APPENDIX J

Monitoring and Adaptive Management Plan

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This section describes the monitoring that would be conducted for the Upper Truckee River Sunset Stables Restoration Project. The purpose of project monitoring is to track the implementation of the construction controls and design features found in Section 2.4.3.11 and the prescribed BMPs (Appendix F), and in some cases, to measure their short-term effectiveness at protecting resources.

Types of Monitoring

Implementation monitoring consists of visual monitoring of project treatment areas, roads, stream crossing, staging areas, etc. to ensure that all management practices and design features are implemented as prescribed, including those designed to prevent sediment delivery and protect water quality (e.g., erosion control measures, drainage BMPs, etc.).

Effectiveness monitoring consists of visual monitoring to evaluate the effectiveness of the prescribed design features and management practices at meeting their objectives. It includes evaluating the effectiveness of management practices designed to prevent sediment delivery and protect water quality (e.g., erosion control measure, drainage BMPs, etc.).

Required Monitoring

For the Reach 5 components of the Upper Truckee River Sunset Reach Restoration Project the Best Management Practice Evaluation Program (BMPEP) protocols developed by the USFS and the CA State Water Resources Control Board (USDA FS, 2002) will be followed to provide qualitative information about BMP implementation and effectiveness. The Region 5 BMPEP On-Site Evaluation form will be used to rate the effectiveness of the BMPs.

The required monitoring for the entire Sunset Stables Project also involves:

Design implementation inspection and reporting

To be documented in a daily diary and presented in a final construction report shortly after project completion. This report would document any problems encountered during project implementation and changes that occurred between final design and on the ground implementation, including a discussion on impacts to meeting project objectives, if any.

SWPPP monitoring

As part of the Stormwater Pollution Prevention Plan (SWPPP) as required by the Lahontan Regional Water Quality Control Board, SWPPP monitoring would include regional Best Management Practices Evaluation Program (BMPEP) monitoring as described in the Regional BMPEP Monitoring Protocols (USDA FS, 2002) on NFS lands, temporary BMP monitoring, and short term stream flow turbidity monitoring during project implementation. During the summer, SWPPP inspections are made once a month, before forecasted storms when possible, and after storms. If the SWPPP design is not working as planned, changes would be made in the field to correct the problem and those changes would be recorded on the SWPPP drawings with copies sent to permitting agencies. Copies of all inspections are kept along with the SWPPP drawings.

Included in the requirements for SWPPP monitoring is monitoring of temporary Best Management Practices, which are required during all construction activities in the Tahoe Basin that involve soil disturbance. Temporary BMPs differ from permanent BMPs as they are designed to remain effective only until construction is complete and permanent BMPs can be applied. Depending on the nature of the

activity and site characteristics, a variety of different BMPs may be employed to keep sediment from being mobilized. Temporary BMP monitoring would be conducted to ensure that short term adverse impact to soil and water quality does not occur. This will consist of documenting that all temporary BMPs that are required in permit and NEPA/CEQA documents are implemented and that they remain effective during the construction season. Examples of this monitoring will be incorporated into the Storm Water Pollution Prevention Plans (SWPPP) for each phase of project implementation.

Vegetation monitoring

Sensitive plant surveys have been completed within the project area. Sensitive plant locations are within the project area, but outside of the footprint for proposed project activities. The LTBMU botanists would be notified prior to project implementation activities on NFS lands in order to insure sensitive plant areas are flagged in accordance with the design features. If any new sensitive plants or sensitive plant communities are discovered during project implementation on NFS lands, an LTBMU botanist would be notified so they can be flagged as described above. Sensitive plant areas would be monitored post implementation to determine effectiveness of design features.

Invasive Weeds

The LTBMU noxious weed coordinator would be notified prior to project implementation activities on NFS lands in order to ensure that existing noxious weed infestations are treated or flagged. Implementation of noxious weed prevention practices would be monitored in compliance with the state and SNFPA (2004) standards. Require washing equipment before entering the project area when: equipment is coming from outside the Lake Tahoe Basin; if the previous location is unknown; or the previous location is infested with weeds. Equipment would be inspected after washing to insure the absence of soil, seeds or plant materials.

After the project is completed for each year of ongoing implementation on NFS lands, the LTBMU noxious weed coordinator would be notified as to the disturbance areas where activities occurred that year. The LTBMU noxious weed coordinator would inventory the high risk areas (e.g. roads and staging areas) within the NFS lands in the project area after implementation of each phase to enable actions to ensure additional weed species do not become established in the areas affected by the project and to ensure that known weeds do not spread. All noxious weed infestations within the project area would be monitored and treated post implementation for three years or until eradicated.

Heritage resource monitoring

Due to the close proximity of recorded cultural resources, a heritage resource specialist would monitor ground disturbing activities associated with this project. All heritage resource sites will be flagged and avoided per project design features.

Adaptive Management

Upon completion of the Sunset Stables Project, an adaptive management approach will be used to monitor the completed project along with other UTR restoration projects that have been initiated or completed. The goal of this approach is to minimize the potential for minor channel or bank treatment adjustments to become a larger issue, and to coordinate with other UTR project managers to apply the same approach on all UTR restoration projects. Monitoring will measure and document any observed changes in channel bank or bed treatments and determine whether or not corrective actions are needed.

Monitoring will be implemented for a minimum of three years after each project reach is completed to clearly identify the nature and extent of possible resource and water quality issues. Based upon the monitoring results, Adaptive Management, possibly including corrective actions

would be applied to address each issue. On-site mitigation will be the first step to resolve possible natural resource water quality issues. While a range of future management options is possible, the ultimate resolution will be strongly guided by the nature and extent of the monitoring results and future management will remain flexible so it can be adapted to these results.