Appendix II
Watershed Health Guidance Sources

Appendix II is intended to function as a guide to the content and availability of reference documents used to support the watershed health standards and guidelines incorporated into the Forest Land Management Plan, 2001 revision.

Practices used on the Forest are referred to as Best Management Practices (BMP) and Soil and Water Conservation Practices (SWCP). This abstract contains information about management practices used on the Wasatch-Cache National Forest that will, when properly implemented, help achieve the following goals:

- Prevent or reduce the amount of pollution generated by non-point sources, such as silviculture or stream channel modifications, to levels compatible with State of Utah water quality goals.
- Protect water related beneficial uses.
- Minimize soil losses and maintain soil productivity.

Best Management Practices

BMP's are determined solely by a State from a process that includes problem assessment, examination of alternative practices, and appropriate public participation. Best Management Practices as defined by State of Utah-Division of Water Quality regulation, or agreement between the State of Utah and Forest Service, include the following:

1. State of Utah. 1995. Non-point Source Management Plan for Hydrologic Modifications, and addendum to the Utah Non-point Source Management Plan. Utah Division of Water Quality, Salt Lake City, Utah.
2. State of Utah. 1998. Non—point Source Management Plan for Silvicultural Activities. Silvicultural Addendum Subcommittee of the NPS Taskforce. Utah Division of Water Quality, Salt Lake City, Utah.
3. Salt Lake County. 1981. Salt Lake County Water Quality and Pollution Control, Erosion Control Handbook. Salt Lake County Department of Environmental Health, Salt Lake City, Utah.

These documents are available from the agencies listed in the individual citations. Electronic copies of documents (1) and (2) and other water quality protection related documents are available on the World Wide Web at:

http://www.eq.state.ut.us/eqwq/doc_rule.html

Soil and Water Conservation Practices

General SWCP's are described in Forest Service Manuals and Handbooks (FSM and FSH). Site-specific practices can be defined, or adapted from any credible source, by Forest ID teams. The following references are sources of soil and water conservation practices adopted for use at the Forest wide, management area wide, or site-specific scales of management:

1. USDA-Forest Service. 1988. R1/R4 Soil and Water Conservation Practices Handbook. FSM 2509.22. Intermountain Region Office, Ogden, Utah.
2. USDA-Forest Service. 1979. Technical Guide for Erosion Prevention and Control on Timber Sale Areas. Prepared by John Potyandy with major contributions from Walter F. Megahan and Pete Bengeyfield. Region 4 Soil and Water Management. Intermountain Region Office, Ogden, Utah.
3. USDA-Forest Service. 1992. Winter Sports Guidebook. Prepared by Rocky Mountain Region with assistance from Regions Four, Five, and Six. Wasatch-Cache National Forest, Salt Lake City, Utah.
4. USDA-Forest Service. 1999. Winter Sports Monitoring Plan, Appendix N. Wasatch-Cache National Forest, Salt Lake City, Utah.
5. Utah Department of Transportation. 1999. Temporary Erosion and Sediment Control Manual. UDOT-Region 2, West Salt Lake City, Utah.
6. Bio-West Consultants. 1999. Applied Storm Water Pollution Prevention for Highway Design and Construction. Bio-West Environmental Consulting, Logan, Utah.

These documents are available from the agencies listed in the individual citations. Electronic copies of document (1) are available on the World Wide Web at:

http://www.fs.fed.us/im/directives/html/fsh2000.html

Electronic copies of document (5) are available on the World Wide Web at:

http://www.dot.state.ut.us/esd.html

Implementation direction for Watershed Health:

When determining the sufficient quality, quantity and timing of flows, use the following four factors in the determination: (1) maintenance and enhancement of habitat for fish, wildlife, and riparian plant communities; (2) maintenance of channel stability and capacity for passing floods; (3) maintenance of recreational opportunities such as fishing, swimming, boating, and aesthetic enjoyment; and (4) maintenance of water quality and natural temperature regimes.

When determining instream flows, mimic the natural stream discharge as much as possible, incorporating: (1) summer and winter base flows to sustain and enhance habitat for fish species and riparian plants, (2) a peak flow component to maintain fish habitat, channel capacity, and riparian plant regeneration, and (3) a gradual rising and falling hydrograph limb during spring runoff to protect bank stability, fish habitat, and trigger fish behavioral patterns. Flood flows should be allowed for maintenance of floodplains.

To protect present and future riparian, aquatic and hydrologic resources: sufficient quality, quantity and timing of flows will be quantified where it is deemed that diminishing or otherwise altering existing instream flows would result in impairment to these resources.

During project planning or watershed assessment, develop site specific Riparian Management Objectives for the purpose of refining riparian management direction to better reflect conditions that are attainable in specific watersheds or stream reaches based on local geology, topography, climate, and potential vegetation.

As part of any proposed project, identify landslide areas and potentially unstable areas prior to conducting land-disturbing activities that have a likelihood of triggering landslides. Design management activities within identified landslide areas to retain the dominant hydrologic functions and processes.

303d Guidance

Cooperate with the State, Tribes, other agencies and organizations to develop and implement (Total Daily Maximum Load) TMDL's and their Implementation Plans for 303d impaired waterbodies influenced by National Forest System management. Work with the State, Tribes, other agencies and organizations to prioritize restoration needs and to bring 303d impaired waterbodies into compliance with State water quality standards in a reasonable time frame. Work within the State's timelines to assist the State in the identification of 303d impaired waterbodies, development of TMDL's, and development of TMDL Implementation Plans.

This 303d Guidance to be applied with S6.

Some management activities may cause small additions of pollutants in the short-term, yet the progress toward attainment of beneficial use standards is not affected, or may even be improved by the project in the long-term. Assessment models do not provide a precise linear projection of progress toward attainment, but instead project progress within a range of variation. Also, in natural systems the progression toward recovery is not linear, but fluctuates as a result of natural factors. This standard is intended to allow for small short-term additions of pollutants if it can be demonstrated that the progress toward attainment is maintained or improved by the project, and such additions will not cause unacceptable adverse environmental effects.

Questions and Answers for Standard:

Q: What defines a "new proposed management activity?"

A: A "new proposed management activity" is any project that is proposed for NEPA analysis and usually resulting in a Record of Decision, a Decision Notice, or a Decision Memo.

Q: How can we both "improve OR maintain progress toward beneficial use attainment?" Don't impaired waterbodies have to be simply improved?

A: While it's true that all 303d impaired waterbodies must eventually be improved this standard is worded this way to recognize that not every NEPA decision within a watershed containing an impaired waterbody may have a strong tie to the pollutant of concern for which the water body is listed. For example, a NEPA decision may install a vault toilet upstream of a waterbody that is impaired for sediment. The sediment sources may have been identified as coming from roads within the watershed. While the installation of the vault toilet could in theory add sediment to the waterbody, it's incumbent on the affects analysis for the NEPA document to describe the level of Best Management Practices (BMP) used that would not compromise long-term recovery of the downstream waterbody, therby "maintaining" the existing progress toward eventual recovery.

Another example might include an activity within the watershed that is located downstream of the listed waterbody. In this case the NEPA documentation should note the location of the impaired waterbody with respect to the action, and state that the impaired waterbody will not be affected by the action – again thereby "maintaining" the existing progress toward eventual recovery. Also, in this case, State "antidegredation policy" would still apply since the activity is downstream of the 303d listed waterbody.

The standard also intends to recognize that not every NEPA decision will arise out of a purpose and need to improve the impaired waterbody. Since watershed restoration dollars are limited by annual appropriations, forests should strive to improve the conditions of 303d listed waterbodies by implementing restoration activities and/or adjusting management activities on a priority basis. Forest deciding officials need to respond to multiple needs. A deciding officer may be responding to a purpose and need to address a particular forest health issue in an area that for one reason or another is not a high priority for appropriated restoration dollars. The selected alternative should address the forest health purpose and need and may wind up not improving an existing 303d listed waterbody with respect to the pollutant for which it is listed. In such a case the NEPA documentation should ensure that, as a minimum, the overall progress toward beneficial use attainment for that listed waterbody is maintained.

In summary, for project level NEPA it is critically important that Affected Environment and Environmental Consequences discussion of a NEPA document articulate the location of a listed waterbody, the pollutants for which it's listed, the watershed processes and pollutant sources that likely led to the listing, and the effects of the selected alternative on that waterbody with respect to the pollutant of concern and the eventual attainment of beneficial use support.

Q: What if a deciding officer chooses an alternative with a Record of Decision that does not "maintain or improve progress toward beneficial use attainment?"

A: A Record of Decision (EIS) is the appropriate document used to disclose significant impacts that would result from a selected alternative. However, the responsible official must still abide by other existing laws. Rarely would we expect a Record of Decision that would not improve or maintain the progress toward beneficial use attainment of a 303d listed waterbody, yet the possibility is conceivable. Usually this type of project proposal will be generated from social

and economic issues outside of the agency. An example might include a hydropower development site on top of or above a waterbody listed for temperature. Such a decision would likely require a change in the beneficial use designation of the waterbody by the State as well as a Forest Plan amendment, and would more than likely involve significant intergovernmental coordination at the local, Tribal, State, and Federal levels.

Q: The last phrase in the standard seems to allow additional degradation of impaired waters, is that the intent?

A: The last phrase of the standard should not be interpreted separately from the rest of the standard. The conjunctive "and" joins this phrase to the first half of the standard which states that proposed management activities ensure the overall progress toward beneficial use attainment is improved or maintained. Furthermore, the first three words of the standard "Within legal authorities" imply that the project must meet the law. There are two issues the last phrase of this standard attempts to address.

First, most water quality regulators generally recognize that projects aimed at restoration of impaired waters over the long term may result in short-term increases in the pollutant of concern. A road-decommissioning project, for example, may increase the risk of short-term sedimentation in order to fix a long-term problem. In such a case the environmental consequences discussion should ensure the overall (long-term) progress toward beneficial use attainment even with a short-term sediment increase "and" that the increase doesn't have an unacceptable adverse effect to a local beneficial use (such as the viability of an endangered species).

Second, the last phrase in the standard is intended to recognize the fact that sediment estimates derived from empirical models do not necessarily translate into real sediment increases in the waterbody. Sediment models are best used to (a) depict "relative differences between various alternatives" given a set of assumptions about conditions on the ground or (b) to identify potential hotspots for sediment production within any one alternative that may require more site specific mitigation or a change in design. Therefore, just because a sediment model may depict a given quantity of sediment production does not mean that any real on-the-ground effect may occur. The output of the model needs to be interpreted in light of the chance for real sediment production.

Q: What constitutes an "unacceptable adverse effect?"

A: It is incumbent on the NEPA documentation to fully disclose the processes ongoing in the watershed with respect to the impaired waterbody and the pollutant of concern for which it is listed, and the effects of the alternatives on those processes, in determining whether or not an unacceptable adverse effect is likely to occur with the implementation of a given alternative. The determination that this is an unacceptable adverse effect is a subjective decision made by the responsible official.

Q: Why does this standard apply to "watersheds containing 303d listed waterbodies" instead of simply projects that may affect the specific waterbody?

A: The reference to watersheds is to identify those areas where NEPA documentation must be thorough in documenting both the existing condition of water quality and the effects of any proposed activity on that water quality. Whether or not a specific 303d listed segment may be affected by the proposed activity should be disclosed in the effects analysis. For some activities, this effects analysis would require more detail than others. For instance, a road construction project on landtypes susceptible to erosion located just upstream of a 303d listed waterbody for sediment would require more detail to disclose the effects on that waterbody than lower risk activities located downstream of the 303d listed waterbody. Applying the standard to the entire watershed simply identifies potential areas where project level NEPA analysis should be careful to fully disclose the existing condition, the processes involved leading to the existing condition, and the likelihood of effects to the listed waterbody in question.

Q: How can we in fact "ensure that new or proposed management activities will maintain or improve progress toward beneficial use attainment?"

A: The term "ensure" is used to "make certain or sure" that the "project level NEPA documentation" (including accompanying records in the project file) discloses and articulates the direct, indirect, and cumulative effects of past, present, and reasonably foreseeable actions on the listed waterbody within the watershed, with respect to the specific pollutant for which that water body is listed, and in sufficient detail to support the decision to be made as reasonable and prudent. The term "ensure" does NOT refer to an absolute knowing or absolute quantification of on-the-ground effects.