

Volume 3, Chapter 5 Biological Mitigation

Contents

5-1	INTRODUCTION.....	3
5-1.1	WHAT IS MITIGATION?	3
5-1.2	WHO IS THE PROJECT DEVELOPMENT TEAM (PDT)?.....	4
5-1.3	ROLE OF CALTRANS BIOLOGIST AND LANDSCAPE ARCHITECT	4
5-2	RULES, REGULATIONS, AND REGULATORY AUTHORITIES	5
5-2.1	MITIGATION REQUIREMENTS IN FEDERAL LAWS, REGULATIONS AND POLICIES.....	5
5-2.2	STATE LAWS, REGULATIONS AND POLICIES.....	10
5-2.3	CALTRANS MISSION AND GOALS	13
5-2.4	CALTRANS POLICIES.....	13
5-3	MITIGATION THROUGHOUT THE PHASES OF PROJECT DEVELOPMENT	13
5-3.1	PROJECT DELIVERY.....	14
5-3.2	MITIGATION THROUGH PROJECT DEVELOPMENT PHASES: PID, PA&ED, DESIGN, ROW, CONSTRUCTION, POST CONSTRUCTION.....	14
5.3.2.1	PROJECT INITIATION DOCUMENT.....	14
5.3.2.2	PROJECT APPROVAL AND ENVIRONMENTAL DOCUMENT.....	15
5.3.2.3	PLANS, SPECIFICATIONS, AND ESTIMATE (PS&E)	15
5.3.2.4	CONSTRUCTION PHASE	16
5-4	DOCUMENTATION.....	18
5-4.1	DESIGN FILE	18
5-4.2	STANDARD TRACKING AND EXCHANGE VEHICLE FOR ENVIRONMENTAL SYSTEM (STEVE)	19
5-4.3	ENVIRONMENTAL COMMITMENT RECORD.....	20
5-4.4	CORRESPONDENCE.....	20
5-4.5	ALTERNATIVES EVALUATION/ANALYSIS.....	21

5-4.6 DEMONSTRATION OF IMPACT AVOIDANCE 22

5-4.7 LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE
ALTERNATIVE (LEDPA)..... 22

5-5 MITIGATION IMPLEMENTATION 22

5-5.1 SEQUENCING 22

5-5.2 AVOIDANCE..... 23

5-5.3 MINIMIZATION..... 23

5-5.4 REPAIR OR RESTORE 23

5-5.5 REDUCE OVER TIME 24

5-5.6 FUNDING AND PAYING FOR MITIGATION 24

5-5.7 IMPACTS AND ESTIMATES..... 25

5-6 COMPENSATORY MITIGATION 25

5-6.1 MITIGATION BANKS 25

5-6.2 IN-LIEU-FEE PROGRAMS 28

5-6.2.1 FUNDING FOR ILF PROGRAMS 28

5-6.3 HABITAT CONSERVATION PLAN (HCP)..... 29

5-6.4 NATURAL COMMUNITY CONSERVATION PLAN (NCCP)..... 29

5-6.5 PROJECT SPECIFIC MITIGATION..... 30

5-6.5.1 FUNDING PROJECT SPECIFIC MITIGATION 31

5-6.5.2 PLANNING AND DESIGN FOR PROJECT SPECIFIC MITIGATION 33

5-6.5.3 DOCUMENTATION OBLIGATIONS FOR PROJECT SPECIFIC
MITIGATION..... 36

5-6.5.4 PROJECT SPECIFIC MITIGATION POST CONSTRUCTION
OBLIGATIONS IN PERPETUITY 36

5-7 REFERENCES, DEFINITIONS AND ACRONYMS..... 37

REFERENCES 37

5-7.1 DEFINITIONS..... 38

5-7.2 LIST OF ACRONYMS 39

CHAPTER 5

BIOLOGICAL MITIGATION

5-1 INTRODUCTION

This chapter will describe the biological mitigation process including avoidance, minimization, and compensation of environmental impacts; proper documentation of all mitigation and monitoring activities; overview of policies and regulations related to environmental mitigation; and the roles and responsibilities of key members of the Project Development Team (PDT) during all stages of project development and the mitigation process—from planning through implementation.

5-1.1 WHAT IS MITIGATION?

Environmental mitigation is the process by which project proponents apply measures to avoid, minimize, or compensate for the adverse effects and environmental impacts resulting from their projects.

The National Environmental Policy Act (NEPA) directs federal agencies, when planning projects or issuing permits, to conduct environmental reviews to consider the potential effects on the environment by their proposed actions. NEPA also established the Council on Environmental Quality (CEQ), which is charged with the administration of NEPA.

The CEQ regulations (**40 CFR 1508.20**) define mitigation as:

1. Avoiding an impact altogether by not taking a certain action or parts of an action
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
4. Reducing the impact over time by preservation and maintenance operations during the life of the action
5. Compensating for the impact by replacing or providing substitute resources or environments

FHWA regulations state that it is the policy of the Administration to incorporate measures to mitigate impacts. Mitigation is not required by NEPA, however. Under Federal Highway Administration (FHWA) guidance, the mitigation of impacts must be considered whether or not the impacts are significant and agencies are required to identify and include in the action all relevant and reasonable mitigation measures that could improve the action.

NEPA does not impose a substantive duty on agencies to mitigate adverse environmental effects; however, mitigation is mandated under California Environmental Quality Act (CEQA) Guidelines whenever a project may result in a significant impact to the environment. CEQA

Guidelines §15126.4(a) requires lead agencies¹ to consider feasible mitigation measures to avoid or substantially reduce a project's significant environmental impacts.

5-1.2 WHO IS THE PROJECT DEVELOPMENT TEAM (PDT)?

The PDT is composed of staff from the various Caltrans functional units as well as local and regional agency representatives. Led by the Project Manager (PM), it serves as a collaborative forum, making recommendations on how to carry out the project work plan. It is the PDT's responsibility to ensure a project complies with all appropriate environmental federal and state laws, regulations and policies, and that avoidance and minimization measures have been incorporated into the project to the extent possible.

PDT members advise and assist the PM in directing the course of studies, are responsible for carrying out the project work plan, and actively address significant project issues that may arise during any component of the project lifecycle. The PDT is also responsible for planning (i.e., funding, consultations, site evaluation, monitoring needs, etc.) for compensatory mitigation when avoidance and minimization measures cannot be achieved. The obligation for compensatory mitigation implementation remains with the PM with assistance from the PDT until the obligations are satisfied.

5-1.3 ROLE OF CALTRANS BIOLOGIST AND LANDSCAPE ARCHITECT

The District biologist and the Landscape Architect are both integral members of the PDT, and both play a key role in the planning, design, funding, and implementation of environmental mitigation.

The District biologist's responsibilities as a member of the PDT vary. Responsibilities include: performing field reviews to determine if wetlands or potential habitat or protected species are present, mapping or delineating wetlands and other waters of the U.S. and habitat communities, submitting any required reports to regulatory agencies, providing information on potential impacts to the PM and determining methods to avoid, minimize, and/or mitigate for potential impacts to biological resources.

The District biologist must also coordinate with resource and regulatory staff to determine project impacts and required mitigation, and to obtain the necessary permits or agreements.

¹ The lead agency (or project proponent) is responsible for conducting the CEQA review and has final approval of the project. They are responsible for coordinating with the project applicant, public and associated agencies during the CEQA process. When more than one agency is involved in a project, the agency with primary responsibility for approving a project is the lead agency, for purposes of following the CEQA protocol. Other agencies with discretionary approval power over the project are called "responsible agencies". The lead agency has an obligation to consult with these agencies during the CEQA process to ensure their input is accounted for.[6] Responsible agencies often have a vested interest in a specific environmental resource that they are charged with regulating.

The District biologist is also responsible for preparing the Natural Environment Study (NES). The NES details all the biological studies, impact analysis and agreed to mitigation measures (i.e., approved by the PM with an understanding of the effect on scope, schedule, and cost).

The Landscape Architect also provides guidance and expertise necessary to implement appropriate on-site mitigation such as erosion control. Caltrans Landscape Architects are responsible for preparing planting and irrigation plans for highway projects, providing guidance on placing vegetation or hydroseeding, and working in coordination with other PDT members.

5-2 RULES, REGULATIONS, AND REGULATORY AUTHORITIES

The following section introduces the federal and state laws, regulations, and policies most commonly applicable to the mitigation process as well as discusses briefly the regulating agencies with permitting authority that often require implementation of mitigation measures to protect biological resources.

5-2.1 MITIGATION REQUIREMENTS IN FEDERAL LAWS, REGULATIONS AND POLICIES

National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.). [Volume 1, Chapter 1 of the SER](#) provides a description of the [NEPA](#). The National Environmental Policy Act process serves as a baseline for the development of mitigation measures that may be necessary to avoid, minimize, or compensate for impacts to environmental resources and it requires the examination and avoidance of potential effects to the social and natural environment when considering approval of proposed transportation projects.

Clean Water Act (33 U.S.C. 1251-1376). [Volume 1, Chapter 1](#) provides a description of the federal [Clean Water Act \(CWA\)](#). The CWA protects valuable wetlands and other aquatic habitats through a permitting process that ensures development and other activities are conducted in an environmentally sound manner. If a Caltrans project is expected to result in impacts to wetlands or other aquatic resources, then it may be necessary to obtain a Section 404 (Nationwide or Individual) Permit, or Section 401 Certification, as determined through consultation with the U.S. Army Corps of Engineers (USACE) and/or the Regional Water Quality Control Board (RWQCB), and to mitigate for the potential impacts.

- [Section 401](#) requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. must obtain a state certification that the discharge complies with other provisions of CWA. The RWQCB's administer the certification program in California.

The District biologist or water quality specialist is responsible for coordinating with the RWQCB to attain the necessary guidance regarding the need for mitigation for potential impacts to waters of the state and the U.S. impacted by a proposed project. The Project Biologist or water quality specialist is also responsible for providing the PDT with the RWQCB's guidance and suggestions, to determine if the project design will need to be modified prior to finalizing the Project Approval and Environmental Document (PA&ED). It is very important that the District biologist or water quality specialist

communicate with the rest of the PDT members at all times, and that he/she keeps a constant flow of all information attained from the Board regarding mitigation needs, since this information will be used to finalize the project scope, schedule and budget and project plans.

- **Section 404** establishes a permit program administered by USACE, regulating the discharge of dredged or fill material into waters of the U.S. (including wetlands). Caltrans projects are always designed to avoid to the extent practicable all impacts to aquatic resources, and to provide the necessary avoidance, minimization, and/or mitigation measures.

Guidance on compensatory mitigation required for wetlands and other aquatic resources is provided in the revised regulations governing compensatory mitigation ([Final Rule 2008](#)) for authorized impacts to wetlands, streams, and other waters of the U.S. under Section 404 of the CWA, issued on March 31, 2008, by U.S. EPA and USACE. These regulations are designed to improve the effectiveness of compensatory mitigation to replace lost aquatic resource functions and area, expand public participation in compensatory mitigation decision making, and increase the efficiency and predictability of the mitigation project review process.

The District biologist participates in the CWA Section 404 permitting process and [NEPA/404 MOU](#) by providing information regarding the projects' impacts to wetlands and other waters. The District biologist also assists the PDT in selecting and developing mitigation efforts and incorporating it into a proposed project, with the PM's concurrence.

Since April 20, 2011 the USACE South Pacific Division has used the Standard Operating Procedure (SOP) for Determination of Mitigation Ratios which provides guidance for establishing mitigation ratios to compensate for the unavoidable losses to wetlands. The SOP provides a checklist to review proposed on- and off-site mitigation and make adjustments (increases) to the ratios to accommodate type conversion, uncertainty, temporal loss etc.

http://www.spn.usace.army.mil/regulatory/PN/2012/Mitigation_Ratios.pdf

Section 10 of Rivers and Harbors Act (33U.S.C. 401 et seq.). [Volume 1, Chapter 1 of the SER](#) provides a description of [Section 10 of Rivers and Harbors Act](#). Section 10 of the Rivers and Harbors Act is administered by USACE. Section 10 requires permits in navigable waters of the U.S. for all structures such as riprap and activities such as dredging. Navigable waters are defined as those subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means to transport interstate or foreign commerce. Some activities involving wetlands and subject to section 10 of the Rivers and Harbors Act are also commonly regulated under Section 404 of the CWA and typically permitted by the USACE under the 404 permitting program. Any compensatory wetland mitigation completed as part of

permitting under Section 10 must also comply with the same standards including the USACE/U.S. EPA 2008 Final Rule.

[Endangered Species Act of 1973 \(16 U.S.C. 1531-1543\)](#). This act and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. Mitigation may be required to avoid, minimize, and/or compensate for potential impacts to threatened or endangered listed species, and their habitats. The District biologist determines the appropriate mitigation in consultation with regulatory and resource agencies. Mitigation may be incorporated into the conservation measures developed through consultation and articulated in the Biological Assessment (BA) and Biological Opinion (BO).

[Volume 1, Chapter 1 of the SER](#) provides an additional overview of the federal Endangered Species Act (ESA), as well as [Volume 3, Chapter 4 of the SER](#).

[Magnuson-Stevens Fishery Conservation and Management Act \(16 U.S.C. §1855\(b\)\(4\)\(B\)\)](#).

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996, establishes a management system for national marine and estuarine fishery resources through the development of federal Fishery Management Plans (FMPs²). This legislation requires that all federal agencies consult with National Marine Fisheries Service (NMFS) regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect “essential fish habitat.” Essential Fish Habitat (EFH) is defined as “*waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.*” The MSFCMA states that consultation regarding EFH should be consolidated, where appropriate, with the interagency consultation, coordination, and environmental review procedures required by other federal statutes, such as NEPA, the CWA, and the ESA. EFH consultation requirements can be satisfied through concurrent environmental compliance if the lead agency provides NMFS with timely notification of actions that may adversely affect EFH and if the notification meets requirements for essential fish habitat assessments.

If NMFS determines that an action would adversely affect EFH and subsequently recommends measures to conserve such habitat, the MSFCMA proscribes that the federal action agency that receives the conservation recommendations must provide a detailed response in writing to NMFS within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NMFS EFH conservation recommendations, the federal agency must explain its reasons for not following the recommendations.

Impacts regulated under the MSFCMA also require mitigation to offset the loss of fish habitat. NMFS may require replacement of habitat or other conservation measures.

² The EFH consultation mandate applies to all species managed under a federal FMP. Chinook and coho salmon, groundfishes, and coastal pelagic fish species, managed under the MSFCMA, may potentially be present in the Action Area. Chinook and coho salmon are managed under the Pacific Coast Salmon FMP, coastal pelagic species are managed under the Coastal Pelagic Species FMP, and groundfish species are managed under the Pacific Coast Groundfish FMP. In the Mid-Pacific Region, the [Pacific Fisheries Management Council](#) works with NMFS to develop FMPs and designate EFH for commercial fish species.

[The McAteer-Petris Act of 1965](#), [Volume 1, Chapter 2 of the SER](#) describes [the McAteer-Petris Act of 1965](#) which established the San Francisco Bay Conservation and Development Commission (BCDC) as a temporary state agency charged with preparing a plan for the long-term use of the San Francisco Bay (the Bay Plan).

Under the McAteer-Petris Act and the Bay Plan, any person or agency proposing to place fill in, to extract materials from, or to make any substantial change in the use of any water, land, or structure in BCDC's jurisdiction in the San Francisco Bay is required to secure a San Francisco Bay permit. BCDC grants San Francisco Bay permits.

The type of permit issued depends on the scope and nature of the proposed activities. BCDC also requires mitigation for any discharge into wetlands and other Bay resource. As the BCDC jurisdiction often overlaps with wetlands regulated by the USACE and the RWQCB, compensatory mitigation proposed for these other agencies will generally satisfy the BCDC as well.

[The Coastal Zone Management Act of 1972](#), [Volume 1, Chapter 18 of the SER](#) provides a description of the [Coastal Zone Management Act of 1972 \(CZMA\)](#). The CZMA is the primary federal law enacted to preserve and protect coastal resources. California has developed a coastal zone management plan and has enacted its own law, the California Coastal Act of 1976, to protect the coastline. The policies established by the California Coastal Act are similar to those listed above for the CZMA: they include the protection and expansion of public access and recreation; the protection, enhancement and restoration of environmentally sensitive areas; protection of agricultural lands; the protection of scenic beauty; the facilitation of energy producing facilities; and the protection of property and life from coastal hazards. The California Coastal Commission is responsible for implementation and oversight under the California Coastal Act.

Projects conducted within the coastal zone require special scrutiny and care as the Coastal Commission regulates a broader set of wetlands than ordinarily delineated under the USACE's 1987 Delineation Manual. The Coastal Commission's definition of a wetland has one parameter: hydrology, soils, or vegetation. Unavoidable losses to coastal wetlands must be mitigated.

[Migratory Bird Treaty Act \(16 U.S.C. 703-711\)](#), [Volume 1, Chapter 1 of the SER](#) provides a description of the [Migratory Bird Treaty Act](#). The law applies to the removal of nests (such as swallow nests on bridges) with eggs occupied by migratory birds during the breeding season. Caltrans must address any potential impacts that may result during construction activities, such as removal of trees or working under bridges, which may result in mortality of eggs, chicks or adult birds. Caltrans designs and plans projects targeting the avoidance of potential impacts to biological resources. The biologist - provides, as part of their technical studies, suggested avoidance and minimization measures, such as construction windows to avoid the breeding season. This information is incorporated into the environmental document as well as the construction plans and specifications so that potential impacts to migratory birds found within a proposed project's limits can be avoided and projects are not delayed during construction.

Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

For purposes of these guidelines, "disturb" means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

Fish and Wildlife Coordination Act (16 U.S.C. 661-666). This Act applies to any federal project where the waters of any stream or other body of water are impounded, diverted, deepened, or otherwise modified. The consulted agencies may prepare reports and provide recommendations documenting project effects on wildlife and identifying measures that may be adopted to avoid, minimize or mitigate for impacts to wildlife resources. The term "wildlife" includes both animals and plants. Provisions of this Act are implemented through the NEPA process and Section 404 permit process.

National Wild Scenic Rivers Act (16 U.S.C. 1271-1287). This Act prohibits federal agencies from activities that would adversely affect the values for which a listed river was designated. Caltrans consults with the managing agencies during the NEPA process on projects that affect designated rivers or their immediate environments. This early consultation reduces potential conflicts with wild and scenic river values that are protected by the Act. [Chapter 19 of the SER](#) states that the environmental document shall discuss the issue, all coordination among agencies, any impacts to the qualities that support the river's designation, and any mitigation measures. USACE permit applications for activities in wild and scenic rivers are subject to the provisions of [Section 7 of the Wildlife and Scenic Rivers Act](#), which includes Section 404 of the CWA, and Section 10 of the Rivers and Harbors Act.

Executive Order 11988 Floodplain Management (May 24, 1977). This order directs all federal agencies to avoid the long-term and short-term adverse impacts associated with floodplain modification and to avoid direct or indirect support of floodplain development whenever there is a practicable alternative. The Interagency Task Force on Floodplain Management clarified the Order with respect to development in flood plains, emphasizing the requirement for agencies to

select alternative sites for projects outside the flood plains, if practicable and to develop measures to mitigate unavoidable impacts.

Executive Order 11990 Protection of Wetlands (May 24, 1977). This order establishes a National policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. The U. S. Department of Transportation (DOT) promulgated DOT Order 5660.1A in 1978 to comply with this direction. On federally funded projects, impacts on wetlands must be identified in the environmental document.

Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific Wetlands Only Practicable Alternative Finding in the final environmental document.

An additional requirement is to provide early public involvement in projects affecting wetlands. The FHWA provides technical assistance in meeting these criteria (FHWA Technical Advisory 6640.8A) which is implemented by Caltrans through NEPA Assignment.

Furthermore, because FHWA, and thus Caltrans under NEPA Assignment, recognize their role in maintaining and enhancing quality of life and the natural environment through their programs providing compensatory mitigation that results in a net increase of wetland acreage demonstrates that federally-funded highway development can actually help stem the current and historic loss of wetlands where they occur as a direct result of road construction. To ensure proper determination of mitigation ratios, Caltrans has been following the USACE SOP for Determination of Mitigation Ratios on all projects submitted to the USACE since April 20, 2011. The implementation of the SOPs provide justification and documents why a mitigation ratio has been selected.

FHWA Environmental Stewardship Policy. The FHWA's Environmental Streamlining and Stewardship requires transportation agencies (e.g., Caltrans) to work together with natural, cultural and historic resource agencies to establish realistic timeframes for the environmental review of transportation projects. The efficient and effective coordination of multiple environmental reviews, analyses, and permitting actions is essential to meeting the Environmental Streamlining and Stewardship mandates for highway and transit projects under the new transportation bill Moving Ahead for Progress in the 21st Century ([MAP-21](#)).

MAP-21. MAP-21 allows for funding dollars to be set aside for projects that are not yet programmed. By advancing funding prior to project programming and implementation, impacts to biological resources can be mitigated in advance of project construction. Mitigating for impacts in advance of project construction could reduce project delays and mitigation costs, and improve mitigation quality.

5-2.2 STATE LAWS, REGULATIONS AND POLICIES

California Environmental Quality Act (P.R.C. 21000 et seq.) As described in [Volume 1, Chapter 2 of the SER](#), CEQA establishes state policy to prevent significant, avoidable damage to

the environment by requiring changes in projects through the use of alternatives or mitigation measures.

Mitigation is mandated under CEQA Guidelines whenever a project may result in a significant impact to the environment. CEQA Guidelines §15126.4(a) requires lead agencies to consider feasible mitigation measures to avoid or substantially reduce a project's significant environmental impacts.

California Endangered Species Act (Fish and Game Code 2050 et seq.). As described in [Volume 1, Chapter 2 of the SER](#), the California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that will result in a take of a state only listed species, Caltrans must apply for a take permit under section 2081(b). The incidental take permit application requires that the applicant describe the proposed measures to minimize and fully mitigate the impacts of the proposed taking, as well as provide a proposed plan to monitor compliance with the minimization and mitigation measures and the effectiveness of the measures.

Native Plant Protection Act (Fish and Game Code 1900-1913). California's Native Plant Protection Act (NPPA) requires all state agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the California Department of Fish and Wildlife (formerly known as California Fish and Game [CDFG]; *hereafter* Department of Fish and Wildlife)³ at least 10 days in advance of any change in land use. This allows Department of Fish and Wildlife to salvage listed plant species that would otherwise be destroyed. Caltrans follows a slightly different method, which consists of Caltrans biologist staff identifying plants present during the studies and working with the appropriate agencies to establish the best available methods to handle such sites. This method still complies with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Sections 1600 et seq. of the Fish and Game Code. [Volume 1, Chapter 2 of the SER](#) provides a description of [Sections 1600 et seq. of the Fish and Game Code](#). Under these sections of the Fish and Game Code, Caltrans and other agencies are required to notify the Department of Fish and Wildlife prior to any project that would divert, obstruct or change the natural flow, bed, channel, or bank of any river, stream, or lake. When an existing fish or wildlife resource may be substantially adversely affected, Department of Fish and Wildlife is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans and specifications for the project. The Notification of Lake or Streambed Alteration agreement requires the applicant to describe the projects measures that would protect fish, wildlife, and plant resources. Specifically, the applicant must: (1) describe the techniques that will be used to prevent sediment from

³ The passing of Assembly Bill 2283 (Portantino) renamed the Department of Fish and Game (CDFG), the Department of Fish and Wildlife (effective Jan. 1, 2013)

entering watercourses during and after construction; (2) describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources; and (3) describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

The notification requirement applies to any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

The Notification form sent to the Department of Fish and Wildlife must identify all affected species, both wildlife and plants, found within the project area, and must provide measures proposed to avoid, minimize and/or or compensate for such impacts.

Upon review of the information provided with the Notification, if the Department of Fish and Wildlife determines that the proposed project activities may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement, or an Incidental Take Permit will be prepared accordingly. If there is potential for incidental take of state listed endangered or threatened species, then an Incidental Take Permit will be required. The Agreement provides conditions necessary to protect and mitigate for the identified resources. Upon issuance of the Agreement, Caltrans may proceed with the proposed project in accordance with the conditions set forth in the final Agreement.

The conditions from the final Agreement become part of the mitigation plan.

Senate Bill 436 (SB 436) and Senate Bill 1094 (SB 1094) Caltrans develops mitigation sites pursuant to permit and agreement requirements. Previous legislation allowed the transfer and management of the property to non-profits but not the endowment. SB 436 passed and signed into law in 2011 clarified and affirmed that funds set aside for long-term management of mitigation lands (the endowment) may be conveyed to a non-profit organization or special district. SB 436 amended the Government Code Sections 65965, 65966, 65967, and 6598

Limitations and opposition to the changes of SB 436 were addressed by new legislation during 2012. The new legislation, SB 1094, addressed these issues and was supported by over [40 stakeholders](#). The governor signed the bill and since it was an urgency measure it went into effect immediately on September 28, 2012. SB 1094 amended the same sections of the government code that had already been amended by SB 436

In summary, current law authorizes specified governmental entities, special districts and non-profits to hold title and manage a property pursuant to a *mitigation agreement* and to hold the endowment dedicated to that property.

In addition, a provision in SB 1094 expands Caltrans authorities to also transfer the obligation to restore and enhance property and to provide funds to restore and enhance to a governmental entity, special district, and non-profit.

5-2.3 CALTRANS MISSION AND GOALS

[Caltrans' Mission and Goals](#) includes a stewardship strategic goal. This goal aims at preserving and enhancing California's resources and assets. In order to achieve the stewardship goal, Caltrans mitigates impacts of projects to achieve obligations to our natural resources.

5-2.4 CALTRANS POLICIES

Joint Stewardship and Oversight Agreement between Caltrans and the FHWA. Under the Joint Stewardship and Oversight Agreement between Caltrans and FHWA, Caltrans has authority for monitoring, reviewing, and/or approving activities eligible for Federal-Aid Highway Program (FAHP) funds. Additionally per [MAP-21](#), which established a revised and permanent Surface Transportation Project Delivery Program, assigned Caltrans as FHWA's authority and responsibility for compliance with NEPA and other federal environmental laws. Caltrans is responsible for administering FAHP in a manner that insures efficient and effective use of the FAHP funds and compliance with federal law and regulations, including NEPA and other federal environmental laws.

5-3 MITIGATION THROUGHOUT THE PHASES OF PROJECT DEVELOPMENT

Through the implementation of the federal and state laws, regulations and policies mentioned above, Caltrans projects are planned and constructed to avoid and minimize potential impacts to biological resources to the extent practicable. To ensure all the necessary steps have been taken to avoid and/or minimize impacts, the PDT, under the direction of the PM, must identify potential need for mitigation through early assessment of the project area and consultation with the appropriate parties (i.e., U.S. Fish and Wildlife Service [USFWS], NMFS, etc.), and evaluate the findings during project development.

The PDT uses an interdisciplinary approach to plan, develop, and evaluate alternatives for a Caltrans project. The PDT is responsible for conducting studies and the accumulating data throughout the different phases of development. The PDT is composed of staff from the various Caltrans functional units as well as local and regional agency representatives (Landscape Architects, Hydraulics, Right of Way (ROW), Design, etc.).

The PDT is led by the PM, and it serves as a collaborative forum, making recommendations on how to carry out the project work plan. The role of the Caltrans Biologist within the PDT involves the assessing of effects from a project on natural resources; development of avoidance, minimization, and compensation measures; identifying and obtaining required permits, agreements and opinions; coordinating with resource and regulatory agencies; and monitoring project construction and mitigation efforts. Caltrans Biologists begin their involvement with the project at the PID phase and work their way through the PA&ED, PS&E, ROW, and Construction (monitoring) and Post-construction (monitoring).

Caltrans Biologists also play a role in maintenance activities during and after construction. Coordination with both internal and external parties is required of the PDT during each project phase.

5-3.1 PROJECT DELIVERY

During the project development process certain activities are required to ensure that the PDT is in position to move forward with mitigation for unavoidable impacts. This begins during the PID stage, and is carried throughout the duration of the project development process.

5-3.2 MITIGATION THROUGH PROJECT DEVELOPMENT PHASES: PID, PA&ED, DESIGN, ROW, CONSTRUCTION, POST CONSTRUCTION

5.3.2.1 PROJECT INITIATION DOCUMENT

The PID is the document that identifies the scope, schedule and cost of each project. The project alternatives, which will be evaluated as part of the alternatives analysis, are identified and developed in the PID. The identified environmental resource needs, including the mitigation needs, and preliminary impact assessment are made in the PEAR document, which is incorporated into the PID as one of the programming documents.

Preliminary Environmental Analysis Report. A Preliminary Environmental Analysis Report (PEAR) is a project-specific scoping document used to document the issues that are anticipated to be addressed in the NEPA or CEQA document, and is part of certain types of PIDs as an attachment. PEARs are not required for all projects. The PEAR also includes a best-cost estimate that is the basis for requesting funding for the proposed project. The District biologist must provide the best available mitigation cost estimate which ROW uses to complete the ROW Data Sheet. The ROW Data Sheet becomes part of the final PID. The PEAR should not be used as a vehicle for conducting and reporting detailed environmental analyses. These studies are conducted and reported in the PA&ED phase. It should be noted, that some PIDs only estimate the cost of the project through the PA&ED; therefore any mitigation costs are very rough estimates.

In the PEAR, cost estimates must identify to best extent possible, all the potential compensatory mitigation needs that the proposed project might result in. During the initial analysis of project specific mitigation it must be determined if a mitigation bank is available or exists that may be used to satisfied the compensatory needs of the project. If it is determined that no mitigation bank or banks exist that may be used for the proposed project, then the project may requires the acquisition of approved property/lands for mitigation purposes. This acquisition would need to be included in the cost estimate in the PEAR. As previously mentioned, some PIDs only estimate the cost of the project through the PA&ED; therefore any mitigation costs are very rough estimates.

From the outset of every project, Caltrans requires the preparation of the Environmental Commitments Record (ECR). The ECR brings all of the relevant environmental compliance information together in a single place, making it easier to track progress and easier for the project team members (Environmental Project Engineer [PE], PM, Resident Engineer [RE]) to identify actions they need to take. The ECR is discussed in detail in Section 5-4.4 under Documentation.

It is extremely important for the District biologist to provide the best mitigation cost estimate possible to be included in the PEAR, as this estimate will be used by ROW to create the ROW Sheet that will be made part of the final PID. The cost estimate will become part of the programmed budget for the proposed project. Upon finalization of the PEAR, an electronic copy should be uploaded into to STEVE.

For more information on the PEAR and for templates, please see the [PEAR and Preliminary Environmental Study](#).

5.3.2.2 PROJECT APPROVAL AND ENVIRONMENTAL DOCUMENT

During the PA&ED Phase, the project alternatives are developed and analyzed for environmental impacts. During this phase the members of the PDT with the biologist's guidance incorporate avoidance and minimization measures into the project. The need for compensatory mitigation is identified and details regarding mitigation implementation are developed. The District biologist should initiate the coordination and consultation process with resource and regulatory agencies to develop the appropriate mitigation measures and commitments that will ensure avoidance and minimization where practicable, and compensatory mitigation where needed. Also during this phase, expanded engineering studies must be completed to support environmental evaluation and the proposed project.

If mitigation costs estimate increase and would increase the project cost the PM must be notified and with their concurrence the ROW Data Sheet must be updated to reflect such changes in cost estimate.

5.3.2.3 PLANS, SPECIFICATIONS, AND ESTIMATE (PS&E)

During the PS&E phase, all environmental permits, agreements, and mitigation commitments must be fully incorporated into the PS&E. During this phase, is it also very important to review the mitigation budget, to ensure mitigation costs have not changed. Any changes should be reported to the PM, who will coordinate with ROW to make the necessary changes and updates to the ROW Data Sheet.

The District biologist must review the final PS&E package to check and verify that all permits, agreements, and mitigation commitment appropriate to the PS&E have been included. The [PS&E review tool](#) is a detailed checklist that can assist the biologist in this effort.

Prior to Ready to List (RTL), an [Environmental Certification](#) is required to assure that all the appropriate commitments and permit conditions have been include in the PS&E. The Environmental Certification for the RTL must be approved by and in accordance with the executive authorization provided by the Chief of the Division of Environmental Analysis. It should be noted that not all projects will have an Environmental Certification for RTL (e.g., Minor B projects).The Environmental Certification indicates that:

- The environmental document is appropriate for the project and remains valid
- All actions in the PS&E are covered in the environmental document or subsequent permits and approvals/agreements
- All environmental commitments belonging in the PS&E have been included

5.3.2.4 CONSTRUCTION PHASE

The District biologist participates in the pre-construction meetings, pre-construction surveys, construction monitoring and coordination to ensure compliance with approvals, opinions, and permits. The District biologist assists the RE to ensure that all biological requirements and considerations in the contract are understood by, and that necessary preparations are made by, the RE and the Contractor. The Biologist may conduct construction monitoring or oversee a consultant's biological construction monitoring.

Avoidance and minimization of impacts continues to be the priority goals through the duration of the project. During construction activities, Caltrans must ensure that all the mitigation measures included in the ECR are followed and understood by the entire team (Caltrans Staff, Contractors, etc.). All crew members must attend a pre-construction Environmental Assessment Training, given by a qualified biologist, and must be provided with a copy of the mitigation measures expected to be followed consist with the related permit's provisions and environmental document measures. The District biologist may also need to monitor restoration activities,

During the construction stage, the District biologist becomes the point of contact with resource and regulatory agencies to address and resolve mitigation concerns. In addition, a District biologist may need to review a change in order to determine if additional habitat would be affected, or in the instance when there is a resource identified that was overlooked during the environmental review stage. Additional mitigation may result from this activity.

On-site monitoring by a qualified biologist is often a mitigation requirement of endangered species consultation. Other permits may also require regular or periodic monitoring of construction activities by a biologist if sensitive resources have been identified to be found within the project area. The biologist may also be required to oversee the construction phase of a mitigation site. All monitoring activities must be recorded using the appropriate checklist documents.

5.3.2.5 CONSTRUCTION CONTRACT ACCEPTANCE (CCA)

A [Certificate of Environmental Compliance](#) is provided at the construction contract acceptance (CCA) phase once all post construction mitigation obligations have been achieved or other appropriate mechanisms have been established to assure timely fulfillment of mitigation obligations. It is the responsibility of the District biologist to conduct monitoring and reporting activities and to provide assistance to the RE from the beginning of construction through CCA to insure that all biological commitments are implemented during the construction of the project.

Post Construction Phase. The District biologist is responsible for developing and implementing a monitoring plan to determine whether the mitigation meets the agreed upon goals and objectives of the mitigation as approved in the permit. Monitoring between 3 and 5 years is a standard amount of time for general habitat mitigation; however, regulatory agencies can require more time for large, complex mitigation projects. Where wetland habitat is affected, the USACE guidance entitled [Habitat Mitigation and Monitoring Proposal Guidelines](#) should be followed.

Each USACE district has its own version of the guidelines; therefore, the District biologist should ensure that they are using those guidelines appropriately for their district.

Post-construction monitoring for ecological restoration will determine whether a site is trending toward development of mature habitat. The information should be used to correct deficiencies and guide establishment of the site. Also, valuable information may be obtained to aid in planning and design of future projects. Because monitoring funds can be limited, it is important that the monitoring activities are closely aligned with the original mitigation goals and budget.

Monitoring activities should be conducted to gather specific site metrics that measure success as defined in the approved monitoring plan. General purpose information includes information that is of interest, but may not be directly connected with managing the site. Monitoring may involve the collection of quantitative and/or qualitative data.

Annual monitoring reports are prepared by the District biologist and are submitted to the appropriate regulatory and resource agencies.

Caltrans responsibilities expand beyond the construction period, and may in some instances be required in-perpetuity. Mitigation sites are generally located off-site, while restoration sites may be located within the Caltrans ROW. Caltrans mitigation obligations in the post-construction phase are described in this section.

Monitoring responsibilities during post construction activities are often required to be performed by Caltrans staff. Caltrans may contract with a landscape company to provide maintenance services, but a Caltrans biologist is still required to periodically monitor the site to ensure that the required criteria set forth by the regulatory and resources agencies is being met. For example, a major component of habitat replacement is quarterly monitoring and annual reporting on the progress of any plantings and recommending corrective measures, if appropriate. This monitoring requirement, generally established in the regulatory permit, may last until the habitat reaches a certain stage, which will vary for different habitats, plantings, and conditions. Annual monitoring requirements will usually be determined in negotiations between District biologists and resources and regulatory agencies. Mitigation monitoring activities should be part of the initial planning, must be part of the PEAR, and should follow a predetermined schedule. The monitoring requirements are developed by the District biologist, and then are submitted to the PM, so that costs can be considered before commitments and are made in permits.

Monitoring activities are conducted to evaluate the mitigation project in order to take the necessary remedial actions and ensure project success.

A record should be kept describing and logging all maintenance activities for which Caltrans is responsible for in-perpetuity. This record should be updated constantly to ensure that Caltrans is in full compliance with its monitoring responsibilities

In-Perpetuity. In such instances where a mitigation bank or an In-Lieu Fee (ILF) program is not available or feasible to be used as compensatory mitigation, the District biologist would identify project specific mitigation. Implementing project specific mitigation requires the District

biologist to remain involved in the monitoring and reporting process post construction, to fulfill in-perpetuity mitigation requirements. Activities that may be required in perpetuity include monitoring and annual reporting, and ensuring the annual reports are uploaded into STEVE. In addition, should project specific mitigation fail, a contingency mitigation or replacement for the mitigation is required. The contingency is developed in the PDT under the direction of the PM with the guidance of the Biologist in conjunction with the resource agencies.

5-4 DOCUMENTATION

Documentation is an important step in planning, designing, and funding mitigation for Caltrans' projects. Caltrans' documentation system consists of: (1) [a Design File](#), (2) [a Project File](#), and (3) [STEVE](#). The Design Team is responsible for maintaining hard copy records of all documents related to a proposed project, including but not limited to, documents related to design, funding, and mitigation decisions in the Design File. Environmental studies, reports, permits, and other related documents are stored as hardcopies in the Central File and electronically in STEVE. Documentation in each of these locations occurs at all stages of a project (PID, PA&ED, PS&E, RTL, etc.).

The mitigation planning process also includes creating a cost estimate to address mitigation needs identified in the PID; this process must also be well documented. In the PA&ED stage, the PM must plan the allocation of funds after receiving the preliminary budget and an estimated cost of the project; if funding is inadequate, the PM can also request additional funds. The PM in coordination with the all other PDT members must ensure all decisions are documented in the Design Team File. The environmental team takes the lead on ensuring that documentation is stored in the Central File, and in STEVE. The District biologist, who is responsible for providing the necessary biological assessments that serve to identify potential impacts and the need for mitigation, is also responsible for ensuring all technical reports and studies produced during the assessment of the biological resources is uploaded to the correct location in STEVE.

This section will provide a description of these documenting tools available to Caltrans staff and identify roles and responsibilities within the PDT in maintaining and updating all documentation related to mitigation activities. This section will also identify the type of records that must be documented and filed during the mitigation process (agency correspondence, alternative analysis/decisions, funding activities, etc.).

5-4.1 [DESIGN FILE](#)

Caltrans Design Team staff, as part of the PDT, is responsible for keeping and maintaining a [design file](#) for each proposed project. The design file consists of hard copy files of design plans and documents for all projects proposed by Caltrans, for each of the project phases. This file consists primarily of design-related documents, which play a key role in the preliminary development and planning of potential mitigation needs, including cost estimates. Permits and biological technical documents are placed in the file.

Under NEPA Assignment, Caltrans is required to maintain project files and general administrative files pertaining to its responsibilities. The files are required to be reasonably available for inspection by the FHWA at the files' locations within five days notice. These files

include, but are not limited to, all letters and comments received from governmental agencies, the public, and others relative to the Department's responsibilities.

A Central File is established for the primary purpose of keeping a complete record of all critical decisions made during each stage of the project. The file starts as soon as preliminary studies can be identified for the project. Hardcopies of all environmental related material is continuously stored in the Central File, throughout the entire life of a project, including post construction. The District biologist must ensure that all correspondence with resources and regulatory agencies, environmental decisions and studies, and all other decisions, including mitigation costs estimates are documented in this location, where information may be easily accessible to the appropriate Caltrans Staff and PDT members.

See [Important Environmental File Contents](#) for a list of key environmental file contents.

5-4.2 **STANDARD TRACKING AND EXCHANGE VEHICLE FOR ENVIRONMENTAL SYSTEM (STEVE)**

The [STEVE](#) is a database used to collect, track, share and report environmental data. This documenting tool provides improved metrics for effective management decisions and an efficient retrieval of project information. The environmental PDT members including the District biologist should use STEVE to maintain a centralized electronic record of important information related to mitigation activities and decisions. Mitigation related documents need to be added to the Supercontainer in STEVE

Examples of the types of Environmental Documents stored in STEVE's Supercontainer that may be used for mitigation efforts include the following:

Summary Reports:

- The PEAR
- NES or NES (Minimal Impact (MI))
- EFH Report
- Habitat Mitigation and Monitoring Plan

Technical Reports:

- BA
- Supplemental BA
- Wetland Delineation/ Assessment
- Wetland ET II, Hydrogeomorphic Method, Rapid Assessment, etc.
- Protocol Survey Reports

Mitigation Documents

- Habitat Assessment of Potential Mitigation Property
- Concurrence Letters from Agency accepting mitigation property as mitigation
- Mitigation Plans
- Resource Management Plans
- Property Analysis Record (PAR) Analysis
- Conveyance Templates, Deeds, etc.

- Revegetation Documents
- Contingency Plans

Permit and mitigation information and data should be added to STEVE on an ongoing basis. Providing the avoidance/minimization measures for a project is required feature in STEVE that the District biologist needs to provide. For example, there is a field where District biologist can enter numerous avoidance/minimization measures, including, but not limited to: seasonal avoidance, minimize nighttime work, avoidance of impacts to nesting birds, and wildlife exclusion fencing.

Mitigation information is uploaded onto the ESA and 404 sections and the mitigation section by the District biologist.

5-4.3 ENVIRONMENTAL COMMITMENT RECORD

In support of the Caltrans' goal of stewardship, it is important to effectively track and document the completion of environmental commitments through the Project Delivery process. To accomplish this, each district shall establish and maintain an Environmental Commitment Record (ECR) for each project. The purpose of the ECR is to ensure that Caltrans meets its environmental commitments by: (1) recording each environmental mitigation, compensation, and enhancement commitment made for an individual project; (2) specifying how each commitment will be met; and (3) documenting the completion of each commitment. The ECR serves as a central resource for the compilation of all relevant environmental mitigation compliance information, making it easier to track progress and facilitating the PDT in identifying actions that need to be addressed.

The ECR is prepared prior to the PA&ED and Design phases, and it is updated for throughout the life of the project. The ECR should reflect all the environmental commitments made and documented in the approved Categorical Exclusion and/or Categorical Exemption (CE) or ED and permits. An ECR is required for all Caltrans projects. Examples of ECRs include the Mitigation Monitoring and Reporting Record, the Permits, Agreement and Mitigation record, and the Red Book (i.e., a record of existing environmental, not a record of completed mitigation measures). Completion of the commitments may extend beyond project construction.

An [Environmental Commitments Record Memorandum](#) is available on the SER for further information.

5-4.4 CORRESPONDENCE

It is important to ensure that all correspondence records and decisions are documented and kept in the proper locations. As discussed in Sections 5-2.1 through 5-2.3 of this chapter, the design team is responsible for maintaining and updating the Design File, while the District biologist, and other related PDT members are responsible for maintaining and updating the Central File and STEVE, with the appropriate documents, including records of all correspondence exchanged with external parties (i.e., regulatory agencies, non-governmental organizations (NGOs), etc.), regarding mitigation and monitoring activities and decisions.

This process requires the Design Team to keep a record of all documentation regarding the design of a proposed project. The District biologist ensures that the environmental central files (Central File and STEVE) document all environmental documents is updated, and that the appropriate documents and data are being documented, being initiated at the PID and continued all throughout the duration of a project, including during post construction activities, if and when applicable. Maintaining an administrative record to account for decisions made and agreed upon during the planning and implementation of mitigation measures to avoid, minimize or compensate for impacts will provide a background on decisions made at each phase in the project development

Also, in circumstances where a potential legal challenge may arise in regards to the type of mitigation implemented, Caltrans staff may be able to refer back to the appropriate documents in record and provide the necessary supportive documentation to justify mitigation actions.

In addition, a written record should be kept of all coordination efforts between Caltrans PDT members (i.e., Project Manger, District biologist, etc.) and regulatory agencies' staff, in which potential project impacts and suggestions to avoid, minimize, or compensate for potential impacts to biological resources were discussed. Caltrans staff must keep written record of all coordination and consultations with resources and regulatory agencies (i.e., USACE, USFWS, NMFS, Department of Fish and Wildlife, BCDC, RWQCB, Mitigation Bank sponsors, NGOs, etc.) including date, parties involved, purpose of consultation/coordination, items discussed, and decision reached as a result of coordination effort.

Records of correspondence with resources and regulating agencies may include informal and formal consultations.

5-4.5 ALTERNATIVES EVALUATION/ANALYSIS

Caltrans projects are designed to avoid, to the extent practicable, any impact to environmental resources. When avoidance is non-feasible or attainable, the need for minimizing such impacts takes priority. Finally, if avoidance and minimization is non-attainable or feasible, compensatory mitigation must be planned to mitigate for any impact to biological resources identified in the proposed project.

The alternative analysis provides a record on the process and methods used to identified the preferred alternative. The alternative analysis also provides substantial background on how and why an alternative that may need compensatory mitigation was selected, as well as the decision process by which a type of compensatory mitigation was selected. The evaluation process should consider potential environmental constraints (i.e., seasonal breeding, migration periods, etc.), funding (short and long-term needs), and availability of the appropriate compensatory mitigation source (i.e., Banks, ILF programs, ROW, endowments, etc.).

For more information on alternatives, please see the [Alternatives Analysis Frequently Asked Questions](#)

5-4.6 DEMONSTRATION OF IMPACT AVOIDANCE

Correspondence records may also serve to provide background information regarding the process by which an alternative was evaluated and ultimately selected. Coordination records between PDT members and resources and regulatory agencies may be used to demonstrate that all the necessary steps were taken to ensure avoidance of impacts to biological resources to the extent practicable. Environmental PDT members are responsible for filing and keeping correspondence records in the Design Team file, the environmental Central File and in STEVE.

5-4.7 LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE (LEDPA)

It is Caltrans' policy to evaluate alternative solutions that avoid or minimize adverse environmental impacts, and to select the alternative that causes the least environmental damage while still accomplishing the transportation need.

Consequently, and in accordance with CWA Section 404 (b)(1) Guidelines, the PM, with the assistance from the District biologist, is responsible for identifying LEDPA through the evaluation of the direct, secondary, and cumulative impacts on aquatic and other sensitive natural ecosystems (i.e., wetlands, streams, and other waters of the U.S.) of each alternative under consideration. This process is recorded during the Alternatives Analysis phase, as stated above.

The LEDPA decision provides a record on the need for mitigation, if the alternative identified as the least environmentally damaging practicable alternative still has adverse impacts to the identified aquatic ecosystem(s), as well as a record of the proposed minimization or compensatory mitigation measures to unavoidable impacts.

5-5 MITIGATION IMPLEMENTATION

5-5.1 SEQUENCING

Mitigation is a process implemented through the application of a strict sequencing process. The documentation of which is required as part of permitting with the resource agencies including the USACE and the RWQCB. Implementation of sequencing adheres to the following steps:

AVOID → MINIMIZE → REPAIR OR RESTORE → REDUCE OVER TIME → COMPENSATE

This ordered approach is mandated through many laws and regulations and demonstrated compliance is often necessary to secure environmental permits such as the Clean Water Act Section 404 permits with the USACE. Effective planning and implementation of mitigation starts at the beginning of the environmental review process with the PID and the PEAR and should be as an integral part of the alternatives development process.

The District biologist is responsible for providing a mitigation cost estimate based on the preliminary studies and analysis he/she has conducted to identify all potential mitigation needs. The approved preliminary cost estimate is reflected in the ROW Data Sheet, and should be included as part of the PEAR, and into the final PID.

5-5.2 AVOIDANCE

Avoidance is the elimination of adverse and unnecessary impacts to environmental resources to the maximum extent practicable. Avoidance is also the first step in implementing mitigation. The PDT and project biologists should evaluate the project and determine if the resource can be avoided outright. Avoidance can include relocating or redesigning the project or elements of the project, or implementing seasonal restrictions on construction to avoid rainy weather or breeding and migration seasons.

The avoidance of impacts to an area of regulated natural resources allows the area to remain undisturbed so that it may continue performing its valuable ecological function.

Avoidance is the first step in the mitigation process sequencing; consequently, practicable avoidance measures should be identified at the PID phase of a project and considered early on with the project design team. Avoidance activities may include relocating or redesigning the project or elements of the project, or implementing seasonal restrictions on construction to avoid rainy weather or breeding and migration seasons.

Avoidance measures should be adequately and clearly coordinated and documented during project scoping and development of Environmental Technical Reports, and then later in permit applications.

Because changes to the project can be increasingly expensive in later phases, avoidance should always be identified early and incorporated into the design plan of the proposed project to ensure that the project can be built. Additionally, avoidance measures should continue to be considered as an option throughout the project development process and should be documented to demonstrate the application of the mitigation sequencing process.

5-5.3 MINIMIZATION

Minimization is the reduction of all unavoidable impacts to wetlands, streams, and other natural resources to the maximum extent practicable. Minimization actions may include making a roadway improvement footprint smaller, using pilings instead of fill in wetlands, or rearranging the way a project is designed to make the impact area smaller.

The process, by which actions to minimize unavoidable impacts to biological resources are developed, should be initiated at the PA&ED phase. Actions taken to minimize an impact should be evaluated and documented as part of the Alternatives Analysis for more complex projects.

5-5.4 REPAIR OR RESTORE

Impacts that cannot be avoided completely and are reduced to the smallest footprint may have effects that are temporary and can be offset by repairing or restoring the degraded area. For example, vegetation that is removed to construct a crossing may be replanted allowing the area to return to essentially preconstruction conditions. Any temporary disturbance resulting from construction should be kept to the minimum necessary and restored at the conclusion of construction to “pre-project” conditions.

5-5.5 REDUCE OVER TIME

Some impacts can result in a large or substantial disturbance to a habitat or community. Occasionally this impact can be reduced over time by a modification to a routine activity such as maintenance activity. Vegetation maintenance is one area where changing the maintenance activity can reduce an impact over time.

Compensatory mitigation is the creation, restoration, enhancement, and, under some circumstances, the —preservation of wetlands, wetland buffer areas, and other natural habitats implemented to replace or compensate for the loss of wetlands, natural habitat area or functional capacity. Preferably, compensatory mitigation is completed in advance or concurrent with the impact to minimize the potential temporal loss of resource functions and values. Resource agencies have included requirements in permits that compensatory mitigation be completed prior to the impacts occurring in construction or concurrent with construction activity.

Compensatory mitigation may be required to mitigate for unavoidable impacts to environmental resources. If a proposed project results in impacts to environmental resources that cannot be avoided or minimized, then compensation is required. The need for compensatory mitigation should be identified by the District biologist, during the preliminary assessment of the site, and all cost estimating related to mitigation should be included in the PEAR. During this initial analysis the type of compensatory mitigation to be implemented should also be evaluated and identified. During PA&ED, the PDT with the biologist as lead develops the mitigation concept into a viable plan that the permitting and regulatory agencies will review and accept. During the PS&E phase, these concepts are reviewed to identify the any changes in cost, finalized and incorporated into the final mitigation plan which is then is submitted to the agencies in the permit application.

The types of compensatory mitigation that may be considered for implementation are described in detailed in Section 5-4.

5-5.6 FUNDING AND PAYING FOR MITIGATION

The District biologist in coordination with the District ROW staff is responsible for mitigation cost estimates during the development of a PEAR and PID. The District biologist develops the estimate and ROW presents it with the ROW Data Sheet. The ROW capital costs associated with mitigation in support of the environmental document should also be scheduled and programmed by the PM in coordination with Headquarters Programming, to be available concurrent with environmental document development.

Once a project is programmed and enters the PA&ED phase, it is important to revisit the cost, schedule, scope, and assumptions and studies made in the PID. This is especially important where new species have been listed, regulations have changed, or seasonal constraints may apply. A biology specific work plan can be a useful tool to assist with the scoping effort.

If during project development, it is determined that additional funding will be required to cover all mitigation costs, then a Project Change Request (PCR) will be submitted by the PM to make a

program change request for an increase in project cost, and to request additional funding. This process may be time consuming and an increase in funding may not always be allowed.

The mitigation budget is managed by ROW in the Phase 9-capital outlay expenditures budget for each project. ROW must seek approval to spend the Phase 9 dollars.

Annually, ROW must provide California Transportation Commission (CTC) for review and approval, a proposed ROW Capital Expenditure Allocation Plan (Allocation Plan) based on the programmed dollars for each project. The [Allocation Plan](#) is submitted to CTC identifies project dollar amounts including mitigation expenses that will be encumbered for that time period. The Allocation plan identifies what will be spent from the programmed estimated budget, set in the PID with updates as needed throughout the project development process.

The Allocation Plan includes projected environmental clearance dates and project certification dates. The PM may request money from the programmed budget to spend in project provided that amount being requested is the same or less than amount that has been scheduled into the annual Allocation Plan.

This funding process applies to the compensatory mitigation types described in Section 5-4.

5-5.7 IMPACTS AND ESTIMATES

The ROW staff and biologists work together to provide estimates of the funding for mitigation. This information is captured in the right of data sheet. Since various levels of Caltrans' management, the CTC, the Legislature, and local agencies use ROW estimates, it is extremely important that ROW estimates be realistic and reliable. Overestimating may result in a project being deferred or eliminated. Underestimating understates Caltrans' financial obligations and may adversely affect supplemental funding or staffing needs. Consequently, the District biologist must provide the best estimate possible for the potential mitigation costs prior to submittal to ROW.

5-6 COMPENSATORY MITIGATION

Caltrans complies with the mitigation sequencing hierarchy approach, placing avoidance and minimization as the priority goal for all projects. However, as many of Caltrans' projects occur on established corridors, avoidance and minimization may be infeasible and compensatory mitigation may be required. The Caltrans biologist must identify the need for compensatory mitigation as early as possible and begin planning, designing and funding accordingly. The following section discusses the types of compensatory mitigation most commonly used by Caltrans to compensate for impacts to biological resources, and provides an overview on the process Caltrans uses to implement compensatory mitigation, including planning, and funding.

5-6.1 MITIGATION BANKS

Use of mitigation banks is the preferred approach by the USACE and FHWA for satisfying obligations for compensatory mitigation. Under the [2008 Final Compensatory Mitigation Rule](#) (USACE 2008; Final Rule 2008) and 33 CFR 332.3(b), the USACE identifies mitigation banks

as their preferred type of compensatory mitigation for impacts to wetlands and other waters of the U.S.

Furthermore, under the FHWA's guidance on mitigation, mitigation banks are also identified by FHWA as the preferred form of compensatory mitigation. Caltrans, as a federal lead, adheres to this preference when planning for compensatory mitigation (23 CFR Part 777).

Mitigation banking consists of the restoration or creation of habitat undertaken expressly for the purpose of compensating for unavoidable habitat losses (species and wetlands) in advance of development actions. The USACE 2008 Final Compensatory Mitigation Rule identifies banking as the preferred form of compensatory mitigation. The four mitigation provisions identified with banking include: (1) Success criteria; (2) Monitoring; (3) Contingencies; and (4) Long-term protection.

Mitigation banks are approved and are established through a permitting process that includes development of banking agreements signed by the USACE, responsible resource agencies, and the bank sponsor. The USACE has developed a mitigation banking agreement procedures webpage which provides guidance for the mitigation bank operator through the mitigation bank establishment process, provides mitigation banking templates, and offers a list of mitigation banks that are approved by regulatory agencies. Mitigation banking credits may be used to provide habitat credits, when available, to mitigate for impacts to sensitive habitat and for federal and state listed species.

A list of approved and available mitigation banks can be located at the [USACE Regional Internet Banking Information Tracking System \(RIBITS\)](#). The Department of Fish and Wildlife also operates a mitigation banking program. California SB 1148, which will provide a sustainable long-term funding for the Department of Fish and Wildlife Banking Program, was approved by Governor Brown on September 25, 2012. This new law will take effect on January 1, 2013. It authorizes Department of Fish and Wildlife to charge fees that will be used to reimburse costs incurred by Department of Fish and Wildlife in reviewing and approving bank-related documents and in implementing banks and administering the programs. The Department of Fish and Wildlife actions to establish the Department of Fish and Wildlife Banking Program are now being undertaken. New guidelines and criteria required by the statute will be developed in coordination with partner federal banking agencies, bank sponsors, conservation organizations, and other interested parties. Caltrans biologists should check the Department of Fish and Wildlife Conservation and Mitigation Banking website (<http://www.dfg.ca.gov/habcon/conplan/mitbank/>) for future updates and Banking Program announcements.

Mitigation banks sell credits of compensatory mitigation for particular habitat types generally on a "per-acre" basis allowing the permittee to purchase only the necessary credit or acreage necessary to offset their impact. Credits may be sold for seasonal wetlands, vernal pool, or shaded riverine. For Caltrans to purchase mitigation credits, appropriate funding must be

identified and approved which is generally secured through Phase 9, which refers to ROW Capital Funding. Phase 9 funding is used to purchase mitigation credits (e.g., habitat and bank credits), as well as for other mitigation needs such as wetland creation needs.

Mitigation Ratios. USACE's goal of compensatory mitigation is to offset aquatic resource functions that will be lost or impaired by the authorized activity, or to otherwise maintain or improve the overall aquatic environment, to fulfill the required no net loss of habitat. Compensatory mitigation may be provided by third parties, such as mitigation banks and ILF programs or may be provided through permittee-responsible mitigation.

Detailed information on how to provide compensatory mitigation for unavoidable impacts to the nation's wetlands and streams can be found in the USACE Final Rule (Final Rule 2008) as well as in the USACE's Standard Operation Procedures for Determination of Mitigation Ratios, which Caltrans has been using in all projects submitted to the USACE since April 20, 2011.

Recently, the USACE has published guidance in the form of a [SOP](#) for determining compensatory mitigation ratios as required for processing of Department of Army permits under Section 404 of the CWA, Section 10 of the Rivers and Harbors Act, and Section 103 of the Marine Protection, Research, and Sanctuaries Act.

Mitigation ratios and credits requirements are also established by the Department of Fish and Wildlife and USFWS, to compensate for loss of habitat of federal and state listed species. Mitigation ratios are established based on the amount of impacted area, the affected species (Swainson's hawk, valley elderberry longhorn beetle, burrowing owl, etc.).

Mitigation ratios for the Department of Fish and Wildlife and USFWS are determined on a project-by-project basis. In general, mitigation (both in terms of temporal and permanent loss) must be proportional to impacts. The factors used in determining compensation ratios often include (1) presence of species; (2) habitat quality; (3) disturbance level of habitat; (4) adjacent land use; (5) connectivity, and (6) projected growth.

In addition, the USFWS issued a *Programmatic Biological Opinion on the Effects of Minor Transportation Projects on the San Joaquin Kit Fox, Giant Kangaroo Rat, Tipton Kangaroo Rat, Blunt-nosed Leopard Lizard, California Jewelflower, San Joaquin Woolly-threads, Bakersfield Cactus, and Recommendations for the San Joaquin Antelope Squirrel* to FHWA on December 21, 2004. This Programmatic Biological Opinion included defined mitigation ratios for both temporal and permanent loss of habitat.

Other Programmatic Agreement documents have been issued through the Section 7 process and may be relevant to a project. A list of Programmatic Agreements and the areas under which they are covered can be located at [MOU/Memorandum or Agreement \(MOA\)](#).

Bank Fees. Bank fees are established by the Bank Sponsors (owners and operators of the mitigation bank) that take into account the total cost for delivery of the mitigation credit that is sold to offset impacts. Commonly, mitigation credits are sold on a per acre or unit basis depending on the type of resource impacts and mitigated (e.g., seasonal wetland or valley

elderberry longhorn beetle credits). Additionally, these bank fees also account for the in perpetuity management of the habitats within the mitigation bank. These fees therefore serve to completely satisfy the permittees mitigation responsibility and release the permittee from liability. This complete release of liability is an attractive option for satisfying mitigation requirements on Caltrans projects.

5-6.2 IN-LIEU-FEE PROGRAMS

ILF programs are commonly used to mitigate relatively small impacts that are not good candidates for on-site mitigation, after avoidance and minimization have been fully considered. ILF programs can be used to mitigate for both endangered and threatened species and wetlands. Under the 2008 Final Rule, ILF programs require that applicants for 404 permits must demonstrate that there is no mitigation bank with suitable credits available that serves the project area.

ILF programs, similar to mitigation banking, sell credits to permittees, transferring mitigation obligations to the ILF programs, and may only be sponsored by governmental agencies and non-profit natural resources management organizations.

ILF programs involve the restoration, establishment, enhancement, and/or preservation through funds paid to a governmental or non-profit natural resources management program sponsor to satisfy compensatory mitigation requirements under Section 404 of the CWA and Section 10 of the Rivers and Harbors act. Funds are often received by the ILF program sponsor prior to undertaking compensatory mitigation projects. A benefit in the use of ILF programs is that an ILF program can involve multiple mitigation project sites.

5-6.2.1 FUNDING FOR ILF PROGRAMS

Under 23 CFR Part 710.513 and 23 CFR Part 777, state and local DOTs are eligible to participate in establishing ILF programs using either National Highway System or Surface Transportation Program Federal-aid funds. State Highway Operation and Protection Program (SHOPP) funds may also be used for this purpose.

ILF mitigation is a form of multiple-project mitigation that occurs when a permittee pays funds to an ILF sponsor instead of either completing project-specific mitigation or providing credits from an existing mitigation bank approved under the Federal Interagency Wetland Banking Guidance (60 FR 58605, 28 November, 1995). ILF programs usually have not acquired or constructed an existing mitigation site when the fee is paid.

ILF arrangements, unlike wetlands banking, do not typically provide compensatory mitigation in advance of project impacts, nor do they establish a clear timetable for the initiation or completion of mitigation efforts. However, an advantage of using ILF arrangement is that ILF arrangements meet the 2008 Final Rule compensatory requirements and relieve the long term liability of Caltrans to maintain a mitigation site in-perpetuity, as the responsibility is transferred to a third party.

5-6.3 HABITAT CONSERVATION PLAN (HCP)

Caltrans and FHWA commonly comply with the ESA through consultations with the Services through Section 7 of the ESA rather than Section 10. Under Section 10(a)(1)(B) of the ESA, Habitat Conservation Plans (HCPs) are developed to provide an exemption for the prohibition of take to federally listed species (Section 9 of the ESA). The HCP serves to describe anticipated effects of the proposed taking, how those impacts will be minimized or mitigated, and how the HCP is to be funded.

For a project with no federal nexus, Caltrans, and/or a local transportation agency may be required to develop an HCP if a project may result in take of a listed threatened or endangered species. However, more commonly, municipalities such as county governments have developed regional (county wide) HCPs with the USFWS to cover certain actions (covered actions). The HCP proscribes mitigation measures and provides for mitigation solutions for project sponsors and Caltrans by “buying in” or paying fees to the HCP program for the development of habitat construction or restoration. Although buying in to a HCP, like a mitigation bank, also relieves the permittee from long-term liability for the mitigation, this only happens on a case by case basis, and unlike ILF arrangements, HCPs may not always relieve Caltrans from long term liability. Mitigation measures included in the HCP: (1) address specific conservation needs of the species, (2) are manageable, and (3) are enforceable. The types of mitigation measures used for a specific HCP are determined on a case by case basis and depend on the needs of the species and the magnitude of impacts anticipated.

The use of an approved HCP for mitigation may be a faster method of satisfying mitigation. Approved HCPs commonly cover a larger range of habitats and it may include species not federally or state listed and may not directly relate to the Caltrans projects impacts. However, as opposed to project specific mitigation, if an approved HCP does not already exist, the process may result in costly expenditures, and may delay Caltrans schedule for project delivery. Therefore, Caltrans prefers, when feasible, to use an HCP only when an approved HCP already exists. It should be noted that an approved HCP does not automatically cover Caltrans projects; Caltrans would need to be a participant in the particular HCP process or develop a separate agreement to use the HCP for a specific project.

A [guidance memo](#) from FHWA is available on the SER for mitigation in areas with HCPs.

5-6.4 NATURAL COMMUNITY CONSERVATION PLAN (NCCP)

The NCCP is a Department of Fish and Wildlife program that identifies and provides for those measures necessary to conserve and manage natural biological diversity within the plan area while allowing compatible and appropriate economic development, growth, and other human uses. The NCCP program is an unprecedented effort by the state, and numerous private and public partners, that takes a broad-based ecosystem approach for planning for the protection and perpetuation of biological diversity.

The NCCP program is a cooperative and volunteer effort to protect habitats and species which began under the [State’s Natural Community Conservation Planning Act](#), legislation broader in its orientation and objectives than CESA and FESA. The NCCP Act of 2003 specifically mentions mitigation as an integral part of a successful NCCP, including but not limited to: (1) measurements needed to determine if mitigation and conservation measures are being

implemented roughly proportional in time and extent to the impact on habitat or covered species authorized under the plan; (2) Department of Fish and Wildlife recommending mitigation measures or project alternatives that would help achieve the preliminary conservation objectives of the plan; and (3) a NCCP approved include an implementation agreement that contains provisions for oversight of plan implementation for purposes of assessing mitigation performance, funding, and habitat protection measure, and provisions to ensure that implementation of mitigation and conservation measures on a plan basis is roughly proportional in time and extent to the impact on habitat or covered species authorized under the plan.

The NCCP program is similar to the federal HCP program or an ILF program and may provide similar opportunities for satisfying compensatory mitigation obligations for projects by paying fees or contributing to the NCCP; however, Caltrans uses NCCPs for mitigation only on a case-by-case basis. Caltrans Headquarters must be consulted prior to setting up an agreement to use as an NCCP for mitigation purposes on a project.

Upon approval of the NCCP, the Department of Fish and Wildlife may also approve the “take” of species whose conservation and management is provided for in the NCCP (Section 2835 of the Fish and Game Code), including species listed as endangered or threatened under the CESA, Section 2050-2116, and those protected by the Native Plant Act (Cal. Public Resources Code Section 1900 seq.)

5-6.5 PROJECT SPECIFIC MITIGATION

Unavoidable impacts occur in areas where an approved mitigation bank does not have coverage in its approved service area. Consequently, project specific mitigation may be necessary to adequately compensate for the unavoidable loss of jurisdictional resources. Accordingly, project specific mitigation is less favored than other alternatives, such as mitigation banks, described above.

When properly implemented according to the 2008 Final Rule, project specific mitigation is an accepted means of providing compensatory mitigation with established administrative procedures. Caltrans can be responsible for project specific mitigation in perpetuity and reports are required to be prepared on an annual basis (placed and tracked in STEVE).

Compensatory Mitigation Plan Preparation

Depending on the habitat impacted and the regulatory jurisdiction Caltrans may be obligated to develop project specific mitigation. In this case, Caltrans prepares a compensatory mitigation plan that satisfies the regulatory agency that has jurisdiction. For example, guidance for a mitigation plan can be found in the 2008 Final Rule, as well as requirements from other resource and regulatory agencies (i.e., RWQCB, Department of Fish and Wildlife, USFWS, NMFS, BCDC, etc.). The requirements include development of a detailed plan that clearly identifies the types and acreages of habitat to be created or restored, performance and success criteria, species targeted, a monitoring and management plan, and financial assurances. Development of the restoration design and compensatory mitigation plan requires detailed analysis and planning by the PDT in conjunction of the resource agencies and the property holder. Commonly, the design

and development of the compensation plan is prepared by supporting consulting firms under contract to Caltrans or a local sponsor.

Additionally, the process to acquire new land/property for mitigation purposes is challenging and involves many members of the PDT. When finding land, Caltrans must take under consideration the type of resources that need to be mitigated for and the property must be approved by the resources agencies prior to purchase. Once the property has been purchased, Caltrans must also consider management costs. A large range of technical staff and experts is required to complete this process.

At times, Caltrans must identify a third party to accept the property in fee or as a conservation easement and the maintenance and management responsibilities of the mitigation area. Additionally; this process requires the transfer of property with an endowment. Upon successful transfer of property, Caltrans still remains accountable for ensuring the success of the mitigation site.

Due to the complexity and long term liability for completing project specific mitigation, Caltrans preference is to satisfy mitigation requirements through mitigation banks and ILF programs. However, a mitigation bank or other alternative may not be available and project specific mitigation may be necessary. Detailed discussion regarding implementation of project specific mitigation including site selection, design, implementation and monitoring and reporting procedures is provided in Sections 5-4.5.2 and 5-4.5.3

Financial Assurances

Caltrans can be required by the Department of Fish and Wildlife or USACE to provide sufficient financial assurance to ensure a high level of confidence that the project specific mitigation will be completed successfully and in accordance with all applicable performance standards. Financial assurance may not be necessary if an alternate mechanism is available, which would ensure a high level of confidence that mitigation will be provided and maintained (e.g. commitment from government agency).

Caltrans provides a [letter](#) to the requesting agency from the PM or upper management staff outlining the specifics of the mitigation commitments within the project budget.

5-6.5.1 FUNDING PROJECT SPECIFIC MITIGATION

As discussed above, early in the PID phase of the project, the District biologist must prepare a cost estimate and coordinate with ROW to plan and program necessary funds for mitigation. A project specific mitigation needs assessment (what, when, where) with capital costs (acquisition, permits, endowments) for all programmed projects summarized by District, provides necessary substantiation required to coordinate, evaluate, approve, and fund the advancement of ROW capital for the purpose of securing mitigation for projects. Additional information on project funding is provided in the link below:

Guidelines for Funding Pre-Project Capital Costs, Including Mitigation

When planning for project specific mitigation it is necessary to recognize the type of impacts that will be expected to occur and the specific types(s) of environmental resources that will be

impacted. Based on the finding, a project specific mitigation cost should be estimated and identified at the PEAR stage. The cost estimate may include the cost, if required by permits, of acquiring new property for mitigation purposes, potential need for transferring property to a third party for maintenance, and the need of in-perpetuity accountability for Caltrans staff.

Cooperative Agreements

A cooperative agreement is an agreement between Caltrans and another party(ies) for the purposes of doing work on the State Highway System and can be used to implement environmental commitments.

On February 3, 2011, responsibility for the review of environmental mitigation cooperative agreements was transferred from the Headquarters Division of Design Office of Cooperative Agreements to the Environmental Management Office (EMO) in the DEA.

EMO has prepared a short guidance document to assist in the preparation of mitigation cooperative agreements. The guidance document includes Best Practices to follow and is meant to assist in preparation of a mitigation cooperative agreement by explaining the basic sections of an agreement and factors that should be considered when drafting the agreement.

The guidance document, as well as the Mitigation Cooperative Agreement Fact Sheet is available on the Caltrans Division of Environmental Analysis' intranet site or by contacting your district biologist: http://env.dot.ca.gov/env_management/mit_coop.shtml

SB 436/SB 1094

Caltrans develops mitigation sites pursuant to permit and agreement requirements. Previous legislation allowed the transfer and management of the property to non-profits but not the endowment. SB 436 passed and signed into law in 2011 clarified and affirmed that funds set aside for long-term management of mitigation lands (the endowment) may be conveyed to a non-profit organization or special district. SB 436 amended the Government Code Sections 65965, 65966, 65967, and 6598

Beginning in October 2011, a SB 436 committee comprised of headquarters and district staff worked to identify how these changes to the government code would be implemented within Caltrans. SB 436 guidance was published in March 2012 as result of this effort. Limitations and opposition to the changes of SB436 were addressed by new legislation during 2012. The new legislation, SB 1094, addressed these issues and was supported by over 40 stakeholders. The governor signed the bill and since it was an urgency measure it went into effect immediately on September 28, 2012. SB 1094 amended the same sections of the government code that had already been amended by SB 436. The SB 436 committee continued to work together and have revised the District Guidance to capture amendments to the government code by the passage of SB1094.

In summary, current law authorizes specified governmental entities, special districts and non-profits to hold title and manage a property pursuant to a mitigation agreement and to hold the endowment dedicated to that property.

In addition, a provision in SB 1094 expands Caltrans authorities to also transfer the obligation to restore and enhance property and to provide funds to restore and enhance to a governmental entity, special district, and non-profit

5-6.5.2 PLANNING AND DESIGN FOR PROJECT SPECIFIC MITIGATION

The District Environmental Offices independently administer and perform all biological functions for the District, with assistance or review by the Division of Environmental Analysis on request. District Environmental Offices have the ultimate responsibility for the quality and timeliness of all biological studies, regardless of who prepares the studies. To successfully design a project specific mitigation, it is essential that all member of the PDT communicate and identify all potential environmental issues that may affect the final project design.

Mitigation Site Analysis

The need for project specific mitigation will be confirmed during PA&ED. At this phase, the District biologist should seek appropriate sites for completing project specific mitigation. Caltrans functional units involved in site review/approval include, but are not limited to, Maintenance; Landscape Architecture; ROW and Hydraulics. The PM is actively involved because the site selection for mitigation has implications for the scope, schedule and cost of the overall project.

Evaluation of possible sites for project mitigation should focus on habitat considerations, ownership specifics, and acquisition costs. The potential need for maintenance of the mitigation site in perpetuity should be fully addressed. Any third party entity that will manage these sites for Caltrans should be carefully selected for their capacity to implement stewardship if mitigation lands and the endowments that accompany the lands. PDT members should use the appropriate project checklist to assure that all important factors are considered at this early stage. Site selection should not be approved until a thorough evaluation of the site has been conducted to assure that the site has the potential to meet the project goals and objectives. The preliminary analysis of the site should include cultural resources and hazardous waste evaluations. Using this process, site selection will match project needs. An assessment of the site is necessary to demonstrate to FHWA standards that the selected site is suitable, and that is acceptable with FHWA general guidelines.

Following consideration of site factors, a Resource Management Plan, including cost estimates, should be prepared for the selected site. The biologist assists the PM with the process to ensure that the concept and location are acceptable and consults with the resource agencies to ensure the site will satisfy the permit obligations. One or more reference data sites should be evaluated in the development of the monitoring plan. A reference site contains the same habitat type and is within the region of the mitigation site, for example, an on-site location for the RWQCB, generally refers to a site located within the watershed. Such sites may be mature habitat and can be used for developing mitigation goals. Some reference sites of early stage habitats may also be assessed to determine interim mitigation site goals. Performance criteria for the project are developed following collection of field data of plant species and/or other aspects at reference sites.

The regulatory and resource agencies responsible for approving the permit action requiring the mitigation should also approve the mitigation proposal for the site. If more than one agency has permitted a project and requires mitigation that is proposed for a site, then all involved agencies must agree on the proposed mitigation plan before the mitigation plan is approved, this process can be very lengthy. The mitigation plan should be made available for their review so any important issues can be considered prior to site acquisition or approval. This agency review step would also apply to projects where structures are being designed. The PM is responsible for providing the biologist with a final approval of the plan, and maintains the authority for overriding the final plan. Future design changes should also require written approval from the PM. This approval represents an in-house procedure that helps to assure compliance.

All decision actions regarding the evaluation and selection of mitigation sites should be documented and filed in the appropriate Central File location.

Goals and Objectives

Goals and objectives for mitigation efforts should be identified at the PID, and all documentations should be maintained by the PDT in the design file, the environmental Central File, and in STEVE, The District biologist, under the PM's supervision, must coordinate development of the goals and objectives when completing a description of the proposed biological impacts in the NES.

The goals and objectives should be revisited and considered throughout the entire duration of the project. The following are a list of key factors that may be considered when establishing or re-establishing mitigation goals and objectives:

- Functions and values impacted and replaced
- Types of Habitats/Reference Sites
- Species Affected
- Planting lists, densities, layout
- Performance/success criteria
- Fish passage – (water depths, velocities, obstructions, culvert lengths, swimming ability, jump heights)

The primary goal and objective of compensatory mitigation is to off-set impact to biological resources resulting from the construction of the project. In order to achieve a successful compensatory mitigation, the PM, assisted by the District biologist and staff, should evaluate and identify the type of functions and values that will be impacted and design a mitigation plan that will compensate appropriately for the functions and values of the resource(s) affected by the proposed project.

The mitigation plan should also identify the types of habitats that will be affected and selected type of compensatory mitigation, accordingly, to fulfill the mitigation needs. The overall goal for habitat mitigation is the replacement of those affected functions and values through the appropriate implementation of the selected compensatory mitigation.

Technical reports that will need to be created to support the proposed mitigation plan should be identified as early as possible. Through early coordination with resource and regulatory agencies, and early evaluation of alternatives and compensatory mitigation, Caltrans staff (District biologist and PM) should identify the necessary technical reports. These technical reports may include, but are not limited to, Jurisdictional Wetland Delineations, Conceptual Mitigation Plans, and Re-vegetation Plans.

A Re-vegetation Plan, for example, focuses entirely on evaluation of vegetation. Plant cover, density, vigor, and species composition are commonly measured. However, there is a trend toward measuring whether the target wildlife species have actually inhabited the mitigation site. Biologists should work with resource agency staff to give full consideration to collecting trend data as an alternative to quantitative performance criteria. If the data show that the project is trending toward habitat development, negotiated resource agency approvals may be obtained.

Performance and success criteria should be identified in the technical reports and used as baseline to evaluate mitigation performance during monitoring activities. Performance/success criteria could be used to establish a mitigation monitoring thresholds, which are an example of specific site management criteria. If a threshold is not met within a certain time, then a specific management action would be performed. For example, if the threshold of 40 percent vegetative cover of target species is not met at the second year, weeding practices would be modified.

Mitigation Alternatives Analysis

The District biologist must provide the PM with information regarding the potential need for mitigation of environmental resources. The mitigation alternatives analysis must be done prior to creating a cost estimate. The PM will finalize a cost estimate for mitigation based on the mitigation alternatives analysis. The approved budget will be targeted to address all the necessary commitments to be included in the mitigation estimate which is tracked in the updates to the ROW data sheet throughout the project development process. If further commitments arise for the preferred alternative, as determined by permitting provision from the resources agencies, then the PM must find additional monetary resources to supplement the approved budget

Adaptive Management

Adaptive management as defined by the USACE in the Final Rule 2008, is the development of a management strategy that anticipates likely challenges associated with compensatory mitigation projects and provides for the implementation of actions to address those challenges, as well as unforeseen changes to those projects. Adaptive management involves the consideration of the risk, uncertainty, and dynamic natures of compensatory mitigation projects while providing guidance for modification of those projects to optimize performance.

Monitoring and Reporting Responsibilities for Project Specific Mitigation

Monitoring and reporting activities for project specific mitigation should be used to determine if the project is meeting performance standards. These activities must be included in the mitigation plan. The mitigation plan must also identify the parameters to be monitored, the length of the monitoring period, all responsible parties involved and frequency of submittal for reports. (33 CFR 332.6).

Long-Term Operations and Management for Project Specific Mitigation

Long-term operation and management for a project-site mitigation project require the prior identification of funding arrangements, and the responsible parties.

Per legislation found in SB 1094, if property has been purchased and transferred to an external party, Caltrans still remains accountable in-perpetuity for ensuring mitigation needs are met accordingly.

5-6.5.3 DOCUMENTATION OBLIGATIONS FOR PROJECT SPECIFIC MITIGATION

The documenting process for project specific mitigation follows the same criteria from Section 5.2 of this chapter. Caltrans design team must ensure documenting into the Central File. Environmental provides them the appropriate documentation.

Type of documents that may be result from project specific mitigation include mitigation alternatives analysis decisions, mitigation designs, cost estimates, conservation easements, as-built, monitoring reports, compliance certifications, etc. Caltrans is responsible for creating an Annual Report in coordination with all participating resources agencies. This report must cover the status of mitigation commitments, any changes to the site or to the commitments, etc. The final report must be added into STEVE.

Project Specific Mitigation Tracking in STEVE

As stated in **Section 5-4.2**, all mitigation-related activities, including consultations with regulatory agencies, final permits and agreements must be well documented in STEVE.

The STEVE is a database used to collect, track, share and report environmental data. This documenting tool provides improved metrics for effective management decisions and an efficient retrieval of project information. The PM and District biologist should use STEVE to maintain a centralized record of documents related to mitigation activities and decisions. Additionally, STEVE may be used to generate reports regarding the status of projects and their mitigation liabilities.

5-6.5.4 PROJECT SPECIFIC MITIGATION POST CONSTRUCTION OBLIGATIONS IN PERPETUITY

When implementing project specific mitigation, Caltrans will need to continue with oversight and monitor the mitigation the site(s) in perpetuity. Caltrans can transfer maintenance and monitoring responsibilities to a third party through an endowment, conservation easement, or other venues, oversight responsibilities will remain The District biologist must perform periodical oversight monitoring and work with the resource and regulatory agencies as needed. The District biologist is also needed, shows compliance with mitigation commitments. These reports should be entered into the STEVE supercontainer. This responsibility holds for Caltrans in perpetuity.

5-7 REFERENCES, DEFINITIONS AND ACRONYMS

The following links provide further resources, as well as definitions and acronyms related to the information presented in this chapter.

REFERENCES

- [Biological Mitigation Frequently Asked Questions \(FAQs\)](#) – The Biological Mitigation FAQs is available on the Caltrans Division of Environmental Analysis’ intranet site or by contacting your district biologist.
- **FHWA –ILF and Banking**
 - [FHWA ILF Compensatory Mitigation Guidelines for Wetlands](#)
 - [FHWA FAQs ILF](#)
 - [FHWA—Executive Orders on Water, Wetlands, and Wildlife](#)
 - [FHWA Environmental Review Toolkit: Streamline/Stewardship—Mitigation Options Overview](#)
 - [FHWA Guidance on the Use of the TEA-21 Preference for Mitigation Banking](#)
 - [FHWA—Legislation, Regulation, and Policy for Water, Wetlands, and Wildlife](#)
- **USACE-Wetland Mitigation**
 - [USACE Final Compensatory Mitigation Rule 2008](#)
 - [USACE Mitigation of Impacts Overview](#)
- **USFWS, NMFS, Department of Fish and Wildlife, RWOCB- Special Status Species and Habitats Mitigation**
- [Department of Fish and Wildlife Conservation and Mitigation Banking Overview](#)
- [Department of Fish and Wildlife HCP Overview](#)
- [Department of Fish and Wildlife NCCP Program](#)
- [EPA Environmental Compensatory Mitigation Fact Sheet](#)
- [NMFS Habitat Conservation Policies and Regulations Overview](#)

- [State Water Resources Control Board—CWA Section 401 Certification and Wetlands Program](#)
- [State Water Quality Monitoring Council—Water Quality Standards, Plans, and Policies](#)
- [USFWS Guidance for Establishment, Use, and Operation of Conservation Banks](#)
- [USFWS HCP Factsheet](http://www.fws.gov/endangered/esa-library/pdf/hcp.pdf)
- [USFWS HCP Overview](http://www.fws.gov/midwest/endangered/permits/hcp/hcp_faqs.html)
- **MAP-21**
 - [FHWA \(Federal Highway Administration\) Main MAP-21 page](#)
 - [USDOT MAP-21 page](#)
 - [AASHTO MAP-21 Resource Center](#)

5-7.1 DEFINITIONS

Authorizing Agency (for a Mitigation Bank): Any federal, state, tribal, or local agency that has authorized a particular use of a mitigation bank as compensation for an authorized activity; the authorizing agency will typically have the enforcement authority to ensure that the terms and conditions of the banking instrument are satisfied.

Avoidance: The avoidance of impacts to an area of regulated natural resources allows the area to remain undisturbed so that it may continue performing its valuable ecological function.

Compensatory Mitigation: The restoration, creation, enhancement, or, in exceptional circumstances, preservation of wetlands and/or other aquatic resources for the purpose of compensating for unavoidable adverse impacts, which remain after all appropriate and practicable avoidance and minimization has been achieved.

Credit: A unit of measure representing the accrual or attainment of functions at a mitigation bank. The measure of function is typically indexed to the number of resource acres restored, created, enhanced, or preserved.

In Lieu Fee Program: an agreement between a regulatory agency (state, federal, or local) and a single sponsor, generally a public agency or non-profit organization. An ILF program involves wetland, stream, or habitat restoration, creation, enhancement, or preservation activities. Unlike mitigation banks, ILFs may perform various environmental enhancement activities throughout a watershed rather than at one particular site.

Minimization: the reduction of all unavoidable impacts to wetlands, streams, and other natural resources to the maximum extent practicable

Mitigation: A process of sequentially avoiding impacts, minimizing impacts, and compensating for remaining unavoidable impacts.

Mitigation Bank: A site where resources are restored, created, enhanced, or, in exceptional circumstances, preserved expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources.

Mitigation Credit: Mitigation credits are units of measure representing the accrual or attainment of a resource's function at a mitigation bank.

Offsite Mitigation: Consists of compensating for resource impacts by replacing or providing substitute resources or habitat at a different location than the project area.

Onsite Mitigation: Compensatory mitigation that replaces wetlands or natural habitat area or functions lost as a result of a highway project with the same or like wetland or habitat type and functions adjacent or contiguous to the site of the impact.

5-7.2 LIST OF ACRONYMS

Allocation Plan - ROW Capital Expenditure Allocation Plan

BA – Biological Assessment

BCDC – San Francisco Bay Conservation and Development Commission

BO – Biological Opinion

CCA – construction contract acceptance

CDFG – California Department of Fish and Game

CE – Categorical Exclusion

CESA – California Endangered Species Act

CEQ – Council on Environmental Quality

CEQA - California Environmental Quality Act

CFGF – California Fish and Game Code

CFR – Code of Federal Regulations

CTC – California Transportation Commission

CWA – Clean Water Act

CZMA – Coastal Zone Management Act

DEA – Division of Environmental Analysis

DOT – Department of Transportation

ECR – Environmental Commitment Record

ED – Environmental Document

EPA – Environmental Protection Agency

EFH – Essential Fish Habitat

EMO – Environmental Management Office

ESA – Endangered Species Act

FAHP – Federal-Aid Highway Program

FESA – Endangered Species Act

FHWA – Federal Highway Administration

FMP – Fishery Management Plan

HCP – Habitat Conservation Plan

ILF – In-Lieu Fee

LEDPA – Least Environmentally Damaging Practicable Alternative

MAP-21 – Moving Ahead for Progress in the 21st Century

MI – Minimal Impact

MOU – Memorandum of Understanding

MSFCMA – Magnuson-Stevens Fishery Conservation and Management Act

NCCP – Natural Community Conservation Plan

NEPA- National Environmental Policy Act

NES – Natural Environment Study

NGO - non-governmental organization

NMFS –National Marine Fisheries Service

NPPA – Native Plant Protection Act

PA&ED – Project Approval and Environmental Document Phase

PAR - Property Analysis Record

PE – Project Engineer

PEAR – Preliminary Environmental Analysis report

PID – Project Initiation Document

PDT – Project Development Team

PM – Project Manager

PS&E – Project Specifications and Estimates

RE – Resident Engineer

RIBITS – Regional Internet Banking Information Tracking System

ROW – Right of Way

RTL – Ready to List

RWQCB – Regional Water Quality Control Board

SB – Senate Bill

SER – Standard Environmental Reference

SHOPP – State Highway Operation and Protection Program

SOP – Standard Operating Procedures

STEVE – Standard Tracking and Exchange Vehicle for Environmental System

USACE – United States Army Corps of Engineers

USFWS – United States Fish and Wildlife Service