

Chapter 7: DESIGN STANDARDS

The following design standards have been recommended by the D/P TAC for use by Project Leads (and hired consultants) during preparation of project designs.

Guidance Documents:

1. California Department of Fish and Game's *California Salmonid Stream Habitat Restoration Manual*

<http://www.dfg.ca.gov/nafwb/manual.html>

➔ This reference manual can be utilized for almost any instream restoration work or bank stabilization projects, as well as road improvement projects. NOAA Fisheries and USFWS are currently consulting on the practices contained in the CDFG Salmonid Stream Restoration Manual as part of the Regional General Permit renewal process for CDFG-funded projects by the San Francisco District USACE (RGP_{CDFG}). During this consultation, these agencies essentially analyze the potential effects to listed species associated with implementation of the practices in the manual. Therefore, regardless of which permitting mechanism is required for a particular project, the use of the standards in this manual could potentially make the consultation occur more quickly since NOAA Fisheries and USFWS will have some effects analyses already completed.

2. California Department of Fish and Game's "Culvert Criteria for Fish Passage" (April 2003)

Located in the California Department of Fish and Game's *California Salmonid Stream Habitat Restoration Manual*, Part IV, Appendix A

<http://www.dfg.ca.gov/nafwb/pubs/2003/FishPassage.pdf>

➔ This reference should be used in conjunction with the following reference (National Marine Fisheries Service [now NOAA Fisheries] Southwest Region's "Guidelines for Salmonid Passage at Stream Crossings") for any projects involving replacement/retrofit of culverts.

3. National Marine Fisheries Service [now NOAA Fisheries] Southwest Region's "Guidelines for Salmonid Passage at Stream Crossings" (September, 2001)

<http://swr.ucsd.edu/hcd/NMFSSCG.PDF>

➔ This reference should be utilized for all projects occurring in fish bearing streams associated with stream crossings (culvert replacements/retrofits, bridges, etc.).

4. NOAA Fisheries "Fish Screening Criteria for Anadromous Salmonids" 1997

<http://swr.ucsd.edu/hcd/fishscrn.pdf>

➔ These criteria must be utilized for projects that require dewatering or any project where use of a pump (water) intake system would be required in a fish-bearing stream.

5. “Handbook for Forest and Ranch Roads: A Guide for planning, designing, constructing, reconstructing, maintaining and closing wildland roads,” by William Weaver and Danny Hagens.

➔ This resource is useful for erosion control projects specifically related to road improvements. *The RCD has a hardcopy of this document available for reference.*

6. U.S. Army Corps –“Bioengineering for Streambank Erosion Control” by Hollis H. Allen and James R. Leech (April 1997)

➔ This resource is useful for projects involving streambank stabilization. *The RCD has a hardcopy of this document available for reference.*

7. U.S.D.A. Natural Resources Conservation Service Field Office Technical Guide

➔ This resource would only be used by the NRCS and for projects where the NRCS is working with the project lead on project designs and plans.

Additional resources for Project Leads:

8. U.S. Forest Service Roads Manual

http://www.fs.fed.us/eng/road_mgt/science.pdf

9. Washington Department of Transportation Environmental Procedures Manual

<http://www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/EPM/September2003.pdf>

9. Washington Department of Fish and Wildlife, Fish Passage Technical Assistance “Design of Road Crossings for Fish Passage”

http://www.wdfw.wa.gov/hab/engineer/cm/culvert_manual_final.pdf

Use of these standards for the design of a particular project is always subject to resource agency input (prior to design start). Project Leads should document in the Project Design & Permit Plan which (if any) of these standards are applied to a project design.

Integrated Watershed Restoration Program (IWRP) for Santa Cruz County
IWRP Design & Permitting Coordination Process Guidelines Manual