

Appendix E

Glossary of Technical Terms

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Environmental Technical Terms

Action	“Action,” a federal term, is the construction or reconstruction, including associated activities, of a transportation facility. For the purposes of this Environmental Impact Report (EIR)/Environmental Impact Statement (EIS), the terms “project,” “proposal,” and “action” are used interchangeably unless otherwise specified. An action may be categorized as a “categorical exclusion” or a “major federal action.”
Area of Potential Effects (APE)	A term used in Section 106 regulations (36 <i>Code of Federal Regulations</i> [CFR] 800) to describe the area in which historic and archaeological resources may be affected by a federal undertaking.
Beneficial Use	A use of a natural water resource that enhances the social, economic, and environmental well-being of the user. Twenty-one (21) beneficial uses are defined for the waters of California, ranging from municipal and domestic supply to fisheries and wildlife habitat.
Best Management Practice (BMP)	Methods that have been determined to be the most effective, practical means of preventing or reducing pollution from non-point sources.
Clean Air Act (CAA)	The Clean Air Act of 1970 and the subsequent amendments, including the Clean Air Act Amendments (CAAAAs) of 1990 (42 United States Code [U.S.C.] 7401-7671g), is the primary federal law that protects the nation's air resources. This act establishes a comprehensive set of standards, planning processes, and requirements to address air pollution problems and reduce emissions from major sources of pollutants.
Council on Environmental Quality (CEQ)	The federal agency responsible for developing regulations and guidance for agencies implementing the National Environmental Policy Act (NEPA).
Cooperating Agency	“Cooperating Agency,” under NEPA, means any agency other than the lead agency that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal for any action significantly affecting the human environment. Under the California Environmental Quality Act (CEQA), the term “responsible agency” is used.
Cumulative Effects	An impact on the environment that results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts result from individually minor, but collectively significant, actions taking place over a period of time.
Decibel (dB)	A unit of noise measured on a logarithmic scale that compresses the range of sound pressures audible to the human ear over a range from zero to 140, where zero decibels represents sound pressure corresponding to the threshold of human hearing and 140 decibels corresponds to a pressure at which pain occurs. Noise analysts measure sound pressure levels that people hear in decibels, much like other analysts measure linear distances in yards or meters. A-weighted decibels (dBA) refer to a weighting that accounts for the various frequency components in a way that corresponds to human hearing.

Environmental Assessment	A concise public document for which a federal agency is responsible that serves to briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a Finding of No Significant Impact. It is the federal equivalent of the CEQA term “initial study.”
Environmental Document	A draft or final EIS or EIR, Finding of No Significant Impact, Environmental Assessment, or Negative Declaration. A Categorical Exclusion form is not considered an environmental document; it is rather the documentation that the project is exempt/excluded.
Environmental Justice	The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.
Environmental Protection Agency (EPA)	An agency of the executive branch of the federal government charged with establishing and enforcing environmental regulations.
Floodplain	The lowlands adjoining inland and coastal waters and relatively flat areas and flood-prone offshore islands, including, at a minimum, those areas that have a 1 percent or greater chance of flood in any given year (also known as a 100-year or a Zone A floodplain).
Hazardous Materials	Substances or materials that the Secretary of Transportation has determined are capable of posing an unreasonable risk to human health, safety, and property when transported in commerce, as designated under 49 CFR Parts 172 and 173.
Hazardous Wastes	Waste materials that are, by their nature, inherently dangerous to handle or dispose of (e.g., old explosives, radioactive materials, some chemicals, some biological wastes). Usually, industrial operations produce these waste materials.
Historic Property	Any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP). The term “eligible for inclusion in the NRHP” pertains to both properties that the Secretary of the Interior has formally determined to be eligible and to all other properties that meet NRHP listing criteria.
Initial Study	Under CEQA, the Initial Study is prepared to determine whether there may be significant environmental effects resulting from a project. The Initial Study is attached to the Negative Declaration or Mitigated Negative Declaration. It can become the basis of an EIR if it concludes that the project may cause significant environmental effects that cannot be mitigated below the level of significance.
Lead Agency	The public agency that has primary responsibility for carrying out or approving a project that may have a significant effect on the environment and for preparing the environmental document.
Level of Service (LOS)	A term that denotes traffic operating conditions at a given intersection. There are six levels of service, A through F, which relate to traffic congestion from best to worst. In general, LOS A represents free-flow conditions with no congestion. Conversely, LOS F represents severe congestion with stop-and-go conditions.

Low-Income Population	A population composed of persons whose median household income is below the Department of Health and Human Services poverty guidelines.
Maintenance Area	A federal term to describe any geographic region of the United States designated nonattainment pursuant to the CAAAs and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under Section 175A of the CAAAs.
Metropolitan Planning Organization (MPO)	A federal designation for the agency responsible for cooperative transportation decision making for an urbanized area with a population of more than 50,000.
Metropolitan Transportation Plan	The official intermodal transportation plan that is developed and adopted through the metropolitan transportation planning process for the metropolitan planning area.
Minority Population	A population composed of persons who are Black (non-Hispanic), Hispanic, Asian American, American Indian, or Alaskan Native.
National Environmental Policy Act (NEPA)	The National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321-4347; P.L. 91-190) is the basic national charter for the protection of the environment. It establishes policy, sets goals, and provides means for carrying out the policy. Its purpose is to provide for the establishment of a CEQ and to instruct federal agencies on what they must do to comply with the procedures and achieve the goals of NEPA.
National Historic Preservation Act (NHPA)	The National Historic Preservation Act of 1966, as amended (16 U.S.C. 470-470 <i>et seq.</i> ; P.L. 89- 665), is the basic legislation of the nation's historic preservation program that established the Advisory Council on Historic Preservation and the Section 106 review process. Section 106 of the NHPA requires every federal agency to "take into account" the effects of its undertakings on historic properties.
National Pollutant Discharge Elimination System (NPDES) Permit	A permit that is required for facilities and activities that discharge waste into surface waters from a confined pipe or channel.
National Register of Historic Places (NRHP)	Administered by the National Park Service, the nation's master inventory of known historic properties, including buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archeological, or cultural significance at the federal, state, and local levels.
Nonattainment Area	Any geographic region of the United States that EPA has designated as a nonattainment area for a transportation-related pollutant(s) for which a National Ambient Air Quality Standard (NAAQS) exists.
Notice of Availability	A formal public notice under NEPA announcing the availability of a completed Environmental Assessment, Draft EIS, or Final EIS. Such notice is to be published in local newspapers. For EISs, publication of such notice in the <i>Federal Register</i> is also required.
Notice of Completion	The CEQA notice submitted to the State Clearinghouse when an EIR is completed. For Caltrans EIRs, the requirement for a Notice of Completion is satisfied by the cover sheet transmitting the EIR to the Clearinghouse.
Notice of Determination	A formal written notice under CEQA filed by a lead state agency when approving any project subject to the preparation of a Negative Declaration or an EIR.

Notice of Intent (NOI)	A notice that an EIS will be prepared and considered. The NOI is published in the <i>Federal Register</i> by the lead federal agency. The CEQA equivalent of this notice is called the Notice of Preparation (NOP).
Notice of Preparation (NOP)	The CEQA notice that an EIR will be prepared for a project.
Project	CEQA (§21065) defines a “project” as an activity that may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and which is any of the following: <ul style="list-style-type: none">a) An activity directly undertaken by any public agency.b) An activity undertaken by a person that is supported, in whole or in part, throughout contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.c) An activity that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.
Recognized Environmental Conditions (RECs)	The presence or likely presence of any hazardous substance or petroleum product on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property (Ref. American Society of Testing and Materials [ASTM] Standard E 1527-00).
Record of Decision	A formal written statement, required under NEPA, wherein a federal lead agency must present the basis for its decision to approve a selected project alternative, summarize mitigation measures incorporated into the project, and document any required Section 4(f) approval.
Regional Transportation Plan (RTP)	“...the official intermodal metropolitan transportation plan that is developed through the metropolitan planning process for the metropolitan planning area, developed pursuant to 23 CFR Part 450.”
Responsible Agency	A “public agency, other than the lead agency that has responsibility for carrying out or approving a project” (Public Resources Code [PRC] 21069). The CEQA Guidelines further explain the statutory definition by stating that a “responsible agency” includes “all public agencies other than the Lead Agency that have discretionary approval power over the project” (14 CCR 15381). State and local public agencies that have discretionary authority to issue permits, for example, fall into this category.
SAFETEA LU	The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (commonly known by its acronym, SAFETEA-LU) is the most recent federal transportation bill authorizing funding for the nation’s surface transportation programs. Signed into law in August 2005, SAFETEA-LU replaced the expired Transportation Equity Act for the 21st Century (TEA-21). The law establishes funding levels and policies for the federal government’s highway, highway safety, transit, motor carrier, and some rail programs administered by the U.S. Department of Transportation. SAFETEA-LU expires September 30, 2009.
Scoping	A process for determining the scope of issues to be addressed in an Environmental Assessment and EIS and for identifying significant issues to be analyzed in depth in an EIS.

Significance – CEQA	<p>CEQA defines a "Significant effect on the environment" as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant” (§15382).</p> <p>CEQA requires that the lead agency identify each “significant effect on the environment” resulting from the project and avoid or mitigate it.</p> <p>The CEQA Guidelines include mandatory findings of significance for certain effects, thus requiring the preparation of an EIR.</p>
Significance – NEPA	<p>NEPA stipulates that an EIS is required when the proposed federal action has the potential to “significantly affect the quality of the human environment.” To determine that potential, one must consider both the context in which the action takes place and the intensity of its effect. Section 1508.27 of the CEQ regulations define the term “significantly” as:</p> <p>Significantly, as used in NEPA, requires considerations of both context and intensity:</p> <p>(a) Context. This means that the significance of an action must be analyzed in several contexts, such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.</p> <p>(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:</p> <ol style="list-style-type: none"> (1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial. (2) The degree to which the proposed action affects public health or safety. (3) Unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. (4) The degree to which the effects on the quality of the human environment are likely to be highly controversial. (5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. (6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. (7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts. (8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of significant scientific, cultural, or historical resources. (9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. (10) Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment. [43 FR 56003, Nov. 29, 1978; 44 FR 874, Jan. 3, 1979]

State Implementation Plan (SIP)	The portion (or portions) of an applicable air quality implementation plan approved or promulgated, or the most recent revision thereof, under sections 110, 301(d) and 175A of the CAA.
State Water Resources Control Board	The principal authority of California for regulation of the quantity and quality of waters of the state, established by act of the legislature in 1967. It assumed responsibility for administration of the Porter-Cologne Water Quality Control Act of 1969.
Statewide Transportation Improvement Plan	A staged, multiyear, statewide, intermodal program of transportation projects that is consistent with the statewide transportation plan and planning processes and metropolitan plans, Transportation Improvement Plans, and processes.
Statewide Transportation Plan	The official statewide, intermodal transportation plan that is developed through the statewide transportation planning process.
Title VI of the Civil Rights Act of 1964	A policy of the United States that prevents discrimination on the grounds of race, color, or national origin in connection with programs and activities receiving federal financial assistance.
Transportation Control Measure	Any measure that is specifically identified and committed to in the applicable implementation plan that is either one of the types listed in §108 of the CAA, or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions. Notwithstanding the above, vehicle technology-based, fuel-based, and maintenance-based measures that control the emissions from vehicles under fixed traffic conditions are not Transportation Control Measures for the purposes of project-level conformity.
Transportation Improvement Plan	A staged, multiyear, intermodal program of transportation projects that is consistent with the metropolitan transportation plan. It is a federal term.
Trustee Agency	A state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California. Trustee agencies include: (a) the California Department of Fish and Game (CDFG) with regard to the fish and wildlife of the state, to designated rare or endangered native plants, and to game refuges, ecological preserves, and other areas administered by the department; (b) the State Lands Commission with regard to state-owned “sovereign” lands such as the beds of navigable waters and state school lands; (c) the State Department of Parks and Recreation with regard to units of the State Park System; and (d) the University of California with regard to sites within the Natural Land and Water Reserves System” (14 CCR 15386).
Volume to Capacity Ratio (V/C)	The ratio of an intersection’s traffic volume (V) to its capacity (C), with capacity defined as the theoretical maximum number of vehicles that can pass through an intersection during a specified time period. When the V/C ratio is 1.0, traffic is considered to be “at capacity” and there is traffic congestion. A V/C ratio of 1.0 or more translates to an LOS F.
Wetland	Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. (United States Army Corps of Engineers [USACE] and EPA definition).

Engineering Terms

Abutment	Part of a bridge substructure. Refers to the first and last supports of a bridge.
Alkali-Silica Reaction	A reaction between reactive (amorphous) silica (in concrete aggregates) and an alkali (usually present in the cement), which results in the formation of a gel. This gel increases in volume with water and exerts expansive pressure on the concrete, causing failure of the concrete. (from Wikipedia)
Approaches	Part of bridge or bridges leading up to the main span.
Arch	A structural form utilizing a semicircular substructure.
Beam	A horizontal structure member supporting vertical loads by resisting bending.
Bent	Part of a bridge substructure. A single or multi-column frame commonly made of reinforced concrete or steel that supports a vertical load and is placed transverse to the length of a structure. Bents are commonly used to support beams and girders.
Bent cap	Refers to the horizontal element of a bent.
Cable-stayed	A variation of suspension bridge in which the tension members extend from one or more towers at varying angles to carry the deck. Allowing much more freedom in design form, this type does not use cables draped over towers, nor the anchorages at each end, as in a traditional suspension bridge.
Cast-in-place concrete girder	A concrete girder poured in the field in its final position.
Columns	Vertical supporting elements of a bridge.
Concrete box girder	A hollow concrete girder.
Deck	The portion of the superstructure in contact with vehicle tires.
Functionally obsolete	A structure including substandard components, such as older railing or sidewalk and having a roadway geometry that does not meet today's standards. A functionally obsolete bridge may be structurally sufficient, but unable to handle its current volume of traffic.
Girder	A girder is a larger beam.
Main span	Refers to the longest span of a bridge structure (usually significantly longer than other spans). Also refers to the portion of the structure spanning the longest distance.
Pier	A vertical support or substructure unit that supports the spans of a multi-span superstructure at an intermediate location between its abutments.
Piles	Long vertical steel or concrete elements drilled or driven deep into the ground to form part of a foundation. Piles are typically used in groups.
Pile Caps	A rectangular concrete element built on top of a group of piles. A column can be built above a pile cap.

Span	The distance between bents, piers, towers, or abutments.
Steel box girder	A hollow steel girder.
Steel casings	Steel pipe placed around another element for various applications.
Steel tied arch	Bridge built with a semicircular member over the deck, using the deck as a tie. This bridge usually involves cables connecting the deck to the arch.
Substructure	Any portion of a bridge structure below the superstructure, including abutments, columns, walls, and foundations that support the superstructure.
Superstructure	The portion of a bridge structure that carries the traffic load and transfers it to the substructure.
Tie-in	Location where approaches and main span meet.
Truss	A structural form that is used in the same way as a beam, but because it is made of a web-like assembly of smaller members, it can be made longer, deeper, and therefore, stronger than a beam or girder while being lighter than a beam of similar dimensions.