sunday.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-3** Noise and groundborne vibration construction activities whose specific location on the Project Site may be flexible (e.g., operation of compressors and generators, cement mixing, general truck idling) shall be conducted as far as feasibly possible from all adjacent land uses. The use of those pieces of construction equipment or construction methods with the greatest peak noise generation potential shall be operated efficiently to minimize noise impacts to the maximum extent feasible.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-4** Construction activities shall be scheduled so as to avoid as feasible operating several pieces of equipment simultaneously, which causes high noise levels.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-5** Flexible sound control curtains shall be placed around all drilling apparatuses, drill rigs, and jackhammers when in use.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-6** The Project contractor shall use power construction equipment with noise shielding and muffling devices in accordance with the manufacture's recommendations.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-7** Barriers such as plywood structures or flexible sound control curtains extending eight-feet high shall be erected around the Project Site boundary to minimize the amount of noise on the adjacent land uses and surrounding noise-sensitive receptors to the maximum extent feasible during construction.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-8** All construction truck traffic shall be restricted to truck routes approved by the City of Los Angeles Department of Building and Safety, which shall avoid residential areas and other sensitive receptors to the extent feasible.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-9** The Project shall comply with the City of Los Angeles Building Regulations Ordinance No. 178048, which requires a construction site notice to be provided that includes the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the Site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public and approved by the City's Department of Building and Safety.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-10** Two weeks prior to the commencement of construction at the Project Site, notification shall be provided to the immediate surrounding properties that discloses the construction schedule, including the various types of activities and equipment that shall be occurring throughout the duration of the construction period.

**Monitoring Phase:** Pre-Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Documentation of notification provided

- H-11** All new construction work shall be performed so as not to adversely impact or cause loss of support to on-site and neighboring/bordering structures. Pre-construction conditions documentation shall be performed to document conditions of the on-site and neighboring/bordering buildings, including the Pantages Theater, the Avalon Theater, the Art Deco Storefronts on Yucca Street, the AMDA building at 1777 Vine Street, and the Capitol Records Complex, prior to construction activities. The structure monitoring program shall be developed for implementation and monitoring during construction. The performance standards of the adjacent structure monitoring plan shall include the following. All new construction work shall be performed so as not to adversely impact or cause loss of support to neighboring/bordering structures. Pre-construction conditions documentation shall be performed to document conditions of the neighboring/bordering buildings, including the historic structures that are on or adjacent to the Project Site, prior to initiating construction activities. At a minimum, the documentation shall consist of video and photographic documentation of accessible and visible areas on the exterior and select interior façades of the buildings immediately bordering the Project Site. A registered civil engineer or certified engineering geologist shall develop recommendations for the adjacent structure monitoring program that shall include, but not be limited to, vibration monitoring, elevation and lateral monitoring points, crack monitors and other instrumentation deemed necessary to protect adjacent building and structure from construction-related damage. The monitoring program shall include vertical and horizontal movement, as well as vibration thresholds. If the thresholds are met or exceeded, work shall stop in the area of the affected building until measures have been taken to stabilize the affected building to prevent construction related damage to adjacent structures.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Approval of adjacent structure monitoring plan; Field inspection sign-off

- H-12** Driven soldier piles shall be prohibited during construction. Augered piled are permitted.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-13** All construction equipment engines shall be properly tuned and muffled according to manufacturers' specifications.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-14** All mitigation measures restricting construction activity shall be posted at the Project Site and all construction personnel shall be instructed as to the nature of the noise and vibration mitigation measures.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-15** Rubber tired equipment shall be utilized when applicable, such as a combination loader/excavator for light-duty construction operations. Tracked excavator and tracked bulldozers shall be utilized during mass excavation as necessary to facilitate timely completion of the excavation phase of development.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- H-16** All plans and specifications and construction means and methods shall be provided to EMI/Capitol Records for review concurrently with their submission to the City of Los Angeles Department of Building & Safety.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Confirmation of submittal to EMI/Capitol Records and Department of Building and Safety

- H-17** In the event that excavation and development design encounters the foundation or structural walls of the Capitol Records Building echo chamber, a not less than two-inch thick closed cell neoprene foam liner shall be applied to exposed excavation at the West Site adjacent to the EMI/Capitol Records echo chamber provided that: (1) the liner is approved for this use by the City of Los Angeles Department of Building & Safety (if not so approved, then an equivalent product approved for this use by the City of Los Angeles Department of Building and Safety shall be applied) and (2) a Miradrain system (or equivalent product) for drainage and waterproofing shall be installed per manufacturer recommendations. A 10 to 12 inch thick cast-in-place or shotcrete wall shall then be built to attenuate operational noise created by the Project.



**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Field inspection sign-off

- H-18** All new mechanical equipment associated with the Project shall comply with Section 112.02 of the City of Los Angeles Municipal Code, which prohibits noise from air conditioning, refrigeration, heating, pumping, and filtering equipment from exceeding the ambient noise level on the premises of other occupied properties by more than 5 dBA.

**Monitoring Phase:** Pre-Construction (Design Phase); Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Actions Indicating Compliance:** Plan approval; Field inspection sign-off

- H-19** Consistent with Section 99.05.507.4.1 of the LAMC (LA Green Building Code), Exterior Noise Transmission, the proposed building envelope shall have an STC of at least 50, and exterior windows shall have a minimum STC of 30. Furthermore, the Project shall comply with Title 24 Noise Insulation Standards, which specifies the maximum allowable sound transmission between dwelling units in new multi-family buildings, and limits allowable interior noise levels in new multi-family residential units to 45 dBA CNEL.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Plan approval

- J.1-1** During demolition and construction, LAFD access from major roadways shall remain clear and unobstructed.

**Monitoring Phase:** Construction

**Enforcement Agency:** Los Angeles Fire Department

**Monitoring Agency:** Department of Building and Safety; Los Angeles Fire Department

**Action Indicating Compliance:** Field inspection sign-off

- J.1-2** The Project Applicant shall submit a plot plan to the LAFD prior to occupancy of the Project, for review and approval, which shall provide the capacity of the fire mains serving the Project Site. Any required upgrades shall be identified and implemented prior to occupancy of the Project.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Los Angeles Fire Department

**Monitoring Agency:** Department of Building and Safety; Los Angeles Fire Department

**Action Indicating Compliance:** Approval of plan by LAFD

- J.1-3** The design of the Project Site shall provide adequate access for LAFD equipment and personnel to the structure.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Los Angeles Fire Department

**Monitoring Agency:** Department of Building and Safety; Los Angeles Fire Department

**Action Indicating Compliance:** Plan approval

- J.1-4** No building or portion of a building shall be constructed more than 300 feet from an approved fire hydrant. Distance shall be computed along the path of travel, except for dwelling units, where travel distances shall be computed to the front door of the unit.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Los Angeles Fire Department

**Monitoring Agency:** Department of Building and Safety; Los Angeles Fire Department

**Action Indicating Compliance:** Plan approval

- J.1-5** During the plan check process, the Project Applicant shall submit plot plans for LAFD approval of access and fire hydrants.

**Monitoring Phase:** Pre-Construction (Design)

**Enforcement Agency:** Los Angeles Fire Department

**Monitoring Agency:** Department of Building and Safety; Los Angeles Fire Department

**Action Indicating Compliance:** Approval of plot plans by LAFD

- J.1-6** The Project shall provide adequate off-site public and on-site private fire hydrants in its final designs.

**Monitoring Phase:** Pre-Construction (Design)

**Enforcement Agency:** Los Angeles Fire Department

**Monitoring Agency:** Department of Building and Safety; Los Angeles Fire Department

**Action Indicating Compliance:** Plan approval

- J.1-7** Project Applicant shall submit an emergency response plan to LAFD prior to occupancy of the Project for review and approval. The emergency response plan shall include but not be limited to the following: mapping of emergency exits, evacuation routes for vehicles and pedestrians, location of nearest hospitals, and fire departments. Any required modifications shall be identified and implemented prior to occupancy of the Project.

**Monitoring Phase:** Pre-Occupancy

**Enforcement Agency:** Los Angeles Fire Department

**Monitoring Agency:** Department of Building and Safety; Los Angeles Fire Department

**Action Indicating Compliance:** Approval of Emergency Response Plan by LAFD

- J.2-1** The contractor shall provide temporary, minimum 6-foot-high, commercial-grade, chain-link construction fences to protect construction zones on both the East and West Sites. The perimeter fence shall have gates installed to facilitate the ingress and egress of equipment and the work force. The bottom of the fence shall have filter fabric to prevent silt run off where necessary. Straw hay bales shall be utilized around catch basins when located within the construction zone. The perimeter and silt fence shall be maintained while in place. Where applicable, the construction fence shall be incorporated with a pedestrian walkway. Temporary lighting shall be installed and maintained at the pedestrian walkway. Should sections of the site fence have to be removed to facilitate work in progress, barriers and or K – rail shall be utilized to isolate and protect the public from unsafe conditions.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Los Angeles Police Department

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- J.2-2** The Project shall provide for the deployment of a private security guard to monitor and patrol the Site on an as-needed basis appropriate to the phase of construction throughout the construction period.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Los Angeles Police Department

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- J.2-3** Emergency access shall be maintained to the Project Site during construction through marked emergency access points approved by the LAPD.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Los Angeles Police Department

**Actions Indicating Compliance:** Field inspection sign-off; LAPD approval of marked access points; Quarterly compliance report submitted by contractor

- J.2-4** If there are partial closures to streets surrounding the Project Site, flagmen shall be used to facilitate the traffic flow until such temporary street closures are complete.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation

**Action Indicating Compliance:** Field inspection sign-off

- J.2-5** The Project shall incorporate landscaping designs that shall allow high visibility around the buildings, and shall consult with the LAPD with respect to its landscaping plan.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Los Angeles Police Department

**Action Indicating Compliance:** Plan approval

- J.2-6** The Project shall provide security lighting around buildings and parking areas in order to improve security, and shall consult with the LAPD as to its lighting plan.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Los Angeles Police Department

**Action Indicating Compliance:** Plan approval

- J.2-7** The Project Site's public and private recreational facilities shall be designed to ensure a high visibility of these areas, including the provision of adequate lighting for security.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of Building and Safety

**Monitoring Agency:** Los Angeles Police Department  
**Action Indicating Compliance:** Plan approval

- J.2-8** The Project Applicant shall provide the LAPD with the opportunity to review Project plans at the plan check stage of plan approval and shall incorporate any reasonable LAPD recommendations.

**Monitoring Phase:** Pre-Construction (Design Phase)  
**Enforcement Agency:** Department of Building and Safety  
**Monitoring Agency:** Los Angeles Police Department  
**Action Indicating Compliance:** Plan approval

- J.2-9** The Project Applicant shall provide the LAPD with a diagram of each portion of the Project Site, showing access routes and additional access information as requested by the LAPD, to facilitate police response.

**Monitoring Phase:** Pre-Construction (Design Phase); Construction  
**Enforcement Agency:** Department of Building and Safety  
**Monitoring Agency:** Los Angeles Police Department  
**Action Indicating Compliance:** Plan approval

- J.3-1** The Project Applicant shall pay all applicable school fees to the Los Angeles Unified School District to offset the impact of additional student enrollment at schools serving the project area.

**Monitoring Phase:** Pre-Construction  
**Enforcement Agency:** Department of City Planning  
**Monitoring Agency:** Los Angeles Unified School District  
**Action Indicating Compliance:** Issuance of building permit

- J.4-1** The Project shall provide a minimum of 100 square feet of usable open space for each dwelling unit having less than three habitable rooms; 125 square feet for each dwelling unit having three habitable rooms; and 175 square feet for each dwelling unit having more than three habitable rooms pursuant to the requirements of LAMC Section 12.21(G). A minimum of 25 percent of the common open space area shall be planted with ground cover, shrubs, or trees and at least one 36 inch box tree is required for every four dwelling units.

**Monitoring Phase:** Pre-Construction (Design Phase)  
**Enforcement Agency:** Department of City Planning  
**Monitoring Agency:** Department of City Planning  
**Action Indicating Compliance:** Plan approval

- J.4-2** The Project shall pay all applicable fees associated with the Dwelling Unit Construction Tax set forth in LAMC Section 21.10.3(a)(1). The applicable dwelling unit tax shall be paid to the Department of Building and Safety and placed into a "Park and Recreational Sites and Facilities Fund" to be used exclusively for the acquisition and development of park and recreational sites.

**Monitoring Phase:** Pre-Construction (Design Phase)  
**Enforcement Agency:** Department of Building and Safety  
**Monitoring Agency:** Department of Building and Safety

**Action Indicating Compliance:** Issuance of building permit

- J.4-3** Pursuant to Section 17.12 of the Los Angeles Municipal Code, the Project Applicant shall pay all applicable Quimby fees to the City of Los Angeles for the construction of condominium dwelling units, prior to approval and recordation of the final map.

**Monitoring Phase:** Pre-Construction (Design Phase)

**Enforcement Agency:** Department of City Planning

**Monitoring Agency:** Department of City Planning

**Action Indicating Compliance:** Approval and recordation of final map

- J.5-1** The Project Applicant shall pay a mitigation fee of \$200 per capita, based on the projected resident population of the proposed development, to the Los Angeles Public Library to offset the potential impact of additional library facility demand in the Project Area.

**Monitoring Phase:** Pre-Occupancy

**Enforcement Agency:** Department of City Planning

**Monitoring Agency:** Los Angeles Public Library; Department of City Planning

**Action Indicating Compliance:** Issuance of certificate of occupancy

- K.1-1** To mitigate potential temporary traffic impacts of any necessary lane and/or sidewalk closures during the construction period, the Project Applicant shall, prior to construction, develop a Construction Management Plan/Worksite Traffic Control Plan (WTCP) to be approved by LADOT. The WTCP shall be designed to minimize the effects of construction on vehicular and pedestrian circulation and assist in the orderly flow of vehicular and pedestrian circulation on the public streets in the area of the Project. The WTCP shall include temporary roadway striping and signage for traffic flow as necessary, elements compliant with conditions xv through xvii in Measure K.1-3, and the identification and signage of alternative pedestrian routes in the immediate vicinity of the Project. The Plan shall show the location of any roadway or sidewalk closures, traffic detours, haul routes, hours of operation, protective devices, warning signs and access to abutting properties. Any construction related hauling traffic shall be restricted to off-peak hours.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation

**Action Indicating Compliance:** Approval of WTCP

- K.1-2** In order to minimize peak period construction trips, construction related traffic shall be restricted to off-peak hours. The following language is to be incorporated into the WTCP:

- i. On weekdays, work shifts shall not begin between 7:01 AM and 9:29 AM.
- ii Work shifts shall not end between 3:31 PM and prior to 6:29 PM.

The WTCP shall also include Mitigation Measure K.1-3, Condition ii, time restrictions for hauling.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation

**Actions Indicating Compliance:** Approval of WTCP; Quarterly compliance report submitted by contractor

**K.1-3** Prior to the issuance of a grading permit, the Project Applicant shall record and execute a Covenant and Agreement (Planning Department General Form CP-6770), binding the Project Applicant to the following haul route conditions:

- i. All Project construction haul truck traffic shall be restricted to truck routes approved by the City of Los Angeles Department of Building and Safety, which shall avoid residential areas and other sensitive receptors to the extent feasible.
- ii. Except under a permitted exception, all hauling (both delivery and export) shall be during the hours of 9:00 AM to 4:00 PM or 6:30 PM to 9:00 PM. Any exceptions to the above time limits shall be permitted by the Department of Building and Safety in consultation with the Department of Transportation. Exceptions to the haul activity time limits are to be permitted only when necessary, such as for the continuation of concrete pours that cannot reasonably be completed otherwise.
- iii. Permitted Days of the week shall be Monday through Saturday. No hauling activities are permitted on Sundays or Holidays.
- iv. Project haul trucks shall be restricted to 18-wheel trucks or smaller.
- v. The Traffic Bureau of the Los Angeles Police Department shall be notified prior to the start of hauling (213.485.3106).
- vi. Streets shall be cleaned of spilled materials at the termination of each work day.
- vii. The final approved haul routes and all the conditions of approval shall be available on the job site at all times.
- viii. The Contractor shall keep the construction area sufficiently dampened to control dust caused by grading and hauling, and at all times provide reasonable control of dust caused by wind.
- ix. Hauling and grading equipment shall be kept in good operating condition and muffled as required by law.
- x. All loads shall be secured by trimming, watering or other appropriate means to prevent spillage and dust.
- xi. All trucks are to be watered only when necessary at the job site to prevent excessive blowing dirt.
- xii. All trucks are to be cleaned of loose earth at the job site to prevent spilling. Any material spilled on the public street shall be removed by the contractor.
- xiii. The Project Applicant shall be in conformance with the State of California, Department of Transportation policy regarding movements of reducible loads.



- xiv. All regulations set forth in the State of California Department of Motor Vehicles pertaining to the hauling of earth shall be complied with.
- xv. "Truck Crossing" warning signs shall be placed 300 feet in advance of the exit in each direction.
- xvi. One flag person(s) shall be required at the job site to assist the trucks in and out of the Project area. Flag person(s) and warning signs shall be in compliance with Part II of the 1985 Edition of "Work Area Traffic Control Handbook."
- xvii. The City of Los Angeles, Department of Transportation, telephone 213.485.2298, shall be notified 72 hours prior to beginning operations in order to have temporary "No Parking" signs posted along the route.
- xviii. Any desire to change the prescribed routes shall be approved by the concerned governmental agencies by contacting the Street Use Inspection Division at 213.485.3711 before the change takes place.
- xix. The permittee shall notify the Street Use Inspection Division, 213.485.3711, at least 72 hours prior to the beginning of hauling operations and shall also notify the Division immediately upon completion of hauling operations.
- xx. A surety bond by Contractor shall be posted in an amount satisfactory to the City Engineer for maintenance of haul route streets. The forms for the bond shall be issued by the Central District Engineering Office, 201 N. Figueroa Street, Room 770, Los Angeles, CA 90012. Further information regarding the bond may be obtained by calling 213.977.6039

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation; Department of Building and Safety; Los Angeles Police Department

**Actions Indicating Compliance:** Plan approval; Issuance of grading permit; Field inspection sign-off; Quarterly compliance report submitted by contractor

- K.1-4** The Project Applicant shall contact the Metro Bus Operations Control Special Events Coordinator at 213-922-4632 regarding construction activities that may impact Metro bus lines.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Metro; Department of Transportation

**Action Indicating Compliance:** Quarterly compliance report submitted by contractor

- K.1-5** Transportation Demand Management (TDM) – The Project is a mixed-use development, located within a quarter mile radius of the Hollywood/Vine Metro Red Line Transit Station and allows immediate access to the Metro Red Line rail system. Additionally, a number of Metro and LADOT bus routes are less than one-quarter mile (considered to be within reasonable walking distance) from the Project Site, providing access for Project employees, visitors, residents and guests. The Project Site is surrounded by numerous supporting and complementary uses, such as additional housing for employees and additional shopping for residents within walking distance.

The Project shall take advantage of these opportunities through a pedestrian/bicycle friendly design and implementation of a TDM program. A preliminary TDM program shall be prepared and provided for LADOT review prior to the issuance of the first building permit for the Project and a final TDM program approved by LADOT is required prior to the issuance of the first certificate of occupancy for the Project. The TDM Program applies to the new land uses to be developed as part of the final development program for the Project. To the extent a TDM Program element is specific to a use, such element shall be implemented at such time that new land use is constructed. Both the pedestrian/bicycle friendly design and TDM program shall be acceptable to the Departments of Planning and Transportation. The TDM program shall include, but not be limited to, the following strategies:

- Provide an internal Transportation Management Coordination Program with an on-site transportation coordinator;
- A bicycle, transit, and pedestrian friendly environment;
- Administrative support for the formation of carpools/vanpools;
- Inclusion of business services to facilitate work-at-home arrangements for the proposed residential uses, if constructed;
- Flexible/alternative work schedules and telecommuting programs;
- Provide car share amenities (including a minimum of 5 parking spaces for shared car program);
- Parking provided as an option only for all leases and sales;
- A provision requiring compliance with the State Parking Cash-out Law in all leases;
- Provision of a self-service bicycle repair area and shared tools for residents and employees;
- Distribution of information to all residents and employees of the onsite pedestrian, bicycle and transit rider services, including shared car and shared bicycle services;
- Coordinate with LADOT to provide space for a future Integrated Mobility Hub;
- Guaranteed ride home program potentially via the shared car program;
- Transit routing and schedule information;
- Transit pass sales;
- Rideshare matching services;
- Bike and walk to work promotions;
- Visibility of the alternative commute options through a location on the central court of the Project Site;
- Preferential rideshare loading/unloading or parking location;
- Financial contribution to the City's Bicycle Plan Trust Fund established under Ordinance No. 186,272.

In addition to these TDM measures, LADOT also recommends that the Project Applicant explore the implementation of an on-demand van, shuttle or tram service that connects the Project to off-site transit stops based on the transportation needs of the Project's employees, residents and visitors. Such a service shall be included as an additional measure in the TDM program if it is deemed feasible and effective by the Project Applicant.

**Monitoring Phase:** Pre-Construction; Construction; Pre-Occupancy; Occupancy

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation

**Actions Indicating Compliance:** TDM program approval; Issuance of building permit; Issuance of certificate of occupancy; Quarterly compliance report submitted by contractor; Annual compliance report submitted by building management

**K.1-6** Hollywood Community Transportation Management Organization (TMO) – The Project shall join or help create a TMO serving the Hollywood Area by providing a meeting area and initial staffing for one year (free of charge). The Project owner shall participate in the TMO as a member. The TMO shall offer services to member organizations, which include:

- Matching services for multi-employer carpools,
- Multi-employer vanpools (to serve areas that are identified as under-served by transit, but contain the residences of the Hollywood area employees),
- Help coordinating the Bicycle Share and Car Share programs,
- Promotion and implementation of pedestrian, bicycle and transit stop enhancements (such as transit/bicycle lanes), and
- Other efforts to encourage and increase the use of alternative transportation modes in the Hollywood area.

**Monitoring Phase:** Pre-Construction; Construction; Pre-Occupancy; Occupancy

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation

**Actions Indicating Compliance:** Plan approval; Quarterly compliance report submitted by contractor; Annual compliance report submitted by building management

**K.1-7** Integrated Mobility Hubs – To support the goals of the Project's TDM plan and to expand the City's program, the Project Applicant shall coordinate with LADOT to provide space for a Mobility Hub in a convenient location within or near the Project Site. The Project Applicant has offered to provide on-site parking spaces for shared cars that could be a project-specific amenity or be linked with the larger Mobility Hubs program. The Project Applicant shall also provide space that shall accommodate bicycle parking, bicycle lockers, and shared bicycles. LADOT is currently working on an operating plan and assessment study for the Mobility Hubs project that shall include specific sites, designs, and blueprints for Mobility Hub stations. The results of this study shall assist in determining the appropriate location and space needed to accommodate a Mobility Hub at the Project Site.

**Monitoring Phase:** Pre-Construction; Construction; Pre-Occupancy, Occupancy

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation

**Actions Indicating Compliance:** Plan approval; Quarterly compliance report submitted by contractor; Annual compliance report submitted by building management

**K.1-8** Transit Enhancements –The Project shall provide a pedestrian friendly environment through sidewalk pavement reconstruction/improvements, and improved amenities such as landscaping and shading particularly along the sidewalks on Ivar Avenue and Argyle Avenue linking the project to the Hollywood/Vine Metro Red Line Station. Enhancements shall include reconstructing damaged or missing pavement in the sidewalks along Ivar Avenue and Argyle Avenue between the Project Site and the Hollywood/Vine Metro Red Line Transit Station, and installing up to four transit shelters with benches at stops within a block of the Project Site, as deemed appropriate by LADOT. The LADOT designation

of locations shall be made in consultation with Los Angeles County Metropolitan Transportation Authority (Metro).

**Monitoring Phase:** Pre-Construction; Construction; Pre-Occupancy; Occupancy

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** LA County Transportation Authority; Department of Transportation

**Actions Indicating Compliance:** Plan approval; Quarterly compliance report submitted by contractor; Annual compliance report submitted by building management

- K.1-9 Bike Plan Trust Fund** – The Project Applicant shall contribute a one-time fixed-fee of \$250,000 to be deposited into the City's Bicycle Plan Trust Fund established pursuant to Ordinance No. 186,272. These funds shall be used by LADOT, in coordination with the Department of City Planning and Council District 13, to implement bicycle improvements within the Hollywood area. However, improvements within Hollywood that are consistent with the City's complete streets and smart growth policies shall also be eligible expenses utilizing these funds. Any measures implemented by using the fund shall be consistent with the General Plan Transportation Element. Items beyond signing and striping, such as curb realignment and signal system modifications, may be included in the funded projects, to the degree necessary for safe and efficient operation.

Should shuttle riders on the DASH system warrant an increase in capacity, the Project funding may instead be used for the purchase of a shuttle vehicle for the DASH system.

**Monitoring Phase:** Pre-Construction; Construction; Pre-Occupancy; Occupancy

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation

**Actions Indicating Compliance:** Plan approval; Quarterly compliance report submitted by contractor; Annual compliance report submitted by building management

- K.1-10 Traffic Signal System Upgrades** – The Project Applicant shall be required to implement the traffic signal upgrades identified in Attachment 3 to the LADOT's Correspondence to the Department of City Planning, dated August 16, 2012 (See Appendix K.2 to this Draft EIR). Should the project be approved, then a final determination on how to implement these traffic signal upgrades shall be made by LADOT prior to the issuance of the first building permit. These signal upgrades shall be implemented either by the Project Applicant through the B-permit process of the Bureau of Engineering (BOE), or through payment of a one-time fixed fee to LADOT to fund the cost of the upgrades. If LADOT selects the payment option, then the Project Applicant shall be required to pay LADOT the estimated cost to implement the upgrades, and LADOT shall design and construct the upgrades. If the upgrades are implemented by the Project Applicant through the B-Permit process, then these traffic signal improvements shall be guaranteed prior to the issuance of any building permit and completed prior to the issuance of any certificate of occupancy.

**Monitoring Phase:** Pre-Construction; Construction; Pre-Occupancy; Occupancy

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Bureau of Engineering; Department of Transportation

**Actions Indicating Compliance:** Issuance of building permit; Quarterly compliance report submitted by contractor; Issuance of certificate of occupancy; Annual compliance report submitted by building management

- K.1-11 Intersection Specific Improvements – Argyle Avenue/Franklin Avenue – US 101 Freeway Northbound On-Ramp** – To mitigate the significant traffic impact at this intersection under both existing (2011) and future (2020) conditions, the Project Applicant shall restripe this intersection to provide a left-turn lane, two through lanes, and a right-turn lane for the southbound approach and two left-turn lanes and a shared through/right lane for the northbound approach. The final design of this improvement shall require the joint approval of Caltrans and LADOT.

**Monitoring Phase:** Pre-Construction; Construction; Pre-Occupancy

**Enforcement Agency:** Caltrans; Department of Transportation

**Monitoring Agency:** Caltrans; Department of Transportation

**Actions Indicating Compliance:** Approval of design by Caltrans and LADOT; Implementation of improvement

- K.1-12 Highway Dedication and Street Widening Requirements** – The City Council recently adopted the updated Hollywood Community Plan. The new plan includes revised street standards that provide an enhanced balance between traffic flow and other important street functions including transit routes and stops, pedestrian environments, bicycle routes, building design and site access, etc. Vine Street has been designated as a Modified Major Highway Class II requiring a 35-foot half-width roadway within a 50-foot half-width right-of-way. Yucca Street between Ivar Avenue and Vine Street is classified as a Secondary Highway, which requires a 35-foot half-width roadway within a 45-foot half-width right-of-way. Yucca Street between Vine Street and Argyle Avenue is classified as a Local Street. Ivar Avenue and Argyle Avenue are also classified as Local Streets. A Local Street requires a 20-foot half width roadway within a 30-foot half-width right-of-way. The Project Applicant shall check with BOE's Land Development Group to determine if there are any highway dedication, street widening and/or sidewalk requirements for this project.

**Monitoring Phase:** Pre-Construction

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Bureau of Engineering; Department of Transportation

**Action Indicating Compliance:** Confirmation with Bureau of Engineering

- K.1-13 Implementation of Improvements and Mitigation Measures.** The Project Applicant shall be responsible for the cost and implementation of any necessary traffic signal equipment modifications and bus stop relocations associated with the proposed transportation improvements described above. Unless otherwise noted, all transportation improvements and associated traffic signal work within the City of Los Angeles shall be guaranteed through the B-Permit process of the Bureau of Engineering, prior to the issuance of any building permits and completed prior to the issuance of any certificates of occupancy. Temporary certificates of occupancy may be granted in the event of any delay through no fault of the Project Applicant, provided that, in each case, the Project Applicant has demonstrated reasonable efforts and due diligence to the satisfaction of LADOT. Prior to setting the bond amount, BOE shall require that the developer's engineer or contractor contact LADOT's B-Permit Coordinator, at (213) 928-9663, to arrange a pre-design meeting to finalize the proposed design needed for the project.

**Monitoring Phase:** Pre-Construction; Construction; Pre-Occupancy; Occupancy

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Bureau of Engineering; Department of Transportation

**Actions Indicating Compliance:** Issuance of building permit; Quarterly compliance report submitted by contractor; Issuance of certificate of occupancy

- K.1-14** East Site Residential Unit and Reserved Residential Parking Cap. On the East Site, residential development shall be limited to 450 residential units and 675 reserved residential parking spaces.

**Monitoring Phase:** Pre-Construction

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Bureau of Engineering; Department of Transportation

**Action Indicating Compliance:** Issuance of building permit

- K.2-1** No sidewalk in the pedestrian route along a public right-of-way shall be closed for construction unless an alternative pedestrian route is provided that is no more than 500 feet greater in length than the closed route.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation

**Actions Indicating Compliance:** Plan Approval; Quarterly compliance report submitted by contractor

- K.2-2** Construction Related Parking. Off-street parking shall be provided for all construction-related employees generated by the Project. No employees or subcontractors shall be allowed to park on surrounding residential streets for the duration of all construction activities. There shall be no staging or parking of heavy construction vehicles on the surrounding street for the duration of all construction activities. There shall be no staging or parking of construction vehicles, including vehicles that transport workers, on any residential street in the immediate area. All construction vehicles shall be stored on-site unless returned to the base of operations.

**Monitoring Phase:** Pre-Construction; Construction

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation

**Actions Indicating Compliance:** Plan Approval; Quarterly compliance report submitted by contractor

- L.1-1** In the event of temporary partial public street closures, the Project Applicant shall employ flagmen during the construction of water line work, to facilitate the flow of traffic.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Transportation

**Monitoring Agency:** Department of Transportation

**Action Indicating Compliance:** Field inspection sign-off

- L.3-1** All waste shall be disposed of properly and in accordance with the City's Bureau of Sanitation standards. Appropriately labeled recycling bins to recycle demolition and construction materials including: solvents, water-based paints, vehicle fluids, broken asphalt and concrete, bricks, metals, wood, and vegetation shall be used. The bulk recyclable material such as broken asphalt and concrete, brick, metal and wood shall be hauled by truck to an appropriate facility. Nonrecyclable materials/wastes shall be



hauled by truck to an appropriate landfill. Toxic wastes shall be discarded at a licensed regulated disposal site.

**Monitoring Phase:** Construction

**Enforcement Agency:** Department of Public Works; Bureau of Sanitation

**Monitoring Agency:** Department of Public Works; Bureau of Sanitation

**Actions Indicating Compliance:** Field inspection sign-off; Quarterly compliance report submitted by contractor

- L.3-2** Recycling bins shall be provided at all trash locations, to promote recycling of paper, metal, glass, and other recyclable materials during operation of the Project. These bins shall be emptied and recycled accordingly and consistent with AB 939 as a part of the Project's regular solid waste disposal program.

**Monitoring Phase:** Occupancy

**Enforcement Agency:** Department of Public Works; Bureau of Sanitation

**Monitoring Agency:** Department of Public Works; Bureau of Sanitation

**Action Indicating Compliance:** Annual compliance report submitted by building management report complaints regarding excessive fugitive dust generation. Any reasonable complaints shall be rectified within 24 hours of their receipt.

## CONDITIONS OF APPROVAL

### Conditional Use Conditions

1. Floor Area Averaging for Unified Developments: Prior to the issuance of any building permit, the applicant shall record and execute a Covenant and Agreement (Planning Department General Form CP-6770) to run with the land, with the following provisions:
  - a. the applicant shall guarantee the continued maintenance and operation of the development as a unified development;
  - b. the applicant shall indicate the floor area used on each parcel and the floor area potential, if any, that would remain;
  - c. the applicant shall guarantee the continued maintenance of the unifying design elements, and;
  - d. the applicant shall specify an individual or entity to be responsible and accountable for this maintenance. An annual inspection shall be made by the Department of Building and Safety of the development to monitor compliance.
2. Alcohol Sales & Live Entertainment: The conditional use authorization herein is for live entertainment and the sale of alcoholic beverages for on-site consumption within the development through the following:
  - a. On-site sales of a full line of alcoholic beverages in conjunction with food service at five (5) restaurant establishments, on-site sales at one (1) café to be located on the observation deck, and on-site sale of a full line of alcoholic beverages in conjunction with a night club/lounge offering live entertainment and dancing. One (1) retail establishment, such as a gourmet grocery or high-end wine and spirits store, selling a full line of alcoholic beverages for off-site consumption. Two (2) mobile bars to provide alcohol service for special events for on-site consumption on the project site.
  - b. Live entertainment and dancing in conjunction with at least one (1) night club/lounge, one (1) restaurant, within the outdoor plaza within the boundaries of the project site, and at (2) mobile special events locations.
  - c. Live entertainment and dancing within the public right-of-way is prohibited under this grant. Note: This does not preclude the applicant or individual operator from securing a special events permit.
3. **Plan Approval**. The applicant or individual operator shall file a Plan Approval with the Zoning Administrator, to establish more site-specific conditions for the uses which are approved as identified above in Condition No. 2a through 2c of this section (alcohol sales and live entertainment). The Plan Approval application shall be accompanied by the payment of appropriate fees and must be accepted as complete by the Planning Department. Mailing labels shall be provided by the applicant for all abutting owners, for the Council Office, the Neighborhood Council and for the Los Angeles Police Department. In reviewing the plan approvals for alcohol sales and consumption, the Director of Planning may consider conditions volunteered by the applicant or suggested

by the Police Department, but not limited to establishing conditions, as applicable, on the following: hours of operation, security plans, maximum seating capacity, valet parking, noise, character and nature of operation, food service and age limits. Entertainment-related and other specific conditions of operation, including the length of a term grant and security, shall be determined as part of the plan approval determination.

4. The hours of operation for the establishments selling and dispensing alcoholic beverages shall be from 7:00 a.m. to 2:00 a.m., Monday through Sunday. Sales and the service of alcohol shall be permitted from 10:00 a.m. to 2:00 a.m., however, hours of operation and hours of alcohol sales may be extended through the filing of plan approvals as the operators are identified. There shall be no business operations at the site between the hours of 2:00 a.m. through 6:59 a.m. including, but not limited to, private and promotional events.
5. Electronic age verification device(s) which can be used to determine the age of any individual attempting to purchase alcoholic beverages or tobacco products shall be provided at each point-of-sale location. The device(s) shall be maintained in an operational condition and all employees shall be instructed in their use prior to the sale of any alcoholic beverage or tobacco product.
6. Any music, sound or noise emitted from the subject businesses shall comply with the noise regulations in the LAMC. All outside personnel associated with music performance and/or acoustical sound shall follow the City's noise regulations and are required to comply.
7. Applicant and its operator shall provide a detailed security plan to be approved by LAPD, prior to opening.
8. The property management company shall be responsible for providing the security guards identified in the preliminary Security Plan, including maintaining a contract and receipts showing ongoing payment for such service.
9. The operator shall be responsible for mitigating the potential negative impacts of its operation on surrounding uses, especially, noise derived from patrons exiting and crowd control during entry and exiting.
10. During the operating hours of the businesses, the Petitioner(s) shall provide security officer(s) inside the premises.
11. Said personnel shall be licensed consistent with State law and Los Angeles Police Commission standards and maintain an active American Red Cross First-Aid Card. The security personnel shall be dressed in such a manner as to be readily identifiable to patrons and law enforcement personnel.
12. Security shall monitor any sidewalk or patio area used for patron smoking and work to discourage noise or nuisance behavior.
13. The center's business operator shall install and maintain surveillance cameras in all areas of the premises, including the indoor and outdoor dining court lounge area and a 30-day video library that covers all common areas of such business, including all high-risk areas and entrances or exits. The tapes shall be made available to the Police Department upon request.

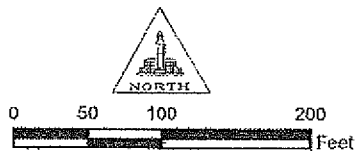
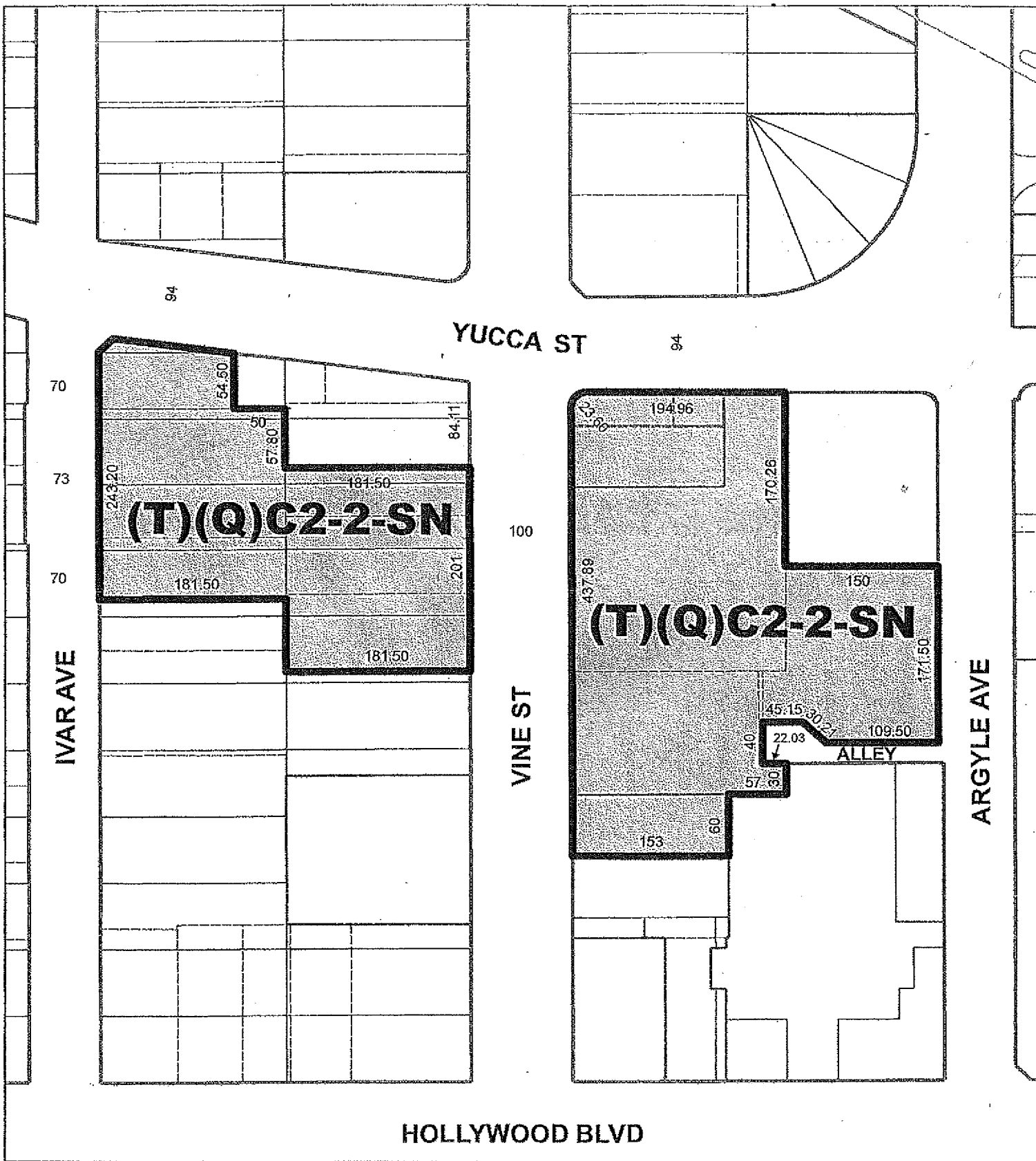
14. No coin-operated games, video machines, pool or billiard tables are permitted.
15. Prior to the issuance of any permits relative to this matter, the applicant shall submit an overall security plan for the project site which shall be prepared in consultation with the Los Angeles Police Department and which addresses security measures for the protection of visitors and employees. The project shall include appropriate security design features for semi-public and private spaces, which may include, but shall not be limited to: access control to buildings; secured parking facilities; walls/fences with key security; lobbies, corridors, and elevators equipped with electronic surveillance systems; well-illuminated semi-public space designed with a minimum dead space to eliminate areas of concealment; and location of toilet facilities or building entrances in high foot traffic areas.
16. The alcoholic beverage license for the restaurants shall not be exchanged for "public premises" license unless approved through a new conditional use authorization. "Public Premises" is defined as a premise maintained and operated for sale or service of alcoholic beverages to the public for consumption on the premises, and in which food is not sold to the public as a bona fide eating place.
17. Prior to issuance of the certificate of occupancy, the applicant shall submit copies of the plot plan(s) for review and approval to the Fire Department. The Fire Department's approval shall be shown via a stamp on all plans submitted to the Zoning Administrator for sign-off.
18. The owners, operators, managers, and all employees serving alcohol to patrons shall enroll in and complete a certified training program is recognized by the State Department of Alcoholic Beverage Control for the responsible service of alcohol. This training shall be completed by new employees within four weeks of employment and shall be completed by all employees serving alcoholic beverages every 24 months.
19. All establishments applying for an Alcoholic Beverage Control license shall be given a copy of these conditions prior to executing a lease and these conditions shall be incorporated into the lease. Furthermore, all vendors of alcoholic beverages shall be made aware that violations of these conditions may result in revocation of the privileges of serving alcoholic beverages on the premises.
20. A phone number to a responsible representative of the owner shall be posted at each restaurant for the purposes of allowing residents and guests to report an emergency or a complaint about the method of operation of any facility serving alcoholic beverages.
21. The project site managers, individual business owners, and employees of all private security officers shall adhere to and enforce the 10 p.m. curfew loitering laws concerning all minors within the grounds of the project site without a parent or adult guardian. Staff shall monitor the area under its control, in an effort to prevent loitering of persons about the premises.
22. At least one on-duty manager with authority over the activities within the facility shall be on each permitted premises at all times that the facility is open for business.
23. All public telephones shall be located within the interior of the establishment structure. No public phones shall be located on the exterior of the premises under the control of the establishment.

24. The applicant shall secure a City permit decal denoting approval of alcoholic beverage sales from a Planning Department public counter subsequent to the Zoning Administrator's signature on the Planning Department sign-off form and mount it on either the inside of the window of the subject site facing the street or on the outside of the building (if inside mounting is not possible). The decal shall be visible at all times and mounted before the privileges granted herein are utilized.
25. There shall be no exterior window signs of any kind or type.
26. There shall be no advertising of any kind or type, including advertising directed to the exterior from within, promoting or indicating the availability of alcoholic beverages. This does not preclude the use of "bar" or "cocktail" if used to advertise the name of the establishment.
27. Alcohol sales and dispensing only for on-site consumption shall only be served by employees of the restaurant(s). The sale of alcoholic beverages for consumption off the premises of the restaurant(s) is prohibited.
28. Within 60 days of the opening of the establishments selling and/or serving alcohol, all employees of the business shall receive "Server Awareness Alcohol Training" (STAR) and LEAD programs regarding alcohol sales, as respectively sponsored by the Los Angeles Police Department and State of California Alcoholic Beverage Control Department at least two times per year or to the satisfaction of the Los Angeles Police Department. The applicant shall transmit a copy of the completion of such training to the Zoning Administrator for inclusion in the file.
29. No employees shall solicit or accept any beverage from any customer while in the premises. No employee or agent shall be permitted to accept money or any other thing of value from a customer for the purpose of sitting or otherwise spending time with customers while in the premises, nor shall the licensee provide, permit or make available, either gratuitously or for compensation, male or female patrons who act as escorts, companions, or guests of any for the customers.
30. Signs shall be posted in a prominent location stating that California State Law prohibits the sale of alcoholic beverages to persons under 21 years of age. "No loitering or Public Drinking" signs shall be posted outside the subject facility.
31. The authorized use shall be conducted at all times with due regard for the character of the surrounding district, and the right is reserved to the City Planning Department to impose additional corrective conditions, if, it is determined by the City Planning Department that such conditions are proven necessary for the protection of person in the neighborhood or occupants of adjacent property.
32. If at any time during the period of the grant, should documented evidence be submitted showing continued violation(s) of any condition(s) of the grant, resulting in a disruption or interference with the peaceful enjoyment of the adjoining and neighboring properties, the City Planning Department will have the right to require the Petitioner(s) to file for a Plan Approval application together with the associated fees and to hold a public hearing to review the Petitioner(s) compliance with and the effectiveness of the conditions of the grant. The Petitioner(s) shall submit a summary and supporting documentation of how compliance with each condition of the grant has been attained.
33. A copy of this grant and all Conditions and/or any subsequent appeal of this grant and resultant Conditions and/or letters of clarification shall be printed on the building plans

submitted to the Development Services Center and the Department of Building and Safety for purposes of having a building permit issued.

34. The applicant shall defend, indemnify and hold harmless the City, its agents, officers, or employees from any claim, action, or proceeding against the City or its agents, officers, or employees to attack, set aside, void or annul this approval which action is brought within the applicable limitation period. The City shall promptly notify the applicant of any claim, action, or proceeding and the City shall cooperate fully in the defense. If the City fails to promptly notify the applicant of any claim, action, or proceeding, or if the City fails to cooperate fully in the defense, the applicant shall not thereafter be responsible to defend, indemnify, or hold harmless the City.



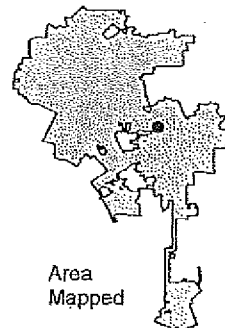


C.M. 150 A 187, 150 A 189  
148 5A 187, 148 5A 189

CPC-2008-3440-ZC-CUB-CU-ZV-HD

CFI *[Signature]*

030713



Area  
Mapped

Sec. . The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy, either in a daily newspaper circulated in the City of Los Angeles or by posting for ten days in three public places in the City of Los Angeles: one copy on the bulletin board located in the Main Street lobby to the City Hall; one copy on the bulletin board located at the ground level at the Los Angeles Street entrance to the Los Angeles Police Department; and one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

I hereby certify that the foregoing ordinance was passed by the Council of the City of Los Angeles, at its meeting of \_\_\_\_\_.

JUNE LAGMAY, City Clerk

By \_\_\_\_\_  
Deputy

Approved \_\_\_\_\_

\_\_\_\_\_  
Mayor

Pursuant to Charter Section 559, I approve  
this ordinance and recommend  
its adoption on behalf of the City Planning  
Commission . . . . .

File No(s). \_\_\_\_\_

see attached report.  
  
MICHAEL LOGRANGE  
Director of Planning