

APPENDIX E – GLOSSARY OF TECHNICAL TERMS

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ACTION (1): Any highway construction, reconstruction, rehabilitation, repair, or improvement undertaken with Federal-aid highway funds or FHWA approval.

ACTION (2): A highway or transit project proposed for FHWA or FTA funding. It also includes activities such as joint and multiple use permits, changes in access control, etc., which may or may not involve a commitment of federal funds (23 CFR 771.107(b)).

ACTIVE FAULT: A fault that has moved within late Quaternary time (the last 750,000 years). Note that this definition is broader than that used by the California Department of Conservation, California Geological Survey (CGS), which defines an active fault as one that has moved within Holocene time (the last 11,000 years).

ADAPTIVE MANAGEMENT: A long-term repeated process of gradually modifying management techniques based on the results of modeling and research.

ALLUVIAL FAN: A fan-shaped area of soil deposited where a mountain stream first enters a valley or plain.

ALLUVIAL SOILS: Soil developing from recent alluvium (see below); typical of floodplains.

ALLUVIUM: Material developed by running water.

AMBIENT: Refers to surrounding, external, or unconfined conditions.

AMBIENT NOISE: Exterior sound (the surrounding sound from all sources near and far).

ANADROMOUS: Refers to fish that typically inhabit seas or lakes but ascend streams to spawn; for example, salmon.

AREA OF POTENTIAL EFFECT (APE): A term used in Section 106 of the National Historic Preservation Act to describe the area in which historic resources may be affected by a federal undertaking.

ARID: Dry.

ARTERIAL: A highway or local road that primarily serves through traffic

AS-BUILTS: The final plans of a project after the project is constructed. These plans show the original design, as well as changes that occurred during construction.

ATTAINMENT AREA: A geographic area in which levels of a criteria air pollutant meet the health-based primary standard (national ambient air quality standard, or NAAQS) for the pollutant. An area may have an acceptable level for one criteria air pollutant, but may have unacceptable levels for others. Thus an area could be both attainment and nonattainment at the same time. Attainment areas are defined using federal pollutant limits set by the U.S. EPA.

AUXILIARY LANE: The portion of the roadway adjoining the traveled way for speed change, turning, weaving, truck climbing, maneuvering of entering and leaving traffic, and other purposes supplementary to through-traffic movement. Auxiliary lanes are used to balance the traffic load and maintain a more uniform level of service on the highway. They facilitate the positioning of drivers at exits and the merging of drivers at entrances.

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BACKWATER: The rise in water surface elevation due to encroachment.

BASE FLOOD: The flood having a one percent (1%) chance of being equaled or exceeded in any given year (100-year flood).

BASE FLOOD ELEVATION (BFE): The water surface elevation of the base flood.

BASE FLOOD PLAIN: The area subject to flooding by the base flood.

BENEFICIAL USE: A use of a natural water resource that enhances the social, economic, and environmental well-being of the user. Twenty-one beneficial uses are defined for the waters of California, ranging from municipal and domestic supply to fisheries and wildlife habitat.

BEST MANAGEMENT PRACTICE (BMP): Any program, technology, process, operating method, measure, or device that controls, prevents, removes or reduces pollution.

BOG: Wetland ecosystem characterized by an accumulation of peat, acid conditions, and dominance of sphagnum moss.

BORROW: Soil brought in from another area.

BRACKISH: Water that has salt concentration greater than fresh water ($>.05$ ‰) and less than seawater (<35 ‰).

BYPASS: An arterial highway or local road that permits traffic to avoid part or all of an urban area.

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CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA): State legislation enacted in 1970 and subsequently amended. It requires public agencies to regulate activities which may affect the quality of the environment so that major consideration is given to preventing damage to the environment.

CALIFORNIA TRANSPORTATION COMMISSION (CTC): A State Commission, established by State Assembly Bill 402 (AB 402) with nine appointed member and two ex-officio members, responsible for the programming and allocating of funds for the construction of highway, passenger rail, and transit improvements throughout California. The CTC also provides guidance and recommendations on transportation policies.

CALIFORNIA TRANSPORTATION PLAN (CTP): The CTP is a long-range transportation policy plan that is submitted to the Governor. The CTP is developed in collaboration with partners, presents a vision for California's future transportation system, and defines goals, policies, and strategies to reach the vision. It is developed in consultation with the State's regional transportation planning agencies, is influenced by the regional planning process, and provides guidance for developing future RTPs. RTPs should be consistent with and implement the vision and goals of the CTP. As defined by State statute, the CTP is not project specific.

CAPACITY: The maximum amount of traffic that can be accommodated by a uniform segment of freeway under prevailing conditions.

CATEGORICAL EXCLUSION (CE): "Categorical exclusion," under NEPA, covers various categories of actions which do not individually or cumulatively have a significant effect on the human environment and are exempt from the requirement to prepare an Environmental Assessment or an Environmental Impact Statement.

CATEGORICAL EXEMPTION (CE): "Categorical Exemption," under CEQA, means an exemption for a class of projects that have been determined by the Secretary of the Resources Agency not to have a significant effect on the quality of the environment. Article 19 of the CEQA Guidelines describes and gives examples for each class of categorical exemption. There are several exceptions which preclude a project from being considered a Categorical Exemption under CEQA: projects located on a site included on a list of designated hazardous waste sites (the Cortese List); projects that may result in damage to scenic resources on officially designated state scenic highways; or projects that may cause substantial adverse change to a historic resource.

CHANNELIZATION: The use of traffic markings or islands to direct traffic into certain paths, for instance, a "channelized" intersection directs portions of traffic into a left-turn lane through the use of roadway islands or striping that separates the turn lane from traffic going straight.

CLEAR RECOVERY ZONE: Unobstructed, relatively flat or gently sloping area beyond the edge of the traffic lane, which affords the drivers of errant vehicles the opportunity to regain control.

COFFERDAM: Temporary watertight enclosure from which water is pumped-out to expose the bottom of a body of water and permit construction.

CONVENTIONAL HIGHWAY: A highway without control of access that may or may not be divided.

COOPERATING AGENCY: “Cooperating Agency,” under NEPA, means any agency other than the lead agency which 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.

CORRIDOR: A strip of land between two termini within which traffic, topography, environment, and other characteristics are evaluated for transportation purposes.

COUNCIL OF GOVERNMENTS (COG): A voluntary consortium of local governments formed to cooperate on problem solving, e.g., regional transportation planning and programming. Some RTPAs and MPOs are COGs.

CUMULATIVE IMPACT (CEQA): The CEQA definition of cumulative impact comes from the Office of Planning and Research (OPR). Section 15355 of OPR’s CEQA Guidelines provides the following context:

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

- a) The individual effects may be changes resulting from a single project or a number of separate projects.
- b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

CUMULATIVE IMPACT (NEPA): The NEPA definition of a cumulative impact comes from the Council on Environmental Quality (CEQ), which defines a cumulative impact as:

...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR §1508.7.)

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dba: A-weighted decibels are adjusted to approximate the way the average person hears sound.

DECIBEL: With respect to sound, decibels measure a scale from the threshold of human hearing, 0 decibels, upwards towards the threshold of pain, about 120-140 decibels. Because decibels are such a small measure, they are computed logarithmically and cannot be added arithmetically. An increase of 10 decibels is perceived by the human ear as a doubling of noise.

DECIDUOUS: (of leaves), shed during a certain season (winter in temperate regions, dry seasons in the tropics); (of trees), having deciduous parts.

DEMAND: The transportation need at a point in time, e.g., traffic volume on a segment of road at a point in time, projected traffic volume on a segment of road in a future year, current peak period ridership on a bus route, children crossing at a signed intersection on school days.

DEMOGRAPHY, DEMOGRAPHIC: The study of populations with reference to birth and death rates, size and density, distribution, migration, and other vital statistics.

DESIGN CAPACITY: The maximum number of vehicles that can pass over a lane or a roadway during one hour without operating conditions falling below a pre-selected design level.

DESIGN CONCEPT: The type of facility identified by the project, e.g., freeway, expressway, arterial highway, grade-separated highway, reserved right-of-way rail transit, mixed-traffic rail transit, exclusive busway, etc.

DESIGN FLOOD: The peak discharge, volume if appropriate, stage or wave crest elevation of the flood associated with the flood frequency selected for the design of a project. (In other words, the project will not be inundated at the design flood frequency.)

DESIGN LIFE: The length of time that a transportation facility or improvement is intended to remain serviceable, frequently expressed in years.

DESIGN SCOPE: The design aspects which will affect the proposed facility's impact on regional emissions, usually as they relate to vehicle or person carrying capacity and control, e.g., number of lanes or tracks to be constructed or added, length of project, signalization, access control including approximate number and location of interchanges, preferential treatment for high-occupancy vehicles, etc.

DESIGN SPEED: A speed determined for design and correlation of the physical features of a highway that influence vehicle operation. It is the maximum safe speed that can be maintained over a specified section of highway when conditions are so favorable that the design features of the highway govern.

DESIGN VOLUME: A volume determined for use in design, representing traffic expected to use the highway. Unless otherwise stated, it is an hourly volume.

DESIGNATED FLOODWAY: A floodway designated by a state or local agency. California State Reclamation Board (Board) definition: A designated floodway means either: (1) the channel of the stream and that portion of the adjoining floodplain reasonably required to provide passage of a base flood or (2) the floodway between existing levees as adopted by the Board or the Legislature.

DETERMINISTIC SEISMIC HAZARD ANALYSIS: Seismic parameters are estimated based on the size of the maximum credible (magnitude) earthquake expected. The value obtained is essentially time-independent. This method is used by Caltrans to assess the seismic hazard at most structures. See also probabilistic seismic hazard analysis, below.

DIAMETER AT BREAST HEIGHT (DBH): Diameter of tree measured 4 feet, 6 inches (1.4 meters) from ground level.

DIFFERENTIAL SETTLEMENT: The uneven lowering of different parts of an engineered structure, often resulting in damage to the structure.

DIRECT EFFECTS: Effects that are caused by and action and occur at the same time and place as the action.

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ECOSYSTEM: The biotic community and its abiotic environment functioning on a system.

ENCROACHMENT (FEMA DEFINITION): Construction, placement of fill, or similar alteration of topography in the floodplain that reduces the area available to convey floodwaters. FHWA definition: An action within the limits of the base floodplain.

ENCROACHMENT (FHWA): An action within the limits of the base floodplain.

ENDANGERED: Plant or animal species that are in danger of extinction throughout all or a significant portion of its range.

ENDEMIC, ENDEMISM: Restricted to a given region (e.g., endemic to California).

ENVIRONMENTAL DOCUMENT: “Environmental Document” means draft or final Environmental Impact Statement (EIS) or Environmental Impact Report (EIR), Finding of No Significant Impact (FONSI), Environmental Assessment (EA) or Negative Declaration (ND)/Mitigated Negative Declaration (MND). A categorical exemption or exclusion is not considered an environmental document; it is rather the determination that the project is exempt/excluded from the requirement to prepare an environmental document.

ENVIRONMENTAL PROTECTION AGENCY [UNITED STATES] (U.S. EPA): An agency of the executive branch of the federal government charged with establishing and enforcing environmental regulations.

EPHEMERAL: Lasting for only a short time; transitory; short-lived.

EROSION: The wearing away of the land surface by running water, wind, ice, or other geological agents.

ESTUARY: Partially enclosed embayment where fresh water and sea water meet and mix.

ETHNOGRAPHIC: Relating to the study of human cultures.

EXPANSIVE SOILS: Soil deposits that have the capacity or a tendency to expand during weather or seismic events.

EXPRESSWAY: An arterial highway with at least partial control of access, which may or may not be divided or have grade separations at intersections.

EXTANT: Still in existence.

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FALSEWORK: A temporary frame to support a structure during construction.

FAULT CREEP: Slow ground displacement occurring without accompanying earthquakes.

FEDERAL HIGHWAY ADMINISTRATION (FHWA): The Federal agency within the U.S. Department of Transportation responsible for administering the Federal-aid Highway Program and the Motor Carrier Safety Program.

FEDERAL REGISTER (FR): The *Federal Register* is the official daily publication for agency rules, proposed rules, and notices of federal agencies and organizations, as well as for Executive Orders and other presidential documents.

FEDERAL TRANSIT ADMINISTRATION (FTA): An agency within the U.S. Department of Transportation responsible for administering federal funds for public transportation planning, programming, and projects.

FEDERAL STATE TRANSPORTATION IMPROVEMENT PROGRAM (FSTIP): A multiyear statewide, financially constrained, intermodal program of projects that is consistent with the statewide transportation plan (CTP) and regional transportation plans (RTPs). The FSTIP is developed by the California Department of Transportation and incorporates all of the MPOs *and* RTPAs FTIPs by reference. Caltrans then submits the FSTIP to FHWA.

FEDERAL TRANSPORTATION IMPROVEMENT PROGRAM (FTIP): A constrained 4-year prioritized list of all transportation projects that are proposed for federal and local funding. The FTIP is developed and adopted by the MPO/RTPA and is updated every 2 years. It is consistent with the RTP and it is required as a prerequisite for federal funding.

FINDING OF NO SIGNIFICANT IMPACT (FONSI): A document by a federal agency briefly presenting the reasons why an action, not otherwise categorically excluded, will not have a significant effect on the human environment and therefore does not require the preparation of an EIS.

FLOOD BOUNDARY AND FLOODWAY MAP (FBFM): The floodplain management map issued by FEMA that depicts, on the basis of detailed analyses, the boundaries of the 100- and 500-year floodplain and the regulatory floodway.

FLOOD FREQUENCY: The statistical number of years that takes place before the recurrence of a flood of the same magnitude. (10-year flood, 50-year flood, 100-year flood, etc.)

FLOOD INSURANCE RATE MAP (FIRM): The insurance and floodplain management map issued by FEMA that identifies, on the basis of detailed or approximate analyses, the areas of 100-year flood hazard in a community.

FLOOD INSURANCE STUDY (FIS): It is a report that describes and delineates the Special Flood Hazard Areas and the elevations of the community.

FLOODPLAIN: Any land area subject to inundation by floodwaters from any source.

FLOODPLAIN EVALUATION REPORT: A technical report which evaluates effects of the floodplain encroachment concerning the six key items identified in 23 CFR 650.111(b)(c)(d) verified by results of the Location Hydraulic Study (same as Figure 804.7A Technical Information for Location Hydraulic Study located in chapter 804 of the Highway Design Manual), but in greater detail. This report is required in situations where it is uncertain or clear that a project may involve a significant encroachment. This report is to be used as a backup for the Environmental Assessment/Finding of No Significant Impact (EA/FONSI) or an Environmental Impact Statement (EIS). The risks, impacts, and mitigation measures must be summarized in the NEPA document.

FLOODPLAIN VALUES: Fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aqua culture, forestry, natural moderation of floods, water quality maintenance, groundwater discharge, etc.

FLOODPROOF: To design and construct a project to keep floodwaters out or to reduce the effects of floodwaters.

FLOODWAY: The channel of a river or other watercourse, plus any adjacent floodplain areas, which is designated a floodway by a public agency, that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without cumulatively increasing the water-surface elevation more than one foot above the BFE. (Since the one foot is already accounted for, no increase of any amount in the BFE is allowed in the floodway.)

FLOODWAY FRINGE: The portion of the 100-year floodplain that is not within the floodway and in which development and other forms of encroachment may be permitted under certain circumstances.

FOSSIL: Any remains, trace, or imprint of a plant or animal that has been preserved in the earth's crust since some past geologic time (Bates and Jackson 1980:243).

FRAGMENTATION: Reduction of a large habitat area into small, scattered remnants; reduction of leaves and other organic matter into smaller particles.

FRIABLE: Easily crumbled (as in friable soil).

FREEWAY: A divided arterial highway with full control of access and with grade separations at intersections.

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GEOMETRIC DESIGN: The design of the physical features of a road, such as alignment, grades, sight distances, widths, slopes, etc., many of which are dictated by the design speed.

GOODS MOVEMENT: The transportation of commodities by any or all of the following commercial means; aircraft, railroad, ship, or truck.

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HABITAT: Place where a plant or animal lives.

HABITAT PROTECTION: Ensuring appropriate uses of land to maintain and optimize species habitat values.

HIGH OCCUPANCY TOLL (HOT) LANES: New HOV lanes that allow single occupant vehicles access for a fee.

HIGH OCCUPANCY VEHICLE (HOV) LANES: A lane of freeway reserved for the use of vehicles with set minimum number of occupants. Buses, taxis, carpools (which satisfy the occupancy minimum), and motorcycles generally may use HOV lanes.

HOLOCENE: The second epoch of the Quaternary Period characterized by man and modern animals.

HYDRIC SOIL: Soil subject to saturation or inundation.

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IGNEOUS ROCKS: Formed when magma (liquid rock material) cools below the earth's surface or when lava cools above ground.

INDIRECT EFFECTS: Effects that are caused by an action and occur later in time, or at another location, yet are reasonably foreseeable.

INTERCHANGE: A system of interconnecting roadways in conjunction with one or more grade separations providing for the routing of traffic between two or more roadways on different levels.

INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT (ISTEA): Federal transportation legislation adopted in 1991. It provided increased funding and program flexibility for multimodal transportation programs. Upon its expiration, ISTEA was succeeded by TEA-21.

INTERREGIONAL IMPROVEMENT PROGRAM (IIP): One of two component funding source programs that ultimately make up the State Transportation Improvement Program (STIP). The IIP receives 25% of the funds from the State Highway account. The IIP is the source of funding for the ITIP.

INTERREGIONAL TRANSPORTATION IMPROVEMENT PROGRAM (ITIP): A Statewide program of projects, developed by Caltrans for interregional projects that are primarily located outside of urbanized areas. The ITIP has a 4-year planning horizon and is updated every two years. It is submitted to the CTC along with the FTIP and taken together they are known as the STIP.

INTERREGIONAL TRANSPORTATION STRATEGIC PLAN (ITSP): A plan that describes and communicates the framework in which the state will carry out its responsibilities for the Interregional Transportation Improvement Program (ITIP).

INITIAL STUDY (IS): 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.

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LANE NUMBERING: On a multilane roadway, the lanes available for through travel in the same direction are numbered from left to right when facing in the direction of travel.

ldn: Average noise over one day and night.

LEAD AGENCY (CEQA): “Lead Agency” means the public agency which has primary responsibility for carrying out or approving a project which may have a significant effect on the environment and preparing the environmental document.

LEAD AGENCY (NEPA): The agency or agencies preparing or having taken primary responsibility for preparing the environmental impact statement.

leq: A measure of the average noise level during a specified period of time.

leq(h): Equivalent or average noise level for the noisiest hour.

LEVEL OF SERVICE (LOS): A measure describing operational conditions within a traffic stream. It measures such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The six defined levels of services use letter designations from A to F, with Level of Service A representing the best operating conditions and Level of Service F representing the worst. Each Level of Service represents a range of operating conditions.

LIQUEFACTION: The loss in the shearing resistance of a cohesionless soil, caused by an earthquake wave. The soil is turned into a fluid mass.

LITHIC: Consisting of or relating to stone or rock.

LITTORAL: Shallow water of a lake in which light penetrates to the bottom, permitting submerged, floating, and emergent vegetative growth; also shore zone of tidal water between high-water and low-water marks.

LOAD LIMITS: Weight restrictions used to prohibit vehicles that exceed a specified weight from using a transportation facility.

LOCATION HYDRAULIC STUDY (SAME AS FIGURE 804.7A TECHNICAL INFORMATION FOR LOCATION HYDRAULIC STUDY LOCATED IN CHAPTER 804 OF THE HIGHWAY DESIGN MANUAL): The preliminary investigative study to be made of base floodplain encroachments by a proposed highway action. (This study must be performed by a registered engineer with hydraulic expertise.)

LONGITUDINAL ENCROACHMENT: An encroachment that is parallel to the direction of flow. Example: A highway that runs along the edge of a river is, usually considered a longitudinal encroachment.

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MAGNITUDE: A measure of the strength of an earthquake or the strain energy released by it.

MAINTENANCE AREA: A federal term to describe any geographic region of the United States designated non-attainment pursuant to the Clean Air Act Amendments of 1990 (CAAA) and subsequently re-designated to attainment subject to the requirement to develop a maintenance plan under Section 175A of the CAAA.

MAJOR FEDERAL ACTION: Section 1508.18 of the CEQ Regulations states that "Major Federal action" includes actions with effects that may be major and which are potentially subject to Federal control and responsibility. Major reinforces but does not have a meaning independent of significantly (Sec. 1508.27)." An EIS must be prepared for any major federal action significantly affecting the quality of the human environment.

MAJOR INVESTMENT: Federal regulations define a "major metropolitan transportation investment" as "a high-type highway or transit improvement of substantial cost that is expected to have a significant effect on capacity, traffic flow, level of service, or mode share at the transportation corridor or subarea scale" (23 CFR 450.104).

MAJOR INVESTMENT STUDY (MIS): Prepared during the early planning phase to analyze the range of modal alternatives and cost/benefits of "major metropolitan transportation investments," which are defined as being highway or transit improvements of substantial cost that are expected to have a significant effect on capacity, traffic flow, level of service, or mode share at the transportation corridor or subarea scale. TEA-21 ELIMINATED THE REQUIREMENT FOR A SEPARATE MIS DOCUMENT, BUT THE ANALYSIS STILL MUST BE CONDUCTED.

MARSH: Wetland dominated by grassy vegetation, such as cattails and sedges.

MAXIMUM CREDIBLE EARTHQUAKE (MCE): The maximum intensity earthquake that is assumed to occur closest to the site. This earthquake is also described as the maximum magnitude earthquake, or maximum earthquake.

MEDIAN: The portion of a divided highway separating the traveled ways in opposite directions.

METROPOLITAN PLANNING ORGANIZATION (MPO): A federal designation for the forum for cooperative transportation decision-making for an urbanized area with population of more than 50,000.

METROPOLITAN TRANSPORTATION IMPROVEMENT PLAN (MTIP): MTIP is a synonym for the FTIP and it refers to the programming done by the MPO/RTPA as part of the development of the MTP. Also called **REGIONAL TRANSPORTATION IMPROVEMENT PLAN (RTIP)**.

METROPOLITAN TRANSPORTATION PLAN (MTP): A federal and state mandated planning document prepared by MPOs and RTPAs. The plan describes existing and projected transportation needs, conditions, and financing affecting all modes within a 20-year horizon. Also called a **REGIONAL TRANSPORTATION PLAN (RTP)**.

MIDDEN: A prehistoric refuse heap, usually containing shells and/or bones.

MIGRATION: Intentional, directional, and usually seasonal movement of animals between two regions or habitats; involves departure and return of the same individual.

MITIGATED NEGATIVE DECLARATION (MND): The CEQA document that is used when the Initial Study concludes that a project's potential significant effect on the environment can be reduced below the level of significance with the incorporation of mitigation measures.

MITIGATION BANK: Large blocks of land preserved, restored, and enhanced for the purpose of consolidating mitigation and/or mitigating in advance for projects that take listed species.

MIXED-FLOW LANE: A standard traffic lane for all types of vehicles, including single-occupant cars, carpools, vans, buses, and trucks.

MONITORING WELL: A well drilled at a hazardous waste management site or Superfund site to collect groundwater samples for the purpose of physical, chemical, or biological analysis to determine the amounts, types, and distribution of contaminants in the groundwater beneath the site.

MOVING AHEAD FOR PROGRESS IN THE 21st CENTURY ACT (MAP-21): MAP-21 was signed into law by President Barack Obama on July 6, 2012. Funding surface transportation programs at over \$105 billion for fiscal years (FY) 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005.

MULTIMODAL: Pertaining to more than one method of traveling.

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NATIONAL ENVIRONMENTAL POLICY ACT (NEPA): Enacted in 1969, NEPA requires all federal agencies to consider environmental factors through a systematic interdisciplinary approach before committing to a course of action. The NEPA process is an overall framework for the environmental evaluation of federal actions.

NATIONAL HIGHWAY SYSTEM (NHS): Consists of 155,000 miles (plus or minus 15 percent) of the major roads in the U.S. Included will be all interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT (NPDES): "...is required for facilities and activities that discharge waste into surface waters from a confined pipe or channel."

NEGATIVE DECLARATION (ND): The CEQA document that is used when the Initial Study concludes that a project will have no significant impact on the environment.

NONATTAINMENT AREA: "Nonattainment Area" means any geographic region of the United States that the U.S. Environmental Protection Agency (U.S. EPA) has designated as a nonattainment area for a transportation related pollutant(s) for which a National Ambient Air Quality Standard (NAAQS) exists.

NONPOINT SOURCE: A "nonpoint source" is a dispersed source of pollution that is not identifiable as to specific location, but may be identified as contributing to water quality degradation from a tributary drainage area, e.g., pesticide residues distributed over an agricultural area.

NOTICE OF AVAILABILITY (NOA): “Notice of Availability” means a formal public notice under NEPA announcing the availability of a completed EA, DEIS, or FEIS. For EISs, publication of such notice in the Federal Register is required.

NOTICE OF COMPLETION (NOC): The CEQA notice submitted to the State Clearinghouse when an EIR, MND, or ND is completed.

NOTICE OF DETERMINATION (NOD): A “Notice of Determination” is a formal written notice under CEQA filed by a lead state agency when approving any project subject to the preparation of an EIR, MND, or ND.

NOTICE OF EXEMPTION (NOE): “Notice of Exemption” means a brief notice which may be filed by a public agency after it has decided to carry out or approve a project and has determined that the project is exempt from CEQA.

NOTICE OF INTENT (NOI): Under NEPA, the “Notice of Intent” is a notice that an Environmental Impact Statement will be prepared and considered. The Notice of Intent is published in the Federal Register by the lead federal agency. Under CEQA, a lead agency must also provide a “Notice of Intent to Adopt” an ND or MND to the public, responsible agencies, trustee agencies, and the county clerk of each county in which the proposed project is located.

NOTICE OF PREPARATION (NOP): "Notice of Preparation" is the CEQA notice that an EIR will be prepared for a project.

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OVERCROSSING (O.C.): A local road structure that bridges over a state highway.

OXYGEN DEMAND: Materials such as food waste and dead plant or animal tissue that use up dissolved oxygen in the water when they are degraded through chemical or biological processes. Chemical and biochemical oxygen demand (COD and BOD) are measures of the amount of oxygen consumed when a substance degrades.

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PALEONTOLOGIC SPECIES: A morphologic species based on fossil specimens. It may include specimens that would be considered specifically distinct if living individuals could be observed (Bates and Jackson 1980:451).

PALEONTOLOGICAL RESOURCE: A locality containing vertebrate, invertebrate, or plant fossils (i.e., fossil location, fossil bearing formation, or a formation with the potential to bear fossils).

PALEONTOLOGY: The study of life in past geologic time based on fossil plants and animals and including phylogeny, their relationships to existing plants, animals, and environments, and the chronology of the earth's history (Bates and Jackson 1980:451).

PARTICIPATING AGENCY: Under 23 USC 139, a participating agency is any federal or non-federal agency (state, tribal, regional, or local government agency) that may have an interest in the project. Nongovernmental organizations and private entities cannot serve as participating agencies

PLAYA: A shallow temporary lake that may form in alkali sinks.

PLEISTOCENE: The first epoch of the Quaternary Period characterized by the first indications of social life in man.

PLIOCENE: The first epoch of the Tertiary Period characterized by the transition from hominids to early humans

POINT SOURCE: Distinct location from which wastes are discharged (e.g., pipes and sewers).

PRACTICABLE: The term *practicable* means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

PROBABILISTIC SEISMIC HAZARD ANALYSIS: Seismic parameters are estimated using several significant seismic sources, the likelihood of occurrence within a given time frame, and the uncertainty of the estimate. Caltrans uses probabilistic methods for important bridges and certain seismic retrofit projects.

PROJECT (CEQA): California Public Resources Code §21065 defines a “project” as an activity which 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:

- A. An activity directly undertaken by any public agency.
- B. An activity undertaken by a person which 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.

PROJECT (FHWA): 23 Code of Federal Regulations §1.2 defines a project as an undertaking by a State highway department for highway construction, including preliminary engineering, acquisition of rights-of-way and actual construction, or for highway planning and research, or for any other work or activity to carry out the provisions of the Federal laws for the administration of Federal-aid for highways.

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QUATERNARY PERIOD: A geologic period, which includes both the Pleistocene and Holocene Periods, comprising the second portion of the Cenozoic era; characterized by the rise of man and modern animals.

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RECEPTORS: Term used in air quality and noise studies that refers to houses or businesses that could be affected by a project.

RECORD OF DECISION (ROD): The “Record of Decision” is 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.

RECURRENCE INTERVAL: The average time interval between earthquake occurrences of equal magnitude on the same fault.

REGULATORY AGENCY: An agency that has jurisdiction by law.

REGIONAL IMPROVEMENT PROGRAM (RIP): One of two component funding source programs that ultimately make up the STIP. The RIP receives 75% of the funds from the State Highway account. This 75% is then distributed to the MPOs and RTPAs by a formula. The RIP is the source of funding for the FTIP.

REGIONAL TRANSPORTATION IMPROVEMENT PLAN (RTIP): RTIP is a synonym for the FTIP and it refers to the programming done by the MPO/RTPA as part of the development of the RTP. Also called a **METROPOLITAN TRANSPORTATION IMPROVEMENT PLAN (MTIP)**.

REGIONAL TRANSPORTATION PLAN (RTP): A federal and state mandated planning document prepared by MPOs and RTPAs. The plan describes existing and projected transportation needs, conditions, and financing affecting all modes within a 20-year horizon. Also called a **METROPOLITAN TRANSPORTATION PLAN (MTP)**.

REGIONAL TRANSPORTATION PLANNING AGENCY (RTPA): A state designated single or multi-county agency responsible for regional transportation planning. RTPAs are also known as Local Transportation Commissions or Councils of Governments and are usually located in rural or exurban areas.

REGULATORY EARTHQUAKE FAULT ZONES: Areas along faults defined as active by the California Geological Survey, typically one-quarter mile or less in width, where special studies are required to determine if there is a surface rupture hazard. Caltrans’ broader definition of active faults results in other areas that also need to be addressed for surface rupture. A site near a fault defined as active by Caltrans criterion also requires a review of surface rupture potential.

REGULATORY FLOODWAY: A floodplain area that is reserved in an open manner by federal, state, or local requirements, i.e., unconfined or unobstructed either horizontally or vertically, to provide for the discharge of the base flood so that the cumulative increase in water surface elevation is no more than a one-foot increase. (Since the one foot is already accounted for, no increase more than 0.00 feet is allowed)

RESPONSIBLE AGENCY: A “public agency, other than the lead agency which has responsibility for carrying out or approving a project” (PRC 21069). The CEQA Guidelines further explains the statutory definition by stating that a “responsible agency” includes “all public agencies other than the Lead Agency which 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.

REVEGETATION: Planting of indigenous plants to replace natural vegetation that is damaged or removed as a result of highway construction projects or permit requirements.

RIGHT-OF-WAY: A general term denoting land, property, or interest therein, usually in a strip acquired for or devoted to transportation purposes.

RIPARIAN: Along banks of rivers and streams; riverbank forests are often called gallery forests.

RIPRAP: Randomly placed rock or concrete used to strengthen an embankment or protect it from erosion.

RISK ASSESSMENT: An economic and/or non-economic assessment of the impacts associated with the floodplain encroachment(s). It is meant to be more general in detail than a risk analysis. The format and content of the Summary Floodplain Encroachment Report form is the minimum required for a risk assessment.

ROTATIONAL SLIDE OR SLUMP: Landslide movement due to forces that cause a concave upwards surface in the mass.

RUDERAL: Disturbed area with a prevalence of introduced weedy species. Ruderal habitats are associated with unpaved highway shoulders and weedy areas around and between dwellings and other structures.

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THE SAFE, ACCOUNTABLE, FLEXIBLE, EFFICIENT TRANSPORTATION EQUITY ACT: A LEGACY FOR USERS (SAFETEA-LU): SAFETEA-LU authorized the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005 to 2009.

SCENIC HIGHWAY SYSTEM: A list of the highways that are eligible to become, or are designated as, official scenic highways. Many state highways are located in areas of outstanding natural beauty. California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, §260 et seq.

SCOPING: NEPA defines scoping as an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action (40 CFR §1501.7). Under CEQA, scoping is designed to examine a proposed project early in the EIR environmental analysis/review process, and is intended to identify the range of issues pertinent to the proposed project and feasible alternatives or mitigation measures to avoid potentially significant environmental effects.

SCOUR: Erosion caused by moving water.

SEICHE: A wave oscillation of the surface of water in an enclosed basin initiated by an earthquake.

SENATE BILL (SB) 45: California State Senate Bill 45, passed in 1997, revised transportation funding priorities at the State level, allocating 75% of capital outlay dollars to regional agencies, and 25% to the State.

SETBACKS: The minimum horizontal distance slopes shall be set back from site boundaries according to Chapter 70 of the Uniform Building Code. Also applies to the minimum horizontal distance required from faults to structures (see California Geological Survey Special Publication 42, pp. 27 and 29).

SETTLEMENT: The gradual downward movement of an engineered structure due to compression of the soil below the structure foundation.

SIGNIFICANCE (CEQA): 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).

CEQA requires that the lead agency identify each "significant effect on the environment" resulting from the project and avoid or mitigate it.

The CEQA Guidelines include mandatory findings of significance for certain effects, thus requiring the preparation of an EIR.

SIGNIFICANCE (NEPA): Under NEPA, 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 defines the term “significantly” as:

Significantly as used in NEPA requires considerations of both context and intensity:

- 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.
- 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:
 - 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 National Register of Historic Places 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].

SIGNIFICANT ENCROACHMENT: A highway encroachment and any direct support of likely base floodplain development that would involve one or more of the following construction or flood related impacts:

1. A significant potential for interruption or termination of a transportation facility, which is needed for emergency vehicles or provides a community's only evacuation route.
2. A significant risk (*to life or property*), or
3. A significant adverse impact on natural and beneficial floodplain values.

SOIL CREEP: The gradual, steady downhill movement of soil and loose rock material.

SOLE SOURCE AQUIFER: An aquifer upon which a community depends exclusively for its fresh water supply.

SPECIAL FLOOD HAZARD AREAS (SFHAS): The areas delineated on an NFIP map as being subject to inundation by the base (100-year) flood.

SPECIAL-STATUS SPECIES: Plant or animal species that are either (1) federally listed, proposed for or a candidate for listing as threatened or endangered; (2) bird species protected under the federal Migratory Bird Treaty Act; (3) protected under state endangered species laws and regulations, plant protection laws and regulations, Fish and Game codes, or species of special concern listings and policies; or (4) recognized by national, state, or local environmental organizations (e.g., California Native Plant Society).

STATE HIGHWAY OPERATIONS AND PROTECTION PROGRAM (SHOPP): A legislatively created program to maintain the integrity of the State Highway System. It is tapped for safety and rehabilitation projects. SHOPP is a multi-year program of projects approved by the Legislature and Governor. It is separate from the STIP.

STATE IMPLEMENTATION PLAN (SIP): The state's plan for attaining the National Ambient Air Quality Standards. Per federal law, transportation plans and programs in air quality non-attainment areas must conform to the SIP.

STATE TRANSPORTATION IMPROVEMENT PROGRAM (STIP): A statewide or bundled prioritized list of transportation projects covering a period of four years that is consistent with the long-range statewide transportation plan, MTPs, and FTIPs, and required for projects to be eligible for funding under Title 23 USC and title 49 USC. Chapter 53.

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.

STATEMENT OF OVERRIDING CONSIDERATION: Pursuant to CEQA, a written explanation prepared by a public agency that explains why it approved a project, despite the presence of significant, unavoidable environmental impacts.

STATEWIDE TRANSPORTATION PLAN: The official statewide, intermodal transportation plan that is developed through the statewide transportation planning process.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP): A SWPPP is prepared to evaluate sources of discharges and activities that may affect storm water runoff, and implement measures or practices to reduce or prevent such discharges.

STRATUM: A layer of sedimentary rock; plural is strata.

STRATIGRAPHY: The study of rock layers, especially their formation, distribution, composition, and age.

SUBSIDENCE: A localized mass movement that involves the gradual downward settling or sinking of the earth's surface.

SUMMARY FLOODPLAIN ENCROACHMENT REPORT (SAME AS FIGURE 804.7B FLOODPLAIN EVALUATION REPORT SUMMARY LOCATED IN CHAPTER 804 OF THE HIGHWAY DESIGN MANUAL): A floodplain assessment report which addresses the six key items identified in 23 CFR 650.111(b)(c)(d) verified by results of the Location Hydraulic Study. If it is determined that a project does not have a significant encroachment, this form can be used as a minimum backup for a categorical exclusion (CE) determination. For federally-funded projects on the State Highway System (SHS), the Caltrans project engineer will sign the Summary Floodplain Encroachment Report. For local assistance projects, this report must be filled out and signed by the local agency project engineer, with concurrence signature by the District Local Assistance Engineer (DLAE).

SWALE: A wide shallow depression in the ground to form a channel for storm water drainage. Bio-swailes or biofiltration swales are densely vegetated to filter runoff.

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THREATENED: A species that is likely to become endangered in the foreseeable future in the absence of special protection.

TIERING: The process of preparing multiple levels of an environmental review, typically including general matter in broad environmental documents with subsequent narrower environmental documents.

TOTAL DISSOLVED SOLIDS: Concentration of all substances dissolved in water (solids remaining after evaporation of a water sample).

TRACT: A standard geographical unit of measurement defined by the U.S. Census Bureau.

TRAFFIC ACCIDENT SURVEILLANCE AND ANALYSIS SYSTEM (TASAS): A system that provides a detailed list and/or summary of accidents that have occurred on highways, ramps, or intersections that are part of the State Highway System. Accidents can be selected by location, highway characteristics, accident data codes, and combinations of the above.

TRAFFIC FORECAST: A best estimate of future roadway travel conditions, demand, and resulting volumes.

TRAFFIC OPERATIONS: The safe and efficient movements of vehicles, people, and goods. The typical measures of effectiveness are travel times, delay, accidents per vehicles miles, and level of service.

TRANSLATIONAL SLIDE: Landslide movement that occurs predominantly along planar or gently undulating surfaces.

TRANSPORTATION CONTROL MEASURE (TCM): "... is 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 Clean Air Act 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-base, and maintenance-based measures which control the emissions from vehicles under fixed traffic conditions are not TCMs for the purposes of project-level conformity.

TRANSPORTATION DEMAND MANAGEMENT (TDM): "Demand-based" techniques for reducing traffic congestion, such as ridesharing programs and flexible work schedules enabling employees to commute to and from work outside of the peak hours.

TRANSPORTATION EQUITY ACT FOR THE 21ST CENTURY (TEA-21): Federal legislation signed into law in 1998, authorizing highway, highway safety, transit and other surface transportation programs for the following six years. TEA 21 built on the initiatives established in the 1991 ISTEA.

TRANSPORTATION IMPROVEMENT PLAN (TIP): A staged, multiyear, intermodal program of transportation projects which is consistent with the metropolitan transportation plan. It is a federal term.

TRANSPORTATION SYSTEM MANAGEMENT (TSM): TSM is 1) a process oriented approach to solving transportation problems considering both long and short range implications; and 2) a services and operations process oriented in which low capital, environmentally-responsive, efficiency-maximizing improvements are implemented on existing facilities.

TRUSTEE AGENCY: "...a state agency having jurisdiction by law over natural resources affected by project which are held in trust for the people of the State of California. Trustee agencies include: a) the California Department of Fish and Game [Wildlife] 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).

TSUNAMI: A water wave of local or distant origin that results from large-scale displacements associated with large earthquakes, major submarine slides, or volcanic eruption.

TURBIDITY: Cloudiness (or a measure of the cloudiness in water due to the presence of suspended particulates).

TYPE I PROJECTS: A proposed federal or federal-aid highway project for the construction of a highway on new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. Other specific activities that qualify as a Type I project are defined in 23 CFR 772.

TYPE II PROJECTS: Usually called a retrofit project, a proposed federal or federal-aid highway project for noise abatement on an existing highway.

TYPE III PROJECTS: A federal or Federal-aid highway project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

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UNDERCROSSING (U.C.): A state highway structure that bridges over a local road.

UNUSAL CIRCUMSTANCES (NEPA): For any action which would normally be classified as a CE but could involve unusual circumstances, Caltrans is required to conduct appropriate environmental studies to determine whether a categorical exclusion is proper (23 CFR 771.117(b)). Unusual circumstances include actions that involve:

1. Significant environmental impacts;
2. Substantial controversy on environmental grounds;
3. Significant impact to properties protected under 4(f) of the USDOT Act or Section 106 of the National Historic Preservation Act ;
4. Inconsistencies with any federal, state or local law relating to environmental impacts.

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VERTICAL CLEARANCE: The unobstructed distance above the roadway surface; the height at which a vehicle may pass beneath a structure, such as a bridge, without any physical contact.

VIEWSHED: View; total visible area from the position of a single observer or the total visible area from observers in multiple positions.

VISUAL RESOURCES: The natural and artificial features of a landscape that characterize its form, line, texture, and color.

VISUAL UNITY: The visual coherence and compositional harmony of a landscape when considered as a whole.

VOLUME TO CAPACITY RATIO (V/C): The relationship between the demand for trips and the number of trips that can be accommodated.

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WATERSHED: The area of land that drains into a specific waterbody.

WATERS OF THE UNITED STATES: As defined by the United States Army Corps of Engineers (USACE) in 33 CFR 328.3(a):

1. All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, including any such waters:
 - (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (iii) Which are used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundment of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in paragraphs 1-4;
6. The territorial seas;
7. Wetlands adjacent to waters (waters that are not wetlands themselves) identified in paragraphs 1-6.

WEIR: A dam in a stream to raise the water level or divert its flow.

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. Wetlands generally include swamps, marshes, bogs, and similar areas.

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