

## APPENDIX C

### MONITORING PLANS

Several monitoring requirements for watershed resources and water quality are in place and will be followed for the Sugarberry project, as described below.

#### **HFQLG Monitoring**

The HFQLG Act, FEIS and ROD require that monitoring data be collected annually and reported to Congress and the Scientific Review Team. Monitoring requirements are divided Annual Status Reports, implementation monitoring and effectiveness monitoring. With respect to watershed resources, there are requirements in each of these three categories, as described below.

##### *Annual Status Reports*

This requirement includes tracking of expenditures, outputs and projections related to resource management activities conducted under the authority of the HFQLG Act. With respect to watershed resources, total acres of accomplishment must be reported for treatments for the purpose of water yield increases and “other natural resource benefits achieved”, namely watershed restoration projects accomplished as part of HFQLG projects and with HFQLG funds. Accomplishments are recorded and tracked using the HFQLG Oracle database. As Sugarberry watershed projects are accomplished, they will be reported using this system. Projected dates of Sugarberry watershed restoration projects will also be entered in the database, with accomplishment projections updated as necessary.

##### *Implementation Monitoring*

Implementation monitoring is required in order to assess the extent to which activities are implemented according to the ROD. With respect to watershed resources, this is comprised of the Best Management Practices Evaluation Process (BMPEP). The question to be answered is: “*Are BMPs implemented during project activities?*” The objective is for BMP implementation to be at 100 percent. Results for any BMP below 85 percent trigger a review of the activity area before implementation of further projects.

Implementation monitoring is achieved by selecting a representative number of treatment units each year from a sample pool of completed stands or project areas. Across the HFQLG Pilot Project area, 30 evaluations are made each year of stream protection zones (T01), skid trails

(T02), landings (T04), roads and stream crossings (E08 and E09), road decommissioning (E10), and prescribed burns (F25). These results are summarized and reported annually. Effectiveness monitoring (see below) will be conducted at the same sites. When portions of the Sugarberry project are completed, they will be entered in the sample pool for the year of completion (or sometimes the following year, depending on the BMP to be evaluated), and may be chosen for evaluation.

### *Effectiveness Monitoring*

The purpose of effectiveness monitoring is to assess the degree to which actions meet key resource objectives. Several questions are posed in the HQLG FEIS that must be answered with regard to effectiveness monitoring related to the issue of Watershed Effects and Aquatic and Riparian protection. The following questions that are project-specific will apply to the Sugarberry Project:

*What is the effect of activities on indicators of watershed condition?* – Attributes of disturbance levels are to be tracked with respect to pre- and post-project conditions. These include road density, near-stream road density, equivalent roaded acres (ERA), near-stream ERA, and number of road-stream crossings. These data are reported for the Sugarberry Project in the Hydrology Report.

*Are springs, seeps and other small aquatic habitats protected during project activities?* – Special aquatic habitats are to be identified in all units selected for BMPEP evaluation, and aerial photo-aided field reconnaissance is to be conducted to determine if the features were accurately identified, located on the Sale Area or project map, and properly protected.

*Are Best Management Practices applied during project activities effective in meeting onsite objectives?* – The objective is 100 percent BMP effectiveness. Results for any BMP below 85 percent trigger a review of the activity area before implementation of further projects. Sites with poor effectiveness will be reviewed promptly for remediation.

The sample pool selected for implementation monitoring will also be evaluated for BMP effectiveness. When portions of the Sugarberry project are completed, they will be entered in the sample pool for the year of completion (or sometimes the following year, depending on the BMP to be evaluated), and may be chosen for evaluation.

## **Central Valley Regional Water Quality Control Board (CVRWQCB, Central Valley Board) Monitoring**

As described in Section 1.7 of the Sugarberry Hydrology Report, the Central Valley Board has issued a conditional waiver of waste discharge requirements for non-point sources of water pollution. A condition for the Forest Service to receive this waiver is to obey certain monitoring requirements, as described below.

### *Implementation Monitoring*

Implementation monitoring is required for all projects and consists of non-random pre- and post-winter inspection of project BMPs during the course of timber harvest activities. In practice this is achieved by denoting all stream crossings, temporary roads, skid trails, landings and specified mitigations (BMPs) on the Timber Sale Administration Report (R5-FSM-2400-181) and submitting these to the Central Valley Board to demonstrate compliance and implementation of BMPs.

### *Forensic and Effectiveness Monitoring*

As described in Section 1.7 of the Sugarberry Hydrology Report, forensic and effectiveness monitoring are required for Federal projects only if “the discharger’s cumulative watershed effects analysis indicates that the project, combined with other Forest Service projects conducted in the watershed over the past 10 years, may cause any watershed or sub-watershed to exceed a threshold of concern” (CVRWQCB, 2005). Forensic and effectiveness monitoring consist of winter inspection of sediment sources and BMPs to detect significant sources of pollution, to determine whether project-specific BMPs are effective in protecting water quality, and to assist in evaluating the overall effectiveness of the waiver program in protecting water quality and beneficial uses. If the proposed action (Alternative B) is selected for the Sugarberry project, Forensic and effectiveness monitoring may be required in several subwatersheds. Forensic and effectiveness monitoring consist of winter inspection of sediment sources and BMPs to detect significant sources of pollution, to determine whether project-specific BMPs are effective in protecting water quality, and to assist in evaluating the overall effectiveness of the waiver program in protecting water quality and beneficial uses. If watersheds over threshold are to be monitored, they will be conducted according to the following schedule:

“Forensic monitoring shall take place at least two times during the winter period, as follows:

- **Once**, during or within 12 hours following a 24-hour storm event of at least 2 inches (of rainfall) and after 5 inches (of total precipitation) has accumulated **after November 15 and before April 1**. Inspections that cannot be conducted during or within 12 hours of such a storm event (due to worker safety, access or other uncontrollable factors) shall be conducted as soon as possible thereafter.
- **Once**, during or within 12 hours following a 24-hour storm event of at least 2 inches (of rainfall) and after 15 inches (of total precipitation) has accumulated **after November 15 and before April 1**. Inspections that cannot be conducted during or within 12 hours of such a storm event (due to worker safety, access or other uncontrollable factors) shall be conducted as soon as possible thereafter.

Additional Forensic Monitoring inspections shall be conducted if the following “observation trigger” occurs:

- A noticeable significant discharge of sediment is observed at any time in any Class I or Class II watercourse. Photo-point monitoring shall be conducted when such discharge is the result of failed water quality protection management measure(s) or lack of implementation of such measure(s).

Follow-up forensic monitoring inspections shall be conducted until corrective action is completed to repair or replace failed management measures and/or significant sediment discharges have ceased.

**Effectiveness Monitoring** - An Effectiveness monitoring inspection shall be conducted as soon as possible following the winter period to determine the effectiveness of management measures in controlling discharges of sediment and in protecting water quality. The Effectiveness monitoring inspection shall take place as follows:

- **After March 15 and before June 15** to assess the effectiveness of management measures designed to address controllable sediment discharges and to determine if any new controllable sediment sources have developed.

The Effectiveness monitoring inspection shall include visual inspection of hillslope components (roads, landings, skid trails, watercourse crossings and unstable areas). If the visual inspection of hillslope components reveals significant management measure failure(s), a visual inspection of in-stream components (bank composition and apparent bank stability, water clarity and in-stream sediment deposition) shall also be conducted.”

#### *Additional Monitoring*

If the Forest Service is found to be in noncompliance with waiver criteria including BMP guidance documents, violating a water quality control plan, threatening downstream beneficial uses, or threatening recovery of an impaired water body, they may be subject to additional Water Quality Compliance Monitoring, Assessment Monitoring or Trend Monitoring requirements. For

details, refer to “CVRWQCB Resolution R5-2005-0052, Conditional Waiver of Waste Discharge Requirements Related to Timber Harvest Activities”.

*Reporting Requirement*

The Forest Service is required to submit an Annual Monitoring report to the Central Valley Board by July 15 for inspections covering the previous winter period for every year a timber harvest activity is enrolled in the Waiver. The timely submittal of a Forest Service BMP evaluation report will satisfy the reporting requirement for implementation monitoring for federal lands.