

Draft Lower West Branch Priest River Total Maximum Daily Load Implementation Plan



March 2004

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Implementation Plan

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Table of Contents

Table of Contents	i
List of Tables	ii
List of Figures	iii
Abbreviations, Acronyms, and Symbols.....	iv
Acknowledgements.....	vi

EXECUTIVE SUMMARY.....	1
------------------------	---

CHAPTER 1.

Introduction, Summary of the Lower West Branch TMDL, and Basic Features of the Implementation Plan	2
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Section:

1.1	Introduction	2
1.2	§303(d) Status of Lower West Branch	5
1.3	Summary of Lower West Branch Sediment TMDL.....	6
1.4	TMDL Implementation Plans as Referenced in Idaho Code and IDEQ Guidance, and Responsibilities for Plan Development.....	10
1.5	Formation and Work History of the Lower West Branch WAG.....	11
1.6	Public Involvement in the Process	12
1.7	Structure of the Lower West Branch TMDL-IP	14
1.8	Priorities and Goals of Implementation.....	14
1.9	Prioritization and Accounting – Load and Yield Coefficients, Cost Benefit, and Activities not Directly Related to Sediment Load Reduction.....	15
1.10	Consideration and Examples of Sediment Load Methods	16
1.11	Net Positive Gains in Sediment and Water Yields, and Net Loss of Shade.....	18
1.12	Evaluation and tracking of Effort over Time	19
1.13	Integrated Schedule Milestones, and Responsible Parties	20
1.14	Identification of Funding Sources and Technical Assistance.....	20
1.15	BMP Effectiveness Monitoring and In-stream Monitoring to Access Support Status of Beneficial Uses	21
1.16	Feedback Loop	22

CHAPTER 2.

TMDL Implementation Plans	23
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Section:

2.1	Integrated Summary Table of Implementation Plan Projects.....	23
2.2	Forest Practice Implementation Plan.....	32
2.2.1	Submittal by Idaho Department of Lands	32

2.2.1.1 IDEQ Comments to Submittal by IDL 41

TABLE OF CONTENTS (continued)

Section:

2.2.1 Submittal by U.S. Forest Service 43
 2.2.2.1 IDEQ Comments to Submittal by USFS 50
 2.2.3 Submittal by the Washington Department of Natural Resources 52
 2.2.3.1 IDEQ Comments to Submittal by WDNR..... 59
 2.3 Agricultural Implementation Plan 61
 2.3.1 Submittal by the Idaho Conservation Partnership..... 61
 2.3.1.1 IDEQ Comments to Submittal by the Idaho Conservation Partnership 77
 2.3.2 Submittal by the Washington Conservation Partnership 80
 2.3.1.1 IDEQ Comments to Submittal by the Washington Conservation Partnership..... 82
 2.4 County and State Road Implementation Plan..... 85
 2.4.1 Proposed Projects by County Road Departments 85
 2.4.2 Idaho Department of Transportation..... 89
 2.5 Bonner County Planing, Zoning, and Development Implementation Plan 91
 2.5.1 Bonner County Planning Department 91
 2.5.2 Idaho Department of Environmental Quality..... 91
 2.6 Fisheries Management Implementation Plan 93
 2.6.1 Idaho Department of Fish & Game..... 93
 2.3.1.1 IDEQ Comments to Submittal by the IDFG 95
 2.6.2 Washington Department of Fish & Wildlife..... 95
 2.6.3 U.S. Fish & Wildlife Service 97
 2.7 Environmental Regulation and Oversight Implementation Plan..... 98
 2.7.1 Idaho Department of Environmental Quality..... 98
 2.7.2 Washington Department of Ecology..... 99
 2.7.2.1 IDEQ Comments to Submittal by WDOE..... 100

REFERENCES 101

APPENDICES

A. Letter Mailed to Lower West Branch Property Owners 102
 B. Prospective Funding Programs for Watershed Restoration..... 105

LIST OF TABLES

Table

1. Results of IDEQ Beneficial Use Reconnaissance Project (BURP) Sampling within the Lower West Branch, as Scored by the Water Body Assessment Guidance 6
 2. Sediment Calculations for Lower West Branch Watershed by Ownership/ Management Categories 8

3. Sediment Load Reductions Required to Meet TMDL Goals for the Lower
West Branch 9

LIST OF TABLES (continued)

Table

4. Agencies and Private Landowners of the Lower West Branch Watershed Advisory Group (WAG).....	13
5. Summary Tables of Lower West Branch Implementation Plans in Sections 2.2. – 2.7	24
6. Proposed Tracking Sheet for Sediment Load Reduction, Cost-Effectiveness, Priority Setting, and Cost Accounting for Projects	31
7. Summary of Road Improvement Projects by the USFS within the Lower West Branch watershed, 1997 - 2002	43
8. List of Completed Road Improvement Projects on National Forest Land in the Lower West Branch watershed, 1997 - 2002	44

LIST OF FIGURES

Figure

1. Location map of Priest River Subbasin and Lower West Branch watershed	3
2. Streams and subwatersheds of the Lower West Branch watershed.....	4
3. General land use and ownership in the Lower West Branch watershed.....	7
4. Forest Road 57A as it approaches Lower West Branch; and the Road 57A approach to LWB after 4” rock was applied.....	17
5. Forest Road system of the Lower West Branch watershed	33
6. Landslide into Lower West Branch main stem (1992) from canyon area just south of Pine Creek inflow	42
7. Agricultural land uses within the Idaho portion of the Lower West Branch watershed, as submitted by the Idaho Conservation Partnership.....	78
8. Land management within the Idaho portion of the Lower West Branch watershed, as submitted by the Idaho Conservation Partnership.....	79
9. Bear Paw Road with a dual ditch system, and drainage ditch discharging into a perennial stream crossing	86
10. Bear Paw Road at Lower West Branch crossing; upstream pond created by road fill and twin culverts, and downstream view of culverts showing fish migration block.....	88

Abbreviations, Acronyms, and Symbols

303(d)	refers to section 303 subsection (d) of the Clean Water Act, or a list of impaired water bodies required by this section	IDEQ	Idaho Department of Environmental Quality
§	Section (usually a section of federal or state rules or statutes)	IDFG	Idaho Department of Fish and Game
BAG	Basin Advisory Group	IDL	Idaho Department of Lands
BMP	Best Management Practice	IDT	Idaho Department of Transportation
BCRD	Bonner County Road Department	IPNF	Idaho Panhandle National Forests
BS&WCD	Bonner Soil & Water Conservation District	ISCC	Idaho Soil Conservation Commission
BURP	Beneficial Use Reconnaissance Program	KEA	Kootenai Environmental Alliance
CWA	Clean Water Act	LA	load allocation
CWAL	cold water aquatic life	LC	load capacity
CWE	cumulative watershed effects	LWB	Lower West Branch Priest River
EPA	United States Environmental Protection Agency	LWD	large woody debris
FPA	Idaho Forest Practices Act	mi²	square miles
FS	Fully Supporting	MOS	margin of safety
GIS	Geographical Information Systems	NFS	Not Fully Supporting
GPS	Global Positioning Systems	NRCS	Natural Resources Conservation Service
HUC	Hydrologic Unit Code	NTU	nephelometric turbidity unit
IDAPA	refers to citations of Idaho administrative rules	POCD	Pend Oreille Conservation District
		POCRD	Pend Oreille County Road Department

SPZ	Stream Protection Zone as defined in the Idaho FPA.
SSBMPs	site specific BMPs
TMDL	total maximum daily load
TMDL-IP	TMDL Implementation Plan
tons/yr	tons per year
TSS	total suspended solids
USFS	United States Forest Service
USF&WS	United States Fish & Wildlife Service
WAG	Watershed Advisory Group
WBAG	Waterbody Assessment Guidance
WDOE	Washington Department of Ecology
WDFW	Washington Department of Fish & Wildlife
WDNR	Washington Department of Natural Resources
WEPP	Water Erosion Prediction Project

ACKNOWLEDGMENTS

I would like to thank the members of the Lower West Branch Watershed Advisory Group (see Table 4) for their time and contributions to this draft TMDL Implementation Plan. For many of the implementation plan sections, there was a considerable effort put forth. The Lower West Branch TMDL implementation work will be a long term process, and will only be successful with a commitment and collaboration between government agencies, both in Idaho and Washington, along with private landowners and business interests in the watershed. Up to this point in the process, that level of collaboration has been readily apparent among our local group.

Cover Photo – thanks to Bruce Brockway, private landowner within the Lower West Branch watershed, for supplying some historic photographs. The cover photo was taken in 1911, and depicts a log drive down Lower West Branch main stem. Note the river in the background, and particularly the damage to the stream banks. This is a good example of legacy impacts within our TMDL watersheds.

-Glen Rothrock

Executive Summary

Will be developed in the 2nd Draft Version.

Chapter 1. Introduction, Summary of the Lower West Branch TMDL, and Basic Features of the Implementation Plan

1.1 Introduction

The Coeur d'Alene Regional Office of Idaho DEQ considers a TMDL Implementation Plan (TMDL-IP) as Phase 2 of the TMDL process. Phase 1 begins with a Subbasin Assessment of a §303(d) listed waterbody and determination of beneficial use support status. If a Not Fully Supporting status is determined (i.e., "water quality impaired"), then a TMDL for the listed pollutant of concern(s) is developed (sediment for the LWB). The final TMDL document is submitted to EPA for approval. Upon EPA approval, IDEQ initiates the TMDL-IP process. Phase 3 would be on-the-ground implementation of the actions specified in the plan.

The EPA views the TMDL implementation plan "as a description of the tools, methods, and authorities that will be used to achieve applicable water quality standards" (IDEQ 2003a). The implementation plan will include measurable milestones set within a schedule for implementing the called-for actions. Further, an implementation plan can be viewed as a mechanism for establishing specific plans to monitor progress toward water quality standards attainment and correcting the TMDL.

TMDLs tend to be a broad subbasin or watershed approach of estimating current load of the pollutant of concern from numerous categories of nonpoint sources, and in some watersheds, point sources. For example, in estimating sediment load from a forested road network, calculated load estimates may be applied to hundreds of miles of road and hundreds of stream crossings, based on a small or best moderate sample size of the road network in the watershed.

The TMDL-IP process leads to identification of specific projects or policy changes to meet the load reduction goals of a TMDL. The TMDL-IP process affords a second, more focused examination of pollutant load estimates. Within a forested road system, projects may be identified such as culvert upgrades with larger pipes, addition of road prism relief culverts, or adding gravel to the road surface. It is important to prioritize a list of projects, in part by cost-benefit in terms of tons of sediment reduced/unit cost. With a smaller scale to work with on a project specific basis of a TMDL-IP, and more specific information, calculation of pre-project and post-project sediment loads should be more refined.

The bottom line of the TMDL process is eventually to observe and document restoration of the impaired beneficial use(s). In the LWB, the impaired beneficial use is cold water aquatic life and salmonid spawning. TMDLs are focused on accounting for reduction levels of the listed pollutant of concern from current loading level toward the estimated Load Capacity. While the Lower West Branch TMDL-IP will certainly identify projects and policies for sediment load reduction, the process will also consider other contributing factors to the observed biological impairment including hydrologic modifications, elevation of water temperature, in-stream fish habitat degradation, introduction of non-native salmonids, and the lingering effects of legacy land use practices.

Figure 1. Location map of the Priest River Subbasin and Lower West Branch watershed.

Figure 2. Streams of the Lower West Branch watershed.

There is no certainty in the LWB that current sediment load is the primary contributing factor to the observed biological impairment. While it is clear that current land uses are contributing an unnecessary sediment load, and reductions can be identified and made in an economically reasonable manner, the TMDL-IP will also identify projects and policies aimed at areas such as fisheries management, shade increase, and in-stream habitat improvement.

Finally, the TMDL-IP will be considered a “living document,” subject to annual review and modification. This concept will be put into place by a “feedback loop,” consisting of: continuing the roles and involvement of a Watershed Advisory Group, tracking TMDL-LP project completion, conducting BMP effectiveness monitoring, and conducting in-stream biological monitoring.

1.2 §303(d) Status of Lower West Branch

The LWB watershed is 56,835 acres in size and resides in the Priest River Basin 4th order Hydrologic Unit (Figures 1 and 2). Watershed lands are in Bonner County, Idaho and Pend Oreille County, Washington (36% of the watershed is in Washington). EPA placed the Idaho segment of the LWB main stem on the 1994/96 Clean Water Act §303(d) list as “water quality limited” with sediment as the listed pollutant of concern. The listed segment is from the Idaho - Washington State line down to the mouth where LWB discharges into Lower Priest River.

In response to the §303(d) listing, IDEQ conducted a watershed assessment as reported in *Priest River Subbasin Assessment and Total Maximum Daily Load* (Rothrock 2001). The listed stream segment was assessed as Not Fully Supporting (NFS) of the beneficial uses cold water aquatic life and salmonid spawning. The NFS status resulted from IDEQ stream surveys in 1997 and 1998 under the Beneficial Use Reconnaissance Project (BURP), in which sampling produced low biological index scores for aquatic insects and fish populations, and low habitat ranking scores. In addition, placement of a temperature recorder in 2000 produced data that exceeded the Idaho State Water Quality Standards temperature criteria for cutthroat trout spawning and incubation for the period of mid June through July (IDEQ 2000). On the draft 2002/03 IDEQ §303(d) list, heat has been added as a pollutant of concern for LWB (IDEQ 2003b).

During the period of TMDL implementation, a restored condition of Full Support of cold water aquatic life beneficial uses would be detected through periodic stream surveys using a BURP equivalent protocol (see Section 1.15). BURP data are currently assessed through procedures of IDEQ’s Waterbody Assessment Guidance, Second Edition (WBAG II) to determine support status (Grafe *et al.* 2002). The LWB data from the 4 BURP sites in 1997 and 1998 has been transformed into WBAG II scores (Table 1). This provides a reference point for future sampling. Non-passing scores from the BURP electro-fishing surveys in Idaho primarily related to zero occurrence of native salmonids (no cutthroat trout captured), and a low catch-per-unit effort of cold water individuals (brook trout and slimy sculpin).

As a result of the NFS status of the Idaho main stem segment, a sediment TMDL was prepared for the entire LWB watershed in both Idaho and Washington. EPA approved the TMDL in March 2002.

Table 1. Results of IDEQ Beneficial Use Reconnaissance Project (BURP) Sampling within the Lower West Branch, as Scored by the Waterbody Assessment Guidance, Second Edition.

BURP site	Aquatic insects SMI score & (condition rating)	Electro-fishing SFI score & (condition rating)	Instream habitat SHI score & (condition rating)	Average condition rating score
1997 lower, ID	43 (1)	20 (MT)	56 (1)	MT
1997 middle, ID	52 (1)	62 (1)	55 (1)	1.0
1998 upper-mid, WA	37 (MT)	no data	35 (1)	MT
1998 upper, WA	55 (1)	no data	44 (1)	1.0

SMI = Stream macroinvertebrate index

SFI = Stream fish index

SHI = Stream habitat index

Condition Rating (CR) Breakpoints

SMI: <39 = Minimum Threshold 39-56, CR = 1 57-64, CR = 2 ≥65, CR = 3

SFI: <34 = Minimum Threshold 34-66, CR = 1 67-80, CR = 2 ≥81, CR = 3

SHI: No Minimum Threshold <58, CR = 1 58-65, CR = 2 ≥66, CR = 3

Mean CR ≥ 2.0 = Full Support of cold water aquatic life beneficial use (2 or 3 indexes calculated),

Mean CR < 2.0, or SMI or SFI equals MT = Not Fully Supporting of cold water aquatic life beneficial use.

1.3 Summary of Lower West Branch Sediment TMDL

Calculation methods used for Priest River Subbasin TMDLs are fully described in Section 4.1 of *Priest River Subbasin Assessment and Total Maximum Daily Load* (Rothrock 2001). The LWB sediment TMDL is presented in Section 4.3.1. While it is not the intent to repeat the full information presented in the TMDL, a brief summary and calculation tables are included in this current report for convenience of reference to TMDL-IP sediment reduction projects.

The sediment TMDL is partitioned by the ownership/management patterns of the watershed (Figure 3). LWB is a mixture of federal lands and private ownership with a small acreage of Idaho State ownership. Land under USFS management totals 42,223 acres, around 32% in Washington. Most of this land is managed for timber production, and there is a substantial 7,895 acres in grazing allotments. Industrial timber holdings total 3,517 acres in the watershed. Within Idaho there are 9,213 private acres which are not industry owned. Most land use on these private holdings has been given a general designation of agriculture zone with hay cropping and grazing. Small-scale non-industrial timber operations occur on these private lands. In recent years there has been an increase in 5 to 20 acre rural homesteads. In Washington there is another 1,119 acres

Figure 3. General land use and ownership in the Lower West Branch watershed.

Table 2. Sediment Calculations for Lower West Branch Watershed by Ownership/Management Categories

Categories of Sediment Loading	USFS	Private Idaho	Private WA	Timber Industry	Idaho State	County Roads	Totals
Natural Sediment Load							
Watershed area: square miles	66.7	15.4	3.0	2.3	1.1	0.3	88.8
Weighted mean tons/mi ²	20.8	22.5	19.3	23.8	22.8	21.8	21.1
Tons/year – 100% delivery	1,387	347	57	54	26	6	1,878
Current Sediment Load							
1. Forested area							
Forested area minus roads & crops (mi ²)	63.9	8.7	2.3	2.2	1.1	0.0	78.3
Weighted mean tons/mi ²	20.8	22.5	19.3	23.8	22.8	21.8	21.1
Tons/yr with 100% delivery	1,330	196	45	52	25	0	1,649
2. Unpaved roads							
Mean tons/stream crossing from CWE score	0.39	0.39	0.34	0.20	0	0.52	0.40
Number of stream crossings	141	48	3	5	0	23	220
Tons/yr at stream crossings	54	19	1	1	0	12	87
Miles of total roads - (minus stream crossings)	318	63	16	8	3	31	439
Mean tons/mile of total roads from CWE score	3.1	3.9	4.0	2.9	3.1	3.5	3.4
Tons/yr from total roads (minus crossings)	1,017	256	65	26	8	117	1,489
3. Failures at roads							
Number of washouts at stream crossings	3	2	0	0	0	1	6
Tons/yr from stream crossing washouts	65	43	0	0	0	22	130
Number of typical road prism failures	6	2	0	0	0	0	8
Tons/yr from typical road prism mass failures	721	240	0	0	0	0	961
% assigned to tons/yr atypical mass failure	75%	15%	0	0	0	10%	100%
Tons/yr from atypical failures	360	72	0	0	0	48	480
4. Hay land and grazing							
Acres of improved hay land and pasture	0	3,838	305	0	0	0	4,143
Tons/yr from agricultural improved land	0	155	12	0	0	0	167
5. Stream bank erosion							
% assigned to tons/yr stream bank erosion	75.2%	17.6%	3.4%	2.6%	1.3%	0%	100%
Tons/yr from stream bank erosion	639	150	29	22	11	0	851
Total current tons/yr	4,186	1,131	152	101	46	199	5,816^a
Percent of total	72.0%	19.4%	2.6%	1.7%	0.8%	3.4%	100%

a = Sediment load table does not include 800 tons/yr assigned to both natural and current loads from lower canyon mass failures

of private non-industrial land where there is hay cropping, grazing, and timber operations. State owned land totals 763 acres.

Table 2 presents sediment load calculations for natural background condition, and for categories of current land use conditions. Calculated sediment loads are separated by general ownership/management groups. The table also includes a category for county maintained roads.

The sediment calculation table does not include a landslide prone area of steep canyon from the Peninsula Road Bridge upstream for about 5 stream miles (Figure 2, the lower main stem reach between Cuban Creek inflow to just past Pine Creek inflow). This area has a documented history of large slumps at canyon walls directly into the main stem. TMDL calculations assigned an annualized current load of 1,600 tons/yr along this canyon. Documented landslides are in part a natural phenomenon, but at least one mass failure was directly attributed to a vegetative clearing on a steep slope followed by a thunderstorm and subsequent slide. Sediment load from slides was not allocated among the ownership/management groups. However, this canyon area should receive some Site Specific BMPs in the Forest Practices Implementation Plan (Section 2.1).

Table 3 is the sediment TMDL in a summarized, tabular form. The first column, Sediment Allocation, assigns the Loading Capacity (LC) to ownership/management groups. The LC is 50% above estimated background load. The second column repeats the current sediment load calculations of Table 2, and the third column, Sediment Reduction Required, is simply Current Load minus LC.

Table 3. Sediment Load Reductions Required to meet TMDL Goals for the Lower West Branch

Ownership/Management	Load Capacity sediment allocation (tons/yr)	Calculated current sediment load (tons/yr)	Sediment reduction required in tons/yr	Percent of sediment reduction
USFS	2,081	4,186	2,105	70.2
Industrial Timber Lands, ID & WA	81	101	20	0.7
Private Forest and Agricultural Lands, WA	86	152	66	2.2
Private Forest and Agricultural Lands, ID	521	1,131	610	20.4
Idaho State	39	46	8	0.3
Bonner & Pend Oreille County Maintained Roads	10	199	189	6.3
Totals	2,818	5,816	2,998	100%
Canyon wall mass failures	1,200	1,600	400	--

1.4 TMDL Implementation Plans as Referenced in Idaho Code and IDEQ Guidance, and Responsibilities for Plan Development

Under Section 303(d)(1) of the Clean Water Act, states are required to prepare a list of waters not meeting state water quality standards. For waters on this “303(d) list,” such as Lower West Branch, States must prepare pollution control plans that allocate acceptable pollutant loads or load reductions to point and nonpoint sources contributing to the water quality violation. These plans are referred to as Total Maximum Daily Loads (TMDLs). The requirement of IDEQ to prepare TMDLs is established in Idaho Code 39-3611.

Idaho Code 39-3611 cites the development of “pollution control strategies for both point sources and nonpoint sources” (i.e., an implementation plan) as part of the TMDL process. Most TMDL documents prepared by IDEQ and submitted to EPA since 1999 have not incorporated an implementation plan, including the Lower West Branch TMDL. IDEQ has taken the track of developing an implementation plan as a separate document, guided by an approved TMDL. A target goal established in IDEQ guidance is to develop an implementation plan within 18 months of TMDL approval (IDEQ 1999a).

Development of implementation plans rely on existing local, state, and federal authorities, and in no way creates new enforcement authorities or results in more enforceable TMDLs (IDEQ 2003b).

Generally, implementation plans are to be developed in partnership with the IDEQ, the local Watershed Advisory Group (WAG), if one has been established, and other state “designated agencies” (IDEQ 2003b). The WAG (or other individuals responsible for developing the implementation plan) will recommend specific control actions and will then, with the Basin Advisory Group (BAG), review the implementation plan before submitting it to IDEQ for approval. Implementation plans are approved by the IDEQ State Office, Surface Water Program and submitted to EPA for their information and record keeping. Implementation plans are not submitted to EPA for approval as part of the TMDL. Once approved by IDEQ, TMDL implementation plans become incorporated as part of the State Water Quality Management Plan.

The designated state agencies are responsible for assisting with the preparation of individual source plans and in many cases, the implementation plan, particularly for those sources for which they have regulatory authority or programmatic responsibilities. Idaho’s designated state management agencies are specified in Idaho Code §39-3601 *et seq.*, and are:

- Idaho Department of Lands for timber harvests and mining activities,
- Idaho Soil Conservation Commission for grazing and agriculture activities,
- Idaho Transportation Department for design and construction of public roads,
- Idaho Department of Agriculture for aquaculture,
- Idaho Department of Environmental Quality for all other activities.

Implementation plans should be developed with the participation of federal partners, fisheries management agencies, county and city governments, service districts, tribal councils, and private landowners in the watershed. The integration of these groups for the LWB watershed is described in Section 1.5 below, where a non-designated WAG has been formed. In Idaho, the designated

designated state agencies, along with other state partners and federal agencies, are charged by the Clean Water Act to lend available technical assistance and other appropriate support to local efforts/projects for water quality improvements (IDEQ 2003b). Some of the important roles provided include federal consistency with State program objectives, and making select funding sources available for implementation activities.

The public, through the WAG process, should be provided with opportunities to be involved in implementation plan development to the maximum extent practical. Public participation will significantly affect public acceptance of the document and the proposed control actions. The public, landowners, local governing authorities, taxpayers, industries, and land managers, are the ones who know the pollutant sources best and will be responsible for implementing the control actions identified in the plan. Experience has shown that the best and most effective implementation plans are those that are developed with substantial public cooperation and involvement (IDEQ 2003b). Local ownership is a prerequisite for a successful TMDL implementation plan.

Finally, useful guidance on the purpose of an implementation plan is stated in the Idaho Nonpoint Source Management Plan (IDEQ 1999b), with similar language echoed in Idaho Code 39-3611. This guidance states: “The primary purpose of any implementation plan under the TMDL process is to identify and describe the specific pollution controls or management measures to be undertaken; the mechanisms by which the selected pollution control and management measures will be put into action; and, the authorities, regulations, permits, contracts, commitments, or other evidence sufficient to ensure that implementation will take place. The plan also describes when implementation will take place, identifies when various tasks or action items will begin and end, when mid-term and final objectives will be met, and established dates for meeting water quality targets.”

1.5 Formation and Work History of the Lower West Branch WAG (non-designated)

In the fall of 2002, IDEQ began a series of telephone calls and letter writing to form a Watershed Advisory Group for the Lower West Branch TMDL-IP. It must be emphasized that at the time of writing this draft TMDL-IP, the watershed group thus formed is not an officially designated WAG as established in Idaho Code §39-3616 (i.e., the IDEQ director has not named and designated the Lower West Branch WAG). The direction that will be sought from the IDEQ Coeur d’Alene Regional Office is to eventually form a designated WAG for the entire Lower Priest River drainage, a 220,000 acre subset of the Priest River Subbasin, 4th order Hydrologic Unit (Figure 1). There are additional TMDL-IP plans required in the Lower Priest River drainage besides LWB.

The initial WAG meeting was held on October 9, 2003 in the city of Priest River. The group included government representatives from both Idaho and Washington. While the §303(d) listed segment of LWB falls only within the Idaho border, improvement of beneficial use status will need sediment reduction efforts not only in Idaho, but also within the upper watershed lands in Washington (the sediment TMDL allocations does encompass the entire watershed). Included in the WAG were private landowners, environmental groups, industrial timber, and the Kalispel Tribe. The initial meeting was primarily a summary presentation of the Subbasin Assessment and TMDL results, along with an examination and discussion of the components of a TMDL-IP.

One important discussion resulting from the first WAG meeting involved sediment reduction credits given to recently completed work within the watershed. Land management agencies felt strongly about receiving acknowledgment for monies spent on completed improvement projects. The WAG decision was to incorporate into the TMDL-IP, projects that went back 5 years, or from 1997. This will fit satisfactorily into the TMDL allocations since most land use data for the TMDL estimates were collected in 1998 and 1999.

At the first meeting, the WAG also suggested additional groups that should become part of the TMDL-IP effort. A second meeting was set for February 5, 2003 and included some additional WAG members. The established WAG for the LWB is shown in Table 4.

At the February 5th meeting, the USFS, Priest Lake Ranger District, presented a list of numerous improvement projects on forest service roads accomplished between 1997 – 2002. Other presentations were given on land use activities and jurisdictions within the watershed. The group also identified several “hot spots,” areas of well-known sediment erosion problems that needed remediation.

An important point brought up in the meeting is the need to track and account for new and continuing land use activities in the watershed that contribute net positive sediment yields, increased canopy openings, loss of stream shade, and stream bank damage. These activities might include new timber sales, clearing for rural homestead development, and more hobby farms with large animal grazing. Accounting for new and continuing land use development is addressed in Section 1.11.

In July 2003, IDEQ sent out a request package to WAG members. This package was a request for state designated agencies, and the non-designated federal, state, and local government partners, to supply narrative, proposed projects, and/or policy changes which essentially would become the material for Chapter 2 of this draft TMDL-IP. Guidelines and suggestions of content were given by IDEQ in the request package. The deadline to forward material back to IDEQ was October 2003.

The first cut of the draft TMDL-IP was completed in March 2004. The draft document was mailed to WAG members for review and comment. The WAG held a meeting on May 15th to go over the review comments, and to provide further information to the draft. IDEQ compiled the results of this meeting into the draft TMDL-IP that will be advertised for a public review and comment period.

1.6 Public Involvement in the Process

Besides having private landowner representation on the WAG, other efforts have been made in the area of public education and involvement. As a beginning effort, IDEQ identified the names and addresses of all private landowners within the watershed in both Idaho and Washington (nearly 250 landowners). IDEQ prepared and mailed out a letter to the landowners (February 2003, see Appendix A) explaining: the §303(d) listing, the subbasin assessment and TMDL process along with results, and announced the initiation of the implementation plan. This letter was followed by a public information meeting held in the city of Priest River on March 19, 2003, along with an information article in the Priest River Times.

Table 4. Agencies and Private Landowners of the Lower West Branch Watershed Advisory Group (not a designated WAG)

Entity Represented	Contact Name
Idaho Department of Environmental Quality	Glen Rothrock, Coeur d'Alene
Idaho Department of Lands	Scott Marshall, Coeur d'Alene
Idaho Department of Lands	Bill Love, Ed Robinson, and Tom Johnson, Sandpoint
Idaho Department of Lands	Mick Schanilec and Jim Nolen, Priest Lake
Idaho Soil Conservation Commission	Mark Hogen, Coeur d'Alene
Idaho Department of Transportation	David Karsann, Coeur d'Alene
Idaho Department of Fish and Game	Mary Terra-Berns, Coeur d'Alene
U.S. Forest Service, Priest Lake Ranger District	Kathy Murphy and Jill Cobb, Priest Lake
U.S. National Resources Conservation Service	Jeff Stewart, Sandpoint and Dick Yetter, Lewiston
U.S. Fish & Wildlife Service	Scott Deeds, Spokane WA
Bonner Soil and Water Conservation District	Linda O'Hare, Sandpoint
Idaho Assoc. Soil & Water Conserv. Districts	Jamie Davis, Sandpoint
Bonner County Road Department	Chuck Spickelmire, Sandpoint
Bonner County Planning Department	Claire Marley, Sandpoint
Washington Department of Ecology	Dennis Murray, Spokane WA
Washington Department of Fish & Wildlife	Jeff Lawlor, Spokane WA
Washington Department of Natural Resources	Marc LeClair and Jill Jones, Colville WA
Pend Oreille Conservation District	Russ Fletcher, Newport WA
U.S. National Resources Conservation Service	Mark Simpson, Newport WA
Pend Oreille County Road Department	Ron Curren, Newport WA
Stimson Lumber Company	Wade Pierce, Newport WA
Forest Capitol (prior Crown Pacific lands)	Kevin Boling, Coeur d'Alene
Kalispel Tribe of Indians	John Gross and Michele Wingert, Usk WA
Kootenai Environmental Alliance	Barry Rosenberg, Coeur d'Alene
Selkirk Conservation Alliance	Mark Sprengel, Priest River
Idaho private landowner (agriculture)	Allen Cary, Priest River
Idaho private landowner (timber)	Jim Linton, Priest River
Idaho private landowner	Bruce Brockway
Washington private landowner (agriculture)	Bill Egolf, Priest River

After the introductory letter was mailed, IDEQ received several telephone calls from landowners requesting site visits to discuss participation for improvement projects on stream sections running through their property. Site visits were made by IDEQ.

When the draft TMDL-IP is completed in June 2004 (following WAG review and comment), a second letter will be mailed announcing the report for a public review and comment period, along with a follow-up article in the Priest River Times. It may be that the final TMDL-IP will include provisions for a watershed newsletter, published and mailed annually, to keep area residents abreast of initiated projects, and to present ideas and methods for land stewardship projects.

1.7 Structure of the Lower West Branch TMDL-IP

Chapter 2 of this document is structured as six separate implementation plan Sections based on categories of land use, ownership/management jurisdictions, and/or regulatory jurisdictions. Each implementation plan section will contain proposed improvement projects, along with narrative of BMP choices and approaches to land use management policies. The implementation plan Sections are:

- 2.1 Integrated Summary Table of Action Items
- 2.2 Forest Practices Implementation Plan
- 2.3 Agricultural Implementation Plan
- 2.4 County and State Road Implementation Plan
- 2.5 Bonner County Planning, Zoning and Development Implementation Plan
- 2.6 Fisheries Management Implementation Plan
- 2.7 Environmental Regulation and Oversight Implementation Plan

1.8 Priorities and Goals of Implementation

Activities proposed and listed for implementation in Chapter 2 will require examination by the WAG, and a system for prioritizing and ranking projects for level of implementation action and scheduling. The IDEQ document, *Technical Guidance and Policy Recommendation for Preparing an Idaho TMDL Implementation Plan* (IDEQ 2003a), presents useful guidelines for determining watershed priorities for proposed pollutant control measures. These guidelines are listed below and were shared with WAG as a checklist for prioritization.

- ***Load and yield coefficients:*** land uses with the highest sediment unit loads or yield coefficients (estimates of load from a land use in mass/time/area). Load coefficients, coupled with information about proximity to waterways and delivery efficiencies, will allow prioritizing of projects to target areas with the greatest potential to reduce sediment loading to

to the impaired waterbody. Agencies may want to refine or readjust the sediment load calculations presented by IDEQ in the *Priest River Subbasin Assessment and TMDL* (Rothrock 2001).

- **Cost effectiveness:** projects with the lowest cost per unit of sediment reduction. In evaluating cost effectiveness of projects it is important to consider the life of the project, the pollutant form addressed, and previous load reduction efforts.
- **Multiple benefits:** projects that provide additional water quality benefits, especially if they can be linked to reduction of other pollutants addressed by a TMDL. For example, stream bank projects that reduce sediment loading, and also improve stream shading, might be considered as higher priority.
- **Landowner/community acceptance:** projects with willing landowners can help demonstrate feasibility and cost effectiveness.
- **Availability of funds:** some projects may only be viable if special funding is available. For example, agriculture BMPs may only be affordable if cost-share funds are available. Local government projects may depend on budget appropriations for outside funding support.
- **Ease of implementation:** projects that are easy to install because of willing landowners, easy access, relatively easy design, construction, and maintenance considerations.

1.9 Prioritization and Accounting – Load and Yield Coefficients, Cost Benefit, and Activities not Directly Related to Sediment Load Reduction

As part of the prioritization guidelines listed above, a method needs to be selected to assign sediment yield reductions to proposed projects. Also, a selected method would assign sediment load reduction credits to projects completed between 1997 - 2003 (Section 1.5). Then there is the matter of assigning a priority rank to activities such as in-stream habitat enhancements that do not reduce sediment directly but may improve the biological condition.

Table 5 in Section 2.1 is a tabular summary of proposed actions within the implementation plans submitted to IDEQ, and Table 8 in Section 2.2.2 is a submittal by the USFS for LWB projects completed between 1997 – 2002. At this point in the development of the draft TMDL-IP, or Draft Version 1, neither table includes sediment load coefficients and associated project cost estimates.

Table 6 in Section 2.1 presents a blank spread sheet that IDEQ proposes as an accounting or tracking table for each proposed or completed project. For a proposed sediment reduction project, an estimated pre-project and post-project load is calculated. Project costs are estimated, and then a cost effectiveness ratio is calculated as dollars/ton/yr. For example, an insloped 1,000-foot road segment, with moderate traffic, approaching down gradient and crossing a stream, is bladed and freshly graveled (2 – 4” depth, ¾” minus gravel) for a cost of \$1,000. The calculated effectiveness of reducing fine sediment yield from this road segment is 1 ton/yr for five years. This equates to \$1,000 per 1 ton per over 5 years, or \$200/ton sediment reduction/yr. A priority ranking assigned

A priority ranking assigned by the WAG not only would include the cost-effectiveness calculation, but the other priority considerations listed in Section 1.8 if applicable.

A practical importance exists for land management agencies to receive sediment reduction credits for each completed project. The agencies want to track their sediment reduction efforts against the allocations of Load Capacity assigned within the TMDL. There is an expressed concern that if the watershed Load Capacity is met without an observed restoration of the biological beneficial uses, then agencies will be required to further their reduction requirements with no end in sight.

In Section 2.2.1, IDL proposes the formation of a WAG subcommittee, a Forest Practices Working Group. This group will need to select a preferred method to calculate sediment reduction for forestry related projects (see Section 1.10 below).

Another issue of discussion and decision by the WAG and the Forest Practice Working Group is whether to account for routine maintenance procedures or application of standard BMPs on forest roads (i.e., only account for projects “above and beyond” the routine procedures of doing business or providing a service). For example, road blading is beneficial in reducing fine sediment runoff by smoothing out developed ruts, and reestablishing the proper in-slope or out-slope grade. If the USFS blades 3 miles of a well-established and used timber haul road, does this routine maintenance qualify for TMDL reduction credit?

And finally, how are credits established for streamside shade improvement and in-stream fisheries enhancements? An example would be placement of large wood structures to create pools, increase habitat complexity, and meter or store moving sediment. Another example might be fisheries management manipulations to favor native cutthroat trout over introduced brook trout. It may be decided that in-stream projects have, overall, a greater benefit toward restoration of beneficial uses than sediment reduction projects. How is this weighed in a prioritization scheme?

1.10 Consideration and Examples of Sediment Load Estimation Methods

The Forest Practices Working Group that IDL will convene (Section 2.2.1) should examine the variety of sediment load methods available for pre-project and post-project loading estimates. As suggested by IDEQ in Section 1.1, the TMDL-IP phase is a good opportunity to refine the TMDL estimates at a project specific level. A stated desire of the WAG is to select one method to be used across the board for road projects on forested land of federal, state, private industrial timber, private non-industrial timber, county, and residential, ownership/management. It is assumed by IDEQ that there will be at least one site visit to a proposed project. At this site visit, project area descriptions and measurements can be collected for use in the estimation method. For completed projects, a site revisit may be needed to collect the specific information.

There are four sediment load estimation methods, which result in tons/yr, that might be considered, along with an IDL concept of calculating a percent reduction. These methods are:

- the method used for Lower West Branch TMDL calculations was the IDL road inventory protocol under the Cumulative Watershed Effects (CWE) process (IDL 2000). The

disadvantage of using already collected CWE data (in 1999) is that the data were often collected on a spatially wide-scale, and lacks area specific information. Calculations are easily accomplished with a simple spread sheet application.

- the USFS Water Erosion Prediction Project (WEPP) soil erosion model, WEPP:Road. One attractive advantage of this method is that it can be used interactively over the internet. Thus for example, a group of WAG members can sit around a computer and run through multiple WEPP:Road scenarios with load values given instantaneously.
- the Watershed Analysis procedure from the Washington Forest Practices Board manual (WFPB 1997). Calculations are easily accomplished with a simple spread sheet application.
- computer runs from the USFS – WATSED model. WATSED is used for examining management scenarios under various project alternatives in the Idaho National Panhandle Forests. A disadvantage is the reliance on USFS personnel to make WATSED model runs, and model runs would have to be made on non-federal managed lands.

To get a feel on differences of output from these various methods, two examples are given below. These examples are taken from USFS completed projects between 1997 - 2003.

Example 1

Item number 15 in Table 5 was a significant USFS project on Forest Road 57A (see Figure 5 road map). This road goes east off Johnson Cutoff Road through flat meadow lands, and then slopes down as it approaches the LWB main stem. The road terminates at the stream's edge. Local residents use the road for stream access and camping. Four-wheel drive vehicles have crossed the stream and continue driving on the opposite shore. During spring soggy conditions, vehicles formed large ruts in the road which are direct conduits to the stream (Figure 4, left). The road segment is not graveled, and was eroding. There are no ditches or cut/fill banks. Most eroded sediment heads directly down the road toward the stream. This road segment was flagged during the CWE inventory as a Significant Management Problem.

Specifications used in pre-project sediment load estimations were: a road approach of 500 ft with a 5% slope, a road tread of 14 ft and deeply rutted, no ditches and cut/fill banks, and 100% delivery of sediment to surface water. Pre-project results of the methods are:

CWE =	1.6 tons/yr
WEPP:Road =	2.6 tons/yr
Washington FPB =	3.9 tons/yr
WATSED =	not yet available



Figure 4. Forest Road 57A as it approaches Lower West Branch (left, pre-project); and the Road 57A approach to LWB after large rock was applied (right).

The USFS project included laying down a thick layer of 4” minus rock over the last 100 feet of the road approach (Figure 4, right). This prevented auto and truck traffic from driving down to the streams edge. At the upgradient end of the rock layer on the road, additional rock was used to create an effective berm to intercept water and sediment flow from the upper portion of the road. This project was considered a 100% sediment reduction effort, and long lasting.

Example 2.

Item number 133 in Table 8 was ditch line and road surface improvements on Forest Road 318 which runs above and parallel to Bear Paw Creek (Figure 5). Several perennial and intermittent tributaries to Bear Paw Creek run underneath this road. On one, in-sloped road segment approaching down gradient to a perennial stream crossing, the inside ditch was recontoured and then lined with rock. The road was also graded. Further, a relief culvert was placed in the road tread 60 feet up from the stream crossing. This culvert transferred ditch water and sediment runoff down a vegetated fill slope and flatter vegetated buffer before reaching the stream.

Specifications used in pre-project sediment load estimations were: a road approach of 500 ft with a 5% slope, a road tread of 14 ft, in-sloped with a bare drainage ditch, vegetated cut and fill banks, and 100% delivery of sediment to the upstream end of the stream crossing culvert.

	Pre-project	Post-project with rocked ditch and graveled	Post-project including relief culvert
CWE =	3.7/t/yr	1.0/t/yr	0.2/t/yr
WEPP:Road =	2.5/t/yr	0.4/t/yr	0.1/t/yr
Washington FPB =	4.9/t/yr	2.3/t/yr	0.2/t/yr
WATSED =	not yet available		

1.11 Net Positive Gains in Sediment and Water Yields, and Net Loss of Shade

There will be new and continuing land use activities in the LWB watershed, both identified within the TMDL-IP and outside of the TMDL-IP, that will result in sediment yield to streams, canopy openings, loss of riparian vegetation, and stream bank damage. As the TMDL-IP is initiated and moves forward, these activities need to be accounted for in the balance sheet of the TMDL that has a goal of a downward trend of net sediment yield, and a net improvement of shade (Section 1.12).

Improvement projects by the USFS are often financed from the proceeds of timber sales. There will be features of a timber sale that will result in at least a short-term gain in sediment yield. An estimate of the sediment yield gain needs to be identified and entered in the TMDL accounting as a realistic offset to the net decrease afforded by mitigation improvements.

A constant debate in forested watersheds is the affect of canopy openings by timber harvesting. Some would debate that clear-cut harvests in headwater lands leads to accelerated spring runoff volume and velocity, over and above the long-term clearing pattern created by the historic fire regime. It is further argued that this accelerated energy in turn damages stream bank integrity leading to direct sediment yield. It seems that this suggested hydrologic disequilibrium cannot be ignored and needs to be a focus of the TMDL-IP monitoring component.

The rate of new rural homestead development within the LWB watershed is increasing. This includes lot clearing, and building of access roads and driveways, some with stream crossings. While Bonner County Stormwater Ordinance #227 (1993) as revised by Ordinance #343 (1997) has erosion control and water runoff management provisions, it has been observed by IDEQ that the ordinance BMPs are not being strictly adhered to, or sometimes ignored. Without a doubt there is an increase in sediment yield. There are also observations of vegetative clearing within riparian zones as part of homestead development.

While the ISCC and NRCS may develop programs with existing ranches for sediment reduction and shade increase, there will be new ventures of cattle grazing and hobby farms that will lead to stream bank trampling and loss of riparian vegetation.

For industrial and non-industrial private timber harvests under the purview of the Idaho Forest Practice Act (FPA), there are conditional allowances for shade tree removal within the stream protection zone (SPZ). Within the SPZ, if the existing standing trees per 1,000 feet exceed the FPA minimums, harvesting is allowed to a point of 75% of the current shade over the stream.

1.12 Evaluation and Tracking of Effort Over Time

In many cases, the problems leading to water quality impairments have accumulated over decades, and will likely require significant time to remedy. It is important for the stakeholders to demonstrate an ongoing commitment to long-range implementation. For the TMDL implementation plan to work, there must be maintenance of effort over time by all stakeholders including local citizens, tribes, state, federal, and county agencies. Idaho Code §39-3601 *et seq.* specifies the State lead agencies responsible for TMDL implementation (see Section 1.4) and

requires an ongoing commitment from the lead agencies to devote the necessary resources to help restore beneficial uses.

Maintenance of effort over time is not solely focused on physical restoration work, but will attempt to look at land use planning issues, revisions to agency standard operating procedures, conservation easements, and various other methods through which long-term benefits can be obtained.

It is important to develop a tracking system for projects identified in the TMDL-IP, and completed. This will entail good documentation of:

- location (by GPS),
- completion dates,
- actual costs,
- previously discussed pre-project and post-project sediment load estimates, or
- values assigned for improvements in stream shade and fish habitat, and
- GIS mapping of completed projects.

Tracking is also needed for land use activities identified in Section 1.11 that result in net sediment gain and loss of shade. This will be particularly difficult, and likely incomplete, for land use activities that will occur outside of the TMDL-IP effort.

1.13 Integrated Schedule Milestones, and Responsible Parties

Table 6 of Section 2.1, as a horizontal expansion of proposed implementation projects in the Table 5 format, is meant to be a starting point for prioritizing projects with estimated costs, sediment load reduction estimates, and priority ranking for both sediment reduction and non-sediment reduction projects. Table 6 can also serve to document project completion dates and actual project costs. Listed projects would include the responsible parties for implementation. The simple concepts of Tables 5 and 6 could be expanded to include integrated scheduling, and establishing intermediate steps of project schedule milestones.

1.14 Identification of Funding Sources and Technical Assistance

Funding for TMDL implementation projects may come from a variety of sources. Funding should first come from within the designated State agencies and their partner agencies. For example, the USFS completed project list from 1997 – 2002 (Table 8) was funded through maintenance budgets and through a percentage of timber sale dollars generated within the LWB watershed. Where appropriate and possible, IDEQ will assist lead agencies in obtaining sources of funding and ensure collaboration between agencies for funding of related projects.

Identification of potential sources of funding for TMDL implementation projects are listed in the *Idaho Nonpoint Source Management Plan* (IDEQ 1999), and *Technical Guidance and Policy Recommendation for Preparing an Idaho TMDL Implementation Plan* (IDEQ 2003a). An updated list of these funding sources is presented in Appendix B of this draft LWB report. In each of the LWB implementation plan Sections of Chapter 2, potential funding sources are also listed by the

listed by the agencies submitting draft plans. Several of these funding sources require public participation in the way of committed match funds, and the IDEQ will be available to assist any parties that wish to seek funding for water quality projects within these watersheds.

Besides project funding, there is often the need for technical assistance. Examples include IDL assistance to non-industrial timber operators for proper application of forest practice BMPs, and NRCS guidance to ranchers for application of grazing BMPs.

1.15 BMP Effectiveness Monitoring and In-stream Monitoring to Assess Support Status of Beneficial Uses

Opportunities will exist for reasonable and practical BMP effectiveness monitoring. As an example, Bonner County and Pend Oreille County (WA) road departments recently submitted a \$319 Nonpoint Source grant package for FY 2005. This project proposal is to install rock check dams within the Bear Paw Road ditch system that is delivering sediment to perennial streams crossing underneath the road. IDEQ has committed to directly measure deposited sediment behind selected rock check dams to compare with calculated TMDL sediment yield estimates. In addition, at selected stream crossings, water samples will be taken for Total Suspended Sediment (TSS) and turbidity, both within the ditch upgradient to the check dams, and of water spilling over the check dams and heading toward a stream crossing. TSS and turbidity samples will also be taken within the selected streams both above and below the road crossing. A suggested expansion of Table 6 would be inclusion of a BMP effectiveness monitoring scheme for selected projects.

IDEQ has also been in contact with several private landowners who would consent to having ISCO automated samplers installed on access bridges to measure TSS and turbidity. Suspended sediment trends appears to be a good surrogate for sediment abatement tracking in the LWB watershed. Preliminary TSS sampling by IDEQ shows a relatively high suspended sediment concentration and turbidity during spring runoff compared to other area streams. The turbidity values may even approach the Idaho Standards value of 50 NTU above background for cold water aquatic life (IDAPA 58.01.02.250.02.d).

It would be important to establish stream flow gage stations within the LWB watershed. There is very little information on flow characteristics and possible hydrologic disequilibrium from cumulative effects of canopy openings. Measurement of flow characteristics needs to be coupled with continued surveys of bank stabilization and estimates of lateral recession rates. It is envisioned that the USFS would be responsible for establishing and maintaining gaging stations, and the ISCC and NRCS would lead the effort on stream bank surveys.

In-stream monitoring of cold water biota and salmonid spawning beneficial use status following implementation of sediment abatement projects, and other projects such as structural habitat improvements, is key to establish the final sediment load reduction required by the TMDL. The bottom line for the Lower West Branch TMDL-IP is eventual restoration of the impaired beneficial uses. A condition of Full Support of these beneficial uses will be detected through periodic stream surveys using the IDEQ Beneficial Use Reconnaissance Project (BURP) protocol, or BURP equivalent methods. BURP data are assessed through IDEQ's Waterbody Assessment Guidance procedures to determine support status (Grafe *et al.* 2002). BURP in-stream sampling at

stream sampling at 4 sites within the LWB occurred in 1997 and 1998, and it was this data that led to the Not Fully Supporting status.

In-stream monitoring should be completed a minimum of every five years at randomly selected upper to lower sites within the main stem low gradient channel of LWB. Monitoring should assess a stream reach length that is at least 40 times bankfull width, and include sampling for macroinvertebrates, and electro-fishing. Surrogate targets established in the final TMDL-TP, such as percent fines, residual pool volume, or TSS, may also be monitored in a manner determined in the plan.

1.16 Feedback Loop

A feedback loop provides the needed information on how the TMDL-IP is working through time, and what modifications need to be made for improving the performance and goals of the TMDL-IP. The feedback loop, and ultimate success of watershed restoration, will need the following features:

- active long-term commitment and participation of the WAG,
- long-term commitment of identified responsible agencies to carry out actions listed in the TMDL-IP,
- a good tracking system of TMDL-IP projects completed, and an accounting method of new land use activities occurring outside the purview of the TMDL-IP,
- a commitment to BMP effectiveness monitoring and in-stream monitoring, including good documentation of results and analysis,
- annual progress reports,
- review and comment of the annual progress reports by the WAG, and
- annual meetings of the WAG with the intent of modifying the TMDL-IP plan based on information gained and documented through-out the previous year.

Chapter 2. TMDL Implementation Plans

Section 2.1 Integrated Summary Table of Implementation Plan Projects

Sections 2.2 through 2.7 present six TMDL Implementation Plans based on categories of land use, ownership/management jurisdictions, and/or regulatory jurisdictions. These Sections were primarily compiled from draft reports submitted in response to a July 2003 request package from IDEQ (see Section 1.5).

In these TMDL-IP Sections, there is considerable narrative of programs, policies, regulations, recommendations, funding sources, etc. Specific proposed Action Items have been culled out of the submitted reports and placed into tabular form as presented in Table 5. Several of the proposed Action Items can be initiated immediately within the existing programmatic and financial resources of the respective government agencies. Many of the Action Items will require additional funding, and need to go through a priority ranking system by the WAG, followed by an effort to seek and secure the needed funding. Table 6 shows a proposed extension of Table 5 that could be used for tracking and assigning priority ranks (see Section 1.9).

Table 5. Summary Tables of Lower West Branch Implementation Plans in Sections 2.2 – 2.7.

Table 5A. Proposed Action items Identified in the Forest Practices Implementation Plan, Section 2.2

Item No.	Stream/ subwatershed	Project type	Practices	Project Location	Units Treated	Date Ident.	Date Comp.	Participating Partners
Action Items Identified by IDL in Section 2.2.1								
1	Watershed wide	Forest Practices Working Group (FPWG)	Develop SSBMPs; examine and modify existing policies & regulations, identify improvement projects.	watershed wide	varies	2004	ongoing	IDL, USFS, WDNR, industrial timber, non-industrial timber (the FPWG)
2	Pine Creek	Road	Gravel	Unknown	unk		2003	not sure
3	Pine Creek	Road	New ditches, relief culverts	Unknown	unk		2003	not sure
4	Pine Creek	Road	6-8 culvert replacements on Class II streams	Sections 26, 27, 28	8 CMPs	2004		FPWG, landowners, BCRD
5	Pine Creek	Road	Improve road crossing approach on two perennial stream crossings	Section 26 & 27	2 SCs	2004		FPWG, BCRD
6	Pine Creek	Fill slope	Repair fill slope failure	T56N, R5W, S10E		2004		IDL
7	Watershed wide	Public I&E	Develop brochure explaining SSBMPs	watershed landowner	n.a.	2004		FPWG
8	Watershed wide	Public I&E	Develop press release of SSBMPs	watershed landowner	n.a.	2004		FPWG
9	Watershed wide	Public I&E	Field trip to demonstrate SSBMPs	watershed landowner	n.a.	2004		FPWG
10	Watershed wide	Audits	Annual audits of SSBMPs	watershed landowner		2004	annual	FPWG
11	Watershed wide	Inspections	Level of routine FPA inspections will be ?	watershed landowner	n.a.	2004	ongoing	IDL
12	Watershed wide	Inspections	BMP implementation monitoring	watershed landowner	n.a.	2004	ongoing	FPWG
13	Watershed wide	CWE	Reapply CWE inventory	watershed landowner	n.a.	2004	prop. 2008	IDL, IDEQ
14	Watershed wide	Audits	Internal IDL audits	watershed landowner	n.a.	2004	ongoing	IDL

Table 5A. Continued

Item No.	Stream/ Subwatershed	Project type	Practices	Project Location	Units Treated	Date Ident.	Date Comp.	Participating Partners
Action Items Identified by USFS in Section 2.2.2								
15	Lower W. Branch	Road	Armor road approach with 4" minus rock, create rock berm to intercept sediment	57A	2 acres	2003	2003	USFS
16	Lower W. Branch	Str. Cross.	Place large boulders to stop 4-wheel access to stream crossing	57A	2 SCs	2003	2003	USFS
17	Rogers-Mosquito	Cut Banks	Willow cuttings, seed, and mulch		0.3 mi	2003		USFS
18	Butch Creek	Road	Check dams to prevent erosion	ditches to 1st order str	20 CDs	2003		USFS
19	Butch Creek	Road	Road obliteration	FRds 2730B, 462E	1.0 mi	2003		USFS
20	Lower W. Branch	Road	Basic maintenance; blading, culvert clean out, ditch cleaning	FRds 416, 334 and 2291: yearl	varies (mi)	2003		USFS
21	Lower W. Branch	Road	Basic maintenance; blading, culvert clean out, ditch cleaning	FRds 305, 318 and 1092: every 3 year	varies (mi)	2003		USFS
Additional Action Items Identified by IDEQ for Section 2.2								
22	Lower W. Branch	Slopes	Develop SSBMPs for forest practices on steep canyon slopes	From Peninsula Roa	unk. acres	2003	ongoing	FPWG
23	Watershed wide	Steam. banks	Develop SSBMPs within FPA - SPZ in areas of eroding banks & shade protection need	watershed wid	unk. miles	2003	ongoing	FPWG
24	Tribs. crossing Bear Paw Road	Road	SSBMPs for timber access roads abutting Bear Paw Road	Bear Paw Roa	unk. appr.	2003	ongoing	FPWG
25	Upper Lower W. Branch	Road	Examine culvert discharges for creation of 1st order channelization of flow & sediment	FRd 305 in Secs. 11, 2 and 3	culverts	2003		USFS
26	Butch Creek	CB/Road	Cut bank and road surface erosion identified in CWE inventory	FRd 1142 in Sec.	unk. miles	2003		USFS
27	Flat Creek	Road	CWE - SMP: combined road erosion	FRd 1095A	unk. miles	2003		USFS
28	Tributaries to Bear Paw Creek	CB/Road	Cut bank and road surface erosion identified in CWE inventory	FRd 1113A in Secs. 23 and 2	unk. miles	2003		USFS

Table 5A. Continued

Item No.	Stream/ subwatershed	Project type	Practices	Project Location	Units Treated	Date Ident.	Date Comp.	Participating Partners
Additional Action Items Identified by IDEQ for Section 2.2								
29	Ojibway headwaters	Road	Cut bank and road surface erosion identified in CWE inventory	FRd 318F in Sec. 1	unk. miles	2003		USFS
30	Tunnel Creek	Str. Channel	CWE - SMP: channel scouring from culvert discharge	Spur road off FRd 1332	culvert	2003		USFS
31	Tunnel Creek	Road	CWE - SMP: road erosion at crossing	RFd 1332, Section 1	SC	2003		USFS

Table 5B. Proposed Action items Identified in the Agricultural Practices Implementation Plan, Section 2.3

Item No.	Stream/ subwatershed	Project type	Practices	Project Location	Units Treated	Date Ident.	Date Comp.	Participating Partners
Action Items Identified by Idaho Conservation Partnership (ICP) in Section 2.3.1								
32	Idaho watershed	Public I&E	Quarterly newsletter to LWB landowners	watershed wide	n.a.	2003	ongoing	ISCC, NRCS, BS&WCD (i.e. ICP)
33	Idaho watershed	Programs	Initiate Agricultural Waste & Nutrient Management recommendations in section 2.3.1.i	watershed wide	unk.	2003	ongoing	ICP, landowners
34	Idaho watershed	Programs	Initiate Beaver Dam recommendations in section 2.3.1.ii	watershed wide	unk.	2003	ongoing	ICP, landowners, FPWG, IDFG
35	Idaho watershed	Programs	Initiate Engineering Techniques recommendations in section 2.3.1.iii	watershed wide	unk.	2003	ongoing	ICP, landowners, FPWG, IDFG
36	Idaho watershed	Programs	Initiate Wetland Enhancement & Creation recommendations in section 2.3.1.iv	watershed wide	unk.	2003	ongoing	ICP, landowners, FPWG, IDFG, ACOE
37	Idaho watershed	Programs	Initiate Erosion Control with Soil Bioengineering/Geotechnical Construction Techniques recommendations in section 2.3.1.v	watershed wide	unk.	2003	ongoing	ICP, landowners, FPWG, IDFG

Table 5B. Continued

Item No.	Stream/subwatershed	Project type	Practices	Project Location	Units Treated	Date Ident.	Date Comp.	Participating Partners
Action Items Identified by Idaho Conservation Partnership (ICP) in Section 2.3.1								
38	Idaho watershed	Programs	Initiate In-stream Fish Habitat Improvement recommendations in section 2.3.1.vi	watershed wide	unk.	2003	ongoing	ICP, landowners, FPWG, IDFG
39	Idaho watershed	Programs	Initiate Livestock Management Recommendations in section 2.3.1.vii	watershed wide	unk.	2003	ongoing	ICP, landowners
40	Idaho watershed	Programs	Initiate Riparian Zone Management recommendations in section 2.3.1.viii	watershed wide	unk.	2003	ongoing	ICP, landowners, FPWG
41	Idaho watershed	Programs	Initiate Roadside Erosion Management recommendations in section 2.3.1.ix	watershed wide	unk.	2003	ongoing	ICP, landowners, FPWG, BCRD
42	Moores Creek	CCRP	Cattle exclusion fencing along stream, riparian planting of shrubs & trees, improved stream crossings	middle Moores Creek agricultural & meadow land	acres, stream mi, & 2 SCs	2002	in progress	ICP, landowner
43	Snow Creek	Agriculture	Appropriate agricultural programs	Snow Creek valley	unk.	2003		ICP, landowner
43	Tunnel Creek	Agriculture	Appropriate agricultural programs	Tunnel Creek agric. land	unk.	2003		ICP, landowner
44	Ole/Slough Creeks	Agriculture	Appropriate agricultural programs	Ole/Slough agric. land	unk.	2003		ICP, landowner
45	Lower W. Branch	Agriculture	Potential animal feeding operation	LWB near Moores Creek mouth	unk.	2003		ICP, landowner
46	Moores Creek	Agriculture	Appropriate agricultural programs	Upper Moores Creek	unk.	2003		ICP, landowner
47	Peewee Creek	Agriculture	Appropriate agricultural programs	Identified Peewee Creek agric. & meadow land	unk.	2003		ICP, landowner
Action Items Identified by Washington Conservation Partnership (WCP) in Section 2.3.2								
48	Flat Creek	Agriculture	An array of agricultural conservation practices	Flat Creek agricultural landowner, Section 1	acres & stream mi, & SCs	2002	in progress	NRCS & POCD (i.e. WCP), landowner
49	Bear Paw Creek	Road	Stabilize eroding road surface and cutbanks to stream crossings, improve crossings	Bear Paw Creek Section 1	2 SCs	2003	In progress	WCP, landowner

Table 5C. Proposed Action items Identified in the County and State Road Implementation Plan, Section 2.4

Item No.	Stream/ subwatershed	Project type	Practices	Project Location	Units Treated	Date Ident.	Date Comp.	Participating Partners
Action Items Identified by County Road Departments in Section 2.4.1								
50	Streams crossing Under Bear Paw Rd	Road Ditches	Place rock check dams within Bear Paw Road drainage ditches	Bear Paw Road Sections 18, 7, 6, 31, 19, 13 & Snow Creek Rd. & Johnson Cutoff Rd	145 CDs	2003		BCRD, POCRD, IDEQ, NRCS
51	Lower W. Branch	Culvert	Replace twin 4 foot culverts with either bottomless arch or large diameter culvert	Bear Paw Road at LWB crossing	1 SC	2003		POCRD, POCD, NRCS, USFS, WDFC
Additional Action Items Identified by IDEQ for Section 2.4								
52	Slough Creek	Culvert	Replace undersized culvert	Bear Paw Road at Slough Creek crossing	1 CMP	2003		BCRD
53	PeeWee Creek	Road	CWE - SMP: road erosion at crossing	Peterson Road, Sec. 2	1 SC	2003		BCRD
54	Pine Creek	Road	Road & culvert improvements identified by IDL & CWE in items 3-5	Pine Creek subwatershed	SCs	2003		BCRD
55	Streams crossing Under Hwy 57	Road	Maintenance procedures to minimize sediment input at stream crossings	LWB and tributaries crossing under Hwy 57	SCs	2003		IDT

Table 5D. Proposed Action items Identified in the Bonner County Planning & Zoning Implementation Plan, Section 2.5

Item No.	Stream/ subwatershed	Project type	Practices	Project Location	Units Treated	Date Ident.	Date Comp.	Participating Partners
Action Items Identified by IDEQ for Section 2.5								
56	Idaho watershed	Erosion, stormwater	Improved compliance of Bonner County Stormwater Ordinance #343	Idaho watershed	n.a.	2003		BCP&Z, landowners
57	Idaho watershed	Public I&E	Assistance provided to landowners for better erosion and stormwater control	Idaho watershed	n.a.	2003		BCP&Z, landowners
58	Pine Creek	Road & Lot	Erosion control on private land identified in CWE inventory	Pine Creek, Section 2	n.a.	2003		BCP&Z, landowners

Table 5D. Continued

Item No.	Stream/subwatershed	Project type	Practices	Project Location	Units Treated	Date Ident.	Date Comp.	Participating Partners
Action Items Identified by IDEQ for Section 2.5								
59	Snow Creek	Road	CWE - SMP: road erosion at culvert cutbanks on private road	Snow Creek, Section 2	1 SC	2003		BCP&Z, landowners
60	PeeWee Creek	Road	CWE - SMP: road erosion at culvert crossing on private road	Peewee Creek Section 2	1 SC	2003		BCP&Z, landowners

Table 5E. Proposed Action items Identified in the Fisheries Management Implementation Plan, Section 2.6

Item No.	Stream/subwatershed	Project type	Practices	Project Location	Units Treated	Date Ident.	Date Comp.	Participating Partners
Action Items Identified by Idaho Dept. of Fish & Game in Section 2.6.1								
61	Watershed wide	Project reviews & comment	Review of timber sales, road construction projects, and stream alteration permits for demonstration of no net increase of the pollutant of concern.	watershed wide	unk.	2003	ongoing	IDFG
Action Items Identified by Washington Dept. of Fish & Wildlife in Section 2.6.2								
62	Washington watershed	Public assistance	In-stream improvements of fish habitat	watershed wide	stream feet	2003	ongoing	WDFW, landowners
63	Washington watershed	Technical review	Hydraulic Project Approval for proposed projects within Ordinary HWL	watershed wide	unk.	2003	ongoing	WDFW, POCRD, WCP, WDNR, landowners
Additional Action Items Identified by IDEQ for Section 2.6								
64	Watershed wide	In-stream habitat	Identify willing landowners to cooperate for in-stream fish habitat improvements on waters traversing through their property	watershed wide	stream feet	2003		IDEQ, IDFG, WDFW, landowners

Table 5F. Proposed Action items Identified in the Environmental Regulation and Oversight Implementation Plan, Section 2.7

Item No.	Stream/subwatershed	Project type	Practices	Project Location	Units Treated	Date Ident.	Date Comp.	Participating Partners
Action Items Identified by IDEQ in Section 2.7.1								
65	Watershed wide	Project reviews & comment	Review of timber sales, road construction projects, and stream alteration permits for demonstration of no net increase of the pollutant of concern.	watershed wide	unk.	2003	ongoing	IDEQ
66	Watershed wide	Oversight	Tracking and reporting pollution abatement projects and progress	watershed wide	n.a.	2003	ongoing	IDEQ & WAG
67	Watershed wide	WAG Coordination.	Working with the WAG to review TMDL-IP progress, and through feedback, periodically modify the TMDL-IP	watershed wide	n.a.	2003	ongoing	IDEQ & WAG
68	Watershed wide	Liaison	Contact and liaison with landowners and agencies to explore improvement projects	watershed wide	n.a.	2003	ongoing	IDEQ, WAG, landowners
69	Watershed wide	Funding	Explore and assist with funding resources, opportunities, grant applications	watershed wide	n.a.	2003	ongoing	IDEQ, WAG, landowners
70	Idaho watershed	Monitoring	Periodic in-stream monitoring through Beneficial Use Reconnaissance Project, and TMDL-IP effectiveness monitoring	watershed wide	n.a.	2003	ongoing	IDEQ
Action Items Identified by WDOE in Section 2.7.2								
71	Washington Watershed	Technical Assistance	Provide technical assistance in meeting Idaho TMDL goals	watershed wide	n.a.	2003	ongoing	WDOE & WAG
72	Washington Watershed	Funding assistance	Explore and assist with funding resources, opportunities, grant applications	watershed wide	n.a.	2003	ongoing	WDOE & WAG
73	Washington Watershed	Coordination	Facilitating and working with other Washington state agencies, POCD, NRCS, and WRIA 62 Planning Unit group in TMDL related issues	watershed wide	n.a.	2003	ongoing	WDOE, WAG, WRIA 62 group

Abbreviations Used in Table 5 above, and Table 8 of USFS Completed Projects (Section 2.2.2)

BL	Road Bladed	RCMP	Removed Corrugated Metal Pipe	SCBL	Stream Crossing Block
CD	Check Dam	RD	Rolling Dips	SE	Seeded
DA	Ditch Armoring	REC	Road Reconditioning	SF	Silt Fence
EC	Erosion Control	RECOMP	Repaired CMP	SSE	Spot Seeded
FER	Fertilized	RERD	Reroute Road	WB	Water-barred
MUL	Mulch	RSS	Spot Surfacing	WBT	Water Bar Treatment
NCMP	New CMP	RSUR	Road Resurfacing		
PWI	Planted Willow	SB	Sediment Basins		
RCL	Road Closure	SC	Stream Crossing		
RCL-O	Road Closure - Obliteration	SCB	Stabilized Cutbank		

Table 6. Proposed Tracking Sheet for Sediment Load Reduction, Cost-Effectiveness, Priority Setting, and Cost Accounting for Projects

Item No.	Estimated sediment reduction in tons/yr or percent reduction from current (if applicable)	Estimated cost				Estimated cost effectiveness \$/reduction unit (if applicable)	Designated Priority rank, 1, 2, or 3	Date Compl.	Actual Spent			
		Federal \$	State \$	Private \$	Grant \$				Federal \$	State \$	Private \$	Grant \$
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

2.2 Forest Practices Implementation Plan (FPIP)

The Idaho Department of Lands (IDL) will be the lead agency in compiling the FPIP report section. The report section will have contributions from the following agencies:

IDL as administrator of the Idaho Forest Practices Act (FPA). IDL will consult and develop report contributions from representatives of the non-industrial and industrial timber industry in Idaho. Scott Marshall and Jim Colla are the leads for IDL, working with staff from the Sandpoint and Cavanaugh Bay IDL regional offices. Jim Linton is the WAG member representing private non-industrial timber, and Wade Pierce from Stimson Lumber Co. is the WAG member representing the industrial timber industry.

U.S. Forest Service. Kathy Murphy and Jill Cobb from the Priest Lake Ranger District are the WAG members for USFS.

The Washington Department of Natural Resources (WDNR) as administrator of the WA - FPA. The WDNR will consult and develop report contributions from representatives of the non-industrial and industrial timber industry in Washington. Marc LeClair and Jill Jones are the WAG members from WDNR, and Wade Pierce also represents industrial timber in Washington.

A good deal of the FPIP, and the other implementation plan sections, revolves around improvement targets on unpaved roads, particularly at stream crossings. A road map of the watershed is shown in Figure 5. There is a tremendous amount of detail in the road network that simply cannot be captured in this small-scale map. In addition, the road network changes over time with road obliterations, new temporary roads for timber sales, and new permanent private roads servicing rural home development. Poster sized maps with projects completed and proposed improvements on road segments will be developed as part of implementation tracking.

2.2.1 Submittal by Idaho Department of Lands

LOWER WEST BRANCH TMDL FOREST PRACTICES IMPLEMENTATION PLAN

December 2003

I. Introduction

This Forest Practices Implementation Plan outlines an approach to meeting the requirements for pollution reduction set forth in the Lower West Branch of Priest River total maximum daily load (TMDL). This plan covers the following drainage units (Figure 2):

Figure 5. Road map of the Lower West Branch Watershed.

- Pine Creek Subwatershed
- Snow Creek Subwatershed
- Lower-East Sidewall
- Moores Creek Subwatershed
- Flat Creek Subwatershed
- Headwaters Sidewall
- Bear Paw Creek Subwatershed
- Center-West Sidewall

All or portions of Flat Creek, Headwaters Sidewall, Bear Paw Creek , and Center-West Sidewall drainage units are within the state of Washington where Washington Department of Natural Resources has jurisdiction over forest practices.

According to the TMDL, forest land comprises the majority of the total acreage within the TMDL planning area. Industrial private, non-industrial private, U.S. Forest Service, and State endowment lands are present in this planning area.

The Lower West Branch TMDL document prepared by the Idaho Department of Environmental Quality (IDEQ) lists non-irrigated crop and grazing lands, failures on roads (crossings and fill prisms), and road and skid trail construction associated with forest land harvest activity as the primary nonpoint source of pollutants. This portion of the TMDL implementation plan addresses nonpoint source pollution from road and skid trail construction and other forest practices activities associated with timber harvest in order to reduce sediment loads. In addition, the Cumulative Watersheds Effects Process for Idaho (CWE), which was conducted in all these drainages, has preliminarily identified adverse temperature conditions. This plan will address those temperature conditions.

Forest roads have long been recognized as a potential main source of sediment from forest harvesting activities. Forest road sedimentation problems are most acute during major storm events and on new road construction, especially when roads are located close to streams when appropriate BMP's have not been properly applied. As with other soil disturbances, sedimentation generally declines at vegetation establishment on roadsides and implementation of erosion control measures.

To mitigate for any potential impacts from forest practices, state, federal and other technical specialists have conducted varying degrees of subwatershed assessments in these drainages. The assessments include the CWE process noted earlier on State and private lands, and U.S. Forest Service watershed assessment models on federal lands. These assessments are the basis for prescribing additional practices in the watersheds to insure allocated sediment loads are reduced and water quality standards are met and maintained. Generally, these practices include elements that address site specific road drainage and stabilization measures, fish passage through stream crossings, and streamside canopy cover and large woody debris recruitment.

II. Public Involvement

In accordance with Idaho's Nonpoint Source Management Plan, the Department of Lands is the designated lead agency for Forest Practices activities on all forest lands in the state of Idaho, including federal lands. As the lead agency, the Department of Lands is responsible for soliciting input from affected landowners and technical specialists to help develop practices that will fully restore the beneficial uses.

In accordance with FPA Cumulative Watershed Effects rules, for each subwatershed, the Department of Lands will form a forest practices working group consisting of industrial and non-industrial forest landowners, state and federal land managers. This group will be charged with evaluating the analysis data generated from the TMDL and the resulting preliminary management practices. The group will finalize watershed-specific best management practices and implementation guidelines. The Department of Lands will facilitate these groups and report progress and recommendations to the appropriate Watershed Advisory Group (WAG) or Basin Advisory Group (BAG) as recommended by IDEQ.

III. Implementation Time Line

TIME SCHEDULE

WORK TO BE DONE	DATE	RESPONSIBLE PARTY
FINALIZE FOREST PRACTICES IMPLEMENTATION PLAN	December 2003	IDL –FPA Coordinator
FORM WORK GROUPS	December 2003	IDL- Forest Practice Advisor
CWE REVIEWED - SSBMPs FINALIZED	April 2004	Work Group
APPROVAL	June 2004	IDEQ
COMMENCE SSBMP IMPLEMENTATION AND DOCUMENTATION	November 2004	Landowners and FPA Advisor
FOLLOW-UP MONITORING	2008	CWE Coordinator Landowners, IDEQ

IV. Forestry Implementation Plan Funding

Under the FPA, the party responsible for conducting the forest practice must meet applicable rules and BMPs. IDL has responsibility to administer and enforce the FPA. The cost of complying with the FPA is borne by the operator, landowner, or third party, depending on any contractual agreements that may be in existence. At present, private forest landowners are annually assessed \$ 0.10 per acre for all forestlands and \$ 0.12 per thousand board feet harvested to help fund IDL administration of the FPA. State endowment lands fund FPA administration out of dedicated funds appropriated for timber sale administration. IDL also has authority to expend funds out of a rehabilitation account, but this is limited to only those costs associated with the repair of unsatisfactory practices identified in the Notice of Violation process.

Some site-specific practices that may arise out of the work group process may be considered voluntary and thus the operator or landowner may not be required to bear the full cost of implementation. In addition, current and prospective funding levels may not be adequate for IDL to oversee administration of additional practices in the drainages. To fully implement additional practices, additional sources of funding must be secured for operator implementation and IDL administration. Options for increased funding include additional landowner assessments, income tax credits, increasing federally funded forestry cost share practices, or grants.

[The following is a note provided by Tom Johnson, IDL, Sandpoint, on cost-share programs that will be of value to explore within the LWB watershed]:

Forest Land Enhancement Program (FLEP) is the cost-share component to the Forest Stewardship Program. It provides up to 75% funding for activities such as tree planting, thinning, management plans or hazard abatement. The Idaho Forest Legacy Program provides funding for conservation easements to qualified landowners to maintain a forest land base.

Information concerning these programs is available at our Dept. of Lands web site www2.state.id.us/lands. Look under Quick Reference for Forestry Assistance. You will also find Forest Stewardship Guidelines for Water Quality BMPs. This is the picture book guide to the Idaho Forest Practice Act (FPA).

V. Goals and Objectives

The goal of the Forest Practices Implementation Plan is to restore the identified beneficial uses to full support status. In all eight of the above listed segments, sediment is the pollutant that is causing the nonattainment of beneficial uses. In addition, CWE has identified an adverse condition for stream temperature in some reaches.

The Lower West Branch TMDL calls for specific reduction of these pollutants. The short term objective, over the next 6 months, of the Forest Practices Implementation Plan will be to finalize the management practices contained in this plan needed to reduce the amount of sediment entering the streams from forest practices activity.

Potential sources of sediment from forest lands include forest roads, skid trails, landings and stream crossings. In addition, there are a number of legacy issues that occur within this subbasin related to historic forest practices (fires and other activities) that may have impacted the function and health of the riparian zones and the stability of stream channels. The long-term goals of this plan will be to implement identified mitigation to maintain or restore these riparian zones and stream channels to a full functioning condition.

VI. Linkages to Federal and State Water Quality Programs

Under the 1972 Clean Water Act, Congress authorized states to control nonpoint sources of pollution through the implementation of Best Management Practices (BMPs). A BMP is defined as a measure determined to be the most effective and practical means of preventing or reducing pollution inputs from point or nonpoint sources in order to achieve water quality goals. Idaho's

forestry BMPs are included in the Idaho Forest Practices Act, title 38, chapter 13 Idaho Code, passed by the legislature in 1974. The Act and associated administrative rules have been updated on several occasions since that time. The FPA is designed to assure the continuous growing and harvesting of forest tree species, and to protect and maintain the forest soil, air, water resources, wildlife and aquatic habitat. FPA rules address timber harvesting practices, forest road construction and maintenance, forest tree residual stocking and reforestation, use of chemicals, and the management of slash and the use of prescribed fire.

The Idaho Water Quality Standards and Waste Water Treatment Requirements, title 39, chapter 1 Idaho Code reference the Forest Practices rules as the approved BMPs for silvicultural activities. The Idaho Department of Lands is the designated state agency responsible for administering and enforcing the FPA on all forest lands in the state. On federal lands, the FPA must be met or exceeded. Generally, additional regulatory and administrative review requirements under NFMA and NEPA result in practices that exceed FPA minimum standards.

Provisions are also included within the FPA to address water quality impacts across the drainages. In 1991, the FPA was amended to include provisions for minimizing watershed impacts resulting from cumulative effects of multiple forest practices. The Idaho Cumulative Watershed Effects (CWE) process includes assessment of erosion hazards, canopy closure, stream temperature, hydrology, sediment delivery, channel stability, beneficial uses and nutrients. The CWE process provides a broad scale watershed assessment that determines if water quality problems exist and what should be done to mitigate those problems. This is done as part of a cooperative approach with affected landowners through development of site specific forestry BMPs.

In 1999 Department of Lands field crews conducted CWE assessments in the eight subwatersheds in this plan. Information gained from those field studies combined with parallel work conducted by the U.S. Forest Service have been consolidated into a mitigation plan for the drainages with respect to forest practices activities.

VII. Sediment Load Allocation and Reduction

The sediment load and reduction allocations were defined in the TMDL by ownership/management. The following table summarizes the data from the TMDL as follows:

	<u>Load Allocation (t/yr)</u>	<u>Load Reduction (t/yr)</u>
USFS	4,186	2,105
Industrial Timber (ID & WA)	101	20
Private Forest & Ag Lands (WA)	152	66
Private Forest & Ag Lands (ID)	1,131	610
Endowment Land (ID)	46	8
Bonner County Roads	199	189

VIII. Proposed Management Actions

A. Convene Forest Practices Working Group

1. Membership to include landowner representatives from the following:

- USDA-Forest Service – Priest Lake Ranger District
- Idaho Department of Lands –Priest Lake and Pend Oreille Lake Areas
- Stimson Lumber Company
- Non-industrial Private Forest Owners

December 2003

N/C

B. Legacy Problems

1. CWE Management Problems

The Forest Practices Working Group will evaluate, prescribe repairs, estimate repair costs, prioritize and seek funding for the 15 CWE Management Problems and 2 mass failures identified in CWE reports.

The Forest Service, Idaho Department of Lands and Stimson Timber Company will identify other legacy problems within their respective ownerships and the Forest Practices Working Group will recommend priorities for repairs.

April 2005

Costs to be determined.

2. Pine Creek Residential Access Roads

Pine Creek contains approximately 5 miles of roads which are used jointly for forest practices and access to rural residential tracts. Significant portions of these roads have been recently rocked (mostly using 3”+ coarse base rock) to improve all weather access. New ditches and ditch relief culverts were installed along some locations. However, no new culverts were installed at any of the stream crossings some of which contain undersized pipes. Although all of these streams are intermittent Class II (non-fish bearing), approximately 6-8 culverts should be replaced to meet current Forest Practices Act standards.

Fall 2003

\$15, 000

Summer 2004, 2005, 2006

\$25, 000

3. Pine Creek Crossing

A privately maintained residential access / forest practices road crosses Pine Creek in Section 27, Township 57 North, Range 5 West. The crossing consists of a CMP approximately 6 feet in diameter and an earthen fill of about 200 feet. Although the culvert size and fill appear stable enough to handle high flows, this crossing should be

be evaluated for proper culvert size, fish passage and fill stability. A bridge might make a more suitable crossing if replacement is warranted.

April 2004 \$8,000 + If Needed

A minor amount of soil erosion resulting from exposed mineral soil is occurring at the southern approach to this crossing. Grass seed and straw mulch should satisfactorily reduce this erosion source.

April 2004 \$100

4. Pine Creek / State Endowment Land

A fill slope failure on State of Idaho Endowment Land in Section 5, Township 56 North, Range 5 West will be repaired as part of the development package for a future timber sale.

C. Site Specific Best Management Practices (SSBMPs)

1. The Forest Practices Work Group will develop Site Specific Best Management Practices to recommend for forest practices.

April 2004 Costs to be determined.

D. Information / Education for Private Forest Owners

1. Develop a brochure explaining SSBMPs for distribution to forest owners/operators obtaining a Notification of Forest Practice.

June 2004 \$300

2. Develop press release on SSBMPs for distribution to local media. (Priest River Times, Gem State Miner, etc.)

June 2004 N/C

3. Public / Landowner / Media Field Trip to view SSBMP implementation.

Summer 2005 \$500

4. Encourage forest landowners to develop forest management plans that identify water quality concerns and encourage the implementation of SSBMPs.

2003, 2004, 2005, 2006 N/C

E. Forest Practices Implementation and Effectiveness Audits

1. The Forest Practices Work Group will annually conduct an audit to determine the implementation and effectiveness of Site Specific BMPs and related projects within the Lower West Branch. Estimates of sediment reduction will be calculated during these audits to determine if TMDL goals are being met.

October 2004, 2005, etc.

\$500

As mitigation work is completed within the watershed, load allocations and reductions will be analyzed for calibrating the TMDL model. Load reduction calculations will be used as a method for relative comparisons and not as an absolute target. Load reduction targets may be utilized as indicators to assess the effectiveness of BMPs and sediment reduction projects.

IX. Compliance and Enforcement Actions

Prior to the harvest of timber a logging operator must notify the Department of Lands of planned timber harvest by filing a Certificate of Compliance and Notification of Forest Practices. This notification form lists the contractor responsible for slash management and the operator responsible for Forest Practices compliance, the landowner and the log purchasers. Fire hazards and basic forest environmental information on streams, soils, and slopes are collected in the form and identified on a map.

IDL has the authority to enter logging operations, to inspect for compliance with the Fire Hazard Reduction Laws and the FPA. Any time department personnel inspects a logging operation, a report of inspection will be completed that lists satisfactory practices and unsatisfactory rule violations. While most FPA rules are mandatory, application of BMPs resulting from the CWE process are encouraged but not mandatory.

When IDL has determined that the operator has violated any provision of the FPA, it shall be considered a violation. If the violation is minor, the operator may only receive an unsatisfactory inspection report. If the unsatisfactory items are corrected in a timely manner, no Notice of Violation will be issued. A Notice of Violation will be issued for all major infractions or if serious resource damage has occurred or will occur when an operator has multiple minor infractions which are collectively significant or when an operator fails to correct previously noted unsatisfactory conditions.

The Notice of Violation will specify the reason for the violation, any damage or unsatisfactory condition and required repair or mitigation. If the operator corrects the violation, no further action is taken. If an operator fails to correct the Notice of Violation, the department can complete the repair and take civil action to recover repair and legal costs. Provisions also exist to deny an operator the ability to obtain new notifications if an operation has a current violation or the operator can be required to post a bond if it is determined the operator is a repeat or habitual offender of the FPA.

As IDL does not always have the resources or the need to inspect all logging operations in the area, department personnel work cooperatively with the University of Idaho, industry,

environmental groups and other agencies to assist in training private forest landowners and logging operators on appropriate forest management and water quality protection practices. In addition, the Associated Logging Contractors has embarked on an accreditation program for loggers in the State of Idaho. Most purchasers of forest products in this area require that only accredited loggers can sell logs to local mills.

Accreditation is obtained through rigorous initial training and continuing education. Performance standards are verified by follow-up field inspections for compliance with the Forest Practices Act standards.

X. Implementation Effectiveness Monitoring Plan

IDL and other landowners employ rigorous BMP implementation monitoring programs as funding allows. However, many studies have been conducted that quantitatively demonstrate BMP effectiveness and past FPA audits have demonstrated that if BMPs are properly applied, they are effective at reducing impacts to beneficial uses.

Forest practices in this drainage will be inspected for compliance with the FPA and any other recommended practices. If any unsatisfactory conditions are identified, they will be corrected using IDL standard enforcement procedures as described in the preceding section. If any voluntary BMPs are not met, the landowner operator will not be eligible for any cost-share funds. In addition, provisions exist in the FPA to require operating bonds of repeat or habitual violators of the FPA and IDL has the authority to deny a notification for operators with a current Notice of Violation. The IDL office in Sandpoint will be the office of record for all inspection reports in these drainages.

The Idaho Cumulative Watershed Effects process will be reapplied in 2008 to help monitor progress in meeting beneficial use of attainment goals.

In addition to the regular FPA inspection program and follow-up CWE assessment conducted by IDL, the Forest Practices Water Quality Management Plan calls for state-wide audits of the application effectiveness of Forest Practices rules.

In addition, the department conducts internal audits on an annual basis. In the past, these audits have demonstrated a very high rate of compliance with standard FPA rules. The audit process is a key component of the feedback loop mechanism used by the Forest Practices Act Advisory Committee and Idaho State Board of Land Commissioners to evaluate the effectiveness of Idaho forestry BMPs. Selected sales will be audited within these drainages on an annual basis using the established audited protocols.

2.2.1.1 IDEQ Comments to Submittal by Idaho Department of Lands

IDL has committed in their plan to form a Forest Practices Working Group to develop specific TMDL implementation approaches for the Lower West Branch. In IDEQ's request package to IDL for input to the draft TMDL-IP (July 2003), there were some specific issues that IDEQ felt needed to be addressed. These issues are listed here for consideration by the Working Group:

To what degree if any does IDL modify its FPA administrative approach within an EPA approved TMDL watershed?

Identify any land stewardship programs that would help finance or provide assistance for small timber landowners on projects to reduce sediment, create streamside buffers, etc. Could logger training and accreditation programs be further promoted within the Priest River Basin?

There are some Site Specific Best Management Practices (SSBMPs) that need to be considered within identified sections of the watershed. Examples of areas where SSBMPs are perceived to be needed by IDEQ, include:

- The steep canyon slopes adjacent to Lower West Branch main stem from the Peninsula Road Bridge upstream for about 5 river miles. These slopes are known to be susceptible to mass failure. Based on estimates of documented past failures, the Lower West Branch TMDL estimated an average slide of 12,000 tons occurring every 15 years. This is a sediment load directly into the stream, and is a loading that is vastly greater than other nonpoint source contributors. There is a need for SSBMPs to be established to lessen the potential threat of major slides into the stream. Documented landslides are, in part, a natural phenomenon, but at least one mass failure was directly attributed to a vegetative clearing on a steep slope followed by a thunderstorm and subsequent slide (Figure 6).



Figure 6. Landslide into Lower West Branch main stem (1992) from canyon area just south of Pine Creek inflow.

- SSBMPs within the FPA Stream Protection Zones where Lower West Branch stream segments exhibit accelerated stream bank sloughing and erosion, and have a temperature adverse condition as determined by the CWE process.
- There has been a problem with timber access roads adjacent and abutting Bear Paw Road. In some observations by IDEQ, the access road approach abutting the county road was not armored, and produced significant sediment to the ditch system of Bear Paw Road. During rain storms and snow melt this sediment is delivered to streams crossing

crossing under the county road. In a couple of cases the initial logging road construction filled in the county road drainage ditch (no culvert), with the temporary blockage causing sediment runoff and road wash. SSBMPs need to be applied along Bear Paw Road.

2.2.2 Submittal by U.S. Forest Service

In the February, 2003 Lower West Branch WAG meeting, personnel from the USFS Priest Lake Ranger District submitted a list of road improvement projects completed between 1997 – 2002 on Federal lands within the watershed. The itemized list is shown in Table 8, and the USFS summary of work is shown below in Table 7. USFS also presented proposed projects beginning in 2003. These are entered in Table 5A, items 15 – 21. Items 15 and 16 were completed in 2003.

Table 7. Summary of Road Improvement Projects by the USFS within the Lower West Branch Watershed, 1997 - 2002

Sediment Reduction Project	Total Accomplishment
Road obliteration	40.7 miles
Culvert upgrades/new installations	59 each
Culverts removed	38 each
Road blading	78.9 miles
Seed, fertilizer, and mulch	4.2 miles
Hand waterbar	1.7 miles
Check dam installation	9 each
Waterbar and seeded	15.1 miles
Road reconditioning	88.3 miles
Sediment basins	21 each
Spot surfacing with rock aggregate	10.3 miles
Rolling dips	157 each
Erosion control and cutbank stabilization	7 acres
Road reroute	0.3 miles
Clean ditchlines	1,300 feet
Silt fences	200 feet
Willow stabilization	2 acres

Table 8. List of Completed Road Improvement Projects on National Forest Land in the Lower West Branch watershed, 1997 – 2002

Item No.	Stream subwatershed	Project type	Practices	Road Location	Units Treated	Unit Type	Date Ident.	Date Compl.
1	Moores	Road	Seeding, fertilizer, water bar	1098, 1042, 1042	6.8	miles		1997
2	Moores	Road	Blading	229	4.3	miles		1997
3	Moores	Road	Blading	41	0.9	miles		1997
4	Moores	Road	Blading	130	4.8	miles		1997
5	Butch	Road	Check dam	30	4	CD		1997
6	Butch	Road	Road reconditioning	30	5.9	miles		1997
7	Butch	Road	Silt fence	30	170	feet		1997
8	Butch	Road	Sediment basins	30	6	SB		1997
9	Butch	Road	Spot surfacing	30	--	RSS		1997
10	Butch	Road	New corrugated pipe	30	7	NCMP		1997
11	Butch	Road	Road reconditioning	46	3.8	miles		1997
12	Butch	Road	Spot surfacing	46	--	RSS		1997
13	Butch	Road	Rolling dips	46	14	RD		1997
14	Butch	Road	Sediment basins	46	1	SB		1997
15	Butch	Road	Spot surfacing	46	--	RSS		1997
16	Butch	Road	Rolling dips	46	1	RD		1997
17	Butch	Road	New corrugated pipe	46	2	NCMP		1997
18	Butch	Road	Spot surfacing	463	--	RSS		1997
19	Butch	Road	Rolling dips	463	3	RD		1997
20	Butch	Road	Sediment basins	108	1	SB		1997
21	Butch	Road	Spot surfacing	108	--	RSS		1997
22	Butch	Road	Rolling dips	108	19	RD		1997
23	Butch	Road	New corrugated pipe	108	1	NCMP		1997
24	Butch	Road	Sediment basins	1084	1	SB		1997
25	Butch	Road	Spot surfacing	1084	--	RSS		1997
26	Butch	Road	Rolling dips	1084	2	RD		1997
27	Butch	Road	Sediment basins	114	1	SB		1997
28	Butch	Road	Spot surfacing	114	--	RSS		1997
29	Murray TS	Road	Water bar, spot seed	1302	1.7	miles		1997
30	Ojibway TS	Ri. Zone	Planted willow, stabilize bank	318	2	acres		1997

Table 8. Continued

Item No.	Stream subwatershed	Project type	Practices	Road Location	Units Treated	Unit Type	Date Ident.	Date Compl.
31	12 Mile TS (Moore's?)	Road	Seed & fertilize closed roads	2291, 2291, landing	1	miles		1997
32	Purepaw	Road	New corrugated pipe	313	7	NCMP		1997
33	Purepaw	Road	Road reconditioning	313	2.8	miles		1997
34	Purepaw	Road	Sediment basins	313	7	SB		1997
35	Purepaw	Road	Spot surfacing	313	--	RSS		1997
36	Purepaw	Road	New corrugated pipe	111	1	NCMP		1997
37	Purepaw	Road	Road reconditioning	111	1	miles		1997
38	Purepaw	Road	Sediment basins	111	1	SB		1997
39	Purepaw	Road	Rolling dips	111	7	RD		1997
40	Purepaw	Road	Spot surfacing	111	--	RSS		1997
41	Stonebead (Tunnel & Snow)	Road	Road reconditioning	52	1.2	miles		1997
42	Stonebead (Tunnel & Snow)	Road	New corrugated pipe	52	3	NCMP		1997
43	Stonebead (Tunnel & Snow)	Road	Spot surfacing	52	--	RSS		1997
44	Stonebead (Tunnel & Snow)	Road	Road reconditioning	133	0.7	miles		1997
45	Stonebead (Tunnel & Snow)	Road	Spot surfacing	133	--	RSS		1997
46	Stonebead (Tunnel & Snow)	Road	Rolling dips	133	1	RD		1997
47	Stonebead (Tunnel & Snow)	Road	Road reconditioning	133	2	miles		1997
48	Stonebead (Tunnel & Snow)	Road	New corrugated pipe	133	1	NCMP		1997
49	Stonebead (Tunnel & Snow)	Road	Sediment basins	133	2	SB		1997
50	Stonebead (Tunnel & Snow)	Road	Spot surfacing	133	--	RSS		1997
51	Stonebead (Tunnel & Snow)	Road	Rolling dips	133	1	RD		1997
52	Stonebead (Tunnel & Snow)	Road	Road reconditioning	1092	3.5	miles		1997
53	Castro TS (?)	Road	Road closure and water bars	T347 & 984-B,C,I	6.5	miles		1998
54	Ojibway	Road	Roads treated - seeding, water bars	1109 & 318-J,F,G,H	2.6	miles		1998
55	Puzzle, Pee Wee TS	Landings	Erosion control	1314-C,D,F,H	5	acres		1998
56	West Moore's TS	Road	Road closure	2291	1	miles		1998
57	West Moore's TS	Road	Removed corrugated pipe	2291	3	RCMP		1998
58	West Moore's TS	Road	Water bar treatment	2291A	4	miles		1998
59	Ojibway	Road	Road closure - obliteration	Jeep trail	4	miles		1998
60	Ojibway	Road	Road closure - obliteration	Section 16 road	2	miles		1998

Table 8. Continued

Item No.	Stream subwatershed	Project type	Practices	Road Location	Units Treated	Unit Type	Date Ident.	Date Compl.
61	Ojibway	Road	Removed corrugated pipe	Section 16 road	11	RCMP		1998
62	Castro (?)	Road (?)	Check dam		5	CD		1998
63	Castro (?)	Road	Seeding, mulching	98	2.7	miles		1998
64	Murray Creek	Road	Seeding, fertilizer, mulching	1320	0.5	miles		1998
65	Ojibway	Road	Cut bank seeding & fertilizer	318	2	acres		1998
66	Flat & Moores Creek DFB	Road	Road resurfacing	30	0.2	miles		1998
67	Rogers & Mosquito	Road	Blading	109	9.6	miles		1998
68	Rogers & Mosquito	Road	Repaired corrugated pipe	109	1	RECMP		1998
69	Rogers & Mosquito	Road	Road resurfacing	109	0.1	miles		1998
70	Purepaw	Road	Blading	318 (from 1109 - 318A	6.4	miles		1998
71	Purepaw	Road	Spot surfacing	318 (from 1109 - 318A	--	RSS		1998
72	Moores	Road	Road resurfacing	41	0.6	miles		1998
73	Moores	Road	Ditch armoring	41	1300	feet		1998
74	Moores	Road	Blading	41	0.9	miles		1998
75	Moores	Road	Blading	229	4.3	miles		1998
76	Ole	Road	Blading	109	9.6	miles		1998
77	Ojibway	Road	Road closure - obliteration	Section 16 road	1.3	miles		1999
78	Moores	Road	Road closure - obliteration	2250	0.3	miles		1999
79	Ojibway	Road	Road closure - obliteration	1332	0.7	miles		1999
80	Bearpaw	Road	Road reroute to avoid slump	30	0.3	miles		1999
81	Flat Moores TS	Road	Road closure - obliteration	462	0.5	miles		2000
82	Flat Moores TS	Road	Removed corrugated pipe	462	3	RECMP		2000
83	Flat Moores TS	Road	Road closure - obliteration	462	0.4	miles		2000
84	Flat Moores TS	Road	Road closure - obliteration	462	0.4	miles		2000
85	Ojibway	Road	Road closure - obliteration	318	0.55	miles		2000
86	Ojibway	Road	Removed corrugated pipe	318	1	RECMP		2000
87	Ojibway	Road	Road closure - obliteration	318	1.4	miles		2000
88	Ojibway	Road	Removed corrugated pipe	318	10	RECMP		2000
89	Ojibway	Road	Road closure - obliteration	318	3.26	miles		2000
90	Ojibway	Road	Road closure - obliteration	1113	0.7	miles		2000

Table 8. Continued

Item No.	Stream subwatershed	Project type	Practices	Road Location	Units Treated	Unit Type	Date Ident.	Date Compl.
91	Quartz Jasper TS	Road	Road closure - obliteration	13350	0.88	miles		2000
92	Quartz Jasper TS	Road	Removed corrugated pipe	13350	7	RECMP		2000
93	Twelve Mile KV	Road	Water bars	2291E	1.7	miles		2000
94	Moores	Road	Road closure - obliteration	2291A	0.3	miles		2000
95	Moores	Road	Removed corrugated pipe	2291A	3	RECMP		2000
96	Moores	Road	Blading and water bars	130	4.8	miles		2000
97	Moores	Road	Rolling dips	130	10	RD		2000
98	Quartz Jasper TS (Moores)	Road	Road reconditioning	41	0.6	miles		2000
99	Quartz Jasper TS (Moores)	Road	Road reconditioning	416A	1.1	miles		2000
100	Quartz Jasper TS (Moores)	Road	Road reconditioning	131	3.7	miles		2000
101	Quartz Jasper TS (Moores)	Road	Spot surfacing	131	--	RSS		2000
102	Quartz Jasper TS (Moores)	Road	New corrugated pipe	131	3	NCMP		2000
103	Quartz Jasper TS (Moores)	Road	Road reconditioning	1314E	1.4	miles		2000
104	Quartz Jasper TS (Moores)	Road	Spot surfacing	1314E	--	RSS		2000
105	Quartz Jasper TS (Moores)	Road	Road reconditioning	1314E	0.9	miles		2000
106	Quartz Jasper TS (Moores)	Road	Spot surfacing	1314E	--	RSS		2000
107	Quartz Jasper TS (Moores)	Road	Road reconditioning	1314E	1	miles		2000
108	Quartz Jasper TS (Moores)	Road	Spot surfacing	1314E	--	RSS		2000
109	Quartz Jasper TS (Moores)	Road	Rolling dips	1314E	1	RD		2000
110	Quartz Jasper TS (Moores)	Road	Road reconditioning	133	3.3	miles		2000
111	Quartz Jasper TS (Moores)	Road	Spot surfacing	133	--	RSS		2000
112	Quartz Jasper TS (Moores)	Road	Rolling dips	133	8	RD		2000
113	Quartz Jasper TS (Moores)	Road	New corrugated pipe	133	8	NCMP		2000
114	Quartz Jasper TS (Moores)	Road	Road reconditioning	1335A	0.8	miles		2000
115	Quartz Jasper TS (Moores)	Road	Spot surfacing	1335A	--	RSS		2000
116	Quartz Jasper TS (Moores)	Road	Rolling dips	133	4	RD		2000
117	Quartz Jasper TS (Moores)	Road	Road reconditioning	223	1.3	miles		2000
118	Quartz Jasper TS (Moores)	Road	Spot surfacing	223	--	RSS		2000
119	Quartz Jasper TS (Moores)	Road	Road reconditioning	2232A	0.8	miles		2000
120	Quartz Jasper TS (Moores)	Road	Spot surfacing	2232A	--	RSS		2000

Table 8. Continued

Item No.	Stream subwatershed	Project type	Practices	Road Location	Units Treated	Unit Type	Date Ident.	Date Compl.
121	Quartz Jasper TS (Moores)	Road	Road reconditioning	224	0.4	miles		2000
122	Moores	Road	Blading	41	0.9	miles		2001
123	Lower West Branch	Road	Blading	30	9.5	miles		2001
124	Moores	Road	Blading	229	4.1	miles		2001
125	Moores	Road	Blading	130	5.6	miles		2001
126	Flat Moores TS	Road	Road obliteration	462A	4	miles		2002
127	Flat Moores TS	Road	Road obliteration	462I	1.7	miles		2002
128	Flat Moores TS	Road	Road obliteration	2730I	0.8	miles		2002
129	Flat Moores TS	Road	Road obliteration	131	3.6	miles		2002
130	Flat Moores TS	Road	Road obliteration	462I	0.8	miles		2002
131	Flat Moores TS	Road	Road obliteration	1336A	2.2	miles		2002
132	Flat Moores TS	Road	Road obliteration	1041I	0.4	miles		2002
133	Bear Paw (Purepaw TS)	Road	Ditch line and road surf. improv.	31	3	miles		2002
134	Moores	Road	Blading	229	4.3	miles		2002
135	Moores	Road	Blading	21	2	miles		2002
136	Lower West Branch	Riparian	Channel stabilized with boulders	229	100	feet		2002
137	Lower West Branch	Road	Spot surfacing	229	--	RSS		2002
138	Flat Moores TS (LWB)	Road	Road reconditioning	30	4	miles		2002
139	Flat Moores TS (Flat Creek)	Road	Road reconditioning	46	3.8	miles		2002
140	Flat Moores TS (Flat Creek)	Road	Spot surfacing	46	--	RSS		2002
141	Flat Moores TS (Flat Creek)	Road	Road reconditioning	462A	2.2	miles		2002
142	Flat Moores TS (Flat Creek)	Road	Spot surfacing	462A	--	RSS		2002
143	Flat Moores TS (Flat Creek)	Road	Rolling dips	462A	1	RD		2002
144	Flat Moores TS (Flat Creek)	Road	New corrugated pipe	462A	1	NCMP		2002
145	Flat Moores TS (Flat Creek)	Road	Road reconditioning	46	0.4	miles		2002
146	Flat Moores TS (Flat Creek)	Road	Road reconditioning	462I	0.7	miles		2002
147	Flat Moores TS (Flat Creek)	Road	Road reconditioning	462I	1	miles		2002
148	Flat Moores TS (Moores Crk)	Road	Road reconditioning	104	2.7	miles		2002
149	Flat Moores TS (Moores Crk)	Road	Sediment basin	104	1	SB		2002
150	Flat Moores TS (Moores Crk)	Road	Rolling dips	104	6	RD		2002

Table 8. Continued

Item No.	Stream subwatershed	Project type	Practices	Road Location	Units Treated	Unit Type	Date Ident.	Date Compl.
151	Flat Moores TS (Moores Crk)	Road	New corrugated pipe	104	4	NCMP		2002
152	Flat Moores TS (Moores Crk)	Road	Spot surfacing	104	--	RSS		2002
153	Flat Moores TS (Moores Crk)	Road	Road reconditioning	1041A	0.5	miles		2002
154	Flat Moores TS (Moores Crk)	Road	Road reconditioning	1041B	0.4	miles		2002
155	Flat Moores TS (Moores Crk)	Road	Road reconditioning	104	2.2	miles		2002
156	Flat Moores TS (Moores Crk)	Road	Road reconditioning	109	3.6	miles		2002
157	Flat Moores TS (Moores Crk)	Road	Rolling dips	109	18	RD		2002
158	Flat Moores TS (Moores Crk)	Road	Spot surfacing	109	--	RSS		2002
159	Flat Moores TS (Moores Crk)	Road	Road reconditioning	1096A	0.8	miles		2002
160	Flat Moores TS (Moores Crk)	Road	Road reconditioning	109	7	miles		2002
161	Flat Moores TS (Moores Crk)	Road	Rolling dips	109	28	RD		2002
162	Flat Moores TS (Moores Crk)	Road	Spot surfacing	109	--	RSS		2002
163	Flat Moores TS (Moores Crk)	Road	New corrugated pipe	109	18	NCMP		2002
164	Flat Moores TS (Flat Crk)	Road	Road reconditioning	273	3	miles		2002
165	Flat Moores TS (Flat Crk)	Road	Road reconditioning	27301	0.8	miles		2002
166	Flat Moores TS (Moores Crk)	Road	Road reconditioning	111	2.4	miles		2002
167	Flat Moores TS (Moores Crk)	Road	Rolling dips	111	11	RD		2002
168	Flat Moores TS (Moores Crk)	Road	Spot surfacing	111	--	RSS		2002
169	Flat Moores TS (Moores Crk)	Road	Road reconditioning	131	3.6	miles		2002
170	Flat Moores TS (Moores Crk)	Road	Rolling dips	131	10	RD		2002
171	Flat Moores TS (Moores Crk)	Road	Spot surfacing	131	--	RSS		2002
172	Flat Moores TS (Moores Crk)	Road	Road reconditioning	133	1.9	miles		2002
173	Flat Moores TS (Moores Crk)	Road	Rolling dips	133	10	RD		2002
174	Flat Moores TS (Moores Crk)	Road	Spot surfacing	133	--	RSS		2002
175	Flat Moores TS (Moores Crk)	Road	Road reconditioning	1336A	2.2	miles		2002
176	Flat Moores TS (Moores Crk)	Road	Road reconditioning	2117A	0.5	miles		2002
177	Flat Moores TS (Moores Crk)	Road	Spot surfacing	2117A	--	RSS		2002
178	Flat Moores TS (Moores Crk)	Road	Road reconditioning	229	2.8	miles		2002
179	Flat Moores TS (Moores Crk)	Road	Spot surfacing	229	--	RSS		2002
180	Flat Moores TS (Moores Crk)	Road	New corrugated pipe	229	2	NCMP		2002
181	Flat Moores TS (Moores Crk)	Road	Road reconditioning	2291A	1.1	miles		2002
182	Flat Moores TS (Moores Crk)	Road	Rolling dips	2291A	2	RD		2002

2.2.2.1 IDEQ Comments to Submittal by USFS

The discussion in Sections 1.9 and 1.10 on sediment load reduction credits, and the selected method of load estimation, needs to be applied to the USFS list of projects in Table 8 for accounting and tracking purposes.

No response has been received from the USFS to the IDEQ request package of July, 2003. The narrative below was the content of the request for contributions to this draft TMDL-IP. Likely, many of the issues will be addressed in the Forestry Working Group convened by IDL.

Request to the USFS in July 2003

The USFS will be requested to provide a significant contribution to the TMDL Implementation Plan strategies simply because Idaho Panhandle National Forest lands comprise around 75% of the total Lower West Branch watershed acreage, along with related land use activities. The Forest Practices Implementation Plan (FPIP) section of the TMDL plan will be developed by IDL as the designated lead agency for Forest Practice activities on all forest lands in the state of Idaho, including federal lands. However, IDEQ envisions the USFS developing its own draft report section and submitting this draft to IDL for inclusion into the FPIP.

Below is a draft outline of FPIP content that the USFS might consider:

- a. The USFS management approach on federal lands within the Lower West Branch watershed based on the fact that the Idaho segment of the LWB main stem is on the federal Clean Water Act 303(d) list as “water quality impaired,” and the LWB watershed has an EPA approved sediment TMDL.
- b. At our last Watershed Advisory Group (WAG) meeting on February 6, 2003, USFS provided a rather extensive list of road maintenance, road improvement, and road obliteration projects that have been conducted in the LWB watershed (both Idaho and Washington) between 1997 – 2002. This list has been reformatted into a spreadsheet developed by IDL, and will be included in its entirety in the FPIP. One technical task for the WAG is to develop a standardized method to apply sediment reduction credits to these projects (either in tons/year or in percent reductions). Candidates for sediment reduction methods include the USFS derived models, WATSED or WEPP.
- c. At our February 6th meeting a WAG member brought up a point that the improvement projects of 1997 – 2002 need to be balanced by concurrent timber sale activities during this time that resulted in sediment yield to watershed streams. IDEQ had not requested this information of Jill, but this seems to be a valid point. It would seem that a concurrent list of 1997 – 2002 activities need to be identified which are considered as producing sediment increases to watershed streams. An estimated sediment yield value would be applied in the same way as reduction credits from improvement projects.

An additional consideration is whether to include in the TMDL Implementation Plan, past projects or future proposed projects (item “e” below) that have been long-term established maintenance procedures on roads. An example might be routine scheduled blading on FS

- road 305. If this has been a regularly budgeted maintenance over the years, then it is IDEQ's view that it should not be included. If there is a newly budgeted maintenance procedure that represents an improvement over past maintenance schedules, then it should be included.
- d. The implementation plan will need to incorporate not only a spreadsheet accounting of the 1997 – 2002 projects, but also an electronic mapping of the projects for long-term tracking. IDEQ would like to meet with your GIS technicians and discuss current and future ArcView mapping possibilities for tracking projects and for presentation displays to the WAG and other local groups within the Priest River Basin. IDEQ would also like to take a field trip with USFS staff this summer to view some of the 1997 – 2002 listed improvement projects, and to continue with photo-documentation as part of the implementation plan.
- e. USFS also provided a list of planned future improvement projects. We would request that the USFS examine this list and see if there are any additional foreseeable projects that can be added at this time. For identified future projects, the same considerations as the 1997 – 2002 project list should apply, i.e., concurrent timber sale activities that will yield sediment to watershed streams should be identified, and all projects should be entered into electronic mapping for long-term tracking and for public presentations. Refer to the example spreadsheet at the end of this document for the format to list projects.

During the IDL Cumulative Watershed Effects (CWE) road inventory of the LWB watershed in 1999, the Forest Service road segments below were identified and mapped as having moderate to severe erosion problems. These might be considered for remediation if not already completed between 1997 – 2002.

Sections of Road 305 that parallels the headwaters of LWB main stem. This road is on a steep slope, and culvert discharges may form 1st order channels that flow directly down to the stream. We have also received a complaint about erosion on this road section from a local landowner (June 2003).

A section of Road 1142 crossing upper Butch Creek.

A section of Road 1095 adjacent (west) of Flat Creek in Section 1.

A section of Road 1113A that crosses 1st order channels of Bear Paw Creek, Sections 23 & 26.

Blown out culvert discharge(s) on a closed spur off Road 1332 in headwaters of Tunnel Creek, and other erosion on Road 1332.

Off the Johnson Cutoff Road (north from the Four-Corners Grange Hall), FS Road 57A in Section 8 approaches and crosses the LWB main stem. This crossing is used by 4-wheelers to cross the stream. The downward grade to the stream and adjacent crossing slope are heavily rutted and delivering sediment to the stream. This road approach needs fixing.

- f. If appropriate or realistic, the USFS would identify any future projects on federal land that could enhance in-stream fish habitat, stream bank stability, or riparian condition.
- g. For any future improvement or remediation projects identified in items (e) and (f), please provide cost-estimates if feasible.
- h. If appropriate or realistic, the USFS would identify any future monitoring on federal land. Monitoring might include in-stream assessments such as stream flow, electro-fishing, channel and streambed condition. USFS might also monitor the implementation and effectiveness of activities to reduce sediment loading.
- i. The USFS report section should identify any livestock grazing permits on federal lands within the LWB watershed. If there are active permits and grazing, are there any Assessments for Standards of Rangeland Health that need to be readjusted in the future in association with the 303(d) listing and TMDL status of the LWB?

2.2.3 Submittal by the Washington Department of Natural Resources

Washington DNR Forest Practices: Program Overview

In 1974, the Washington state legislature passed the Forest Practices Act, Chapter 76.09 of the Revised Code of Washington (RCW). The Act defines a plan to protect public resources while allowing Washington to continue to be a productive timber growing area. The Act regulates activities related to growing, managing, harvesting or processing timber on local government, state and private forestlands. The Forest Practices Act required forested buffers along streams and rivers to protect water quality and wildlife habitat. The Department of Natural Resources (DNR) was directed to develop and enforce Forest Practices Rules that defined how forested riparian areas are to be managed. Forest Practices rules are enacted to protect water quality, provide fish and wildlife habitat, protect capital improvements of the State, and ensure that harvested areas are reforested.

In 1999, the Washington State Legislature responded to the Endangered Species Act listing of several salmon species by passing the Salmon Recovery Act, which authorized the Forest Practices Board to adopt rules for salmon recovery. The resulting *Forest and Fish Report* became the basis for the rule changes. These rules increased the size of riparian buffers and created further measures to protect water quality and restore salmon habitat.

In May 2001, the Forest Practices Board adopted permanent rules implementing the “Forest and Fish Report” passed by the Legislature in 1999. The rules are designed to provide protection for aquatic resources and to ensure compliance with the Endangered Species Act and the Clean Water Act while providing for the economic viability of the forest industry. There were four key goals of the Forest and Fish Report:

1. To provide for compliance with the Endangered Species Act for aquatic and riparian species on non-federal forest lands,

2. To restore and maintain riparian habitat on non-federal forest lands to support a harvestable level of fish,
3. To meet the requirements of the Clean Water Act for water quality on non-federal forest lands, and
4. To keep the timber industry viable in the State of Washington.

Forest Practices Board Manual

The Forest Practices Board Manual serves as an advisory technical supplement to the Forest Practices Rules. It contains 26 sections of guidelines for conducting all forest practice activities regulated by the DNR. Sections include guidelines on riparian or wetland protection, road construction and maintenance, unstable slope hazards, determination of fish use for water typing, determination of stream channel characteristics and widths, among other topics.

Training

In WAC 222-08-020 “Orientation and training” it states “The department shall be responsible for a continuing program of orientation and training, relating to forest practices and rules thereof...” Such program shall include:

1. Investigation of current developments in and practical applications of forest resources and related technology.
2. Continuing training of department personnel in the current status of forest resources technology and related disciplines.
3. Dissemination of information on current forest practice technology to the public, in a manner determined by the department to be effective.”

The Forest Practices Division conducts regular training opportunities for loggers, operators, private and industrial foresters on topics such as the forest practices application process, riparian/wetland harvest and protection, road maintenance/abandonment, slope stability, and channel migration zones and bankfull widths.

In addition, the Upper Columbia Basin (UCB) working group, in the spirit of the 1988 Timber, Fish, and Wildlife Agreement, meets every two months to update participants on changes to forest practices, training opportunities (some are during meetings), and share information on agency policies and research activities. Participants include representatives of tribal governments, state agencies, industrial forest landowners, and private forest consultants.

Landowner Assistance Programs:

Recognizing that the new “Forest and Fish” rules would have a disproportionate effect on small, family-owned forests, the legislature authorized a Small Forest Landowner Office be created within the Department of Natural Resources to assess ways in which policies could be crafted to

support landowners who harvest an average of less than two million board feet of timber from their property per year. The Office is directed to serve as a “resource and focal point for small forest landowner concerns and policies”, and seeks to develop policies that conserve Washington’s privately owned non-industrial forests. Recognizing the significant contributions small landowners make to protecting Washington's public natural resources, the office strives to equip landowners with all the necessary tools and information they need to keep their land in forestry use.

With a goal to improve the economic viability and environmental quality of small forestland holdings, the Office pursues the following objectives:

1. Promote, implement, and manage the Forestry Riparian Easement Program.
2. Provide expertise in the management of small forest landholdings.
3. Provide expertise of government programs applicable to small forest holdings.
4. Develop alternative management and harvest plans for small forest holdings.
5. Collect demographics on small forest landowners and their land holdings.
6. Recommend incentives to improve management of small forest holdings for water quality and other environmental and economic goals.

To assist the small forest landowner office in developing policy and recommending rules to the Forest Practices Board, an Advisory Committee was established. The advisory committee consists of seven members, including a representative from the Department of Ecology, the Department of Fish and Wildlife, and a tribal representative. Four additional committee members are small forest landowners who were appointed by the Commissioner of Public Lands from a list of candidates submitted by the board of directors of the Washington Farm Forestry Association.

Forest Riparian Easement Program

The Forestry Riparian Easement Program (FREP) is a further response of legislature recognizing the disproportionate impact of the Salmon Recovery Act of 1999 on small forest landowners. FREP is managed by the Small Forest Landowner Office within DNR. The easement program acknowledges the importance of small forest landowners and the contributions they make to protect wildlife habitat. The program is also intended to help small forest landowners keep their land in forestry.

DNR’s FREP financially compensates eligible small forest landowners for the economic impacts of the new riparian rules in exchange for a 50-year easement on “qualifying timber.” This is the timber the landowner is required to leave unharvested as a result of new forest practices rules protecting Washington’s forests and fish. Landowners cannot cut or remove the qualifying timber during the easement period. The landowner still owns the property and retains full access, but has

but has “leased” the trees and their associated riparian function to the state. The lease does not allow public access to the leased property.

Road Maintenance and Abandonment Plans

Background: The chapter on Road Construction and Maintenance (Chapter 222-24 WAC) begins with a policy statement as follows:

Note: Rules marked with an asterisk () pertain to water quality protection and have been adopted or amended by the Forest Practices Board with agreement from the Department of Ecology per WAC 222-12-010.*

WAC 222-24-010 Policy.

*(1) A well designed, located, constructed, and maintained system of forest roads is essential to forest management and protection of the public resources. Riparian areas contain some of the more productive conditions for growing timber, are heavily used by wildlife and provide essential habitat for fish and wildlife and essential functions in the protection of water quality. Wetland areas serve several significant functions in addition to timber production: providing fish and wildlife habitat, protecting water quality, moderating and preserving water quantity. Wetlands may also contain unique or rare ecological systems.

*(2) To protect water quality and riparian habitat, roads must be constructed and maintained in a manner that will prevent potential or actual damage to public resources. This will be accomplished by constructing and maintaining roads so as not to result in the delivery of sediment and surface water to any typed water in amounts, at times or by means, that preclude achieving desired fish habitat and water quality by:

- Providing for fish passage at all life stages (see Washington state department of fish and wildlife hydraulic code Title 220 WAC)
- Preventing mass wasting
- Limiting delivery of sediment and surface runoff to all typed waters
- Avoiding capture and redirection of surface or ground water. This includes retaining streams in their natural drainages and routing subsurface flow captured by roads and road ditches back onto the forest floor
- Divert most road runoff to the forest floor
- Provide for the passage of some woody debris
- Protect stream bank stability
- Minimizing the construction of new roads
- Assure that there is no net loss of wetland function

The road construction and maintenance rules in this chapter must be applied in achieving these goals. Additional guidance is identified in the board manual, section 3. If these goals are not achieved using the rules and the applied guidance, additional management strategies must be employed.

*(3) Extra protection is required during road construction and maintenance to protect public resources and timber growing potential. Landowners and fisheries and wildlife managers are encouraged to cooperate in the development of road management and abandonment plans. Landowners are further encouraged to cooperate in sharing roads to minimize road mileage and avoid duplicative road construction.

*(4) This section covers the location, design, construction, maintenance and abandonment of forest roads, bridges, stream crossings, quarries, borrow pits, and disposal sites used for forest road construction, and is intended to assist landowners in proper road planning, construction and maintenance so as to protect public resources.

Following the sections on road construction and maintenance comes the new sections adopted in March, 2000: WAC 222-24-050 and 051:

WAC 222-24-050 *Road maintenance and abandonment. The goals for road maintenance are established in WAC 222-24-010. **All forest roads must be improved and maintained to the standards of this chapter within 15 years of the effective date of these rules.** Guidelines for how to meet these goals and standards are in the board manual, section 3. Work performed toward meeting the standards must generally be even flow over the 15-year period with priorities for achieving the most benefit to public resources early in the period. Replacement will not be required for existing culverts functioning with little risk to public resources or for culverts installed under an approved forest practices application or notification if they have been properly maintained and are capable of passing fish, until the end of the culvert's functional life.

WAC *222-24-051 Road maintenance schedule. All forest roads must be covered under an approved road maintenance and abandonment plan within 5 years of the effective date of this rule or by December 31, 2005. This includes all roads that were constructed or used for forest practices after 1974. Inventory and assessment of orphan roads must be included in the road maintenance and abandonment plans as specified in WAC 222-24-052(4).

On May 14, 2003, the Washington State legislature passed a law that provides assistance to small forest landowners to help maintain their roads to the standards required by law and rule. The May 2003 law requires the Department of Natural Resources (DNR) and the Department of Fish and Wildlife (WDFW) to create a cost-share program to help pay some of the small forest landowners' costs of eliminating fish passage barrier on forest roads. A fish passage barrier is any artificial in-stream structure that impedes the free passage of fish.

The DNR, WDFW, or a Lead Entity will evaluate each potential fish passage barrier. A Lead Entity is a local group (such as a conservation district) working on behalf of DNR, WDFW, or the Salmon Recovery Funding Board. If the evaluation determines the landowner does not have a barrier, the landowner will not be enrolled in the program. If the landowner does have a barrier, the barrier will be placed on a prioritized list, and the landowner will be eligible for cost share when the funding is available and the barrier becomes a priority within the watershed. Any qualifying small forest landowner who enrolls in the cost-share program may defer replacing or repairing verified fish passage barriers until the time their project is prioritized. The landowner may elect to fix the barrier with or without the cost share money.

Watershed Analysis in Washington State

Watershed analysis is a biological and physical assessment of a watershed conducted in order to reduce the adverse cumulative effects of forest practices on specific public resources (fish, water, and capital improvements of the state). Watershed Analysis is a process that was developed by forest landowners, Indian tribes, environmental groups and state natural resource agencies, and was adopted into rule by the Forest Practices Board in 1992.

Watershed analysis is performed on Watershed Administrative Units (WAUs). WAUs are areas defined by hydrology and geomorphology, ranging in size from about 10,000 to 50,000 acres. Of 825 Watershed Administrative Units in Washington, 754 are forested. Each analysis is conducted by a team of experts from relevant scientific disciplines, such as hydrology and fish biology. Each team member must have minimum qualifications in education, field experience, and training in the watershed analysis process. Based on this assessment, “prescriptions” become requirements for conducting forest practices within a watershed.

Since watershed analysis prescriptions are rarely more restrictive than the rules that resulted from the 1999 Forest and Fish Report to the Legislature, they are superceded by the new rules, especially in relation to riparian areas and road construction and stream crossings. There is currently no plan to conduct a watershed analysis for the Priest River WAU.

Adaptive Management Program & Cooperative Monitoring Evaluation and Research

The Adaptive Management program was created to provide science-based recommendations and technical information to assist the Forest Practices Board in determining if and when it is necessary or advisable to adjust rules and guidance for aquatic resources to achieve resource goals and objectives. The Forest Practices Board may also use this program to adjust other rules and guidance.

The goal of the program is to affect change when it is necessary or advisable to adjust rules and guidance to achieve the goals of the Forests and Fish Report or other goals identified by the board.

There are three desired outcomes:

- Certainty of change as needed to protect targeted resources,
- Predictability and stability of the process of change so that landowners, regulators and interested members of the public can anticipate and prepare for change,
- Application of quality controls to study design and execution and to the interpreted results.

Adaptive Management Participants: The Forest Practices Board manages the program and has empowered the following entities to participate in the program: The cooperative monitoring evaluation and research committee (CMER), the Timber, Fish and Wildlife (TFW) (1988) policy committee (or similar collaborative forum), the adaptive management program administrator, and other participants as directed to conduct the independent scientific peer review process. The

program strives to use a consensus-based approach to make decisions at all stages of the process. Specific consensus-decision stages will be established by CMER and approved by the board.

The board established the CMER committee to impose accountability and formality of process, and to conduct research and validation and effectiveness monitoring to achieve the resource objectives. The purpose of CMER is to advance the science needed to support the adaptive management process. CMER is made up of members that have expertise in a scientific discipline that will enable them to be most effective in addressing forestry, fish, wildlife, and landscape process issues. Members represent timber landowners, environmental interests, state agencies, county governments, federal agencies and tribal governments from a scientific standpoint, not a policy view. CMER members are approved by the board.

CMER also develops and manages:

- (A) Scientific advisory groups and subgroups,
- (B) Research and monitoring programs,
- (C) A set of protocols and standards to define and guide execution of the process including, but not limited to, research and monitoring data, watershed analysis reports, interdisciplinary team evaluations and reports, literature reviews, and quality control/quality assurance processes,
- (D) A baseline data set used to monitor change, and
- (E) A process for policy approval of research, monitoring, and assessment projects and use of external information, including the questions to be answered and the timelines.

Landslide Hazard Zonation Project

The goal of the Landslide Hazard Zonation (LHZ) Project is to create a vastly improved screening tool by better describing and mapping all potentially unstable slope areas in priority watersheds. The purpose is to eliminate any errors of omission in the identification of unstable landforms during both harvest layout and permitting process. In addition to identifying areas of hazard for mass wasting, landforms and hazard classifications are linked to the degree of hazard and sensitivities to land management practices. The LHZ project will also provide information useful for mitigation solutions as appropriate. Improved regulatory efficiency is therefore expected not only at the FPA permitting level, but up front in land management planning, harvest unit layout and subsequent SEPA review. This approach produces a “no surprises” working environment between landowners, stakeholders and regulators in regard to unstable slopes.

Forest Stewardship Program

The Forest Stewardship Program provides information and advice, financial help for projects, educational programs and materials, and a “Stewardship Forest” recognition program.

Forest Stewardship is a nationwide program designed to assist non-industrial private forest owners in managing their properties for a variety of resource values. Assistance is customized to meet

meet specific needs and objectives. The program is funded and administered by the U.S. Department of Agriculture (USDA) Forest Service and the Washington Department of Natural Resources (DNR) in close cooperation with several other state and federal agencies and private organizations. Landowners with at least five forested acres can request on-site assistance from a DNR stewardship forester and wildlife biologist.

DNR's Federal Assurances Program

DNR, on behalf of the State of Washington, is applying for assurances from the National Marine Fisheries Service (NOAA Fisheries) and U.S. Fish and Wildlife Service that all forest practices activities conducted according to the state forest practices rules and administrative program will satisfy federal requirements under the ESA for aquatic species.

The primary component of federal assurances is relief from any claim that forest practices conducted in accordance with the rules would constitute an impermissible "take" of any threatened or endangered species or would otherwise violate the ESA or implementing regulations with respect to aquatic species.

The State is seeking assurances for fifty years. The State is seeking to provide protection of aquatic species to the maximum extent practicable consistent with maintaining commercial forest management as an economically viable use of forest lands and to provide a regulatory climate and structure more likely to keep landowners from converting forest lands to other uses that would be less desirable for recovery of salmonids.

Without such assurances, landowners would be individually responsible for working with these federal agencies on a case-by-case basis to assure compliance with the ESA. DNR is also working with the U.S. Environmental Protection Agency and the Washington State Department of Ecology to ensure that the forest practices program will meet the goals and standards of the state Water Pollution Control Act and the federal Clean Water Act.

2.2.3.1 IDEQ Comments to Submittal by DNR

IDEQ appreciates the involvement of the WDNR in the Lower West Branch TMDL-IP process, and the above overview of the Washington Forest Practices program. There are significant differences between aspects of Idaho and Washington Forest Practice regulations and programs. The indications are that WDNR will commit to particular vigilance of Forest Practice requirements within this sediment TMDL watershed.

Private ownership in Washington lands within the LWB watershed are 1,013 acres of industrial timber land, and 1,119 acres of other private land which does include timber harvesting activities. This is a small portion of the total watershed (3.8%). However, there are opportunities to identify specific improvement projects within these private lands. The USFS has documented some problem areas within private lands of the Ojibway Creek headwaters, and the LWB headwaters (Figure 2). Again, Washington has not included any of the LWB stream system on their §303(d) list. Hopefully, within the Forest Practices Working Group sessions, specific improvement projects on forested land in Washington will be identified.

WDNR along with NRCS staff in Newport, Washington have recently provided assistance to a Washington landowner with 20 acres that includes two stream crossings over Bear Paw Creek by legacy timber roads. IDEQ made a site visit to this property, and the steep road approaches to the stream are badly eroding. The landowner applied for EQIP funding assistance. This project will be referenced in Section 2.2.2 under the Washington Agricultural IP.

2.3 Agricultural Implementation Plan (AIP)

The Idaho Soil Conservation Commission (ISCC) will be the lead agency in compiling the AIP report section. The report section will have contributions from the following agencies:

The Idaho Conservation Partnership of ISCC, Coeur d'Alene (Mark Hogen); NRCS, Sandpoint (Jeff Stewart, and Dick Yetter in Lewiston); and the Bonner Soil & Water Conservation District, Sandpoint (Linda O'Hare). The partnership would consult with Allen Cary, the Watershed Advisory Group (WAG) member representing private agricultural interests in Idaho.

The Washington Conservation Partnership of NRCS, Newport (Mark Simpson), and the Pend Oreille Conservation District, Newport (Russ Fletcher, lead). The partnership would consult with Bill Egolf, the WAG member representing private agricultural interests in Washington.

2.3.1 Submittal by the Idaho Conservation Partnership

Lower West Branch TMDL Implementation Plan

ISCC, NRCS, Bonner Soil & Water Conservation District

AGRICULTURE IMPLEMENTATION PLAN

Past & Current Agricultural and Grazing Activity

Moores Creek livestock fencing and riparian tree plantings: A Continuous Conservation Reserve Program (CCRP) project with a landowner. Lower meadow is fenced from grazing. Started fencing on upper meadow, but it is not finished. Old conservation plans exist with a number of landowners in the watershed, but there has been no activity in the past 5 years. Inventory maps are being completed on all the agriculture and grazing land in the LWB Watershed by Bill Dansert with SCC.

Public Information and Education Programs Within LWB

A quarterly newsletter is distributed by the Bonner Soil & Water Conservation District, and some of the LWB landowners receive this. (There is a need to secure names of all LWB landowners from Glen Rothrock.) The newsletter contains information on the tree seedling sale, sponsored by the district, as well as other pertinent articles on available programs and conservation issues.

The Natural Resource Conservation Service and the Soil Conservation Commission are non-regulatory agencies that work with private landowners on a request basis. Because the Lower West Branch Watershed has impaired beneficial uses, we will put added emphasis on explaining our technical and financial assistance available to landowners in the watershed. We will do this through the newsletter, through our one-to-one assistance with landowners, and in conjunction and cooperation in working with other agencies.

Overview of Lower West Branch BMP's

Summary of Treatments:

- i. Agricultural Waste Management Systems and Nutrient Management
- ii. Beaver Dam Management
- iii. Engineering Techniques
- iv. Wetland Enhancement and Creation
- v. Erosion Control with Soil Bioengineering/Geo-technical Construction

Techniques

- vi. In-Stream Fish Habitat Improvement
- vii. Livestock Management
- viii. Riparian Zone Management
- ix. Roadside Erosion Management

*i. Agricultural Waste Management Systems and Nutrient Management*Description:

A livestock concentration inventory should be completed as part of the Lower West Branch Watershed Implementation Plan. A high, medium or low hazard rating should be assigned for surface or groundwater pollution potential.

The recommendations below are aimed at managing waste, fertilizers, biosolids, legume crop and crop residues in rural areas in a manner that prevents or minimizes degradation of air, soil, and water resources and protects public health and safety. Systems are planned to preclude discharge of pollutants to surface or groundwater and to recycle waste through soil and plants to the fullest extent practicable.

Agricultural waste management and nutrient management are closely related and will be addressed in one set of recommendations. The main difference is that agricultural waste management usually involves on-site animal waste storage or filtering, whereas nutrient management includes the proper management and planned application of one or both inorganic (commercial) and organic (usually animal waste) fertilizers and nutrients.

All practices below are further outlined in the standards described in the Natural Resources Conservation Service Field Office Technical Guide, Section 4. Numbers after practices are the practice standard number.

*** WASTE MANAGEMENT SYSTEM (312)**

The above practice actually includes one or more of a series of related practices that can be used to improve the management (storage, handling and land application) of inorganic fertilizers and liquid or solid animal waste including runoff from concentrated waste areas.

These other practices include the following:

- waste storage ponds (425)
- waste storage structures (313)
- diversions (362)

- dikes (356)
- fencing (382)
- subsurface drains (606)
- streambank and shoreline protection (580)
- roof runoff management (558)
- forest riparian buffer
- filter strip

* NUTRIENT MANAGEMENT(680)

This practice is aimed at reducing the potential for applied nutrients to pollute surface or groundwater by applying only the amount needed to produce a crop consistent with the land user's goals. It accomplishes this by managing the amount, form, placement and timing of plant nutrients. Planning is done to properly supply plant nutrients for optimum forage and crop yields, minimize entry of nutrients to surface and groundwater, and to maintain or improve the chemical and biological condition of the soil.

Minimum requirements for the practice include, with technical assistance, the development of a nutrient management plan by the farmer. This nutrient management plan will include a nutrient budget accounting for the following:

- current nutrients in the soil for the intended crop
- realistic yield goals
- nutrient credits or carryover

Nutrient management planning includes testing of soils, manure analysis, equipment calibration, and field specific fertilizer and manure applications. The end result is improved crop production and less polluted runoff.

Recommendations:

1. Accelerate planning and monetary assistance to implement the nutrient management and waste management system practices in the watershed.
2. Potentially high hazard livestock concentration areas should receive priority assistance for agriculture waste management systems.
3. At a minimum, a first level **awareness** nutrient management education effort should be implemented in the watershed.
4. An effort should be made to inform local agribusiness of the efforts of the Lower West Branch Watershed Council. Local area crop consultants and agricultural chemical consultants may be able to assist with development of future recommendations for the Watershed Council.

Positives of Recommendations:

1. Nutrient and bacterial loading to surface waters and groundwater will be reduced.
2. The nutrient management practice has a low initial cost and, in almost all cases, improves profitability for the farmer.
3. The technology needed to implement these practices is available, well-understood, and well-documented; networks of farmers using these practices can be established to encourage their use.

Negatives of Recommendations:

1. Waste management systems can be costly depending on barn and feedlot locations, water table, soils, etc.
2. Staff power is limited, so an accelerated effort may require more resources than are currently available.

*ii. Beaver Dam Management:*Description:

In steep terrain, streams move with high velocity and tend to be good trout habitat. Beaver dams in such terrain can be detrimental to the trout fishery due to restriction of fish movement up or downstream, and from increased water temperature which can occur in the pooled area behind the dam. In flat terrain, beaver dams may be a significant source of high quality type 3 or 4 wetlands. Because each situation is unique, decisions on whether beaver dams should remain or be removed should be made jointly by a knowledgeable hydrologist, wildlife manager and fisheries biologist.

Recommendations:

1. If beaver dams are removed, the water should be released slowly.
2. Retain beaver dams in very flat terrain.
3. In areas where beaver are to be discouraged, manage riparian zones for conifers and long-lived hardwoods. Beaver prefer aspen and tend to leave large conifers and hardwoods.
4. Encourage coordination between county, state highway maintenance and land managers on the issue of dam removal and removal techniques.

Positives of Recommendations:

1. Slow release of dam pond will minimize erosion caused by removal of a dam.
2. Maintains potential for high quality wetlands created by beaver.
3. Root systems of long-lived conifers and hardwoods will help stabilize streambanks. These trees will also become large woody debris which will provide structure necessary to the health of the stream.

Negatives of Recommendations:

1. Managing riparian zones for conifers and long-lived hardwoods is long-term.
2. If dams are removed, negative impacts on wildlife that benefited from the pond and associated habitat may occur.

*iii. Engineering Techniques:*Description:

Conventional engineering techniques reduce erosion and prevent downstream transport of sediments. Potential techniques within the Lower West Branch Watershed could involve one or more of the following:

- grade control using drop structures to reduce downcutting
- streambank/stream toe protection (rip-rap, sheet piling, concrete, etc.)
- drainage of slopes which are unstable due to high soil water content

Recommendations:

1. Use on sites where there is potential loss of life, where major transportation delays may result, and where there are property, building, recreational, or other losses which can justify the cost of these practices.
2. Consider use of soil bioengineering/geotechnical construction techniques where economics for engineering techniques are not favorable.

Positives of Recommendations:

1. Usually considered long-term.
2. Highly effective if designed properly.
3. Benefit is usually realized immediately.
4. A highly visual indication that something is being done.
5. Fish and wildlife habitat can often times be incorporated into the practice.

Negatives of Recommendations:

1. High cost.
2. Possible impacts on soil and fisheries during installation.
3. Potential site access problems.
4. Finite life span of these practices.

*iv. Wetland Enhancement and Creation:*Description:

Wetland enhancement and creation can improve water quantity, water quality, and wildlife conditions within a watershed. Water quantity benefits include reduction of peak flows by virtue of the storage properties of the wetland and maintaining base flows by acting as groundwater recharge areas. Water quality benefits include sediment filtering and nutrient uptake by wetland plants. Wildlife benefits include providing habitat for diverse species and a food and water source for land animals.

Wetlands also can benefit urban or residential areas. Incorporating wetlands in roadway designs can offset increased peaks associated with surface ditching. They can maintain flows and sediment loadings at pre-development levels for residential or commercial areas.

It is difficult to determine how many of the original wetlands in the LWB Watershed have been drained or filled. There have been and still are wetland manipulations for agricultural, urban and road building purposes. Although agriculture in the area is declining, much of the drainage remains today. Urban development and road building have also contributed to wetland loss to a lesser degree.

The restoration of altered wetlands is more effective than the creation of wetlands because the hydrology, soils, and seed bank are usually still present on the site. In addition, restored wetlands have a higher functional value than created wetlands. Created wetlands do not support the diversity of plant and wildlife species which are found in natural or restored wetlands.

Bonner County has prioritized wetland areas in its Comprehensive County Local Land Use Plan. Certain categories of wetlands will be targeted for high protection levels possibly including financial assistance.

U.S. Army Corps of Engineers also has some wetland manipulation regulatory authority through the Clean Water Act Section 404 permits. The Natural Resources Conservation Service has some disincentives for USDA program participants for draining, filling or altering of wetlands for the purpose of crop production.

Recommendations:

1. The existing wetlands within the LWB Watershed should be maintained through current local, state, and federal laws. Although the current level of wetland area within the LWB Watershed is high, the distribution and function of wetlands could be improved. Thus, wetland restoration, enhancement, and creation in the LWB Watershed should be encouraged.
2. Priority should be given to those sites having one or more of the following characteristics:
 - within or near the riparian zone except in cases where water from the wetland can exit at seeps in bluffs and having a direct connection to zones of bluff slumping
 - within an area having a high concentration of artificial surface drainage
 - the site has potential for being an open water wetland

- the site is within an area having urban development pressures
3. Emphasis should be placed on restoring drained wetlands rather than creating wetlands. Some specific design considerations include the following:
 - Where a wetland is being created or restored for mitigation purposes, its location should be within the same hydrologic management unit as the wetland that is being altered.
 - For open water wetlands, the potential safety hazards should be considered.
 - Care should be taken to locate sites so that unique or valuable upland habitats are not destroyed in the process of creating or restoring a wetland.
 - Ensure that any wetland restoration or creation does not restrict the movements of migratory fish.
 - Design of a wetland should be such that water bird nest predation is minimized.

Positives of Recommendations:

1. Storage characteristics can reduce peak discharges downstream.
2. Sediment and nutrient storage improves downstream water quality.
3. Can be part of "greenspace belt" in developed areas.
4. Protects downstream fish spawning habitat from sediment.
5. May improve current fish spawning and rearing.
6. More habitat for water birds, mammals, amphibians, etc.
7. Water level manipulation may allow intensive habitat improvement.

Negatives of Recommendations:

1. Structure failure may destroy downstream habitats.
2. Increased water temperature.
3. Created wetland may need operation, management, and maintenance plans.
4. Structures create liabilities in the event of failure.
5. Cost of mitigation is high due to need to create wetlands.

v. *Erosion Control with Soil Bioengineering/Geotechnical Construction Techniques:*

Description:

Soil bioengineering/geotechnical construction techniques combine mechanical, biological and ecological concepts and treatments to reduce slope failures and erosion (NRCS Engineering Field Handbook, Chapter 18). Two approaches to soil bioengineering are woody vegetative systems and woody vegetative systems combined with simple structures. Nonliving approaches use rigid

constructions, such as surface armoring, gravity retaining walls and rock buttresses. The type of system used must fit the site. Treatment sites should be carefully selected. Woody vegetation may not solve a stability problem caused by geologic parameters.

Field studies have shown instances where combined slope protection systems have proven more cost effective than the use of either vegetative treatments or structural solutions alone. Where construction methods are labor intensive and labor costs are reasonable, combined systems may be especially cost effective. Where labor is either scarce or extremely expensive, however, soil bioengineering systems may be less practical than structural measures.

Soil bioengineering/geotechnical construction offers a promising alternative to traditional riparian engineering techniques for the LWB Watershed. Most traditional engineering practices used to control bluff erosion along streams require good access to the site, and a great deal of earth moving on site to install the practices. In contrast, soil bioengineering can often be done by hand, with minimal disturbance to the site. Some common soil bioengineering techniques are fascines (bundles of small diameter live brush tied together), brush mattresses (many long branches criss-crossed and fastened to the ground with dead stakes), live stakes (insertion of medium (1") diameter live vegetative cuttings into the ground) and root wads (part of the trunk and roots of dead, uprooted trees). The LWB Watershed has many remote areas with poor road access. These areas are valued by the public as high quality aesthetic resources. If we wish to reduce erosion damage in the riparian corridor and still maintain high aesthetic values, these labor intensive, but simple, bioengineering practices seem to offer the best solution.

Recommendations:

1. Where possible use soil bioengineering/geotechnical construction to incorporate large woody debris, such as root wads and tree revetment, into streams. **It is highly recommended that a people with considerable experience in soil bioengineering techniques be consulted prior to planning these systems.** Soil bioengineering/geotechnical construction is a developing science that requires a good interdisciplinary understanding of the problem. Each site should be custom designed with someone knowledgeable in soil bioengineering/ geotechnical construction techniques and, for streambank sites, the evolution of stream systems. All practices done to improve stream channel condition should be done with an understanding of channel morphology and classification. Rosgen's stream classification, or a similar system, should be used. Stream classification used in combination with knowledge of the evolution of stream systems will assure that the practice applied will have the best potential to succeed.
2. Research done for similar river systems has led to the following recommendations: (1) where possible, woody species should be phased into the herbaceous cover; (2) among woody species, more advanced successional species are preferred, largely due to their greater root strength; (3) along streambanks and the associated drainage area, soil stability equations should be employed to demarcate the "safe zone" (i.e. a 100 ft. wide strip adjacent to each streambank). Within this zone, all human activity that arrests or reverts the successional process should be discouraged. This includes logging and building construction unless these activities are consistent with forest management practices that promote advanced successional stands; (4) in critical erosion sites, the establishment of advanced successional woody vegetation should be actively promoted by acceptable methods of forest management

including planting of seedlings, selective cutting; and (5) on construction sites, vegetation should be established at the earliest opportunity. Critical area planting could be used to stabilize some slopes and eroding areas. It is preferable to use native plant species since exotic species often compete with native species, leading to their decline.

Positives of Recommendations:

1. Otherwise inaccessible sites can be treated.
2. Root mass development and leaf litter can help hold soil.
3. Soil bioengineering/geotechnical construction can have minimal impact on soil and fisheries during installation.
4. Soil bioengineering/geotechnical construction can cost much less than traditional engineering structures.
5. The aesthetic value of the LWB Watershed is enhanced.
6. Riparian wildlife habitat is protected and enhanced.

Negatives of Recommendations:

1. Soil bioengineering/geotechnical construction techniques will not solve all of the erosion problems in the riparian zone. Often these techniques must be used in combination with structural treatments.
2. The use of vegetative methods alone, specifically for reducing soil moisture content in the surface zones of clay or high water table soils, may not be beneficial for controlling massive slides.

vi. In-Stream Fish Habitat Improvement:

Description:

Trout eggs must have gravel bed streams to successfully incubate. The eggs are dependent upon adequate oxygen and low silt loads in the water to survive. They also must have water moving over them to remove waste products. If the gravel in which the eggs are laid is covered with sediment, the eggs are smothered and die. There is a need to determine the trout spawning locations within the watershed and prevent these areas from being covered by sediment. Spawning beds can be improved by creating areas of constricted flow where the sediment is removed from the gravel by increased water flow.

Recommendations:

1. Inventory and map any in-stream areas suitable for fish spawning and designate these areas for preservation and enhancement. This process would consider water temperature, substrate embeddedness, forage base, pollution sources, conditions of stream crossings and access points, etc.

2. For those areas where enhancement is recommended, consider restoration measures such as channel constrictors, double and single wing deflectors, low stage check dams, rock vortex weirs, gravel traps, etc., ensuring that measures are appropriate for the stream type.
3. For those areas without adequate substrate, consider introduction of artificial substrates and shaping of the channel to maintain this substrate. If the velocity of the water is insufficient, the artificial substrate will become covered with fine sediment.
4. Encourage introduction of suitable large woody debris into stream channels through appropriate silvicultural management of riparian areas. (See Riparian Zone Management.) This treatment also will help provide adequate water temperatures for trout production.

Positives of Recommendations:

1. Improved trout and salmon habitat.
2. Improved recreational opportunities for local landowners.
3. Potential outside income from increased tourism.

Negatives of Recommendations:

1. Spot constriction of flow may cause erosion of the streambank at that point. Spot constriction of flow also causes more deposition to occur in the pool area. Spot constriction does not consider the overall health of the system.
2. Construction costs may be prohibitive.
3. Remoteness of sites from road access for construction machinery may limit treatment of some sites.

vii. Livestock Management:

Description:

Livestock have two major impacts on watershed condition: 1) Pastures in wet soils are compacted by livestock. The compaction decreases infiltration rates and increases runoff. The impact of increased water yield from compaction is an increase in channel forming flows, which accelerates streambank erosion; 2) Unrestricted livestock access to streams removes vegetation and root systems from streambanks. This removal of vegetation reduces the resistance of the streambank to erosion. As a result of compaction and removal of vegetation by livestock, the stream channel becomes wider and shallower.

Recommendations:

1. Reduce impacts of livestock grazing by using rotational or controlled grazing and other pasture management techniques. This will reduce compaction and produce healthier vegetation to reduce water yield from pastures.

2. Eliminate or control livestock access to riparian zone and stream channels.
 - Fence livestock out of riparian zone.
 - Regenerate trees in riparian zone by planting, seeding, or natural regeneration.
 - If livestock need to access the stream to cross to another pasture, use a designed hardened crossing (rock ford) an arched culvert or an engineered bridge.
 - Use other watering techniques when livestock do not need access to stream.

Positives of Recommendations:

1. Most practices used to improve grazing management have low initial costs and in many cases improve profitability for the farmer.
2. Practice will improve hydrologic condition of the managed area.
3. The technology needed to implement these practices is available, well understood, and well documented; networks of farmers using these practices can be established to encourage their use.
4. Practice will result in improved water quality of runoff from the managed area.
5. Prevents erosion, overgrazing, pollution.
6. Allows vegetation to recuperate.
7. Benefits riparian zone fish, wildlife, and wetlands.
8. Helps prevent livestock and woodland predator encounters.

Negatives of Recommendations:

1. Intensive management is required for many low cost practices.
2. Some practice components, such as fencing, are costly and not always well accepted by farmers. Some type of incentive, such as cost-sharing, may be needed to increase acceptance.
3. Installed conservation practice components require increased maintenance by landowner.
4. Soils and fisheries may be impacted during in-stream structure construction. For example, during construction of a livestock crossing, sediment may be introduced into the stream.

viii. Riparian Zone Management:

Description:

The riparian zone is land and vegetation bordering lakes, streams, and wetlands. It is the transition zone between the terrestrial (land) ecosystem and the aquatic (water) ecosystem. The terrestrial and aquatic ecosystems are modified by each other in this zone of transition. Open water and groundwater near the surface cause the riparian zone to have a humid microclimate which changes the type of vegetation, increases its growth rate, and increases the diversity of

wildlife habitat. Vegetation in the riparian zone is a source of energy to the aquatic ecosystem. Trees that fall into smaller streams and remain in place are often a major component of stream structure and fish habitat. The riparian zone is a band of land that has a significant influence on the streams and is significantly influenced by the streams.

Recommendations:

1. Institute coordinated forest management in the watershed.
 - The LWB Watershed Advisory Group (WAG) should meet on a yearly basis to discuss riparian zone management recommendations and specifically if more protection is needed. A no commercial harvest cut zone recommendation could exceed the forest practices act requirements.
2. Provide financial incentives, educational opportunities, and technical assistance to landowners to enable them to manage their riparian zones for stream ecosystem improvement.
 - Landowner implementation of riparian zone recommendations is on a voluntary basis. Therefore, a coordinated effort to inform and assist them is needed to implement recommendations.
 - The length of a riparian zone from a perennial stream should extend upstream into intermittent channels, and end at the point when a streambank can no longer be identified.
 - The riparian zone management area applies to agricultural and urban areas as well as forest land.
 - Establish or manage riparian zones in agricultural and urban areas to have a buffer between the cultivated field and street and lawn runoff.
3. Manage the riparian zone for large, woody debris.
 - Thin stands that are too dense to enable large crowns to develop. Trees with large crowns have large root systems.
 - Plant long-lived deciduous and coniferous trees in sparsely forested areas. Plant trees 12 to 25 feet apart. Begin 5 feet from the streambank and end 50 to 100 feet from the stream. Some of these trees will be lost because the streambanks will continue to erode at a rapid rate. The goal is to have large trees near the bank at about 25 feet apart.
 - Retain coniferous and deciduous trees throughout the riparian zone area. Harvesting should favor growth of long-lived coniferous and deciduous trees such as cedar, spruce and cottonwood
 - Livestock use should be restricted or should be managed to prevent the loss of benefits from other uses.
 - Manage livestock grazing by complete exclusion or controlled grazing systems.
 - Where needed, provide controlled access to the stream by rock fords, or install off-site watering devices.

4. Take precautions to avoid blocking floodplains when building a road across a stream. Where roadbeds cross floodplains, use long bridges, multiple elevation culverts, or rock fords rather than single culverts in the streambed.
 - When a culvert or bridge is used to cross a stream, do not straighten the stream above the crossing because it causes downcutting in the upper part of the straightened section.

Positives of Recommendations:

1. Improve the hydrologic condition of the streams.
 - By acting as dams, large, woody debris can change a uniformly flowing stream into a stream of alternating pools and riffles.
 - Woody debris dams can reduce the effective slope of a stream, reduce stream velocity and erosion potential.
2. Provide food and habitat for aquatic organisms.
 - Fallen leaves and other organic debris from trees are the base of the food chain for aquatic organisms in forested watersheds.
 - The pools formed by large, woody debris retain organic matter in the stream long enough for microorganisms to decompose them, and for fish to eat the microorganisms.
3. Filter sediment and nutrients from runoff.
 - Forested riparian zones are a buffer between logging roads, skid trails, and log landings and streams.
 - In agricultural and urban areas, vegetated riparian zones are buffers between cultivated fields and city streets and lawns.
4. Large trees help stabilize streambanks and reduce erosion rates.
5. A mixture of deciduous and coniferous trees allows the stream to warm in the spring and prevents excessively high temperatures in the summer.
6. The nutrient-rich environment of the riparian zone and the presence of water result in increased wildlife diversity and use.
7. Allows flows above the bankfull level to spread out on the floodplain rather than being forced through a single culvert.

Negatives of Recommendations:

1. It will take a very long time for large, woody debris to have an impact on stream structure.
2. In forested areas leaving trees in a riparian zone will reduce landowners' income from timber sales.
3. Maintaining a forested riparian zone adjacent to cultivated fields will reduce income and could add to production cost.

4. Removing or controlling grazing of livestock in riparian areas will cost the landowner money to install fencing and watering devices, and will increase maintenance costs.
5. Landowners receive little direct economic benefits from managing riparian areas for watershed improvement. Therefore, implementation will require financial incentives, education, and technical assistance.

ix. Roadside Erosion Management:

Description:

Difficulties with high water table soils, low strength soils, steep terrain and occasional sudden heavy rains, have caused many problems for road and structure maintenance.

Roads and ditches are efficient at delivering water to streams, which increases peak flows and streambank erosion.

All agree that road construction and maintenance should be performed using a watershed friendly approach. It should be done in a way that ensures the impact from roads is at the lowest level that can be reasonably achieved. Many of the common erosion control practices used in the watershed are not adequate or will require extra measures for success.

Recommendations:

1. Initiate the coordination of a transportation committee. Meet annually to discuss progress on practices and recommendations.
2. Utilize statewide Best Management Practice Standards and Specifications. Modify practices where needed, to address the unique soil, runoff, and vegetation establishment problems.
3. Research measures that have been used in other areas dealing with the same type of soil.
4. Make more frequent use of traverse drains, ditch blocks, tile, cutouts, etc., to reduce road-ditch flow.
5. Complete a roadside erosion inventory for the watershed utilizing CWE data and local knowledge. Develop a prioritization system.
6. Work with road supervisors to inventory and prioritize existing erosion problems on non-county or state maintenance roads.
7. Complete work on two or more problem sites each summer in each county.
8. Try bioengineering in select locations for erosion control.
9. Minimize or disallow road building in severe erosion prone areas of the watershed.
10. Conduct workshops for road construction contractors to discuss special problems of working in the watershed.
11. Gate and close "problem" roads and other travel ways during wet times of the year to prevent erosion.

12. Coordinate construction of logging roads among different logging companies to minimize total miles of roads.
13. Work with Department of Tourism to educate people on the hydrologic impacts from rutting and compaction of the soil due to careless operation of recreational vehicles.

Positives to Recommendations:

1. Networking and sharing of technical knowledge by meeting annually will save time and money.
2. Bioengineering, tried first in some situations, may save earth-moving costs.
3. A group working together usually has a better chance of securing erosion control dollars.
4. Prioritizing will help solve the worst problems first.
5. Workshops are a cost-effective way to disseminate knowledge of practices that work.
6. Limiting new roads in portions of the watershed will result in lower future maintenance costs.
7. Documenting modified sediment control practices for portions of the watershed will help future practices succeed and prove their value when personnel change.

Negatives of Recommendations:

1. Coordination takes time and leadership.
2. Implementing extra measures to stabilize erodible soil and slopes takes extra dollars that will need to be found.
3. Workshops take time and money to conduct.

Agricultural Cost Share Programs Available

Program	Complete Title	Agency
EQIP	Environmental Quality Incentive Program (largest & most used)	Natural Resource Conservation Services
WRP	Wetlands Reserve Program	NRCS
CCRP	Continuous Conservation Reserve Program	Farm Services Agency
CRP	Conservation Reserve Program	FSA
WHIP	Wildlife Habitat Improvement Program	NRCS
RCRDP	Resource Conservation & Rangeland Development Program (grant or loan program)	Soil Conservation Commission
WQPA	Water Quality Program for Agriculture	SCC
HIP	Habitat Improvement Program	Idaho Fish & Game

319 Grant	Nonpoint Source Management Grants	DEQ
Partners Program	Partners Program with Private Landowners	US Fish & Wildlife
FLEP	Forest Land Enhancement program	Idaho Department of Lands
FPP	Farmland Protection Program	NRCS
FLP	Forest Legacy Program	IDL

Current Programs Initiated by Agricultural Landowner

A landowner in the LWB on Moores Creek has fenced livestock from a creek, is planting trees along the creek, and installing two creek crossings designed by NRCS. Examples of the cost share expenses involved are:

Practices	Cost Shares Available
Fencing – 4 strand fence	1.50/ft.
Tree Planting	1) \$1.50/per bare root plant 2) \$2.50/per containerized plant
Creek Crossing	75% of cost up to \$15,000

This landowner signed up for assistance with NRCS and enrolled 22 acres along a creek in a program called the Continuous Conservation Reserve Program (CCRP) administered by the Farm Services Agency. Under this program there is a \$150 per acre sign-up bonus and annual rental payments to the landowner for 15 years for not haying or grazing inside the fence next to the creek. Depending on the soil type, payments per acre range from \$40 to \$80 annually. There are other cost-share programs that allow occasional grazing inside the fence.

Future Identified Projects

Snow Creek: Sediment/temperature

1. Potential fish barrier (ponds)
2. SVAP (Stream Visual Assessment Protocol) 1.8 miles
3. Forest Riparian Buffer Practice
4. Livestock exclusion/watering

Tunnel Creek: Sediment/Temperature

1. Culvert blow-outs below Bear Paw Rd.
2. SVAP 2.3 miles
3. Forest Riparian Buffer Practice
4. Livestock exclusion/watering

Ole/Slough Creeks: Sediment/Temperature

1. SVAP 1.7 miles

LWB Creek: Sediment/Temperature

1. Potential Animal Feeding Operation (just above mouth of Moores Creek)
2. SVAP 0.5 miles

Moores Creek: Sediment/Temperature

1. SVAP 5 miles (upper section along Highway 57)

Peewee Creek:

1. Gully erosion from intermittent side channels

SVAP would identify more critical areas for treatment (canopy cover, grazing in creeks)

SVAP – Summer 2004

Agricultural Improvement Plan

Our Plan is to meet with Allen Carey.

2.3.1.1 IDEQ Comments to Submittal by Idaho Conservation Partnership

The comprehensive list of BMPs applicable for the Lower West Branch watershed (treatments i – ix) will be extremely helpful to the WAG in seeking out effective project areas. Of particular usefulness is the information presented in Recommendations, Positives, and Negatives of each treatment category.

With the ISCC and NRCS, IDEQ has toured the site listed above as a current CCRP project on Moores Creek. With the landowners permission, this project area could serve as a demonstration area for other interested landowners in the watershed that have a stream running through their land and graze cattle or horses.

IDEQ also toured the sites listed above as Potential Identified Projects. Attempting to interest landowners in agricultural projects within the Snow Creek Valley and along the Tunnel Creek flatlands would be a high priority. Portions of these stream systems have lost their shrub riparian vegetation and are badly eroding.

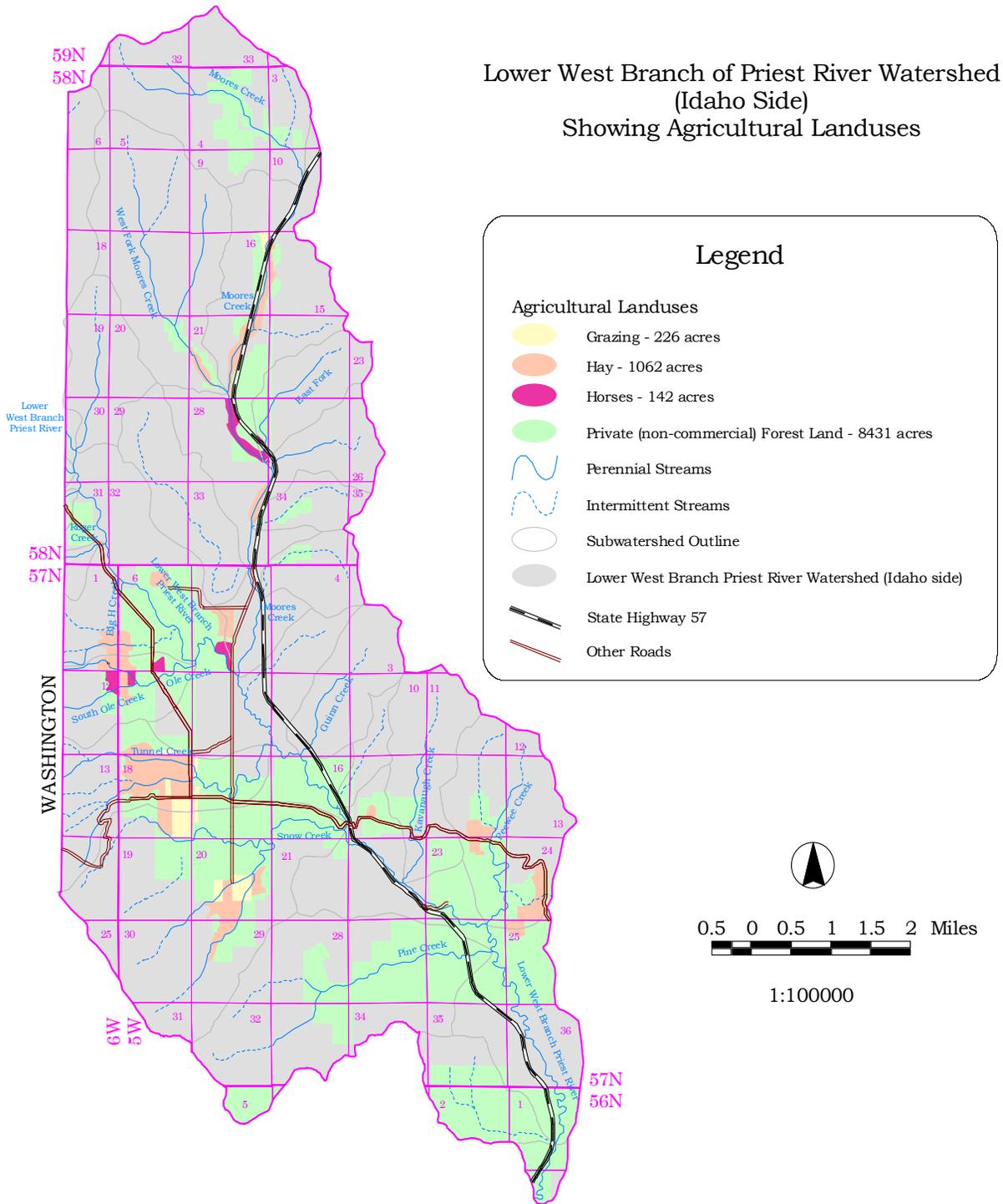


Figure 7. Agricultural landuses within the Idaho portion of the Lower West Branch watershed, as submitted by the Idaho Conservation Partnership.

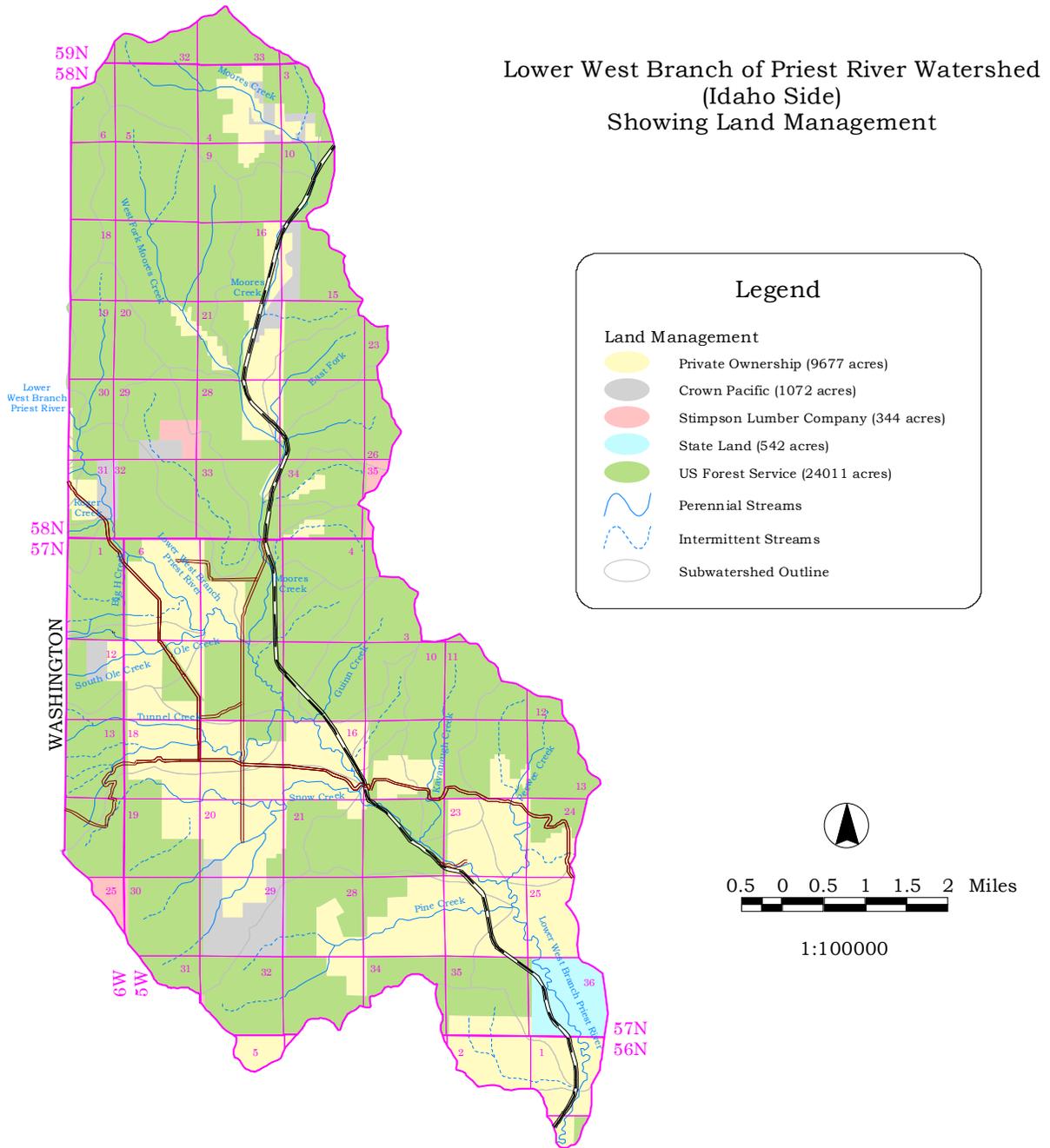


Figure 8. Land management within the Idaho portion of the Lower West Branch watershed, as submitted by the Idaho Conservation Partnership.

2.3.2 Submittal by the Washington Conservation Partnership

Response Letter from NRCS and POCD - Newport, WA

(1). Even though the Washington portion of the watershed, called the Bear Paw, is not on Washington States DOE 303(d) list, it is believed the watershed has some contribution to the sediment load problem. This contribution has not been measured.

(2). I have looked at bank erosion problems in this portion of the watershed. I believe the majority of the bank erosion is being caused by increase in the “time of concentration” relating to past timber harvest operations on primarily U.S. Forest Service properties. This has allowed larger flows of water down the system. These flows are being dissipated in the wetlands and less steep portions of the watershed that still exist to some degree. Unfortunately, these dissipation areas are where all agricultural activities exit. Private landowners have responded and added to the problem by straightening and deepening the creek beds which run through their property. The degree of manipulation varies and there are many landowners where no stream channeling and deepening exists. Generally, this manipulation of the stream occurs where the land was cleared up to the stream. See the aerial map for those locations. The purpose of these practices was done to make the land adjacent to the creek farmable and to prevent the creek from flooding these fields. These activities have further increased flow velocities for the downstream portions of the creek. Vegetation was removed along the creek bed at this time because it was felt that it hindered flow. These stream banks have vegetation that has grown back. But, the lower portion of these banks can't handle high flow events and they are still susceptible to erosion. This is the situation on the property along Flat Creek.

(3). A few weeks ago, I provided you a map of all the landowners in the Bear Paw area (attached). We obtained these boundaries from the Pend Oreille Assessor's office. There are very few landowners in this area. I have worked with three of them. I have developed a plan for a landowner on Bear Paw Creek, and I am developing a conservation plan for a landowner on Flat Creek.

(4). Land use along the streams on private land falls into one of four categories: Forest or Woodland, Grazable Woodland, Pasture, and headquarters or housing.

(5). The conservation practices I recommend for the landowners on the farm along Flat Creek are listed below. They have given me permission to give you this information. I've included the resource concern(s) it addresses and the reason I'm recommending this practice. The number represents the NRCS's code for the practice.

Riparian Forest Buffer (391): This practice was recommended for the area along Flat Creek. At this time, planning requirements require the buffer to range from 35 feet to 50 feet in width on one side of the creek. The required width is dependent on the width of the flood plain adjacent to the creek. On this property, the required width would need to be 50 feet due to the large floodplain. But, from the barn upstream to where the road intersects with the creek, a 35 foot zone is okay on the road side. This 50 foot width is not feasible for the landowner because it would take away much of his farm ground. He has agreed to do 35 feet along the whole creek. The buffer is not needed to filter sediment coming from neighboring fields but

neighboring fields but it would add shade and other fish habitat characteristics to the stream.

Fence (382): To keep livestock out of the above riparian area, a fence would be needed. This is to allow the shrubs and trees to grow. Although this type of erosion doesn't add much sedimentation to the creek compared to the erosion caused by the water, livestock are prevented from breaking off eroded banks with this practice.

Livestock Exclusion (472): A management practice that is usually accomplished with fencing.

Access Road (560): This practice is recommended whenever access is needed on property. It often involves practices such as bridges and culverts when crossing streams. These structures need to be installed correctly so that they do not cause fish passage problems and so that they do not reduce fish habitat more than is reasonable. They also need to be installed so that they do not increase sedimentation or stream bank erosion. The landowner wants to remove a bridge and install one that can handle a large logging truck. Other structures would include water bars and road construction. Road construction would involve placement of road, slope considerations, and other factors to limit erosion. POCD and I are also evaluating the culverts which run through the county roads on the landowners property to see if they meet WDFW fish passage standards.

Critical Area Seeding (472): This practice involves, for the most part, grass seeding. This will be recommended on all forest roads, especially after harvest operations.

Tree/Shrub planting (612): This practice will be recommended in the riparian zone and for all areas that will be harvested.

Site Preparation (490): This practice is recommended as part of all tree/shrub planting activities. It helps the tree/shrubs to become established.

Forest Stand Improvement (666): This practice involves commercial and pre-commercial thinning and pruning for the most part. We will be recommending this practice on the landowners upland forests. The practice will not benefit sediment reduction.

Animal Trails and Walkways (575): This practice is used for allowing livestock access to the stream for water and to allow them access to the other side of the creek. The crossing may be hardened and protected to minimize sedimentation. It is a sacrifice area with the Riparian Forest Buffer. It makes the riparian zone feasible for the landowner to install.

We are also looking at the feasibility of installing a sediment basin (350). This practice would be very expensive and it would require a lot of O&M but it may directly benefit sedimentation. I believe that it may also help to slow flows down so that erosion downstream is lessened.

The landowners on Flat Creek participated in the USDA-Farm Service Agency's (FSA) Agricultural Stabilization Program (ACP) about 10 years ago. They installed some riparian fencing with that program. They recently installed some more riparian fence through a POCD grant. They have applied for the Wetland Reserve Program (WRP) to place the north end of their

property in an easement. If accepted, this land will be managed by NRCS but they will still own the property. NRCS will mainly exclude livestock from the property and allow the plants to come back on their own. They have applied for EQIP to complete the above plan. EQIP may not fund all of the projects in the plan. CRP and the Wildlife Incentives Program (WHIP) is also an option of the landowners. Either program will cost/share with them to install the riparian fence and plant the interior to vegetation. We may add other conservation practices to the landowners plan but these are the main conservation practices that we are looking at.

The following are other conservation practices that I think may help in these areas.

- Fish Passage (396)
- Forest Trails and Landings (655)
- Pasture and Hayland Plantings (512)
- Stream Channel Stabilization (584)
- Streambank & Shoreline Protection (580)

Sincerely,

Mark Simpson
Resource Conservationist

Grant Application Submitted by POCD

For Fiscal Year 2004, the POCD developed an application package to the Washington Department of Ecology (DOE) for Lower West Branch project funding under the Clean Water Act §319 Nonpoint Source Fund. A major project under this cost-share grant proposal was at the Bear Raw Road stream crossing where Lower West Branch main stem crosses under the road (Figure 5). The project was to replace the existing, twin 4-foot culverts with a 24-foot bottomless arch. The Pend Oreille County Road Department would do this work. See Section 2.3 (County Roads) for details on this project. The POCD grant package also included requested cost-share funds for livestock exclusion and riparian plantings on Bear Paw Creek and Flat Creek. The POCD package cited the EPA approved sediment TMDL for Lower West Branch, as developed by IDEQ, for priority points consideration.

The POCD application was not awarded a cost-share grant for the FY 2004 funding cycle. The POCD has reworked the grant package and submitted the package to the DOE for the FY 2005 funding cycle.

2.3.1.2 IDEQ Comments to Submittal by Washington Conservation Partnership

IDEQ has toured the Flat Creek property that is referenced in the letter by Mark Simpson of NRCS. It is clear that the property owner is very willing to install multiple conservation practices on the land. These installed practices can serve as a demonstration project to watershed landowners both in Washington and Idaho. Within the boundaries of the NRCS covenants with

participating landowners, it would be helpful to establish accounting of practices and costs of both completed and proposed projects on this property as part of the TMDL-IP.

The Flat Creek subwatershed, and the property described above under planning for conservation practices, presents an interesting window into the Lower West Branch watershed as a whole in regards to the mosaic of land uses, stream condition, and landowner interactions.

Flat Creek is a perennial, fish bearing stream with a subwatershed size of 4,095 acres, 7.2% of the LWB watershed. Just from visual appearance, Flat Creek appears to have potential for good fish habitat and a viable fishery. IDEQ cannot find any record of fisheries surveys in Flat Creek, and it certainly is a candidate for some biological and habitat assessments.

The upper lands of the subwatershed are managed by the USFS for timber production, with an associated timber road network. Some of the upper lands have been grazing allotment areas.

The west and east forks of Flat Creek converge just below the Forest Road 1095 crossing as it enters the landowners property. The stream is flat gradient through the property, about 2,635 feet in length. Historically, it is likely that this stream segment meandered through meadowland, but at some point in time, was straightened for agricultural land reclamation. The upper end of Flat Creek in this property has been fenced from large animal access. This upper segment seems to be reestablishing its meander. Currently, it is a tight meander with many of the outside curves eroding at the banks (raw vertical banks). In some outside curve sections, the rate of bank lateral recession could be estimated because the fencing posts are now hanging over the outside curve.

While the eroding outside curves are adding sediment to the stream, this is the short-term price to pay until a meander equilibrium is established, which should lead to a healthier stream segment. There are also a few beaver dams in this segment, playing a role in hydrologic dynamics. Also, there is speculation, or at least an opinion, by the landowner and NRCS that spring peak flow volume and velocity have been accelerated by a history of upland timber harvesting activities and timber road development. This may also play a role in the hydrologic dynamics. There is also a perception by the landowner that an excess sediment load has been delivered to the lowland stream segment from upland activities. Some landowners have stated, “why install conservation practices on my property when I’m continuing to get sediment load from the forest land above?”

Concerning erosion at the outside curves, the advice from federal hydrologists is to not attempt bank stabilization at this time. Bank stabilization will likely be a futile exercise until the meander pattern widens and stabilizes on its own.

Flat Creek leaves the agricultural part of the property as it passes under Forest Road 305. From this point to where it flows into Lower West Branch, the terrain appears to be undeveloped shrub land with conifers, under mostly federal ownership. This area is mapped as grazing allotment land, but it does not appear to be currently grazed. Flat Creek may be braiding through this area, and depositing sediment in the flood plains. This feature needs to be confirmed.

Flat Creek enters Lower West Branch above the Road 305 crossing. The LWB stream crossing is two, 4-foot culverts, called “the tubes.” An interesting feature is that the culverts and road fill have restricted bankfull flow enough to create a large pond and wetland area just upstream from the road crossing. In essence, the pond has served somewhat as a sediment basin. As detailed in

Section 2.3, there are proposals to replace the culverts with a spanned arch, or at least a single, large diameter culvert. This project is deemed necessary because of a potential for mass failure. The outlet of “the tubes” is also a fish migration block. However, if the culverts are replaced, the road-created pond and surrounding wetlands may drain as a more natural stream flow, within defined stream banks, is reestablished. Thus, a sediment settling area on the main stem has been lost.

2.4 County and State Road Implementation Plan (CRIP)

The Idaho Department of Environmental Quality (IDEQ) will compile the CRIP report section. The report section will have contributions from the following agencies:

Bonner County Road Department, Chuck Spickelmier, Director

Pend Oreille County Road Department, Washington, Ron Curren, Director

Idaho Department of Transportation, Dave Karsann, Coeur d'Alene Office.

2.4.1 Proposed Projects by County Road Departments

1. Bear Paw Road Sediment Yield Reduction by Check Dams

IDEQ has recently gone into partnership with the Bonner County Road Department (BCRD) and the Pend Oreille County Road Department (POCRD) to submit an Idaho Nonpoint Source Program §319 grant proposal for the FY 2005 funding cycle. This project would construct approximately 145 rock check dams within the drainage ditch system of Bear Paw Road. A summary description of the project, taken from the grant package, is presented below as an illustration of project details that might be considered by the WAG when establishing a priority rank for TMDL-IP proposed projects.

Project Area and Need

Bear Paw Road begins in Bonner County as a county maintained graveled road off Highway 57 in T57N, R5W, S16 (Figure 5). The road travels west and then northwest until it crosses the Idaho – Washington state line. The road continues northwest paralleling the headwaters of the Lower West Branch (T33N, R45E). In Washington, the road is maintained by the Pend Oreille County Road Department. Bear Paw Road is a heavily traveled road, servicing auto traffic for area residents and recreational users, along with logging trucks from watershed timber harvesting.

The road section under project consideration begins at what is called the “four corners” intersection (Figure 5). From this point to the end of the project section at the Lower West Branch stream crossing, Bear Paw Road is 5.3 miles in length. The project also includes a section of Snow Creek Road, which heads south off Bear Paw Road at four corners, and also a section of Johnson Cutoff Road which heads north from four corners.

For the 6 miles of Bear Paw Road under project consideration (including sections of Snow Creek and Johnson Cutoff Roads), there are 11 perennial tributaries and 2 intermittent streams with definite stream beds and banks, that cross perpendicular under the road and then join the Lower West Branch main stem. The perennial stream count does include two crossings of the main stem itself. All but one of the crossings is corrugated metal pipe of various diameters (one bridge crossing).



Figure 9. Bear Paw Road with a dual ditch system (left), and drainage ditch discharging down into a perennial stream crossing.

The road surface of Bear Paw Road (project section) is a crowned gravel base with a flat-rolling grade. The road surface averages about 24 feet in width including shoulders. There are drainage ditches on both sides of the road (Figure 9, left). Water runoff from the road system as conveyed by the drainage ditches, has very few discharge points to a forest floor for settling of suspended sediment. Instead, most of the ditch runoff is conveyed down rolling grades toward each stream crossing. The runoff is discharged at the top of the stream crossing fill, and cascades down to the upstream and downstream ends of the culverts (Figure 9, right). Thus, at each stream crossing there are four ditch discharge points. At most ditch discharge points, there is very little effective vegetated fill slope and buffer length to settle sediment prior to reaching the streams.

Numerous in-the-field observations by IDEQ, and the TMDL sediment load calculations, show that the Bear Paw Road system is a significant sediment contributor to the Lower West Branch stream system. Fine sediment comes from several sources, including:

Sediment from the road tread. Although the road tread received a new bed of large gravel in 1999, IDEQ observations during a rainy day field trip in December 2002 showed considerable fine sediment (yellowish-brown) flowing off the road into the ditch system. Evidently, the heavy road travel has ground-down the gravel base into a high percentage fines.

Loose soil is produced during periodic ditch maintenance practices in the fall. The ditches are scraped clean and the spoils are piled on top of the ditches. County maintenance protocol states that ditch scraping is a necessary practice to maintain sufficient carrying-capacity in the ditches to prevent overflow and road wash.

Another sediment source is timber access roads adjacent to and abutting Bear Paw Road (see Section 2.1.1.1). In some cases, the access road approaches are not armored, and produce significant sediment to the ditch system during rain storms and snow melt periods.

The counties have installed straw bales and silt fences at a few of the ditch terminals of stream crossings, and at the bottom of fill slopes near the streams. Many of these temporary structures are now topped with sediment, and are inadequately preventing sediment discharge to streams.

Project Proscription

Rock check dams will be installed within the portion of the drainage ditches that slope or grade down to each of the thirteen stream crossings. It is estimated that an average of three (3) rock check dams will be installed per ditch section, or 145 check dams total. In Idaho, Bonner County RD would install check dams at nine stream crossings. In Washington, Pend Oreille County RD would install check dams at four stream crossings.

In addition to rock check dams, the county road departments will subcontract hydro-seeding of grasses to inside ditch sections that have no or minimal vegetative cover. This hydro-seeding is desired to more quickly establish the growth of grass vegetation over that which is occurring naturally.

Project Costs and Sediment Reduction Estimates

Total project cost was estimated at \$48,390. This includes a post-project BMP monitoring effort by IDEQ and the county road departments.

The Lower West Branch sediment TMDL allocated 190 tons/yr sediment reduction to county maintained roads, or 6.3% of the total reduction required (Table 2). Of the county allocated reduction, 120 tons/yr are assigned to road prism sedimentation (tread, ditches, and fill/cut slopes).

Using two sediment load estimation methods, CWE and WEPP:Road, the pre-project annual sediment yield to streams in this project area ranged from 37 – 83 tons/yr. The proposed structural ditch treatment of rock check dams for sediment trapping is estimated to prevent approximately 90% of the current load from reaching streams. Using the range from the CWE and WEPP model runs, this translates to a mid point sediment reduction estimate of 55 tons/yr, or 45% of the county allocation to reduce sediment from road surface and ditches.

Using an estimated effective project life of 20 years, a cost benefit ratio of \$48,389 total cost for 55 tons/yr sediment calculates to \$44/ton/yr of sediment abatement over 20 years. Using a much more liberal annual sediment load reduction of 200 tons/yr, as estimated from the Washington Forest Practices Board manual (WFPR 1997), abatement calculates to \$12/ton/yr over 20 years.

As part of the project specifications, the county road departments agree to long-term maintenance of the rock check dam structures. This includes annual inspection and repair of check dams, and the removal of entrained sediment behind the check dams when needed.

An additional benefit of this project relates to the public perception of an ongoing sedimentation problem from the Bear Paw Road system. Over the last twelve years, IDEQ has responded to a few complaints about sedimentation into the streams crossing under the road. These complaints followed the periodic ditch scraping procedures. A structural method to abate the sediment load

into streams, that can be easily observed, hopefully will be viewed as a positive use of resources by the area residents.

This project will also serve as a demonstration of whether the selected sediment reduction method is cost effective and could be used on other county roads and USFS forest roads. The established post-project monitoring efforts are meant to both quantify volume of sediment generated from the road system, and evaluate the effectiveness of sediment yield abatement.

2. Replacement of Bear Paw Road Culverts at Lower West Branch Crossing

As previously mentioned in Section 2.2.2, Pend Oreille County Road Department, along with other partners, are seeking cost-share funding sources to replace the twin 4 foot culverts with either a 24 foot bottomless arch or a single, large diameter corrugated metal pipe.

A main reason prompting this project is the potential for a mass failure at this crossing. There have been two mass failures on Bear Paw Road in the last ten years. A substantial road fill failure just north of the Ole Creek stream crossing (Figure 5) resulted in an estimated sediment delivery of 4,800 tons to Ole Creek. In 2000, there was a failure at the Bear Paw Creek crossing. This failure is believed to have been caused by an undersized culvert, which backed up the spring bankfull flows of Bear Paw Creek, and through hydrostatic pressure and seepage into the road fill, precipitated the failure. Based on measured dimensions of the failure, 2,880 tons of sediment were delivered to the stream. This failure also caused a rerouting of traffic flow on Bear Paw Road.

The same fear of what happened at Bear Paw Creek prevails at the Lower West Branch crossing. The current assessment is that this culvert crossing shows increasing vulnerability to failure with each spring high water event. A total culvert failure creates an urgency with the POCRD, and an unplanned expense. A road failure at this crossing would deliver an estimated 960 - 2,000 tons sediment to Lower West Branch. One estimation of cost for a 24 foot bottomless arch was around \$135,500.



Figure 10. Bear Paw Road at Lower West Branch crossing; upstream pond created by road fill and twin culverts (left), and downstream view of culverts showing fish migration block (right).

Opening up the crossing with either a bottomless arch or embedded large diameter pipe may well drain the pond and some wetlands created by the current road fill (Figure 10, left). With the reestablishment of a stream flow within banks, upstream of the crossing, some sediment trapping function from the pond may be lost. On the other hand, it seems important to prevent a mass failure event.

As can be seen from Figure 10 (right), the outlet drop of the twin culverts may pose as an upstream fish migration block. Interestingly, there has been some discussion that replacement of the existing culverts may pose a threat to resident cutthroat populations of the headwaters by allowing migration of brook trout past the crossing. IDEQ has not been able to document any fish surveys in Lower West Branch above this crossing. USFS snorkeling and electro-fishing surveys within segments of Bear Paw Creek and Ojibway Creek (just south of LWB), in 1998 and 1999, showed some reaches with excellent cutthroat densities and some reaches with low density or no cutthroat, and in all reaches surveyed, brook trout were present.

3. IDEQ Proposal to BCRD for Culvert Replacement at Slough Creek.

Slough Creek crosses underneath Bear Paw Road north of the Ole Creek crossing (Figure 5). The existing culvert is a 24" pipe, and the inlet is about one-third filled with sediment. In a meeting with BCRD and POCRD, all agreed that this crossing has a potential for road failure. Again, a failure at these stream crossings on Bear Paw Road can cause a direct downstream sediment load ranging between 1,000 – 3,000 tons.

IDEQ will work with the BCRD to seek cost-share funding for replacement with an embedded, larger diameter pipe. A rough estimate of total cost was around \$60,000.

4. Other County Road Problems Detected by the CWE Road Inventory

Refer to Section 2.4.1 for a list of road stream crossings identified as Special Management Problems in the CWE inventory. Most of these appear to be private access roads in Idaho. It is hoped that partnerships can be established with private landowners, county personnel, and the WAG, to identify funding aid for private road remediation projects and to provide technical assistance.

2.4.2 Idaho Department of Transportation

IDT did not submit narrative to this draft TMDL-IP. In the July, 2003 request package for contributions to this draft document, IDEQ requested the following input:

1. A description of road maintenance and repair procedures on State Highway 57 segments close to watershed streams and at stream crossings. This discussion should include any appropriate modifications in maintenance, repair, and construction procedures that could be made to reduce sediment yield in lieu of the fact that the Idaho segment of the LWB main stem is on the federal Clean Water Act 303(d) list as "water quality impaired," and the LWB watershed has an EPA approved sediment TMDL. The IDT road system is paved, but there are maintenance procedures done on the unpaved shoulders that drain toward stream crossings, such as Pine Creek and LWB main stem.

2. A description of how IDT might provide technical and other assistance to Bonner County Road Department in their effort to reduce sediment yield to watershed streams from the unpaved County road network within the LWB watershed.

2.5 Bonner County Planning, Zoning, and Development Implementation Plan (PZIP),

The Idaho Department of Environmental Quality (IDEQ) will take the lead in formulating the PZIP report section. The report section will have contributions from the following agencies:

Bonner County Planning Department (BCPD), Claire Marley, Supervisor

Idaho Department of Environmental Quality (IDEQ), Glen Rothrock.

The PZIP plan will include existing private roads, stream crossings, and developed slopes.

2.5.1. Bonner County Planning Department

Bonner County PD did not submit narrative to this draft TMDL-IP. In the July, 2003 request package for contributions to this draft document, IDEQ requested the following input:

1. A description of how BCPD will regulate, inspect, and enforce provisions of Bonner County Stormwater Ordinance #227 (1993) as revised by ordinance #343 (1997), and any other County Ordinances that have provisions relating to surface water protection, within the Lower West Branch watershed. This discussion should include any appropriate changes in the approach of Ordinance regulation and compliance by BCPD in lieu of the fact that the Idaho segment of the LWB main stem is on the federal Clean Water Act 303(d) list as “water quality impaired,” and the LWB watershed has an EPA approved sediment TMDL.
2. A description of assistance the BCPD can provide to private landowners who have existing private road segments near streams, road stream crossings, and developed home-site slopes near streams, that have been identified as having erosion problems and contributing significant sediment delivery to LWB streams. For existing private land, does the BCPD have any regulatory jurisdiction on problems leading to excess sediment delivery to surface waters?

2.5.2 Idaho Department of Environmental Quality

IDEQ has observed that there is increasing rural homestead development within the watershed (5 – 20 acre lots). The level of erosion and water runoff BMPs called for in Bonner County stormwater ordinances are not being strictly adhered to, and in some cases, ignored. IDEQ, in its role of TMDL administration within a watershed, can interact with private landowners to provide information on how to comply with county ordinances for new development, and provide information for improvement projects on existing developed private land. This role as a liaison between landowners and local governmental agencies could lead to some technical assistance, and also to explore cost-share programs for improvement projects. Examples of target projects are private road segments close to streams, road stream crossings, and developed home sites on slopes near streams that have erosion problems and poor water management features, and are contributing significant sediment to streams.

IDEQ has made several site visits to private landowner sites within the LWB watershed during 2002 and 2003 (at the homeowner's request). The landowners have been genuinely interested in water quality issues, and with funding assistance, would be willing to take on improvement projects.

During the IDL - CWE road inventory of the LWB watershed in 1999, there were a few private road segments and slopes that were identified and mapped as having moderate to severe erosion problems. These are:

- Two stream crossings, and maybe more, across Pine Creek, Sections 26, 27, and 28. These crossings were also identified by IDL as having erosion problems, and were listed in Section 2.1.1. Some of these crossings might be county maintained roads.
- A private road and home lot development along the northern edge of Pine Creek was observed as having erosion problems.
- A private access road crossing of Snow Creek,
- Two stream crossings of PeeWee Creek tributaries. One crossing is a private access road, the other is on the county maintained Peterson Road.

2.6 Fisheries Management Implementation Plan (FMIP)

The Idaho Department of Environmental Quality (IDEQ) will compile the FMIP report section. The report section will have contributions from the following agencies:

Idaho Department of Fish & Game (IDFG), Chip Corsi (temporary) Coeur d'Alene

Washington Department of Fish & Wildlife (WDFW), Jeff Lawlor, Spokane

US Fish & Wildlife Service (USF&WS), Scott Deeds, Spokane

2.6.1 Idaho Department of Fish & Game

Response Letter from Idaho Department of Fish & Game

Mr. Glen Rothrock
DEQ Watershed Coordinator
2110 Ironwood Parkway
Coeur d'Alene, Idaho 83814

Dear Glen:

REFERENCE: LOWER WEST BRANCH TMDL IMPLEMENTATION PLAN

The Idaho Department of Fish and Game thanks you for the opportunity to comment on the Lower West Branch TMDL Implementation Plan. We believe efforts to improve water quality and restore habitat in water quality impaired streams is necessary to prevent future listing of and restore Idaho's native fish. Comments in this document have focused on those areas that you specified you wanted responses to in your February 10, 2004 letter.

Our understanding of the Idaho section of the Lower West Branch is it is a lower gradient stream (~ 1% slope), dominated by fine substrate and limited in-stream and riparian cover. In addition, water temperatures probably exceed 20°C during the summer. These are poor conditions for salmonid species and it is not surprising that past fish surveys have found that few fish occur in much of this stream reach and the only salmonid species known to occur there is brook trout.

Habitat conditions more suitable to salmonids are known to occur in the headwaters of this watershed up in Washington. In fact, cutthroat trout have been documented in some of these tributaries. A natural barrier (Torrelle Falls) about 5 miles upstream from the mouth of the Lower West Branch prevents any fluvial or adfluvial salmonids (mountain whitefish, cutthroat trout or bull trout) from utilizing or colonizing any of the watershed upstream of this falls.

We support efforts to improve the native salmonid community in this watershed. In the upper watershed (upstream of the falls) we believe the best opportunity for native fish is to expand the cutthroat trout population that occurs in the headwaters. Downstream of the falls, mountain whitefish and cutthroat trout have the ability to colonize this section of stream once habitat and water temperatures improve. It is unlikely bull trout will ever colonize this watershed, as the falls

falls would prevent them from reaching the headwaters where cold-water temperatures necessary for their survival might exist.

We believe reductions in fine sediment, and improvements in in-stream cover and riparian shading are necessary in the Lower West Branch before native fish can expand their range into the Idaho portion of this watershed. Brook trout have been found to out-compete cutthroat trout where fine sediment is abundant and warmer water temperatures occur. In some systems, brook trout have been found to out-compete cutthroat trout in low gradient, granitic streams where the habitat was relatively undisturbed. For this reason we are unsure if cutthroat trout will ever re-colonize the low gradient stream reaches in Idaho as long as brook trout are present.

We believe restoration work in this watershed should attempt to mimic what you would see in undisturbed streams of a similar gradient and geology. For example, we would support stream bank stabilization projects that would use woody debris, fencing off the riparian area, and planting native vegetation. Re-establishing cedar groves where they historically existed could provide great benefits in the forms of bank stabilization, cooler stream temperatures and long-term large woody debris recruitment. We do not support the use of riprap in low gradient streams. Where rip-rapping appears to be the best or only solution to stabilize banks, we would suggest combing it with bank barbs, and plantings of native vegetation.

Introduced fish have been found to compete, hybridize, prey upon and reduce the survival of many native fishes. For this reason, we do not support stocking fish into any of the streams in this Lower West Branch Watershed. Currently, the Idaho Department of Fish and Game does not plant fish into any river or stream in the Panhandle Region. We do not see this practice changing unless unique circumstances occur such as re-introducing native fish into a stream they were extirpated from. We would only do this if factors that we believed led to their extirpation were removed or corrected. Because cutthroat trout still occur in the Lower West Branch (above the falls) or have the ability to recolonize it naturally (below the falls), stocking cutthroat trout into the Lower West Branch would not be supported. We do support the stocking of fish into ponds that will not allow them to enter nearby rivers or streams. Stocked ponds provide excellent fishing opportunities and give individuals an opportunity to harvest fish while not creating a risk to the native fishery.

The Idaho Department of Fish and Game comments on many state and federal timber sales, road construction projects and activities requiring a stream alteration permit. Our goal in our comments is to reach a balance where the individual/organization can accomplish their task while protecting the fishery and surrounding wildlife. When 303(d) listed watersheds are included in the project area we would prefer that the operator show how their activity will lead to improved conditions or no increase in the pollutant of concern.

If you have any questions or there are issues we did not address, please give us a call.

Sincerely,

Charles E. Corsi
Regional Supervisor

2.6.1.2 IDEQ Comments to Submittal by Idaho Department of Fish & Game

First, a couple of clarifications from the IDFG letter. Torrelle Falls may have not been a natural fish migration barrier. Highway 57 and the predecessor road to Hwy 57 tightly pinched the Lower West Branch main stem to the west over the falls. Based on the topography in the vicinity of the falls, historically, the stream may have meandered over a less severe drop. Secondly, IDEQ placed a temperature sensor in the main stem down from Torrelle Falls from June 24 – October 2, 2000. During the warmest period of the season, from early July to mid August, daily maximum temperatures ranged from 15 – 19° C (Rothrock 2001).

In the July, 2003 request package for contributions to this draft document, IDEQ's request for input from IDFG included:

- a. A statement of fisheries management goals, objectives, and/or policies for the Lower West Branch main stem within Idaho, and its perennial tributaries within Idaho. The above statement should take into account the fact that the Idaho segment of the LWB main stem is on the federal Clean Water Act 303(d) list as "water quality impaired", and the LWB watershed has an EPA approved sediment TMDL.
- b. A list of practical and economically reasonable methods to improve stream bank and in-stream fish habitat within the LWB and tributaries. Glen Rothrock is collecting a list of private landowners that have segments of the LWB main stem or tributaries running through their property, and have expressed interest, or would otherwise go along with, fish habitat improvement projects within their property. A list of project possibilities might include placement of large wood to form pools and cover. A list of fish habitat improvement projects should include cost estimates.

IDEQ does not believe that the above requests were satisfactorily addressed by IDFG.

2.6.2 Washington Department of Fish & Wildlife

Response Letter from Washington Department of Fish & Wildlife

I can personally commit to working with any landowners private or otherwise that want to work on improving habitat and water quality issues in the Lower West Branch. In fact, any projects within the OHWL of state waters requires a Hydraulic Project Approval from WDFW. As the Area Habitat Biologist for Pend Oreille County, I am responsible for issuing these permits.

With regards to economically reasonable methods to improve stream bank and in-stream fish habitat within the LWB and tributaries, I would refer interested parties to WDFW - Aquatic Habitat Guidelines Documents located on our web site: www.wa.gov/wdfw/hab/ahg. Our telephone number is (360) 902-2534, and fax number is (360) 902-2946.

The recently revised Integrated Streambank Protection Guidelines is an excellent document and addresses issues such as erosion-control, bank stabilization, anchoring and placement of LWD, construction considerations, cost of techniques, etc.

With regards to landowners expressing an interest in developing trout ponds, WDFW would discourage the construction of trout ponds unless they are completely separate and isolated from waters of the state. We would definitely not authorize the construction of fish ponds within flowing streams. Prior to constructing any fish pond the landowner would need to contact WDFW and speak with a fisheries biologist and the area habitat biologist.

At a minimum WDFW would require a fish transport permit and possibly a Hydraulic Project Approval. WDOE would have to be contacted with regards to water rights and diversions. If WDOE approved a water right and diversion from a flowing stream then screening would be required by WDFW along with a HPA. Fish would have to come from approved sources and would likely be required to be sterile (triploids).

The request to build a fish pond would have to be looked at on a case by case basis. My experience has been that private fish ponds would not improve the water quality issues that the LWB faces.

With regards to grant programs for habitat improvement, the only grant program that I am familiar with at this time is the EQIP program. This is being administered by NRCS. I believe you can contact Mark Simpson at the Newport NRCS office for more information.

There may be some additional money available through the state forest practice program in the future. The road maintenance and abandonment requirements for small landowners have just undergone a change in legislation. Nobody is really certain what the new law means yet. One of the main concerns with the program was the high cost of replacing fish passage barriers (old culverts, etc). I am not sure if additional money will be available in the form of grants etc. to assist these landowners.

With regards to WDFW's role on new construction projects, timber sales, etc, the only actual permit WDFW issues with the exception of the fish transport permit is the Hydraulic Project Approval. Any construction project, culvert replacement project, bank stabilization project, etc, would require a HPA. Comments on timber sales and forest road construction are mostly directly addressed by WDNR. Our forest and fish biologist, Doug Wiedemeier, comments on and is involved with road maintenance and abandonment plans that are required of large and some small timber landowners.

I do not know of any specific changes we would make or have made with regards to commenting on a project that is a watershed with an EPA approved sediment TMDL.

I hope these comments are somewhat helpful. Please don't hesitate to call if you have additional questions or need further clarification.

Sincerely,

Jeff Lawlor, Area Habitat Biologist
Washington Department of Fish & Wildlife

2.6.3 US Fish & Wildlife Service

USF&WS did not submit narrative to this draft TMDL-IP. In the July, 2003 request package for contributions to this draft document, IDEQ requested the following input:

1. Are there additional fisheries management goals, objectives, and/or policies for the Lower West Branch main stem within Idaho and Washington, and its perennial tributaries, that can be added by a federal agency, the USF&WS?
2. Can the USF&WS add to a list of practical and economically reasonable methods to improve stream bank and in-stream fish habitat within the LWB and tributaries. Glen Rothrock is collecting a list of private landowners that have segments of the LWB main stem or tributaries running through their property, and have expressed interest, or would otherwise go along with, fish habitat improvement projects within their property. A list of project possibilities might include placement of large wood to form pools and cover. A list of fish habitat improvement projects should include cost estimates.
3. Can the USF&WS identify any fisheries grant programs available for in-stream habitat improvements for inclusion in the FMIP?

2.7 Environmental Regulation and Oversight Implementation Plan (ERIP)

The Idaho Department of Environmental Quality (IDEQ) will take the lead in formulating the ERIP report section. The report section will have contributions from the following agencies:

Idaho Department of Environmental Quality (IDEQ), Glen Rothrock, Coeur d'Alene

Washington Department of Ecology (WDOE), Dennis Murray, Spokane

2.7.1 Idaho Department of Environmental Quality (IDEQ)

IDEQ has the role of assuring Idaho's compliance with the Clean Water Act Section 303(d), and Idaho Administrative Code, IDAPA 58.01.02 – Water Quality Standards and Wastewater Treatment Requirements. For Lower West Branch, IDEQ's regulatory actions in relation to these laws are dictated by the following facts:

1. The Idaho segment of the LWB main stem remains on the federal Clean Water Act 303(d) list as Not Full Support of the beneficial uses cold water aquatic life and salmonid spawning (i.e., "water quality impaired"), as determined by IDEQ and documented in the *Priest River Subbasin Assessment and TMDL* (Rothrock 2001).
2. In accordance to IDAPA 58.01.02.054.02, IDEQ prepared a sediment TMDL for the LWB watershed (Rothrock 2001), and EPA approved the TMDL in March 2002. The TMDL includes allocations of the sediment Load Capacity, and allocations of sediment reduction goals within both Idaho and Washington lands.
3. The draft 2002/03 IDEQ 303(d) list adds heat as a pollutant of concern to the LWB in Idaho (because of water temperature exceedances of Idaho Standards for cutthroat spawning and incubation).
4. Thus, there is a mandate for restoration to Full Support of the beneficial uses. The attempt toward restoration as specified in this TMDL-IP will include long-term reduction in sediment yield to watershed streams, improved stream bank stabilization and stream shade, and improved in-stream fish habitat.

The environmental regulatory role of IDEQ will work for compliance of IDAPA 58.01.02.054.04 as follows:

Waters with EPA approved TMDLs Prior to Development of an Implementation Plan

- .04 *High Priority Provisions. Until a TMDL or equivalent process is completed for a high priority water quality limited water body, new or increased discharge of pollutants which have caused the water quality limited listing may be allowed if interim changes, such as pollutant trading; or some other approach for the pollutant(s) of concern are implemented and the total load remains constant or decreases within the watershed. Interim changes shall maximize the use of cost effective measures to cap or decrease controllable human-caused discharges from point and nonpoint sources. **Once the TMDL or equivalent***

process is completed, any new or increased discharge of causative pollutants will be allowed only if consistent with the approved TMDL. Nothing in this section shall be interpreted as requiring best management practices for agricultural operations which are not adopted on a voluntary basis.

IDEQ roles in the TMDL Implementation Plan process have previously been discussed in Section 1.4.

2.7.2 Washington Department of Ecology (WDOE)

Response Letter from Washington Department of Ecology

This letter is in response to your request for the Washington State Department of Ecology's Environmental Regulation and Oversight Implementation Plan (ERIP) concerning the Lower West Branch (LWB) Priest River sediment TMDL. Upper watershed portions of the LWB are located in Washington State; Ecology realizes for effective reduction in sediment load, land use in Washington must be considered. Ecology will continue to provide technical assistance and funding opportunities in support of the State of Idaho Department of Environmental Quality (IDEQ) LWB sediment TMDL Implementation Plan.

The 1998 Washington State Legislature passed the Watershed Management Act (ESHB 2514/RCW 90.82) to provide a framework for local citizens, interest groups, and government organizations to collaboratively identify and solve water-related issues in each of the 62 Water Resource Inventory Areas (WRIA's) in Washington State. The Watershed Management Act enables, but does not require, local groups called "planning units" to form for the purpose of conducting planning. If certain designated local governments and special districts agree to initiate planning, a planning unit may be formed. The State may then offer grant funding to the planning unit to fund their watershed planning. WRIA 62, Pend Oreille formed a Watershed Planning Unit in the year 2000.

In addition to providing funds for watershed planning, supplemental grant funds are also available to the planning units through Ecology. The Pend Oreille watershed planning unit has submitted a water quality supplemental grant application for a web-based spatial data interface for the storage and analysis of water quality and stream flow data. Ecology's Eastern Regional Office (ERO) has agreed in principle to support the concept and provide the data necessary to develop the web-site as well as provide WRIA 62 water quality data on an annual basis.

Ecology has a role of facilitating and working with other Washington state agencies, conservation districts, Natural Resources Conservation Service, Watershed planning units, and additional organizations and government agencies concerning water-related issues. In view of the Department's continuing support, technical assistance, and funding opportunities, Ecology is assured that these activities will allow for achieving the sediment reduction targets of the IDEQ Lower West Branch Priest River sediment TMDL.

Please contact me at (509) 329-3493 if you have any questions.

Dennis Murray
Water Quality Program
Eastern Regional Office

2.7.2.1 IDEQ Comments to Submittal by Washington DOE

IDEQ has been in communication with the committee groups developing watershed plans for the Washington Water Resource Inventory Area (WRIA) 62, or the Pend Oreille River Watershed Planning Unit. Boundaries of WRIA 62 include Idaho watersheds that drain east into Lower Priest River which in turn drains into Pend Oreille River. Included is the Lower West Branch watershed.

In March 2002, IDEQ gave a presentation to WRIA 62 group members explaining the §303(d) listing process in Idaho, along with Idaho's TMDL process and progress. There are also members on the Lower West Branch WAG who are committee members for WRIA 62, including USFS staff from the Priest Lake Ranger District, Washington DOE, NRCS out of Newport, Pend Oreille Conservation District, Kalispel Tribe, and Stimson Lumber Company.

Communication between the Washington and Idaho groups has already led to some assistance in the TMDL effort for Lower West Branch. An example is the grant application package that the POCD developed for submittal to the Washington DOE for Lower West Branch project funding under the Clean Water Act §319 Nonpoint Source Fund (see Section 2.2.2).

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- Washington Forest Practices Board (WFPB). 1997. Board Manual: Standard methodology for conducting watershed analysis under Chapter 222-22 WAC. Version 3.0.

Appendix A. Letter Mailed to Lower West Branch Property Owners

February 18, 2003

To: Property and Home Owners in the Lower West Branch Priest River Watershed

From: Glen Rothrock, Idaho Department of Environmental Quality, Coeur d'Alene

Re: Planning for Watershed Improvement Projects

This letter is to inform property and home owners in the Lower West Branch watershed (Idaho and Washington) of current planning efforts for water quality improvement projects. I would like to provide a brief background of events and reasons for these planned improvement projects.

For the past seven years, the Idaho Department of Environmental Quality (IDEQ) has been conducting comprehensive state-wide assessment of Idaho waters for compliance with the federal Clean Water Act and Idaho Water Quality Standards (Idaho code). This assessment in part relates to a 1994 lawsuit filed against the U.S. Environmental Protection Agency (EPA). The plaintiffs contended that Idaho was not in compliance with the Clean Water Act (administered by EPA) in that Idaho had not sufficiently identified "water quality impaired" streams, rivers, and lakes within the state, and that the state did not have sufficient programs in place to clean up impaired waters. An example of a "water quality impaired stream" is a stream that has received excessive sediment from human land use activities (unpaved roads, timber harvests, grazing), where the sediment has damaged the habitat of cold water organisms. This may mean that excess sediment has filled in trout pools, covered over gravels that trout spawn in, and covered over gravels where aquatic insects live (trout food). EPA lost the lawsuit in federal court, and this initiated a more aggressive approach by Idaho in dealing with impaired streams.

Through various field surveys within the Lower West Branch main stem, from the Idaho/Washington border to where the stream enters Lower Priest River, IDEQ has determined that Lower West Branch qualifies as a "water quality impaired" stream. Overall trout numbers are low, and within the main stem there appears to be mainly brook trout and an absence of the native cutthroat trout. Many gravel areas are covered with silt and sand, and other fish habitat features are generally rated as poor. It is IDEQ's assessment that excess sediment from decades of land use activities, as well as other conditions such as loss of vegetation along streambanks, is in part, related to this impaired cold water fishery condition.

In March 2002, EPA formally approved Lower West Branch as an impaired stream. This leads to the next step, which is to put together a long-term Implementation Plan of proposed projects that will: 1) begin to reduce the annual amount of sediment that flows from watershed lands (both Idaho and Washington) into the Lower West Branch and its tributaries (Bear Paw Creek for example), 2) reestablish shrubs and trees along streambank sections that are bare, and 3) improve trout habitat (for example, place and secure large wood in the stream to create pools).

A group of government agencies, soil conservation districts, and private land owners, both from Idaho and Washington, has begun the process of putting together an Implementation Plan of improvement projects (see list of agencies and individuals on the next page). This group will identify and prioritize projects to reduce, on a long-term basis, the annual sediment input to watershed streams, and to identify potential funding and grant sources for these projects.

An Implementation Plan of future projects however, **can only be successful if the property owners in the watershed are aware of the planning efforts, the reasons behind the efforts, and are willing to participate in the projects.** There are two ways that we, as a group, will begin to involve the property and home owners in the watershed:

1. We will hold a **Public Information meeting** on Lower West Branch water quality and watershed improvement projects on **Wednesday, March 19, 2003, at the Priest River Senior Citizens Center (4th and Jackson) beginning at 7:00 p.m.** We encourage you to attend this meeting so that we can present information and address your questions and concerns.
2. Please write or telephone Glen Rothrock of IDEQ (see letterhead information) if you would like to participate in any improvement projects on your property. A representative from the group will meet with you at your property, examine a specific problem, and discuss potential improvement projects. The type of improvement projects on roads, stream crossings, steep slopes, hay cropping lands, and grazing lands, can include:
 - Improvement of road stream crossings where culvert banks are eroding into a stream
 - Replacement of stream crossing culverts where the culverts are undersized or are preventing fish passage
 - Improvement of road sections next to a stream where the road is eroding into a stream
 - Stabilization of a steep slope where the slope is eroding into a stream
 - Fencing along a stream section to restrict large animal access to the stream, and development of off-site watering facilities
 - Planting of shrubs and trees along a bare and damaged stream section running through your property
 - Instream fish habitat improvements on a stream section running through your property, such as placing large wood to create pools
 - Ensuring that private timber harvesting practices follow the Best Management Practices of the Idaho Forest Practices Act (FPA) to protect water quality

I would like to emphasize that projects for sediment reduction, streambank vegetation, and fish habitat improvements on private property are voluntary actions (except that private timber harvests do need to follow the Idaho FPA). I believe you will find that representatives of government agencies and conservation districts are professional in their interaction with you, will offer practical solutions, and will not come across as trying to regulate your actions. These representatives also have knowledge of resources to help finance improvement projects.

In closing, I do encourage you to attend the Public Information meeting on March 19th. We would like to meet with you and discuss water quality issues in the watershed.

Sincerely,

Glen Rothrock,
DEQ Watershed Coordinator for the Priest River Basin

Appendix B. Prospective Funding Programs for Watershed Restoration

Appendix B, with some modification and update, has been taken *from Idaho Nonpoint Source Management Plan* (IDEQ 1999).

The following is a brief summary of some of the ongoing programs currently used to abate nonpoint source pollution and is not meant to minimize or undermine the importance of those state, federal, local or tribal programs which have not been included in this chapter. Many of these programs have been integrated, such as joint PL566 projects to ensure adequate implementation coverage, and ensure all landowners are able to participate and implement BMPs at some level. Designated agencies and their partners using a mix of regulatory, voluntary, and incentive-based programs, target a given watershed, and in conjunction with the BAG/WAG process as outlined in Idaho's Water Quality Law, provides for the abatement and prevention of nonpoint source pollution in a complementary holistic fashion.

§104(b)(3)...Tribal and State Wetland Protection Grant, EPA

This program provides financial assistance to state, tribal, and local government agencies to develop new wetland protection programs or refine and improve existing programs. All projects must clearly demonstrate a direct link to improving an applicant's ability to protect, restore or manage its wetland resources.

§303 (d)...Water Quality Planning and Management, DEQ/EPA

Water quality standards and implementation plans including review and revision of standards, water quality limited segments, total maximum daily loads, the continuing planning process, and thermal limits. §303 (d) requires states to prepare a prioritized list of water quality limited segments not meeting state water quality standards.

§319 (h)...Nonpoint Source Grants, EPA/DEQ

This program provides financial assistance for the implementation of best management practices to abate nonpoint source pollution. The DEQ manages the NPS program. All projects must demonstrate the applicant's ability to abate NPS pollution through the implementation of BMPs.

Aquatic Ecosystem Restoration, CoE

Section 206 of the Water Resources Development Act of 1996, provides financial assistance for aquatic and associated riparian and wetland ecosystem restoration and protection projects that will improve the quality of the environment. There is no requirement for an aquatic ecosystem project to be linked to a Corp of Engineers project. The program does require that a non-federal interest provide 35% of construction costs, including all lands, easements, right-of-ways and necessary relocations. The program also requires that 100% of the operation, maintenance, replacement, and rehabilitation be borne by the non-federal interest. The program limits the amount of federal assistance to \$5 million for any single project.

Challenge Cost-share Program, BLM

This program provides 50% cost-share monies on fish, wildlife, and riparian enhancement projects to non-federal entities.

Conservation Operations Program (CO-01), NRCS

The CO-01 program provides technical assistance to individuals and groups of landowners for the purpose of establishing a link between water quality and the implementation of conservation practices. The NRCS technical assistance provides farmers and ranchers with information and detailed plans necessary to conserve their natural resources and improve water quality.

Conservation Research and Education, NRCS

The Conservation Research and Education program was created through the 1996 Farm Bill and is administered by the National Natural Resources Conservation Foundation. The purpose of the program is to fund research and educational activities related to conservation on private lands through public-private partnerships.

Conservation Reserve Program (CRP), NRCS

The CRP program provides a financial incentive to landowners for the protection of highly erodible and environmentally sensitive lands with grass, trees, and other long-term cover. This program is designed to remove those lands from agricultural tillage and return them to a more stable cover. This program holds promise for nonpoint source control since its aim is highly erodible lands.

Conservation Technical Assistance (CTA), NRCS

Technical assistance for the application of BMPs is provided to cooperators of soil conservation districts by the NRCS. Preparation and application of conservation plans is the main form of technical assistance. Assistance can include the interpretation of soil, plant, water, and other physical conditions needed to determine the proper BMPs. The CTA program also provides financial assistance in implementing BMPs described in the conservation plan.

Cooperative Studies Program, USGS

The Cooperative Studies Program provides for up to 50% cost-share on water quality and water quantities studies.

Ducks Unlimited Marsh Projects, Ducks Unlimited

Ducks Unlimited is committed to wetland habitat development through their funding and implementation efforts. The Ducks Unlimited Marsh Project has been active in Idaho and cost shares on the development and/or enhancement of wildlife habitat or wetlands.

Environmental Quality Incentives Program (EQIP), NRCS

EQIP is a program based on the 1996 Farm Bill legislation and combines the functions of the Agricultural Conservation Program, Water Quality Incentives Programs, Great Plains Conservation Program, and the Colorado River Basin Salinity Control Program. EQIP offers technical assistance, and cost share monies to landowners for the establishment of a five to ten year conservation agreement activities such as manure management, pest management, and erosion control. This program gives special consideration to contracts in those areas where agricultural improvements will help meet water quality objectives.

Environmental Restoration, CoE

Section 1135 of the Water Resources Development Act of 1986 provides for modifying the structure, operation, or connected influences or impacts from a Corp of Engineer project to restore

restore fish and wildlife habitat. The project must result in the implementation or change from existing conditions, and the project benefits must be associated primarily with restoring historic fish and wildlife resources. Though recreation cannot be the primary reason for the modification, an increase in recreation may be one measure of value in the improvement to fish and wildlife resources. The program requires a non-federal sponsor which can include public agencies, private interest groups, and large national nonprofit organizations such as Ducks Unlimited or the Nature Conservancy. Operation and maintenance associated with the project modifications are the responsibility of the non-federal sponsor. Planning studies, detailed design, and construction are cost shared at a 75% federal and 25% non-federal rate. No more than \$5 million in federal funds may be spent at a single location.

Farm Services Agency Direct Loan Program, FSA

This program provides loans to farmers and ranchers who are unable to obtain financing from commercial credit sources. Loans from this program can be used to purchase or improve pollution abatement structures.

Flood Plain Management Services, CoE

Section 206 of the Flood Control Act of 1960 authorizes the Corp of Engineers to provide information, technical assistance and guidance upon request to states and local communities to reduce flood damages by informing people who live and work in the flood plain of its hazards, and what actions they can take to reduce property damage and prevent the loss of life.

Flood Risk Reduction, FEMA

The Flood Risk Reduction program authorizes FEMA to develop voluntary contracts that provide a lump sum payment to producers who farm land with a high flood potential. In return for the lump sum payments, the producer agrees to comply with applicable wetlands and high erodible land requirements.

Forest Incentives Program (FIP), NRCS

The FIP program is designed to help small private landowners increase timber production on private-owned, nonindustrial, forest lands. Cost-share funds can be used for a variety of purposes including tree plantings, improving a stand of trees, and site preparation for natural regeneration of trees.

Forest Service Challenge Cost-share Program, USFS

This program focuses on fish and wildlife habitat improvements with funds being cost-shared to any non-federal entity.

Forest Service Soil and Water Improvement Program, USFS

This program includes funds to complete improvement projects designed primarily to reduce erosion and sedimentation, and meet targets identified in National Forest System Land Management Plans.

Ground Water Program, DEQ

The ground water program provides the statewide leadership role for ground water protection through the implementation of the Ground Water Quality Rule, regional and local monitoring,

wellhead protection program, and through technical and educational assistance to local, city, county, and state governments.

In 1989, the Idaho Legislature enacted the Ground Water Quality Protection Act creating a Ground Water Quality Council that developed the state Ground Water Quality Plan. The plan includes six key policy areas and a section on development of a ground water quality-monitoring program for the State. The six key ground water policies of the State of Idaho are:

- Maintain and protect the existing high quality of the State ground water;
- Prevent contamination of ground water from all regulated and nonregulated sources of contamination to the maximum extent practical;
- Provide educational programs on ground water protection, prevention of ground water contamination, and ground water restoration;
- Provide information and encourage public participation in applicable activities related to ground water quality protection;
- implement and maintain an ongoing statewide ground water quality monitoring network; and
- Conduct remediation when feasible and appropriate where contamination resulting from human activities produces a significant potential for the impairment of an existing or protected beneficial use of ground water.

IDEQ developed the Ground Water Quality Rule in 1996 using a negotiated rule making procedure. This rule establishes minimum requirements for the protection of ground water through ground water quality standards and an aquifer categorization system. The rule contains numerical and narrative standards which apply to all ground water in the state, with the numerical standards being based on the maximum contaminant levels established under the federal Safe Drinking Water Act. The plan, act, and rule provide the underlying guidance for protection of the State's ground water from nonpoint source contamination.

Hydrologic Unit Areas (HUAs), NRCS

The NRCS is responsible for the HUA water quality projects. The purpose of these projects is to accelerate technical and cost-share assistance to farmers and ranchers in addressing agricultural nonpoint source pollution.

Idaho Riparian Tax Credit (RTC) (Idaho Code §63-3024B), Interagency State Tax Commission

The purpose of RTC program is to provide a public and private partnership for the improvement, repair, and rehabilitation of forest, range, and farm lands. Through tax incentives, landowners are encouraged to fence, set aside, or otherwise improve lands to enhance riparian health.

Idaho Water Resources Board Financial Programs, IDWR

The Idaho Water Resources Board Financial Program assists local governments, water and homeowner associations, non-profit water companies, and canal and irrigation companies with funding for water system infrastructure projects. The various types of projects that can be funded include: public drinking water systems, irrigation systems, drainage or flood control, ground water recharge, and water project engineering, planning and design. Funds are made available through loans, grants, bonds, and a revolving development account.

National Conservation Buffer Initiative, NRCS

The National Conservation Buffer Initiative program provides cost-share funds in an effort to use grasses and trees as conservation buffers to protect and enhance riparian resources on farms. This program will be an integral part of TMDL/WRAS implementation planning to ensure land management practices are moved away from streams and riparian areas.

Planning Assistance, CoE

Section 22 of the Water Resources Development Act of 1974 authorizes the Corp of Engineers to assist local governments and agencies, including Indian Tribes, in preparing comprehensive plans for the development, utilization and conservation of water and related resources. Total costs for projects cannot exceed \$1 million in a single year and are cost-shared at a 50% federal and 50% non-federal rate.

Range Improvement Fund - 8100, BLM

This program focuses on improving rangeland management conditions, including the implementation of best management practices. A portion of the money to operate the program comes from the grazing fees paid by permittees.

Small Watersheds (PL-566), NRCS

The Small Watersheds program authorizes the NRCS to cooperate in planning and implementing efforts to improve soil and water conservation. The program provides for technical and financial assistance for water quality improvement projects, upstream flood control projects, and water conservation projects.

Partners for Wildlife (Partners), USFWS

The Partners for Wildlife program is implemented by the U.S. Fish and Wildlife Service and designed to restore and enhance fish and wildlife habitat on private lands through public/private partnerships. Emphasis is on restoration of riparian areas, wetlands, and native plant communities.

Pheasants Forever

Pheasants Forever can provide up to 100 percent cost-share for pheasant and other upland game projects which establish, maintain, or enhance wildlife habitat.

Resource Conservation and Development (RC&D), NRCS

Through locally sponsored areas, the RC&D program assists communities with economic opportunities through the wise use and development of natural resources by providing technical and financial assistance. Program assistance is available to address problems including water management for conservation, utilization and quality, and water quality through the control of nonpoint source pollution.

Resource Conservation and Rangeland Development Program (RCRDP), SCC

The RCRDP program provides grants for the improvement of rangeland and riparian areas, and loans for the development and implementation of conservation improvements.

State Agricultural Water Quality Program (SAWQP), (1980-1999); Water Quality Cost-Share Program for Agriculture, SCC/ISDA

SAWQP was the primary state planning and implementation program from 1980 through 1999. The state replaced SAWQP in 1999 with a new agricultural water quality incentive program, under the direction of the SCC as the designated agency for agriculture and grazing, which focuses more directly on implementation of agricultural TMDL plans. Where appropriate, state and federal incentive programs are integrated through the scoping process in the planning phase to maximize nonpoint source water quality protection for agricultural activities (see Introduction-Historical and Chapter 2).

State Revolving Fund (SRF), DEQ

The DEQ Grant and Loan Program administers the State Revolving Fund. The purpose of the program is to provide a perpetually revolving source of low interest loans to municipalities for design and construction of sewage collection and treatment facilities to correct public health hazards or abate pollution. Loans can also be made available for all sectors of nonpoint source pollution. The Grant and Loan Program uses a priority rating form to rank all projects primarily on the basis of public health, compliance, and affordability.

Stewardship Incentives Program (SIP), IDL

SIP provides technical and financial assistance to encourage non-industrial private landowners to keep their lands and natural resources productive and healthy. Qualifying land includes rural lands with existing tree cover or land suitable for growing trees. Eligible landowners must have an approved Forest Stewardship Plan and own less than 1,000 acres.

Swampbuster, NRCS

The Swampbuster program is designed to discourage the conversion of wetlands for agricultural crop production. Under this provision, anyone planting crops on wetlands converted after December 23, 1985, is ineligible for most USDA farm program benefits.

Wetlands Reserve Program (WRP), NRCS

WRP was established to help landowners work toward the goal of "no net loss" of wetlands. This program provides landowners the opportunity to establish 30-year or permanent conservation easements, and cost-share agreements for landowners willing to provide wetlands restoration.

Wildlife Habitat Incentive Program (WHIP), NRCS

WHIP was established to help landowners improve habitat on private lands by providing cost-share monies for upland wildlife, wetland wildlife, endangered species, fisheries, and other wildlife. Additionally, cost share agreements developed under WHIP require a minimum 10-year contract.