APPENDIX IS-2

Geotechnical and Seismic Hazards Report

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28 February 2023

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Subject: Evaluation and Summary of Geotechnical and Seismic Hazards
Fox Future Project
10201, 10267, 10271, and 10275 Pico Boulevard
Century City, California
Geosyntec Project No. HPA1132

Dear Mr. Lackow:

Geosyntec Consultants (Geosyntec) is pleased to provide this letter report to Meridian Consultants, LLC (Meridian) summarizing the geologic and seismic hazards evaluation for use in preparing the Environmental Impact Report (EIR) pursuant to the requirements of the California Environmental Quality Act (CEQA) for the proposed FOX Future Project (Project).

Professional services described herein were performed in accordance with our proposal dated 12 September 2022 and our Professional Services Agreement (Agreement) dated 19 September 2022. This letter report was prepared by Messrs. Christopher Corder, P.G. and Jared Warner P.G., C.E.G. and has been reviewed by Mr. Alex Greene, P.G., C.E.G, in accordance with the peer review policies of the firm.

BACKGROUND

The Applicant[1], also referred to as "FOX," is proposing the FOX Future Project to guide the future development of the existing 53-acre FOX property (also known as "SP Area B") located at 10201 West Pico Boulevard and the approximately 0.32-acre Pico Properties located at 10267, 10271, and 10275 West Pico Boulevard in Century City, California (collectively the "project site"; Figure 1). We understand that the SP Area B currently includes approximately 1.8 million square feet of media-related uses (e.g., stage, theater, offices, parking, and open areas). The Pico Properties currently includes approximately 13,750 square feet of post-production, office, and vacant space. The proposed Project would add approximately 1.6 million net new additional square feet of media-related,

[1] The Project Site is currently owned by Fox Studio Lot, LLC; Pico Property, LLC; and 10271-10275 W Pico Boulevard, LLC; hereafter collectively referred to as the "Applicant."

childcare, and general office uses at the project site. It is also our understanding that the Project may include the demolition of approximately 465,500 square feet of existing floor area at the project site. Project development is limited to certain sites within SP Area B (Development Subareas 1A, 2A, 3A through 3F, 5A, 5B, 6A), and the redevelopment of the Pico Properties with a childcare facility. The Project would also enhance pedestrian, bicycle, and vehicular access to SP Area B.

SITE AND GEOLOGIC CONDITIONS

This letter report evaluates the potential geologic and seismic hazards associated with development of the proposed FOX Future Project. The evaluation was used to qualitatively assess hazard potential based on readily available online geologic and geotechnical information. The following data was reviewed and compiled to complete the evaluation:

- California Geological Survey (CGS), 2018a, "Earthquake Zones of Required Investigation, Beverly Hills Quadrangle," official map released 25 March 1999, revised official map released 11 January 2018.
- CGS, 1998, "Seismic Hazard Zone Report for the Beverly Hills 7.5-Minute Quadrangle, Los Angeles County, California," Seismic Hazard Zone Report 023.
- CGS, 2008, "Guidelines for Evaluating and Mitigating Seismic Hazards in California," Special Publication 117A.
- CGS, 2003, "The Revised 2002 California Probabilistic Seismic Hazard Maps, June 2003," Appendix A – 2002 California Fault Parameters.
- Branum, D., Chen, R., Petersen, M., and Wills, C., 2016, "Earthquake Shaking Potential for California," CGS Map Sheet 48.
- Dibblee, T. W., and Ehrenspeck, H.E., ed., 1991, "Geologic Map of the Beverly Hills and Van Nuys (South ½) quadrangles, Los Angeles County, California," Dibblee Geological Foundation Map DF-31, scale 1:24,000.
- Dolan, J. F., Sieh, K., and Rockwell, T. K., 2000a, "Late Quaternary Activity and Seismic Potential of the Santa Monica Fault System, Los Angeles, California," *Geological Society of America Bulletin*, Vol. 12, No. 10.
- Dolan, J. F., Stevens, D., and Rockwell, T. K., 2000b, "Paleoseismologic Evidence for an Early to Mid-Holocene Age of the Most Recent Surface Fault Rupture on the Hollywood Fault, Los Angeles, California," *Bulletin of the Seismological Society of America*, Vol. 90, p.p. 334-344.
- Historical aerials of the site from 1927, 1928, 1939, 1947, 1965, 1968, and 1971 (University of California, Santa Barbara, 2022). Online aerials dated 1985, 1989, 1994, and annually from 2002 to 2022 were viewed on Google Earth (2022).
- Los Angeles, City of, 2018, "Local Hazard Mitigation Plan."

- Los Angeles, County of, 2022, "General Plan 2035."
- United States Geological Survey (USGS), 2002, "Documentation for the 2002 Update of the National Seismic Hazard Maps," USGS Open-File Report 02-420.

Our knowledge of the project site conditions has been developed from a review of the area geology, historical information, and the referenced reports by others within the site vicinity. The following summarizes the regional geology, site conditions, seismic setting, and the regulatory framework pertinent to geotechnical issues affecting the Project.

Regional Geology

The Project site is located within the northwest portion of the Los Angeles Basin, south of the Santa Monica Mountains, near the intersection of the Peninsular Ranges and Transverse Ranges geomorphic provinces of southern California. The Peninsular Ranges province is characterized by a series of northwest trending mountains and valleys separated by faults associated with, and subparallel to, the San Andreas Fault system. These rocks were intruded by Cretaceous age (65 million years ago [mya]) granitic basement rocks, also known as the Peninsular Ranges Batholith. The Transverse Ranges are characterized by east-west trending structural features such as the Santa Monica Mountains and the Santa Monica and Hollywood faults. The Santa Monica and Hollywood faults are considered the boundary between these two physiographic provinces near the project site area.

The Los Angeles Basin is a northwest-trending alluviated lowland plane filled with thick deposits of marine and non-marine sediments bounded by the Santa Monica Mountains to the north, the Elysian, Repetto and Puente Hills to the east, the Santa Ana Mountains and San Joaquin Hills to the south and southeast, and the Pacific Ocean to the west. The relatively flat surface of the Los Angeles Basin slopes gently to the south and is interrupted by a locally trending northwest alignment of low hills and mesas in the southern and western portions of the basin that extend from Newport Beach northwest to Beverly Hills, and the Palos Verdes peninsula at the southwestern extremity.

The Los Angeles Basin began forming during the Late Miocene (approximately 7.2 mya) as a result of subsidence following compressional stresses between the right-oblique Whittier and Palos Verdes fault zones, and the left-oblique Santa Monica fault system [Wright, 1991]. Sedimentary deposits within the Los Angeles Basin range in thickness from approximately 32,000 feet to 35,000 feet south of the site [Yerkes et al., 1965].

Seismic Setting

The tectonic setting of the Los Angeles Basin area is dominated by right-lateral strike-slip faults with a general northwest-southeast trend resulting from the interaction between the Pacific and North American lithospheric plates. Faults in California are generally classified as active, potentially active, and inactive faults. Division of these major groups are based on criteria by the CGS (formerly known as California Division of Mines and Geology, CDMG) for the Alquist-Priolo Earthquake Fault Zoning Program [Hart, 1999]. By definition, an active fault is one that has had displacement within Holocene time (last 11,000 years). A potentially active fault has demonstrated displacement of Quaternary age deposits (last 1.6 million years). Inactive faults have not exhibited displacement in the last 1.6 million years.

The Santa Monica fault zone (SMFZ) is the closest major active fault to the Project area with the potential for surface rupture, with a mapped fault trace 0.5 miles (0.8 km) to the northwest of the Project (Figures 3 and 4) [CGS, 2022]. The SMFZ is considered a part of a continuous zone comprised of multiple fault segments including the Malibu Coast, Santa Monica, Hollywood, Raymond, and Anacapa-Dume faults (Figure 4), in addition to several offshore fault zones including the Anacapa-Dume fault zone, the Santa Cruz Island fault zone, and the Santa Rosa Fault zone. This grouping of faults comprises the Transverse Ranges Southern Boundary fault system with a total length of approximately 150 miles [Dolan et al., 2000a]. The SMFZ exhibits both reverse and left-lateral components of slip and extends westward 25 miles from the western edge of Beverly Hills across West Los Angeles and Santa Monica to Pacific Palisades, where it trends offshore and parallels the Malibu coast near Point Dume. From Beverly Hills, the SMFZ extends eastward as the Hollywood fault along the base of the Santa Monica Mountains from the West Beverly Hills Lineament in the West Hollywood-Beverly Hills area, to the Los Feliz area of Los Angeles. According to the Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3) [Field et al., 2015] the closest segment of the SMFZ (Subsection 1) has a mean 30-year probability of an earthquake equal to or greater than 6.7 moment magnitude (M) (30-year M>6.7 probability) of 0.87 percent (%), a mean 30-year M>7.0 probability of 0.73%, a mean 30-year M>7.5 probability of 0.31%, and a mean 30-year M>8.0 probability of less than 0.01%.

Another nearby major active fault is the Newport-Inglewood fault zone (NIFZ) which is located 1.3 miles (2.1 km) to the southeast of the Project (Figures 3 and 4) [CGS, 2022]. The NIFZ is composed of a series of discontinuous northwest-southeast trending en echelon faults extending from the City of Beverly Hills southeast to the area offshore of Newport Beach. This zone is reflected at the surface by a line of geomorphically young anticlinal hills and mesas formed by the folding and faulting of a thick sequence of Pleistocene age sediments and Tertiary age sedimentary rocks [Barrows, 1974]. Historical seismic activity between 1977 and 1985 shows mostly strike-slip faulting with some reverse faulting along the northern segment (north of Dominguez Hills), and normal faulting along the southern segment (south of Dominguez Hills to Newport Beach) [Hauksson, 1987]. According to UCERF3 [Field et al., 2015] the closest segment of the NIFZ has a mean 30-year probability of an earthquake equal to or greater than 6.7 moment magnitude (M) (30-year M>6.7 probability) of 0.41%, a mean 30-year M>7.0 probability of 0.28%, and a mean 30-year M>7.5 probability of 0.05%. The mean 30-year M>8.0 probability is not reported.

Potentially active faults near the project site, such as the Overland Avenue and Charnock faults to the south (Figure 4), have been mapped [USGS, 2006] or modeled [Field et al., 2015]. Additionally, regional active faults in the vicinity of the Project include the Sierra Madre fault zone to the north (Figures 3 and 4) and the San Andres fault zone to the northeast (Figure 3). These faults and their respective distances from the Project area and UCERF3 participation probabilities, where available, are presented in Table 1. The locations of regional and local faults and historical earthquake epicenters are shown on Figures 3 and 4.

TABLE 1 – SUMMARY OF NEARBY FAULTS

Fault Name	Distance and Direction from Project[a]	Mean 30-Year Participation Probability (%)[b]			
		M≥ 6.7	M≥ 7.0	M≥ 7.5	M≥ 8
Santa Monica	0.4 miles (0.6 km) to northwest	0.87	0.73	0.31	<0.01
San Vicente	1.3 mi (2.1 km) to northeast	0.20	0.16	0.10	<0.01
Newport-Inglewood	1.3 mi (2.1 km) to southeast	0.41	0.28	0.05	NR
Overland Avenue	1.1 mi (1.8 km) to southwest[c]	NR	NR	NR	NR
Hollywood	1.8 miles (2.9 km) to north	1.88	0.57	0.11	<0.01
Puente Hills	4.5 miles (7.2 km) to southeast	1.01	0.51	0.15	NR
Elysian Park	4.8 miles (7.7 km) to east	0.05	0.05	0.02	<0.01
Malibu Coast	6.6 mi (10.6 km) to west	0.75	0.52	0.37	<0.01
Palos Verdes	10.3 mi (16.6 km) to southwest	1.68	1.34	0.42	NR
Sierra Madre	16.4 mi (26.4 km) to north	0.93	0.90	0.69	0.02
Santa Susana	18.9 mi (30.4 km) to northwest	4.20	2.71	0.77	<0.01
San Andreas (Mojave section)	38.6 mi (62.1 km) to northeast	18.63	18.54	17.24	6.73

Notes:

a. Distances from project noted are the closest distance to the mapped fault location according to the Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3) [Field et al., 2015], except for the Overland Avenue fault (see Note c). These distances may be different than the surface trace or inferred projection of the fault as measured from mapped traces in the USGS Quaternary Fault and Fold Database of the United States [USGS, 2006] and the Earthquake Zones of Required Investigation database [CGS, 2022].
b. As reported by the Uniform California Earthquake Rupture Forecast, Version 3, Fault Model 3.2 (UCERF3) [Field et al., 2015]. "NR" = Not Reported.

c. Distance as measured to the fault trace in the USGS Quaternary Fault and Fold Database of the United States [USGS, 2006].

Surface Conditions

The project site currently consists of existing buildings and offices in addition to asphalt paved roads and parking areas. The site is bordered to the west by residential buildings, to the north by West Olympic Boulevard and West Galaxy Way, to the east by Avenue of the Stars, and to the south by West Pico Boulevard. The area is relatively flat lying, sloping gently south from an elevation of approximately +315 feet Mean Sea Level (ft MSL) to +250 ft MSL [Google Earth, 2022].

Subsurface Conditions

The project site subsurface conditions were observed and documented during previous geotechnical investigations performed in the area [Law/Crandall, 2001 and Metro, 2011]. These explorations indicate that recent (Holocene age) alluvium forms the surficial cover within the site vicinity. The Holocene age materials, where present, are underlain by variably thick, older alluvium deposits of late Pleistocene age, which are in turn underlain at depth by marine and non-marine sediment deposits of the San Pedro Formation and the Fernando Formation. The anticipated geologic materials below the project site are described in the following sections.

Recent Alluvium

As described above, regional geologic mapping (Figure 2) identifies alluvium of Holocene age to the southwest, east, and northeast of the immediate project site area [Dibblee, 1991]. These younger alluvial fan deposits typically consist of mixtures of brown, soft to stiff silts and clays with loose to moderately dense, poorly consolidated, interlayered silts, clays, and silty sands with some subordinate layers and lenses of gravelly sandy silt and gravelly sand. The thickness of young alluvium deposits within the site vicinity ranges from approximately 5 feet to 15 feet [Metro, 2011].

Older Alluvium/Lakewood Formation

The older alluvial deposits consist of sediments deposited by former stream and sheet flows that were mainly shed from the Santa Monica Mountains to the north, and thicken to the south and west [Metro, 2011]. Composition of the older alluvial deposits primarily consists of consolidated deposits of interbedded silts, clays, sand, and silty sands, with some clayey sand layers with scattered gravel. Hard carbonate layers are observed locally, ranging from 5 feet to 15 feet in thickness within the site vicinity as a result of secondary soil development processes [Metro, 2011]. The older alluvium overlies deposits associated with the late Pleistocene age Lakewood Formation, which are comprised of non-marine and marine sediments. The older alluvial deposits and the underlying Lakewood Formation are compositionally similar without a clear or easily distinguishable contact between them, and are shown as undifferentiated on the geologic map (Figure 2). Based on previous explorations

[Law/Crandall, 2001], the older alluvial deposits range in thickness from approximately 50 feet to 85 feet within the project site area.

San Pedro Formation

Marine and non-marine deposits associated with the early Pleistocene age San Pedro Formation unconformably underlie the undifferentiated Older Alluvium/Lakewood Formation at variable depths below the project site. The San Pedro Formation consists primarily of light to dark greenish-gray and bluish-gray, fine-grained dense sand and silty sand with few interbeds of medium- to coarse-grained sand and stiff to hard silt layers. Gravelly sand layers and shell fragments at the base of the formation have been encountered in local areas [Metro, 2011]. Previous investigations suggest the early Pleistocene sediments of the San Pedro Formation ranges in thickness up to 650 feet in the project site vicinity [Law/Crandall, 2001].

Fernando Formation

The Pliocene age Fernando Formation unconformably underlies the San Pedro Formation at variable depths within the project site area. Sedimentary bedrock of the Fernando Formation generally consists of stiff to hard yellowish-brown to olive-gray siltstone and claystone with localized thin sandstone layers. However, locally thick intervals of massive silty sandstone have been previously encountered within the project site vicinity [Metro, 2011].

Groundwater

Based on a review of available documents, the historic groundwater level at the project site is estimated to occur at a depth of approximately 30 to 40 feet below ground surface (ft bgs) [CGS, 1998]. According to previous investigations in the project site vicinity, the groundwater ranged from 25 ft bgs to 45ft bgs [Metro, 2011]. The Project is located within the Coastal Plain of Los Angeles – Santa Monica Subbasin (Groundwater Basin Number 4-11.01) which has a surface are of 32,100 acres (50.2 square miles) [CA DWR, 2004]. Shallow groundwater levels are influenced by seasonal rainfall and infiltration, and potentially by groundwater extraction activities within the area.

GEOLOGIC HAZARDS

The hazards generally associated with seismic activity include fault rupture, seismic ground shaking, liquefaction, seismically induced settlement, tsunamis, and landslides. These potential seismic hazards are discussed in the following sections. The conclusions and discussion below are based on the review of available geologic literature, previous investigations by others, and geologic interpretation of the site-specific subsurface information.

Fault Rupture

Seismically induced fault surface rupture occurs as the result of differential movement across a fault that propagates to the ground surface. The potential for fault surface rupture is generally considered to be significant along "active" faults and to a lesser degree along "potentially active" faults [Hart, 1999]. A review of published geologic maps did not identify the presence of active or potentially active faults crossing or projecting towards the Project. Therefore, the potential for fault-related surface rupture at the project site is considered to be low. The proposed Project is not located within a delineated Alquist-Priolo Earthquake fault rupture hazard zone as defined by the California Geological Survey (CGS) [Bryant and Hart, 2007 and CGS, 2018b].

Ground Shaking

The project site is situated within a seismically active region and will likely experience moderate to severe ground shaking in response to a large magnitude earthquake occurring on a local or more distant active fault during the expected lifespan of the Project. The potential for significant seismically induced ground shaking in response to an earthquake occurring along a nearby active fault, such as the SMFZ, or a regional fault, such as the San Andreas fault zone, is relatively high within the project site area. The potential for strong seismic shaking is considered high; however, with site specific investigation and standard site design features addressing seismic shaking, this hazard would not be anticipated to represent a significant or substantially adverse hazard.

The seismic ground motion values listed in Table 2 were derived in accordance with the American Society of Civil Engineers (ASCE) 7-16 Standard and the 2019 California Building Code (CBC). This was accomplished by assuming a default Site Class D and calculating the site coefficients and parameters using the Structural Engineers Association of California and the California Office of Statewide Health Planning and Development online application [CA OSHPD, 2022] and site coordinates of 34.05196001 degrees latitude and -118.41297802 degrees longitude. The Site Class is based on the average subsurface conditions within 100 feet of the ground surface and shear wave velocities. These values are intended for the design of structures to resist the effects of earthquake ground motions.

TABLE 2 – SEISMIC GROUND MOTION VALUES

Parameter	Value
Site Class	D
Mapped Spectral Response Acceleration at 0.2s Period, S_S	2.088 g
Mapped Spectral Response Acceleration at 1.0s Period, S_1	0.746 g
Short Period Site Coefficient at 0.2s Period, F_a	1.2
Long Period Site Coefficient at 1.0s Period, F_v	null
Adjusted Spectral Response Acceleration at 0.2s Period, S_{MS}	2.505 g
Adjusted Spectral Response Acceleration at 1.0s Period, S_{M1}	null
Design Spectral Response Acceleration at 0.2s Period, S_{DS}	1.67 g
Design Spectral Response Acceleration at 1.0s Period, S_{D1}	null
Peak Ground Acceleration, PGA_M	1.077 g

Per ASCE 7-16, a site-specific ground motion hazard analysis is not required for structures on Site Class D sites with S_1 greater than or equal to 0.2, provided the value of the seismic response coefficient Cs is determined by ASCE 7-16 Eq. (12.8-2) for values of $T \leq 1.5Ts$ and taken as equal to 1.5 times the value computed in accordance with either ASCE 7-16 Eq. (12.8-3) for $T_L \geq T > 1.5Ts$ or ASCE 7-16 Eq. (12.8-4) for $T > T_L$. Therefore, a ground motion hazard analysis was not prepared. The structural engineer may utilize more conservative seismic design parameters at their discretion. Furthermore, the ground motion values provided are based on current standards of practice and available data and would be reviewed for conformance with current building code requirements as part of the City's review conducted during the grading/building permit process.

Liquefaction Potential

Seismically induced liquefaction is a phenomenon in which saturated soils lose a significant portion of their strength and acquire some mobility from seismic shaking or other large cyclic loading. The material types considered most susceptible to liquefaction are granular and low-plasticity fine grained soils which are saturated and loose to medium dense. A rapid increase in groundwater pressures (excess pore water pressures) causes the loss of soil strength.

Manifestations of soil liquefaction can include sand boils, surface settlements and tilting in level ground, lateral spreading, and global instability (flow slides) in areas of sloping ground. The impact of liquefaction on structures can include loss of bearing capacity, drag loads on deep foundations, liquefaction-induced total and differential settlement, and increased lateral and uplift pressures on buried structures. Other factors such as soil mineralogy, void ratio, overconsolidation ratio, and age are contributing factors to liquefaction susceptibility. In general, the older or denser a deposit, the less susceptible it is to liquefaction.

According to the CGS [2018a], the City of Los Angeles Local Hazard Mitigation Plan [Tetra Tech, 2018], and the County of Los Angeles General Plan 2035 [2022], the Project is not located within areas identified as having a potential for liquefaction. Additionally, based on a review of the regional geologic map and subsurface conditions reported in previous geotechnical investigations, and the absence of shallow groundwater, the Pleistocene-age sediments underlying the project site (generally dense silty sand and firm silty clay and silts) are not considered prone to liquefaction. Therefore, the potential for liquefaction and its secondary effects are considered relatively low. A site-specific study in accordance with the Seismic Hazards Mapping Act (California Public Resources Code Chapter 7.8, Sections 2690-2699.6) is not required.

Slope Stability

Given the topographic setting and a review of previous geotechnical evaluations in the area, no previously mapped landslides are located at the project site or in an area that could potentially impact the Project. The project site is located within the City of Los Angeles "Hillside Grading Area" [Los Angeles, 2020], however the project site is not located within the City of Los Angeles "Hillside Ordinance Area" [Los Angeles, 2022]. Based on historical aerial photographs, the pre-graded topography of the project site was relatively flat with no significant slopes. The project site is not located within an area that is identified as having a potential for seismic slope instability [CGS, 2018a].

Given the topographic setting and the results of the evaluation presented in this letter, the potential for landslides and slope instability is considered low, and seismic slope instability mitigation in accordance with the Seismic Hazards Mapping Act (California Public Resources Code Chapter 7.8, Sections 2690-2699.6) is not required.

Flooding

The Federal Emergency Management Agency (FEMA) presents the flood hazard potential in the vicinity of the project areas as part of their Flood Insurance Rate Maps. FEMA Map No. 06037C1595G, dated 21 December 2018 [FEMA, 2018], indicates that the project site is located in an un-shaded Zone X which is defined as "areas of minimal flood hazard." Due to a lack of any reservoirs up gradient from the project site, flooding as a result of dam failure is not considered to be a probable hazard. Based on our review of the FEMA mapping, the geologic setting, and the site elevations, the potential for flooding at the project site is very low.

Other Geologic Hazards

The presence of potentially expansive clayey soil was not observed in the previous explorations performed within the proximity of the Project. Given the underlying geologic conditions within the area, which generally consist of granular soils and sedimentary rock, expansive soils are not anticipated to be encountered within the limits of the site. However, deposits of clayey soils with varying degrees of expansion are known to exist locally within the Los Angeles Basin. If encountered, the impacts of expansion can be addressed by using standard geotechnical design and construction practices, such as removing and mixing expansive material with non-expansive soils. Therefore, with site specific investigation and compliance with all applicable building codes and standards addressing expansive soils, this hazard would not be anticipated to represent a significant or substantially adverse hazard.

Other potential geologic hazards evaluated which could possibly affect the project site include slope instability, floods, seiches, and tsunamis. The site is relatively flat, and new engineered slopes, if proposed at the project site, are anticipated to be designed at stable inclinations. Therefore, slope instability is not considered a hazard. Tsunamis are seismically induced waves generated by sudden movements of the ocean bottom during submarine earthquakes, landslides or volcanic activity. Seiches are similarly generated but are oscillating waves within bodies of water such as reservoirs, lakes or bays. The project site is not located within the County of Los Angeles mapped tsunami run-up zone [State of California, 2021] or a CGS Tsunami Hazard Area [CGS, 2021]. Similarly, potential seiche inundation would not likely exceed the extent of tsunami run up. Based on the physiographic setting of the project site, the distance to the ocean or other large water bodies, and the elevation of the project site, the potential for flooding from seismically induced tsunamis and seiches is very low.

SIGNIFICANCE CRITERIA

This report presents an analysis of the potential geologic and seismic impacts, pursuant to the significance criteria outlined in the CEQA Guidelines. Appendix G, Section VII of state CEQA Guidelines [AEP, 2022], indicates that the Project would have a significant effect from these impacts if it were to:

1) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to CGS Special Publication 42 [CGS, 2018b]);
    b) Strong seismic ground shaking;
    c) Seismic-related ground failure, including liquefaction; and
    d) Landslides;
2) Result in substantial soil erosion or the loss of topsoil;

3) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
4) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (UBC, 1994), creating substantial direct or indirect risks to life or property;
5) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or
6) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

POTENTIAL IMPACTS

Known Fault Rupture Zone

Based on previous investigations and available geologic data, active faults with the potential for surface fault rupture are not mapped or known to exist beneath or projecting toward the project site. The Project is not located within an Alquist-Priolo "Earthquake Fault Zone." The potential for surface rupture at the project site due to faulting during the design life of the proposed Project is considered low. Therefore, impacts related to fault surface rupture would be less than significant.

Strong Seismic Ground Shaking

Although the Project could be subjected to strong ground shaking in the event of a nearby or more distant regional earthquake, this hazard is common in southern California and the effects of ground shaking will be limited by proper engineering design and construction in conformance with current building codes and engineering practices. Therefore, impacts related to strong seismic ground shaking would be less than significant.

Seismic-Related Ground Failure, Including Liquefaction

The Project is not located within a "Liquefaction Zone" as shown on the Earthquake Zones of Required Investigation, Beverly Hills Quadrangle map [CGS, 2018a]. However, prior to the issue of building permits, a site-specific geotechnical study would be prepared by a licensed engineer to outline structural design elements that would maintain structural integrity to the maximum extent during seismic ground shaking. Furthermore, the design and construction of the Project would conform to the California Building Code seismic standards as approved by the Los Angeles Department of Building and Safety, in addition to other applicable codes and standards. Therefore, impacts related to seismic related liquefaction would be less than significant if constructed in compliance with existing City regulatory requirements.

Landslides

The proposed Project is not located within an "Earthquake-Induced Landslide Zone" as shown on the Earthquake Zones of Required Investigation, Beverly Hills Quadrangle map [CGS, 2018a]. Therefore, impacts related to slope instability or landslides would be less than significant at the project site.

Result in substantial soil erosion or the loss of topsoil

The Project is currently partially developed with existing paved roads, structures, buildings, and parking areas. Project construction would temporarily expose on-site soils to surface stormwater runoff. Under the State Water Resources Control Board (SWRCB) Construction General Permit (CGP), the Project would require an approved Stormwater Pollution Prevention Plan (SWPPP) and implement construction-related best management practices (BMPs). Implementation of BMPs would control and minimize erosion and siltation. The CGP will be required through the City of Los Angeles' construction, grading, and excavation permitting process and enforced by the Los Angeles Regional Water Quality Control Board (LARWQCB).

Following construction activities, runoff would be directed into existing storm drains that receive surface water runoff under existing conditions, and runoff would not encounter unprotected soils. Because Project implementation would include standard construction BMPs outlined in the project specific SWPPP, impacts related to soil erosion or loss of topsoil would be less than significant.

Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse

Subsidence and ground collapse generally occur in areas with active groundwater withdrawal or petroleum production. The extraction of groundwater or petroleum from sedimentary source rocks can cause the permanent collapse of the pore space previously occupied by the removed fluid. The Project does not involve the creation of new groundwater wells. Subsidence and ground collapse can also occur during dewatering activities. Dewatering activities could be required during proposed excavation activities within Development Subareas 1A, 5A and 5B, and 6A where excavation depths are anticipated to range between 55 feet bgs and 75 feet bgs for the development of below ground parking garages. According to previous investigations in the project site vicinity, depth to groundwater ranged from 25 ft bgs to 45 ft bgs [Metro, 2011]. Based on the proposed excavation depths and understanding of the subsurface materials, shallow, potentially less dense subsurface material susceptible to liquefaction, subsidence, and collapse would be removed. Additionally, implementation of excavation support systems (e.g., soldier beams and lagging, tiebacks, and/or soil nails) would reduce potential instability related impacts resulting from collapse, landslide, and lateral spreading. Project construction including temporary excavations would be designed based on the site-specific ground conditions to comply with all applicable building codes and standards. With adherence to existing regulations, impacts related to geological failure including lateral spreading, on- or off-site landslides, subsidence, liquefaction, or collapse would be less than significant.

Be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property

Expansive soils have relatively high clay mineral content and are usually found in areas where underlying formations contain an abundance of clay minerals. Due to high clay content, expansive soils expand with the addition of water and shrink when dried, which can cause damage to overlying structures. Soils on the project site may have the potential to shrink and swell, resulting from changes in the moisture content. However, the Project would incorporate standard construction practices to maintain the integrity of the project site and proposed structures. Additionally, Project construction would comply with all applicable building codes and standards. With adherence to existing regulations, impacts related to expansive soils would be less than significant.

Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The Project would connect to an existing sewer system and does not include additional septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur.

REGULATORY COMPLIANCE MEASURES

Based on previous investigations and geotechnical recommendations provided for the various projects in the vicinity of the project site, potential impacts associated with fault hazards, including strong ground motions and surface rupture, would be reduced to a less than significant level via compliance with City building code requirements and standard City procedures during permit issuance and compliance processes. These include, but are not limited to the following.

Submittal of a detailed site-specific geotechnical evaluation for the proposed development prepared by a qualified geotechnical engineer, including subsurface exploration and geotechnical laboratory testing for the development of design and construction recommendations. The geotechnical design report shall be submitted to the City of Los Angeles for approval providing site-specific measures to be implemented. As applicable, these measures shall include:

- Conformance with the current building design and structural requirements of the CBC to minimize potential damage during earthquakes.
- Conformance with the seismic safety requirements in the City of Los Angeles Municipal Code.

- Conformance with the City of Los Angeles Local Hazard Mitigation Plan and General Plan Safety Element.
- Conformance with the City of Los Angeles Contents of Reports for Submittal to the Grading Section for soils and geology reports.

Construction

In addition, the geotechnical engineer shall oversee the construction activities including grading and general site preparation activities to monitor the implementation of the recommendations as specified in the geotechnical investigation. With implementation of these regulatory compliance measures, potential impacts associated with geology and soils would be reduced to a less than significant level.

LIMITATIONS

This letter report has been prepared in accordance with current practices and the standard of care exercised by scientists and engineers performing similar tasks in this area. The summary of findings and regulatory compliance measures provided herein are based solely on the desktop evaluation performed by Geosyntec and the referenced previous investigations by others. No additional site-specific or invasive explorations were performed as part of this scope of work to assess potential short- or long-term impacts resulting from potential geologic or seismic hazards. Additionally, no engineering investigation or evaluations were performed to inform the design modifications for short- or long-term performance of the FOX Future Project. It should be emphasized that the project site is located within an area of high seismic risk.

No warranty, expressed or implied, is made regarding the professional opinions expressed in this letter report. In accordance with regulatory requirements as well as standards City practices and procedures, site grading, earthwork, and excavations should be observed by a qualified engineer or geologist to verify that the project site conditions are as anticipated. If actual conditions are found to differ from those described in the report, or if new information regarding the site conditions is obtained, those conditions would be addressed via the City’s standard practices and procedures associated with City issuance of the Project’s grading and/or building permits. Geosyntec is not liable for any use of the information contained in this report by persons other than Meridian or FOX, or the use of information in this report for any purposes other than referenced in this report without the expressed, written consent of Geosyntec.

CLOSING

Geosyntec appreciates the opportunity to prepare this letter report for Meridian Consultants, LLC. If you have any questions or require additional information regarding the findings presented herein, please contact the undersigned.

Sincerely,

Geosyntec Consultants

Christopher Corder, P.G.	Jared J. Warner, P.G., C.E.G.
Professional Geologist	Senior Engineering Geologist

Attachments:
- Figure 1 – Site Location
- Figure 2a – Regional Geologic Map
- Figure 2b – Regional Geologic Map Legend
- Figure 3 – Regional Faults and Historical Earthquake Epicenters
- Figure 4 – Local Faults and Historical Earthquake Epicenters

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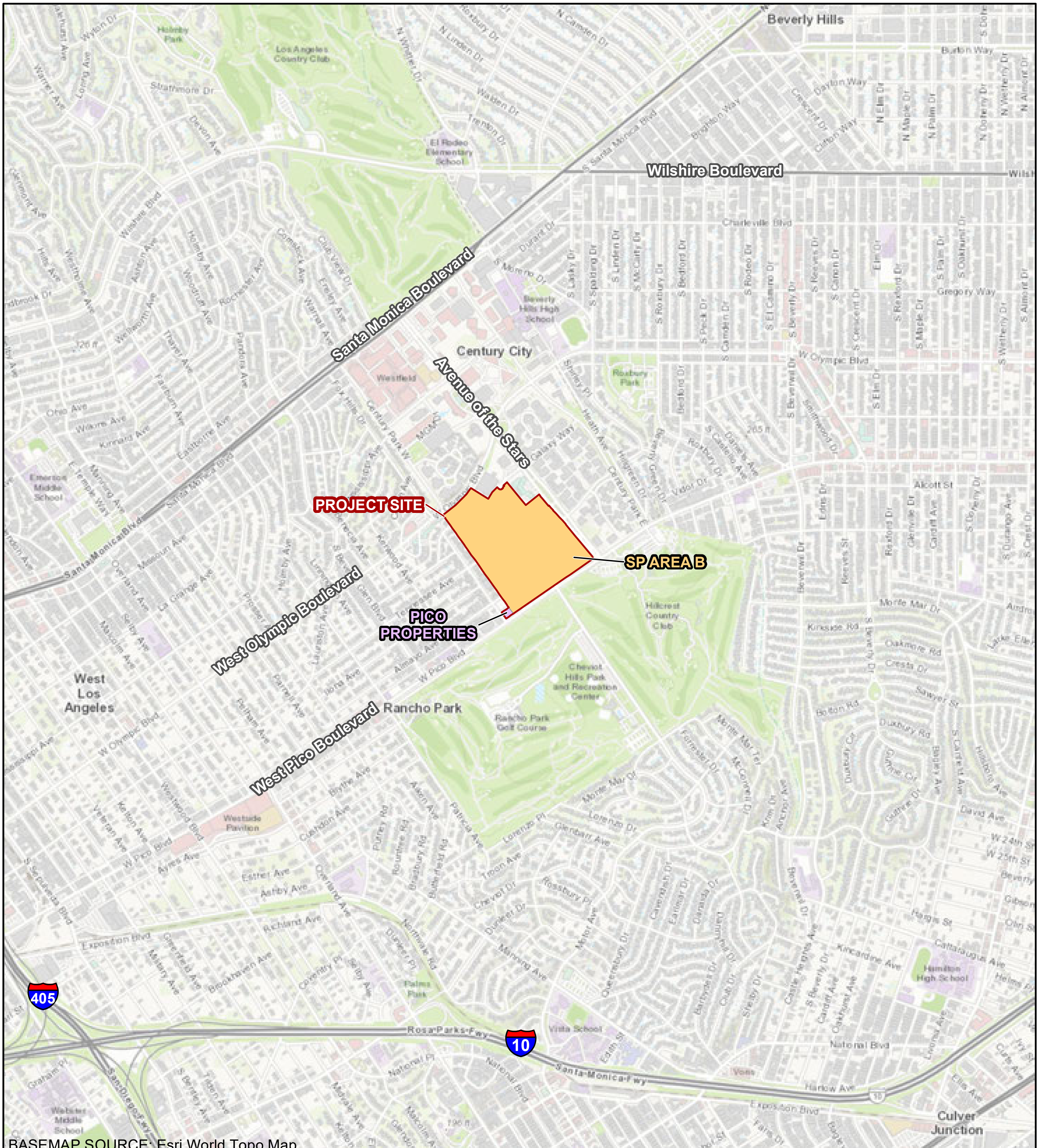
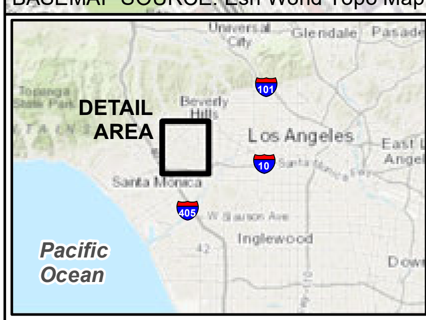
FIGURES





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Site Location

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Figure
1

GEOLOGIC MAP SOURCE:
Dibblee, T.W. and Ehrenspeck, H.E., ed., 1991, Geologic map of the Beverly Hills and Van Nuys (south 1/2) quadrangles, Los Angeles County, California, Dibblee Geological Foundation Map DF-31, 1:24,000.

Regional Geologic Map

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Figure **2a**

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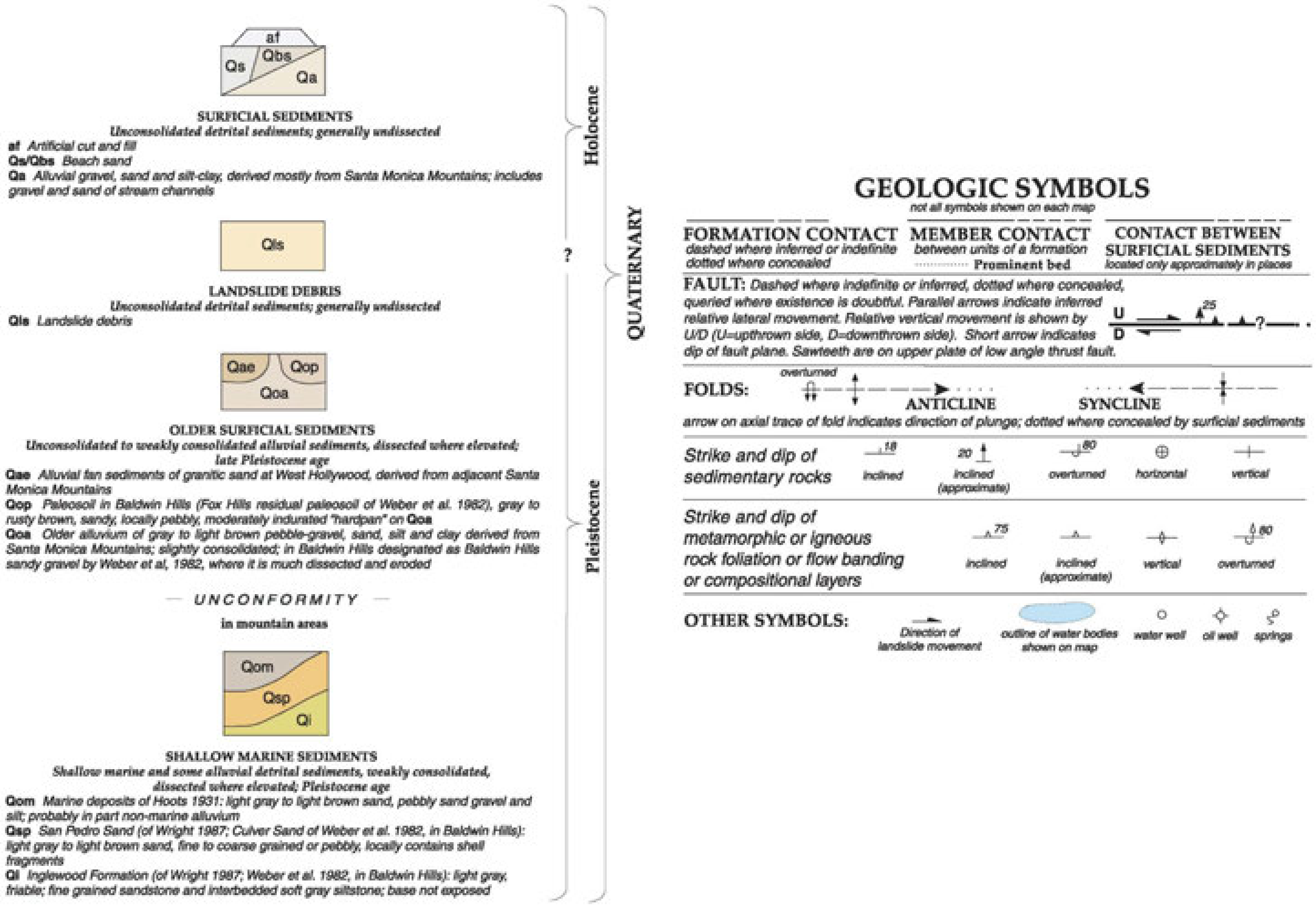

All symbols and units not shown on map.
Colors may vary.

GEOLOGIC MAP SOURCE:
Dibblee, T.W. and Ehrenspeck, H.E., ed., 1991, Geologic map of the Beverly Hills and Van Nuys (south 1/2) quadrangles, Los Angeles County, California, Dibblee Geological Foundation Map DF-31, 1:24,000.

Regional Geologic Map Legend

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Figure

2b

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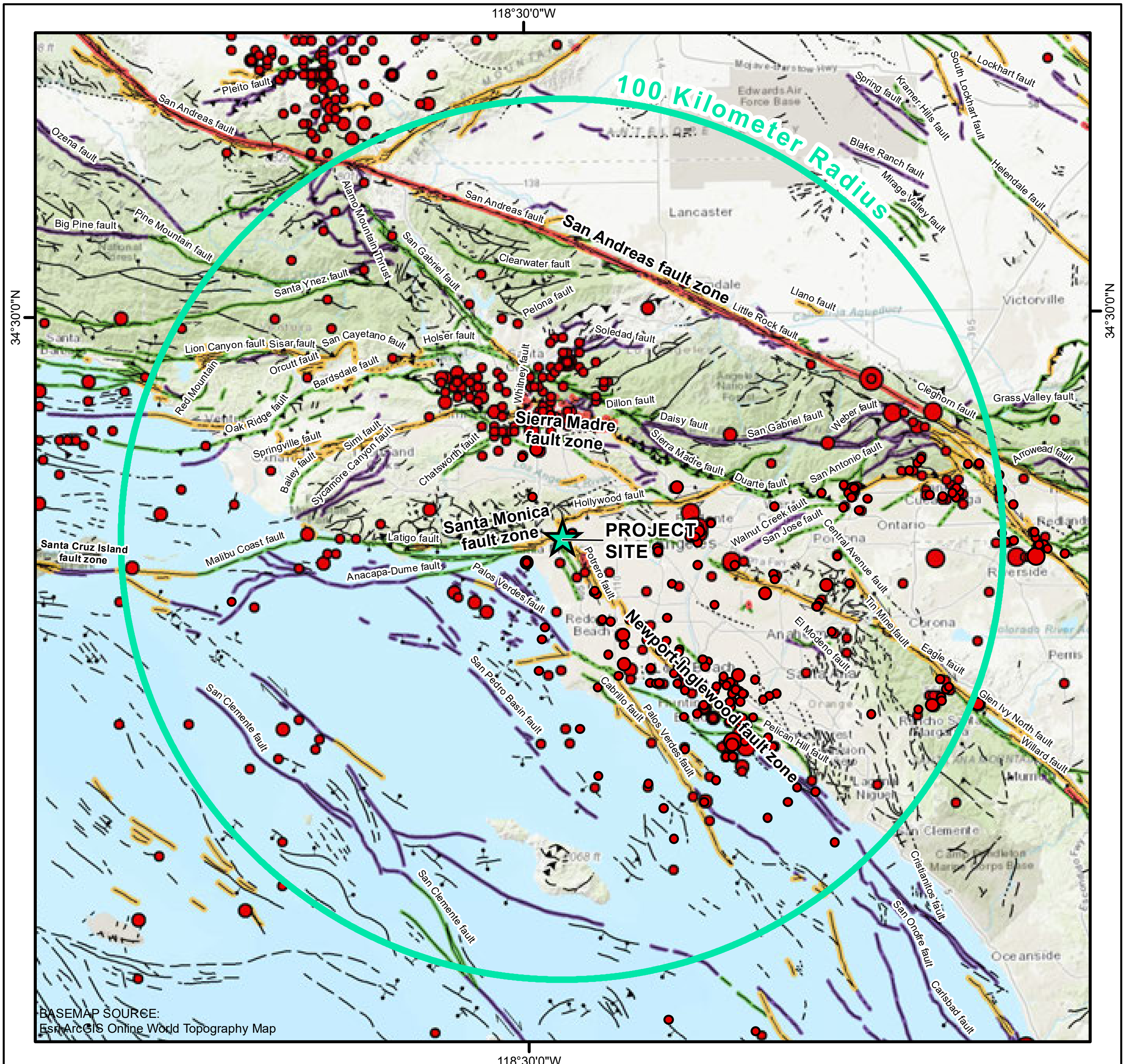

Quaternary Faults

Historic displacement (< 150 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Holocene displacement (< 15,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Late Quaternary displacement (< 750,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Quaternary & unspecified displacement (< 1,600,000 years)
- undifferentiated Quaternary Well Constrained
- undifferentiated Quaternary Moderately Constrained
- undifferentiated Quaternary Inferred

Pre-Quaternary geologic structures (CGS, 2010)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

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Kilometers

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ANSS Earthquakes
Magnitude
- 4.0 - 4.9
- 4.9 - 5.9
- 5.9 - 6.9
- 6.9 - 7.9
- 7.9 - 8.9

SOURCE:
- Faults: Fault Activity Map of California, California Geological Survey Jennings and Bryant, 2010
- Earthquake Epicenters: Earthquake Hazards Program, ANSS Comprehensive Earthquake Catalog, USGS, 6/1/2022

Regional Faults and Historical Earthquake Epicenters

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Figure 3

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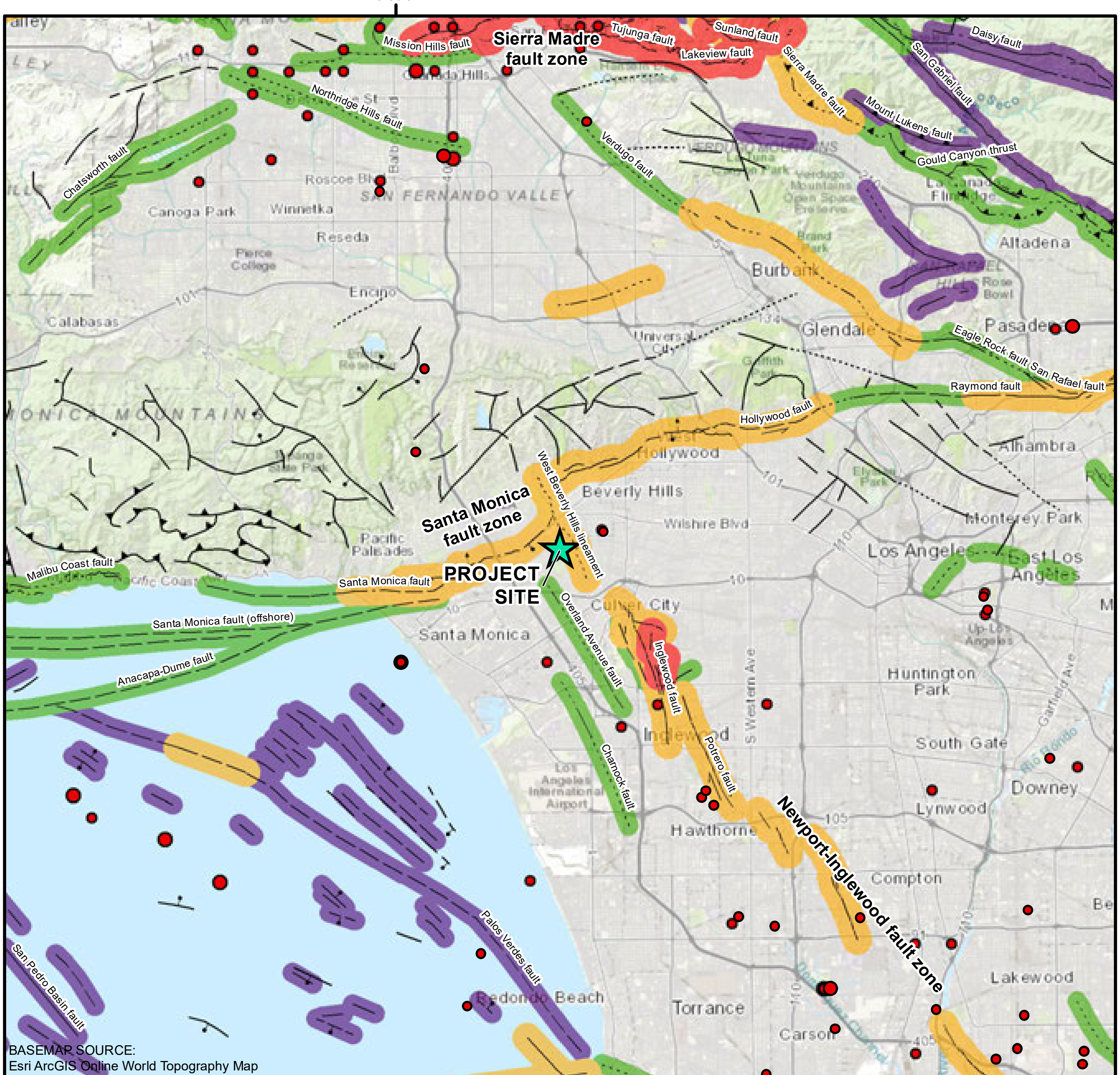

118°30'0"W

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- Mapped Fault Location
- Dashed were Approximated
- Concealed

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Kilometers

ANSS Earthquakes
Magnitude
- 4.0 - 4.9
- 4.9 - 5.9
- 5.9 - 6.9
- 6.9 - 7.9
- 7.9 - 8.9

SOURCE:
- Faults: Fault Activity Map of California, California Geological Survey Jennings and Bryant, 2010
- Earthquake Epicenters: Earthquake Hazards Program, ANSS Comprehensive Earthquake Catalog, USGS, 6/1/2022

Local Faults and Historical Earthquake Epicenters

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Figure 4

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