MEMORANDUM

TO: Forest Practices Board

FROM: Jim Hotvedt, Adaptive Management Administrator JH

DATE: July 19, 2010

SUBJECT: Policy Recommendation to Extend Road Maintenance and Abandonment Plan Deadline

The Forests and Fish Policy Committee is recommending a rule change to allow landowners to apply for an extension of the Road Maintenance and Abandonment Plan (RMAP) deadline for up to five years (to July 2021). The recommended rule change would amend the completion dates in WAC 222-24-050 and 051, specifically, changing the completion date for RMAPs from July 1, 2016 to July 1, 2021. Board Manual (BM) Section 3 may also be revised to update RMAP reporting standards and procedures.

Although Policy is forwarding this recommendation to you, approval of the recommendation by Policy was conditioned upon clarifying implementation details and the role of cooperators (Ecology, WDFW, affected tribes and interested parties) during review and approval of an RMAP extension. If these issues can be settled to all caucuses' satisfaction by the end of July, this recommendation will remain on the Board's agenda. If the caucuses do not reach consensus by the end of July, the recommendation will be removed from the Board's agenda.

Policy's recommendation for a rule change is one component of a comprehensive approach at responding to forest landowner cash-flow challenges resulting from the economic recession. The Board elements of this approach are the recommended rule change to extend the RMAP deadline and possible Board Manual revisions. A third component is the development of an operational plan.

Elements of the operational plan include development of new RMAP reporting forms and landowners submitting a revised RMAP showing an adjusted even-flow schedule over the extension period. This will allow improved tracking and reporting with consistent data standards across all DNR regions. The plan would also include a commitment to enhance communication and coordination by holding annual RMAP status meetings at the Policy level, and by re-energizing regional meetings among DNR RMAP Specialists, Ecology, WDFW, tribal staff and landowners.

Finally, the plan would include an agreement by all caucuses to collaboratively pursue federal funding to accelerate fish passage barrier repairs through the Family Forest Fish Passage Program (FFFPP) and for county access roads. The caucuses also agreed to collaboratively

pursue funding to assess the condition of forest roads on small landowner properties, for adaptive management, and to complete the current work on watershed analysis.

Attached are six documents supporting the recommendations. The first is a letter from the Washington Forest Protection Association proposing a RMAP schedule adjustment. The second is the proposed RMAP extension recommendation document conditionally approved by Policy. The third is an "umbrella" document reaffirming the public values the Forest Practices rules were intended to protect, recognition of the TFW agreement and its associated collaborative nature, and new challenges that have emerged to bring the Forests & Fish caucuses together in a renewed spirit of collaboration. The fourth document is information compiled by Policy to evaluate the consequences of extending the implementation period for RMAPs. The fifth document is a memorandum from Darin Cramer summarizing existing regulatory authority regarding RMAP implementation. The last document is an illustration of what would be used to justify and pursue funding to accelerate the FFFPP and for road repairs and maintenance on county access roads.

JEH/
Attachments

1) Letter from WFPA dated May 27, 2010
2) Proposed RMAP Extension Recommendations
3) DRAFT F&F / RMAP "UMBRELLA DOCUMENT"
4) Information Compiled to Help Evaluate the Consequences of Extending the Implementation Period for Road Maintenance and Abandonment Plans in Washington
5) Memorandum from Darin Cramer dated June 21, 2010
6) Salmon Recovery, Working Forests, Renewable Forest Products, Jobs and Community Partnerships: A Significant Funding Opportunity

WASHINGTON FOREST PROTECTION ASSOCIATION
724 Columbia St NW, Suite 250
Olympia, Washington 98501
360-352-1500 • Fax: 360-352-4621

May 27, 2010

James Hotvedt
Adaptive Management Program Administrator
Washington Department of Natural Resources
P. O. Box 47012
Olympia, WA 98504-7012

Dear Mr. Hotvedt:

In light of the recent recession and its severe negative impact on lumber and timber markets, the Washington Forest Protection Association on behalf of its members is proposing a schedule adjustment to the time period for completing work on Road Maintenance and Abandonment Plans in order to reduce the annual cost of the program.

Attached is the "Report from Staff Work Group to Road Policy Work Group." This report provides information for consideration by the Forest and Fish Policy Committee regarding this proposal. The Report contains draft responses to six questions that are typically part of your consideration of a proposal presented to the Adaptive Management Program.

Thank you for your consideration.

Sincerely yours,

Peter Heide
Senior Director of Forest Policy

cc: Tom Robinson
Stephen Bernath

Proposed RMAP Extension Recommendations

SUMMARY

In response to economic conditions and a request to adjust the schedule for completing work according to Road Maintenance and Abandonment Plans (RMAPs), the Forests & Fish Policy Committee accepted the Charter of the Sub-Policy Group to develop a recommendation to the Forest Practices Board.

To optimize benefits to public resources in forested watersheds while providing near term financial relief for industrial forest landowners, the Sub-Policy Group developed a broad comprehensive approach to the initial request to adjust the RMAP deadline. This approach included discussion of funding needs for small forest landowners and for timber counties to accomplish road maintenance and fish passage improvements, and funding needs for adaptive management. During discussions, an additional priority surfaced – improving the data collection and reporting system for RMAP implementation. Based on these discussions, this findings report recommends a rule change regarding the RMAP deadline and proposes additional actions to enhance future RMAP efforts.

First, the Sub-Policy Group recommends a rule change allowing large private forest landowners operating under an RMAP, and small landowners choosing to file an RMAP plan to apply for an extension of the RMAP deadline for a maximum of five years (to July 2021). In order to receive an extension beyond the existing 2016 deadline, landowners would need to file a new or amended RMAP plan with a summary of work accomplished to date and a schedule for completion at an adjusted even-flow pace with the maximum extension of five years. These amended RMAPs will need to address how the worst-first priorities will be addressed. This shall include an assessment of the remaining fish passage barriers to be replaced and prioritization of fish passage work in the RMAP schedule for that landowner.

Second, to implement the rule change, the Forest Practices Board Manual will be updated to provide specific RMAP reporting procedural guidance, including data collection requirements and procedures, reporting requirements, and compliance.

Third, the Sub-Policy Group recommends developing an operational plan addressing RMAP-related issues in a comprehensive manner. The focus of this plan would be a Timber/Fish/Wildlife (TFW) collaborative on-the-ground approach in support of the RMAP rule change in conjunction with activities to enhance the effectiveness of RMAPs in forested watersheds. Elements of an operational plan include: support for the rule change and amended reporting and compliance procedures; support to enhance and standardize the information gathering and reporting system; descriptions of expectations for completed RMAPs; enhanced communication and collaboration among policy and field staff; and an agreement to collaboratively pursue sufficient funding to achieve results. An operational plan will be coordinated with similar collaborative efforts to secure long term funding to assess the full extent of roads on forested lands on small landowner properties, to determine the status of completion of small forest landowner RMAP work, and funding for adaptive management including completion of the current work on watershed analysis.

Proposed RMAP Extension Recommendations

BACKGROUND

A primary focus area for achieving the Forests & Fish goals is maintenance and improvement of forest roads and stream crossings through Road Maintenance and Abandonment Plans (RMAPs). Currently, projects identified in RMAPs must be completed by July 2016.

According to information compiled for the Staff Work Group Report, estimated private expenditures on RMAPs on approximately four million acres of large private forest ownership exceeds $131 million in the past decade, while public expenditures are estimated to be more than $19 million.[1] Additionally, the Family Forest Fish Passage Program (FFFPP) augments work on fish passage improvements on lands owned by small forest landowners – approximately half of the private forestlands in the state; the state has invested over $17 million in this program since 2003.[2]

Through 2008, approximately 71% of road miles identified for improvement in RMAPs have been improved to meet standards,[3] and 44% of identified fish passage barriers have been removed, resulting in 1,448 miles of historic fish habitat now accessible to fish.[4] As an indication of the implementation status of RMAPs, the Staff Work Group surveyed DNR specialists who reported on a sample of 70 RMAPs statewide; this survey indicated that a majority of the RMAPs are on or ahead of schedule, that good progress has been made on improving key road functions, and that landowners are making significant progress toward designated "worst first" road priorities.[5] These accomplishments provide a foundation for assessing future work priorities and program improvements.

Timber revenues provide the cash flow needed for RMAP projects on private forest lands. As one indicator of the effects of the recession on the timber industry, new home construction declined by 38% from 2008 to 2009, resulting in only 26% of annual lumber production as compared to 2005. Washington DNR estimates that housing starts are expected to gradually increase to more normal levels over the next three years.[6] Given this reduced level of harvest and resulting cash flow, an extension for a maximum of five years will allow landowners to re-calibrate work on RMAPs to match revenues without reducing the legal commitment to complete road improvements necessary to protect and restore water quality and fish habitat.

Small forest landowners are not required to submit an RMAP for their forest lands. Small forest landowners owning more than 80 acres must submit a Checklist RMAP with each forest practices application for the forest roads covered or affected by their forest practice

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[1] Road Policy Staff Work Group Report. May 2010. page 9-12.

[2] Salmon Recovery, Working Forests, Renewable Forest Products, Jobs and Community Partnerships: A Significant Funding Opportunity. May 18, 2010 DRAFT.

[3] Road Policy Staff Work Group Report., page 4.

[4] Id., page 6.

[5] Id., page 8.

[6] Id., page 17-19.

activity. To address fish passage barriers on their land, small forest landowners may apply for financial assistance through the Family Forest Fish Passage Program (FFFPP), a cost-share program to repair or remove fish passage barriers. This recommendation acknowledges that additional funding to accelerate work through the FFFPP is an integral element of a comprehensive approach that would be addressed through an operational plan.

The Sub-Policy Group reviewed three proposed alternatives for extending the RMAP schedule: 1) extend the deadline for all large private forest landowners by five years; 2) provide two options that allow landowners to decide whether to complete RMAPs by the 2016 deadline, or to update RMAPs to meet an extended deadline (up to five years) that would be tied to economic indicators; and 3) extend the deadline by five years and provide a tax incentive to encourage landowners to complete their RMAPs sooner. Alternatives 2 and 3 included a data reporting and tracking component. Implementation of any of these alternatives requires rule-making, and possibly state legislation.

In reviewing economic data and projections to make an informed decision on extending the RMAP deadline, the Sub-Policy Group contemplated an adjustable schedule tied to economic indicators. For a number of caucuses this option was not a desirable method for determining the duration of an extension. The Sub-Policy Group also discussed the proposal to tie early completion of RMAPs to a tax reduction; this option was deemed problematic given that state and county budgets are facing dramatically decreased revenues. Another possibility could be to incorporate an option to assess the effects of a targeted tax incentive in the recommended operational agreement.

During discussions of these alternatives, common principles emerged:

- An RMAP extension must provide assurances that public resources will be protected during the extension period, while providing near-term financial relief for the timber industry;

- An RMAP extension should be efficiently administered, given staffing and financial constraints for state agencies, tribes, and landowners;

- New and amended RMAPs need to be reported in a manner that allows information to be rolled up to the state level to enhance understanding of whether progress is adequate at landowner, region, and state levels;

- An expanded, consistent and transparent system using compatible data collection methods and procedures will enable agencies, tribes and landowners to more effectively track progress and compliance;

- Funding is needed to determine the scope of forest road maintenance and fish passage barrier needs in timber counties and on small forest ownerships;

- Reinvigorating the collaborative TFW approach will optimize progress toward achieving RMAP objectives as well as overall Forests and Fish goals.

Proposed RMAP Extension Recommendations

Questions raised about the various alternatives include:

- Economic incentives may encourage landowners to accelerate RMAP projects, but what are the impacts to state and county budgets?

- A tax incentive requires state legislative action; what is the likelihood of success?

- An economic indicator may be useful, but which indicator is appropriate?

- Currently RMAP data are in different formats and locations; how would a more uniform system be designed and implemented? What are the costs to upgrade a data collection and reporting system?

- There are 119 RMAPs covering large forest ownerships – 104 private ownerships and 15 public ownerships – approximately half the private forestlands in the state. To be effective in achieving Forests and Fish goals, additional funding is needed for projects on small forest land ownerships – 8,121 RMAP checklists have been filed through 2007. The proposed federal funding request is a good idea; how should it be linked with the RMAP extension recommendation, or at least made the focus of a continuing prioritized effort?

Discussion of these questions and concerns informed the following recommendations for a straightforward rule change, cooperative efforts to amend RMAP guidance, and an agreement to collaboratively implement a comprehensive approach, thereby reinvigorating the TFW approach.

PROPOSED RECOMMENDATIONS

The recommendations on the RMAP program for large private landowners[7] include three elements: a rule change, revised field guidance, and a new operational plan.

A. RECOMMENDED RULE CHANGE

The Sub-Policy Group recommends a rule change to allow landowners to apply for an extension of the RMAP deadline for up to five years (to July 2021). Those landowners who seek an extension will file an updated RMAP, using common reporting requirements, with a summary of work to date and a proposed schedule adjustment to continue work at an even-flow pace to complete work by the new deadline.

Landowners who do not apply for an extension will remain on their current schedules, and are not required to file an updated RMAP. These landowners should continue work on an even-flow pace for completion by July 2016; they will continue to use the annual review process and a new common reporting format.

B. REVISED GUIDANCE TO ADDRESS PROCEDURAL CHANGES

Elements to be revised in the Board Manual include:

- A schedule for progress reports for landowners using an RMAP extension;
- Standardized and compatible system for RMAP data collection, documentation and reporting;
- A clear indication of how DNR will determine that RMAPs are complete;
- All parties recognize the value, importance and need for early and active tribal involvement. The Department's review and approval will be conducted in consultation with Ecology, WDFW, affected tribes and interested parties. A clearly defined path for meaningful involvement needs to be developed and implemented in the decision-making process.

C. IMPLEMENTATION OF COMPREHENSIVE APPROACH THROUGH AN OPERATIONAL PLAN

To implement the comprehensive approach, the Sub-Policy Group recommends an operational plan with the following components.

[7] At this time the State does not plan on seeking an extension under these provisions, but does not want to be precluded from seeking an extension in the future if absolutely necessary. Pending a federal court decision between the State and certain tribes, representatives of State agencies and their attorneys will need to meet with tribal representatives and their attorneys to work through how such a potential extension could be addressed given the pending court decision and future legal requirements.

Proposed RMAP Extension Recommendations

- **Cooperative agreement to develop RMAP operational plan**

A comprehensive approach will be most effectively achieved through an operational plan with activities that will enhance efforts to achieve Forests & Fish goals while revitalizing the TFW approach through improved cooperation. Integral to an RMAP operational plan are collaborative efforts:

  - to enact the recommended rule change, including support for state funding for rule-making SEPA processes and for long-term compliance tracking;
  - to develop procedures for documenting progress and completion of RMAPs, and continuing road maintenance obligations;
  - to secure funding to determine the extent of actions required on small forest landowner properties;
  - to secure additional funding for FFFPP and county forest road improvements, and if necessary, state proprietary lands;
  - to design and implement a standardized data collection and reporting system that is cost-effective and transparent;
  - to meet Clean Water Act assurances milestones;
  - to develop a strategy for securing long-term adaptive management funding; and
  - to continue progress on developing recommendations for changes to the Watershed Analysis rules as requested by the Forest Practices Board.

- **Revitalize collaborative TFW on-the-ground approach: High level policy direction to convene a statewide "kick-off" meeting of agency, tribal, conservation and industry RMAP specialists**

The state will convene an annual meeting of the principals representing state and federal agencies, tribes, conservation organizations and landowners to affirm the direction of this effort, review progress, commit to seeking adequate funding for road work on federal, state and private lands and adaptive management, and other TFW issues as appropriate.

The state will also convene a statewide meeting (or regional meeting, depending on time and resources) of state and federal agency, tribal, conservation and landowner RMAP specialists to review and improve RMAP reporting requirements in order to efficiently track progress and compliance. Follow-up meetings will be held periodically to continue to refine a data system and ensure continuing benefits to public resources.

The precursor to such a meeting would be an agreement on the data needs and the development of a reporting system. To create the RMAP reporting and documentation process, DNR will initiate discussions among the Forests & Fish cooperators regarding what information is currently available for forest practices and for the annual Forest Practices HCP report, and what may be needed to develop an improved, standardized reporting and documentation system.

The statewide meeting(s) would begin with Forest & Fish leaders describing a common direction: to employ worst first and even-flow principles in annual RMAP work; to complete RMAPs on or ahead of schedule; and to obtain solid information. The meeting(s) would be an opportunity for participants to share ideas and expectations. The goal is for participants to understand expectations and requirements, and then be prepared to implement the reporting system. As needed, follow-up meetings could be scheduled in the regions for ongoing information and training on reporting requirements.

Other elements include annual meetings with landowners to review and discuss ways to optimize RMAP progress, and WRIA-based meetings regarding coordination of habitat restoration and RMAP projects in a watershed. Individual landowner RMAP annual reviews with DNR in consultation with Ecology, Fish and Wildlife, tribes and interested parties will provide additional opportunities for collaborative discussions about projects and needs, as well as generating data for the reporting system. In addition, periodic coordination meetings with interested parties in a watershed would provide opportunities to coordinate habitat and road projects, thus achieving greater public resource benefits and potentially more cost effective projects or cooperatively funded projects at an earlier date.

- Agreement to cooperatively engage in an intensive effort to secure funding to accelerate road maintenance and fish passage improvements on small forest lands and county access roads

To optimize benefits to public resources throughout forested watersheds, policy principals need to prioritize the effort by all caucuses to support a united message to state and federal funders that additional funding is critical. One element is funding to determine the extent of road maintenance and fish passage improvements needed on small forest lands; a proposal is being prepared and requires strong support to secure sufficient funding. In addition, a proposal for federal funding that augments state funds will accelerate the FFFPP; a similar funding program for county access roads will provide green jobs in rural communities while optimizing benefits to public resources.[8] Any additional federal or state funding obtained through this effort will augment continuing commitments by the state and US Forest Service to improve roads and stream crossings statewide.

[8] Salmon Recovery, Working Forests, Renewable Forest Products, Jobs and Community Partnerships: A Significant Funding Opportunity. May 18, 2010 DRAFT.

Proposed RMAP Extension Recommendations

- **Develop expanded and standardized RMAP data reporting and documentation system**

The Staff Work Group Report acknowledges the difficulty of accurately tracking RMAP work by individual landowners due to "…non-standardized reporting requirements. Furthermore, it is unknown the extent to which individual landowners are including roads in their RMAP inventory that did or did not need upgrading, which would directly influence the accuracy of predicting the remaining proportion (%) of the road network needing completion."[9] The Staff Work Group, in coordination with DNR Forest Practices Division, surveyed agency RMAP specialists to solicit professional opinions on the performance of a sample of RMAPs.[10] While the survey results generally indicate that most plans are on schedule, a standardized information system will allow more accurate determinations of individual RMAP progress and will enhance the ability to focus efforts on priorities in watersheds and regions.

As one element of an operational plan, Forests & Fish participants agree to cooperatively develop a standardized transparent system for data collection and reporting, including protocols and methods for documenting RMAP completion. In addition to strengthening RMAP implementation, establishment of a standardized data / reporting system will meet one of the milestones to be achieved for extension of Clean Water Act assurances.

- **Regional RMAP teams: Improve coordination and consultation**

Focused efforts to energize periodic regional meetings among DNR RMAP specialists, DOE, DFW, tribal staff and landowners, as required in current rules, will enhance communication and training opportunities. Regional teams can cooperatively assess and review projects according to priorities in watersheds, such as salmon recovery plans. Through more effective communication combined with an improved information system, participants are better able to address particular issues before they become problems requiring regulatory intervention. Regional teams can also coordinate to obtain RMAP information for use in annual progress reports, such as the Forest Practices HCP annual reports.

- **Activities and deadlines linked to RMAPs**

Other activities with similar goals are annual Forest Practices HCP reports to the federal Services, the Small Landowner RMAP Checklist report due in 2013 to the legislature, and Clean Water Act assurances milestones including funding for adaptive management. A cooperative approach to accomplishing the RMAP work and a data collection and reporting system will enhance these related efforts.

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[9] Road Policy Staff Work Group Report, page 4-5.

[10] Id., page 7-9.

- Optional tax incentive

One option for future consideration could be a targeted tax incentive to encourage early completion of RMAPs. An assessment of this option would consider the effects of the tax incentive on state and county budgets, and assess the potential off-setting effects of sales and B&O taxes generated by road improvements and repair of culverts and bridges, together with employment benefits.

In considering this option, an analysis could be developed looking at differing qualifying actions and time periods and the resulting potential shifts in expenditures, tax revenue streams and employment. Because of the complexity and varying views on the feasibility and desirability of this action, we recommend that it not be considered at this time, but rather, it should be seriously explored in the future as an option to accelerate the rate of RMAP completion.

- Continue cooperative efforts to develop recommendations for changes to the Watershed Analysis rules as requested by the Forest Practices Board

Forests and Fish Policy has formed a subgroup, and agreed upon a charter, to respond to the Forest Practices Board's adaptive management proposal regarding Watershed Analysis rules. This effort is off to a good start with a target schedule of completing work by December of 2010, and no later than May 2011.

- Continue efforts to develop a strategy for securing long-term adaptive management funding

Securing long-term adaptive management funding is the next significant challenge for Forests and Fish cooperators, and is essential to the long-term viability of the Forest Practices HCP. Policy principals will cooperatively engage in sustained collaboration to secure funding for research and other Adaptive Management Program needs.

DRAFT F&F / RMAP "UMBRELLA DOCUMENT"
to accompany RMAP proposed recommendation to Policy and Forest Practices Board

Forestry and fishing have been the foundation of the Pacific Northwest's economy, environment and culture for generations – a foundation so deep it is protected by important federal Indian treaties. Across Washington State, from the Olympic Peninsula rainforests to the pine forests of the eastern dry country, forests are vital habitat for native fish. Forests and salmon are inseparable and signature icons of the Evergreen State and the entire Northwest.

Washington State works hard to protect its forests – and to keep them working. State law requires the state to collaborate with federal, tribal and local governments, non-profit organizations, and private forest landowners to apply policies and regulations that guide forest practices. These policies and regulations must be implemented to meet diverse interests while keeping the forest industry economically strong. Washington is clear about the public values it seeks to protect:

- Rebuild salmon populations to harvestable levels;
- Honor and implement Indian treaty fishing rights;
- Sustain our forest industry and encourage renewable green products;
- Improve water quality in forested watersheds by reducing sediment delivery to streams and spawning areas; and
- Minimize flooding and resulting downstream impacts.

Protection of these public values requires more than a legal and regulatory system; equally important is a collaborative approach to resolving problems. Washington State has a history of bringing diverse interests together at policy, local and technical levels to review and resolve issues. In 1987 participants in the Timber / Fish / Wildlife (TFW) negotiations adopted new ground rules to guide the management of Washington's forests "to meet the needs of a viable timber industry and at the same time provide protection for our public resources: fish, wildlife and water, as well as the cultural / archaeological resources of Indian tribes within our state."[1] The hallmark of the TFW approach is a spirit of cooperative problem-solving to achieve common goals and objectives.

The TFW agreement is the foundation of cooperative natural resource management in Washington's forests. In response to declines in salmonid populations and water quality in 1999, the TFW caucuses came together to address these issues, culminating in the Forests & Fish Report. This later became the basis of the current Forest Practices regulations and

[1] Timber/Fish/Wildlife Agreement. 1987.

the Forest Practices Habitat Conservation Plan that was endorsed by the federal government in 2006. This framework provides direction to forest landowners to achieve four Forests & Fish goals:

- To provide compliance with the Endangered Species Act for aquatic and riparian dependent species on non-federal forestlands;
- To restore and maintain riparian habitat on non-federal forestlands to support a harvestable supply of fish;
- To meet the requirements of the Clean Water Act for water quality on non-federal forestlands; and
- To keep the timber industry economically viable in the State of Washington.

A primary focus for work to achieve these goals is the maintenance and improvement of forest roads and stream crossings through development and implementation of Road Maintenance and Abandonment Plans (RMAPs). Implementation of RMAPs by large private and public forest landowners has been underway at an 'even-flow' pace with projects to be complete by July 2016. Public and private expenditures on RMAP projects have been significant over the past decade, and progress on improving water quality and fish passage is occurring on public and private forestlands throughout Washington.

Now, in 2010, after a decade of work to achieve the state's goals, new challenges have emerged to bring the Forests & Fish caucuses together in a renewed spirit of collaboration. The economic recession has dramatically reduced timber harvest and revenues, resulting in strained budgets for RMAP projects. Since the economic downturn in 2008, reduced cash flow from reduced harvest has impacted the ability of forest landowners to continue implementing RMAP plans at the projected even-flow pace. In light of the economic situation, Forests & Fish principals are supporting a defined extension of the RMAP deadline to allow landowners to implement their RMAPs on an adjusted schedule while continuing to meet their legal obligations and achieve the Forests & Fish goals.

In addition, a second challenge has emerged: enhancing the work by small forest landowners on road maintenance and fish passage improvements on their properties. This challenge also presents an opportunity to renew the focus on developing a more effective and timely collaborative process to address the worst problems first (the "worst first" strategy). While regulatory requirements for small forest landowners to improve roads and fish passage barriers on their lands are different than for large landowners, the renewed collaborative effort will lead to greater benefits for public resources on forestlands across the state. As one element of this effort, additional funding for a key program, the Family Forest Fish Passage Program, will accelerate progress on improving fish passage on family forestlands. Forests & Fish principals agree to engage in an intensive effort to secure additional funding that will augment state funding for the Family Forest Fish Passage Program.

In addition to the RMAP extension proposal and funding for the Family Forest Fish Passage Program, Forests & Fish principals are collaborating on addressing related funding and

regulatory priorities. Additional funding is needed and proposals developed to determine the extent of road maintenance and fish barriers on small forest landowner properties, and to accelerate road and fish barrier improvements on county roads. Forests & Fish principals are also committed to developing and implementing a strategy to secure funding for adaptive management and scientific research. Concurrently, Forests & Fish principals requested recommendations for changes to the Watershed Analysis rules; a work group is at work and anticipates developing recommendations by December 2010, and no later than May 2011.

Forests & Fish principals recognize that cooperative problem-solving is essential to sustaining Washington's forests, fish, water quality, and cultural and archaeological resources while supporting the continuing vitality of the forest products industry. The Forests & Fish principals are enthused and committed to acting on these priority issues in a renewed sprit of collaboration.

DRAFT

Information Compiled to Help Evaluate the Consequences of Extending the Implementation Period for Road Maintenance and Abandonment Plans in Washington

Report from Staff Work Group to Road Policy Work Group:

Mark Hicks (Washington Department of Ecology), Co-Chair

Peter Heide (Washington Forest Protection Association), Co-Chair

Marty Acker (National Oceanic Atmospheric Administration)

Nancy Sturhan (Northwest Indian Fisheries Commission)

Chris Mendoza (Conservation Caucus)

Curt Veldhuisen (Skagit River System Cooperative)

Jeff Davis (Washington Department of Fish and Wildlife)

David Whipple (Washington Department of Fish and Wildlife)

Dave Price (Washington Department of Fish and Wildlife)

Doug Martin (Washington Forest Protection Association)

May 2010

Document Purpose and Scope

This report is presented to the Forest and Fish Road Policy Work Group in response to a joint request from the state and large forest landowners to consider an extension of the timeline for completion of Road Maintenance and Abandonment Plans (RMAPs). In order to better understand the possible implications of such an extension, a work group was designated and assigned to assemble information on: 1) RMAP progress to date; 2) options for improving the tracking system for RMAP compliance and accountability; 3) draft answers to the six established Policy questions for the adaptive management process; 4) economic conditions and impacts on revenue to private and state landowners; and 5) Forest Practice Rules that remain in place to protect public resources regardless of an extension to the RMAP deadline (Appendix A).

Because the authors had minimal time to verify existing data or collect new data, this report relies primarily on pre-existing summaries from various sources. The information was the best available within the time constraints of the project, but the authors recognize that the report contains gaps and other limitations The scope of this project did not require any recommendations involving the policy merits of the RMAP extension and none are provided or implied in this report.

I. Introduction

The Forests and Fish Report (FFR), the forest practice rules amended to incorporate the FFR, and the Forest Practices Habitat Conservation Plan (FPHCP) together provide direction to forest landowners to achieve four goals:

- To provide compliance with the Endangered Species Act for aquatic and riparian dependent species on non-federal forestlands;
- To restore and maintain riparian habitat on non-federal forestlands to support a harvestable supply of fish;
- To meet the requirements of the Clean Water Act for water quality on non-federal forestlands; and
- To keep the timber industry economically viable in the State of Washington.

One major focus area for work to achieve these goals is the development and implementation of Road Maintenance and Abandonment Plans (RMAPs). As required, state forest managers[1] and large industrial forest landowners submitted their RMAPs and initiated actions to complete work by July 2016. Implementation of RMAPs includes improvements to forest roads, and repair or removal of fish passage barriers. These improvements need to be made at an 'even flow' pace designed to meet the 2016 deadline. Landowners rely on timber revenue to provide the cash flow to accomplish the needed improvements. Over the past year, reduced revenues for both private and public forest landowners has created concern that costs for RMAP implementation will outstrip available funds. Revenues used to make the needed road improvements have significantly declined in the past year due to the current economic downturn, and forest landowners request consideration of some relief from the financial burden of having to continue the pace of RMAP implementation at a rate to meet the current deadline.

Information gathered in this report will be presented to the Road Policy Work Group in May, to be used in formulating a recommendation to the Forests and Fish Policy Committee in June, with the goal of providing a proposal to the Forest Practices Board in August.

This report focuses on RMAP progress on the properties of large private and state landowners. RMAPs were initially required for all forest landowners. In 2003 the legislature modified this to require small forest landowners to submit a simplified

[1] Most Washington-state owned timberlands are covered under the State Trust Lands HCP, rather than the Forest Practices HCP. However, state lands follow the same RMAP requirements as for the Forest Practices HCP lands.

checklist RMAP in association with forest practice applications. A separate process is being initiated by the Forests and Fish Policy workgroup to examine the status of roads and fish barriers on small forest landowner properties.

II. Summary of RMAP Progress to Date by State and Large Private Landowners

Table 1. Summary of RMAP Progress from 2008 DNR[2] Forest Practice HCP Annual Report (from landowner reporting) [3]

Years	Number RMAPs	Total Miles Forest Road	Total Miles Road Needing Improvement prior to RMAP	Total Miles Improved	Total Miles Abandoned	Total Number Fish Barriers prior to RMAP	Number Fish Barriers Removed	Miles Fish Habitat Opened
2001-2008	119	57,442	22,900	15,019	2,431	6,505	2,871	1,448

A. Road Miles

Based on data from DNR's most recent HCP compliance report through calendar year 2008, seven and a half years, or halfway, through the program, 2,431 miles of road have been abandoned and 15,019 miles of road have been improved to meet standards (Table 1). The 15,019 miles of road improved represents 66 percent of the 22,900 miles of roads initially identified as needing improvement.[4] Since this estimate was for the period ending in 2008, the current proportion of roads improved would be somewhat higher. Assuming progress has been half of the historic even-flow rate (half of the average 9% per year) during this economic downturn, the current level of attainment would likely be near 71 percent of miles improved.

A recent interview with DNR staff indicates that it's been difficult to accurately track the total length of RMAP work completed by individual landowners, as a percentage of RMAP work remaining, due to DNR's non-standardized reporting requirements. Furthermore, it is unknown the extent to which individual landowners are including roads in their RMAP inventory that did or did not need

[2] In this report, it is important to distinguish between the Washington State Department of Natural Resources Forest Practices Division which administers the regulatory application of the forests practices rules, and the Washington State Department of Natural Resources State Trust Lands which manages forest resources for their fiduciary benefit.

[3] Washington State Department of Natural Resources. 2009. Forest Practices Habitat Conservation Plan Annual Report, July 1, 2008 – June 30, 2009. WDNR. Olympia, WA. Chapter 9: Road Maintenance and Abandonment Planning for Large Forest Landowners. http://www.dnr.wa.gov/Publications/fp_hcp_annrep09_ch09.pdf

[4] Many miles of forest road are on flat terrain or near ridge tops where they do not cross streams and have no potential to deliver sediment to streams or block fish passage. Other roads were upgraded following Watershed Analysis or other programs before Forest and Fish was implemented.

upgrading, which would directly influence the accuracy of predicting the remaining proportion (%) of the road network needing completion.

Another measure of progress can be found in the Cooperative Monitoring, Evaluation and Research Committee's (CMER) Road Sub-Basin Scale Effectiveness Monitoring Report (Dubé, et. al., in review).[5] This study evaluated forest roads in sixty sample blocks (~4 square miles each) randomly chosen from three sub-regions of Washington. For each block, the local road manager reported the percentage of road length meeting forest practices standards when surveyed in 2006 or 2008, as the result of RMAP and pre-RMAP road improvements. Figure 1 shows that the majority of blocks were 80% or more up to standards, and that progress is particularly strong in eastern Washington.

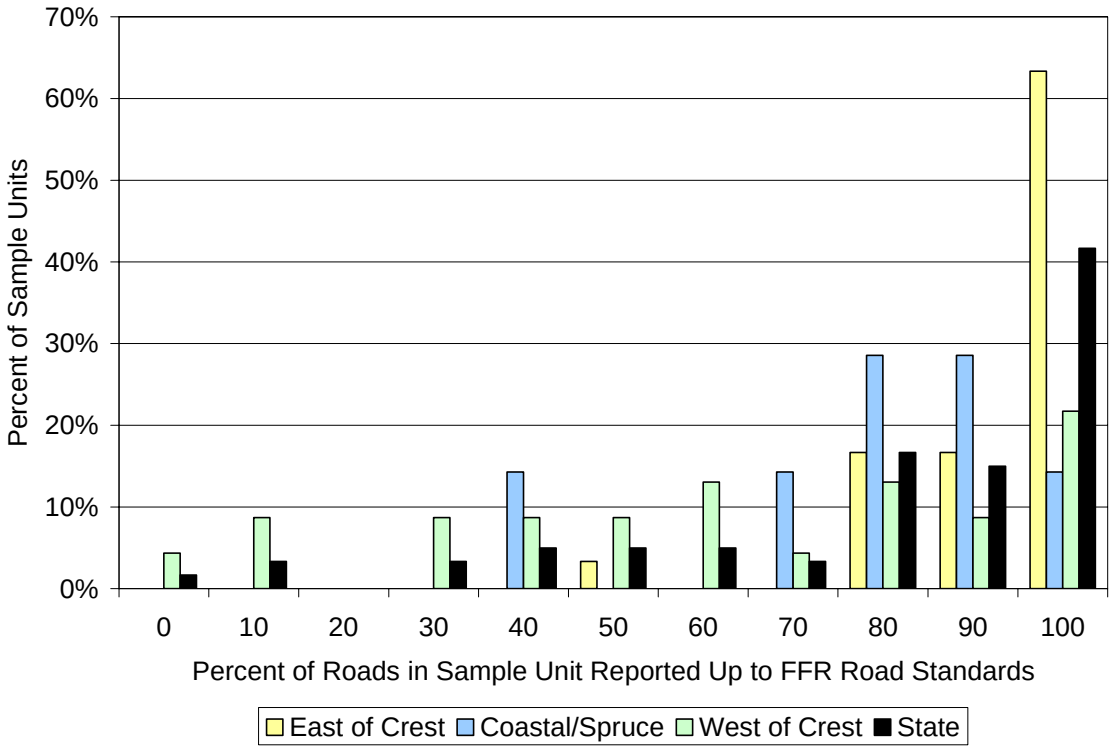

Figure 1: Percent of roads reported to meet forest practices standards within blocks included in the CMER Sub-basin-scale Road Project (Figure 27 from Dubé et al, in review). Percentages are based on reporting by landowner road managers, and overstate the percent completion of RMAP work because they include the road length that was up to current standards prior to RMAP program and work completed under RMAP.

[5] Dubé, K., A. Shelly, J. Black, and K. Kuzis. 2009. Washington Road Sub-Basin Scale Effectiveness Monitoring First Sampling Event (2006-2008) Report. Prepared for the Washington Department of Natural Resources. Olympia WA. This report is currently in peer review and the results should be considered preliminary until approved for final release by CMER.

Results are evident in the on-the-ground conditions as well as through the results of the sediment modeling in the CMER Road Sub-Basin Scale Effectiveness Monitoring Report. Dubé et. al. found that 11% of the sampled road network was hydrologically connected to streams. Levels of connectivity met regional performance targets in 62% of blocks. Using the sediment delivery modeling techniques outlined in the report, it appears that 88% of the sample blocks met performance targets for limiting sediment delivery. Furthermore, there was a statistically significant decrease in sediment delivered with an increase in the percent of road reported to meet forest practice rule standards, unlike connectivity levels, which showed no trend.

During fall 2008 the WFPA performed a road conditions survey of industrial forest land (Martin 2009, Appendix B). The survey sampled 1,047 miles of forest road in 16 counties and found that 12% of the road survey length remained hydrologically connected to streams eight years after the completion of the Forests and Fish Report. Martin reported that 73% of the total road length in their study was classified as "low potential for delivery." In other words, because of topographic location, nearly ¾ of the roads were unlikely to deliver sediment. Martin reported that 6% of all roads were classified as "orphan" or abandoned. Nine percent of the 21% of road segments having high delivery potential were disconnected, thus leaving the minority (12%) of the surveyed road length with a significant potential for sediment delivery. Both the CMER and WFPA reports reflect road conditions at the time of the sampling and are not a direct measure of RMAP completion.

B. Fish Passage Barriers

In addition to road mileage, the DNR HCP compliance report also includes statistics for progress on fish barrier removals.[6] According to the report, 6,505 fish barriers were identified in RMAP assessments prior to RMAP implementation. Of these, 2,871 have been removed or repaired as of 2008. This is 44% of the identified barriers, and their removal resulted in 1,448 miles of historic habitat now accessible to fish.

In an effort to provide some evidence on progress in meeting one of the RMAP priorities – water containing endangered fish species – WFPA sent out a survey in February 2010 that focuses on quantifying the amount of fish barrier work that has been completed specifically on salmon, steelhead, and bull trout waters (Appendix C). Utilizing a GIS data layer representing where key threatened and endangered fish are present improved the ability to estimate which corrections had likely benefitted fish habitat for these key species.

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[6] Washington State Department of Natural Resources. 2009. Forest Practices Habitat Conservation Plan Annual Report, July 1, 2008 – June 30, 2009. WDNR. Olympia, WA. Chapter 9: Road Maintenance and Abandonment Planning for Large Forest Landowners. http://www.dnr.wa.gov/Publications/fp_hcp_annrep09_ch09.pdf

WFPA sent surveys to 54 agencies, municipalities or private landowners that have submitted RMAPs to the Department of Natural Resources, and received 20 responses (37%). The survey results represent approximately 3.6 million acres of the estimated 7.6 million acres of forestland required to submit RMAPs (47%).

Of the 1394 crossings on identified salmon, steelhead and bull trout waters, 777 have been completed as of 2008 (Table 2). This represents a 56% completion rate on salmon, steelhead, and bull trout waters. This work has resulted in 327 miles of habitat being opened up within these ownerships. This survey was a GIS exercise considering the general spatial proximity of crossings to waters mapped as containing Threatened and Endangered species (T&E). It did not link specific blockages to the presence or absence of Threatened and Endangered species at the site scale or evaluate the implications of postponing replacement of any remaining key blockages (those lowest in a watershed.)

Table 2. Results of 2009 WFPA survey of fish barriers removed on salmon, steelhead, and bull trout waters.

Total Crossings Identified	Total Crossings Repaired	Total Miles Habitat Opened
1394	777	327

C. Implementation Status of RMAP

1. Methods

During the development of this report, the Staff Work Group, with assistance from the Forest Practices Division, developed a survey that was sent to the DNR RMAP specialists in each of the six DNR regions (Appendix D). The survey consisted of a series of questions designed to solicit the specialists' professional opinions on the performance of a sample of RMAPs in their regions. The survey asked respondents to select a representative sample of RMAPs and:

1. Categorize the level of completion for each RMAP;
2. State if delays in executing the plans had occurred;
3. Report whether or not rule-identified worst first priorities were employed; and
4. Rate how well the work in each plan has addressed each of the five priority road functions identified in WAC for implementing worst first policy.

The six regional specialists reported on a total of 70 RMAPs.

2. Results

The results indicate that while most plans (59%) have experienced significant implementation delays, a majority (79%) of them are now either on or ahead of schedule (Table 3). The sample RMAPs were categorized as large industrial,

small industrial, agency or small forest landowner. Large private landowners made up 66% of the sample. No discernable differences in completion rate were found among these four RMAP landowner categories.

Table 3: Summary of ratings provided by DNR regional RMAP specialists (May 2010) on progress toward RMAP completion by 2016

	Number of landowners by progress category		
DNR Region	Significantly Behind Schedule	On or Nearly On Schedule	Ahead of Schedule or Complete
PC	4	4	2
SP	2	7	8
OLY	3	3	2
NW	6	2	2
SE	0	12	5
NE	0	4	4
Total	15	32	23
Percent	21%	46%	33%

RMAP specialists indicated that 86% of the plans relied on the criteria in the rules (WAC 222-24-051) when implementing the worst first policy (Appendix D, Summary Tables).[7] The survey responses noted harvest schedules, management needs, equipment utilization, contractor availability, cost and storm repair as other priorities cited in RMAP prioritization.

The survey asked RMAP specialists to rate how much progress each RMAP had made toward key road functions involving fish passage, sediment and hydrologic improvement. Progress made by RMAPs toward individual functions was rated Good for 45% and Fair for an additional 47%. The function with the best overall progress rating was fish passage (61% Good) followed by instability, sediment delivery, water delivery and intercepted groundwater (Table 4). This suggests that landowners are making significant progress toward designated RMAP work priorities.

[7] Worst first prioritization is discussed further in Section VI.C below.

Table 4: Summary of ratings provided by DNR regional RMAP specialists (May 2010) on landowner implementation of RMAP worst first road functions

Category of Road Improvements	Poor Prioritization		Fair Prioritization		Good Prioritization	
	n	%	n	%	n	%
Fish Passage	10	14%	17	25%	42	61%
Sediment Delivery	6	9%	33	47%	31	44%
Instability	6	9%	32	46%	32	46%
Intercept Groundwater	3	4%	43	61%	24	34%
Water Delivery	3	4%	38	54%	29	41%
Average		8%		47%		45%

*Prioritization of worst first was subjectively categorized by DNR Forest Practices foresters who administer RMAP implementation in cooperation with private landowners and other stakeholders.

These results represent the informed estimates of DNR RMAP specialists with the primary responsibility for implementing RMAPs in their regions.

D. Expenditures to Date to Accomplish RMAP Work

The Staff Group requested information on RMAP expenditures from WDFW, DNR State Trust Lands, and WFPA.

WDFW

WDFW has spent $3,344,740 through 2009 on RMAPs, and budgeted an additional $1 million for 2009-2011. WDFW estimates that expenditures have been close to evenly split between sediment and fish passage issues.

Table 5: RMAP Expenditures for WDFW-owned Forest Lands in Washington

Biennium	Sediment Issues	Fish Passage Issues	Ownership Location	Biennial Subtotals
'01-03	$327,536			
'01-03 Subtotal				$327,536
'03-05	$290,448	$108,281 $264,911	Robinson/Ainsley Creek (LT Murray) N.F. Manastash (LT Murray)	
'03-05 Subtotal				$663,640
'05-07	$221,204	$51,080	Scatter Creek (South Puget Sound)	

Biennium	Sediment Issues	Fish Passage Issues	Ownership Location	Biennial Subtotals
		$400,837 $313,673	Methow Phase I Taneum Creek	
'05-07 Subtotal				$986,794
'07-09	$816,770	$550,000	Methow Phase 2	
'07-09 Subtotal	Completed or nearly completed			$1,366,770
'09-11 in capital budget (unknown split between issues)	$500,000 (projected)	$500,000 (projected)	unknown	
'09-11 Subtotal	Budgeted			$1,000,000 (projected)
TOTALS	$2,155,958	$2,188,782		$4,344,740

NOTES:

- In some cases, the split between sediment issues and passage issues was estimated.
- A portion of the '01-03 & '03-05 expenditures includes some road inventory costs to develop RMAPs; no good way to break this out.
- Land Exchanges will have an unknown effect on meeting the deadline, but is expected to help.
- Recent acquisitions have added yet-to-be-quantified RMAP issues to 4 wildlife areas.
- Future acquisitions may create additional RMAP obligations, possibly very near the deadline.

DNR State Trust Lands

DNR State Trust Lands has spent $10,698,804 on RMAPs through 2008 for removing high priority barriers, and completing stream surveys of fish barriers. Additional fish barriers were removed as conditions to timber sale contracts. An additional $4,147,000 is budgeted for the 2009-2011 biennium. Expenditures in Table 6 below do not include funds spent on sediment issues (Personal communication, Alex Nagygyor, DNR State Trust Lands).

All the other RMAP work is wrapped with routine road maintenance work and timber sale work to get the roads ready for haul.

Table 6: WA DNR State Trust Lands Fish Passage Work

Biennium	Construction Season	Total Expenditures
2003-2005	2003 and 2004	$1,152,566
2005-2007	2005 and 2006	$4,876,510

Biennium	Construction Season	Total Expenditures
2007-2009	2007 and 2008	$4,669,728
2009-2011 (Budgeted)	2009 and 2010	$4,147,000
TOTAL		**$14,845,804**

Private Landowners

In April, 2010 WFPA members individually reported expenditures to the Association for RMAP road upgrades and fish barrier work from 2000 through 2009. Ownership changes and variations in accounting procedures resulted in some inconsistencies in reporting. For example, some members were unable to report expenditures for years prior to their management of the land, and others included road "improvements" with what otherwise would be considered routine maintenance. After combining the reports from members and normalizing them for reported acreage, WFPA examined the data and concluded that it provides a reasonable estimate of its membership's expenditures to date for RMAP road improvements.

Table 7: Total WFPA member RMAP expenditures 2000 thru 2009

Year	Estimated Expenditure
2000	$11,470,000
2001	$11,630,000
2002	$11,980,000
2003	$12,900,000
2004	$13,770,000
2005	$14,340,000
2006	$15,220,000
2007	$16,290,000
2008	$14,980,000
2009	$8,440,000
TOTAL	**$131,020,000**

These figures represent 4,037,000 acres of industrial forest ownership. Approximately 600,000 additional acres of industrial forest land would likely qualify for the RMAP requirement, and are not included in this report.

E. Anticipated Implementation of RMAPs during Proposed Extension Period

Specific dollar figures cannot be provided at this time. Providing an accurate average expenditure would require knowledge of which fixes remain to be done and the costs of making those fixes.

In early 2009 WFPA surveyed its membership to find out how much they planned to spend on RMAP work in calendar years 2009 and 2010. A few weeks later WFPA asked them to estimate the cost of finishing their entire remaining RMAP work. All respondents made estimates based on the work schedule required to complete the work by July 1, 2016, or sooner (one had already completed all work).

WFPA received information from members representing 70% of the acreage managed by WFPA member companies and individuals. From this information they estimated that in today's dollars the members will spend approximately $133 million completing RMAP work on 4.04 million acres forest land in their membership. This is about $19 million per year for completion in 2016. Adjusting the RMAP completion schedule would allow landowners to spread the total completion cost over more years, thus reducing the cost per year.

Using the landowner-reported expenditures cited above for an example: If landowners are provided an extra 5 years to come into full compliance with their RMAPs, this changes the window of time to invest in RMAP fixes from 2010 - 2016 (7 years) to 2010 - 2021 (12 years). If they currently spend $19 million dollars per year on RMAP work, they will have spent $133 million dollars by 2016. If this same needed investment in RMAP fixes is extended another 5 years to 2021, then the annual expenditure would be reduced proportionally from $19 million dollars per year to $11.1 million dollars per year (a 41.6% annual reduction).

Comparing the WFPA survey figures for expenditures to date with the expected expenditures to complete RMAPs may raise questions of whether the past spending rate has been adequate to meet the even flow requirement. The peak estimated annual WFPA member expenditure was $16.3 million in 2007 followed by a rapid decline reflecting the economic conditions in 2008 and 2009. To meet the 2016 RMAP deadline, additional expenditures will have to be made in future years to make up for the recent decline in the rate of progress. The discrepancy in past versus future estimated annualized costs may also at least partially reflect the fact the estimates came from two different surveys conducted at different times with different individuals sometimes providing the responses.

III. Tracking System for RMAP Compliance

A. Option to improve tracking system

Currently, DNR's RMAP documentation is in paper format stored in regional offices. These tables and summary reports are not adequate tools to fully track

the progress of RMAP work on a statewide basis. A regularly updated geographically referenced database system (e.g. GIS) would be extremely valuable for showing all known and potential fish barriers and road segments identified for upgrades. This system could show road segments to be abandoned or relocated; road segments where work on the road prism will take place (grading, shaping, cross-drains); and stream culverts to be replaced. This would greatly facilitate tracking compliance, and spatial analysis of RMAP work.

A GIS-based system like this would likely be expensive and require a considerable amount of agency staff time. Current data supplied by landowners is in a variety of analog and digital formats. It is based on road system maps that are often inconsistent with agency maps. Designing a universal system will require dedicated information system staff and coordination with landowners and managers.

B. Level of accountability to be achieved

Ultimately, compliance with forest road maintenance rules should be monitored through the forest practices compliance monitoring system to provide a statistically sound audit report on a regular basis. DNR is currently working to incorporate haul road maintenance into the Compliance Monitoring Program. Compliance with fish barrier law should be monitored by WDFW's Hydraulic Project Approval (HPA) system. WDFW is engaged in a review of the HPA process with a goal of assuring a high level of compliance and effectiveness.

IV. Six Questions for Adaptive Management Process

These six questions are typically answered by CMER as part of the Framework for Successful Policy/CMER Interaction found in the Adaptive Management Board Manual (WAC 222-12-045, Section 12, Appendix B). It should be noted that CMER did not answer the following six questions, nor did they participate in the review or approval of this report. The RMAP Staff Work Group is solely responsible for the answers to the six questions which should not be construed and/or misinterpreted as an official CMER response to this report.

1. Does the study inform a rule, numeric target, performance target, or resource objective? (FFR stakeholders agreed to resource objectives and performance targets for the following functions: heat/water temperature, LWD/organic inputs, sediment, hydrology, and chemical inputs.)

   The information gathered for the Policy Committee informs the rule target of June 30, 2016, for completion of the goals for road maintenance outlined in Chapter 222-24-050 WAC. This includes completion of Road Maintenance and Abandonment Plans (RMAP) for large landowners.

2. Does the study inform the forest practices rules, the Forest Practices Board Manual guidelines, or Schedules L-1 or L-2?

The information was gathered to help inform policy makers about the consequences of changing the Forest Practices Rule mentioned above that specifies the time that landowners have to bring all forest roads up to present standards. It does not inform the Board Manual guidelines or the technical issues in the Forest and Fish Report Schedules L-1 or L-2

The information gathered for the Policy Committee informs the forest practices rules as to the rate at which road improvements are expected to be completed. The information speaks to the progress that has been made by landowners in addressing water and sediment delivery from forest roads to streams and landowner progress on fixing fish passage barriers that have been identified in the large landowner RMAPs and the Family Forest Fish Passage Program (FFFPP). The information also addresses the Forest and Fish Goal of "keeping the timber industry economically viable" and the Forest Practices Act declaration that, coincident with the maintenance of a viable forest products industry, it is important to afford protection to water quality, fish, wildlife and other natural resources.

3. Was the study carried out pursuant to CMER scientific protocols (i.e., study design, peer review)?

   The current report is not a scientific study, nor was it reviewed or approved by CMER, but responds to a policy request to assemble readily available information to provide an initial understanding of the effect of granting an extension to the RMAP compliance date of 2016. The information gathered for the Policy Committee is a compilation of existing statistics and anecdotal information on the progress of road improvements under the forest practices rules. It also contains publicly available information on the current and projected economic status of the forest products industry as it affects timber demand and pricing.

4. What does the study tell us?

   This report responds to the following directive from the RMAP Sub-Policy Group:

   (1) Assessment of progress and status of RMAP implementation
   (2) Options for improving the RMAP compliance tracking system
   (3) Documentation of the current economic situation and impacts on forest landowner revenue
   (4) Summary of road maintenance rules for protecting public resources regardless of the rate of RMAP completion

   What does the study not tell us?

   The information does not provide sufficient detail to identify RMAP progress or additional work needed in individual DNR regions or on individual large land ownerships. This report does not quantify the effectiveness of completed or remaining roadwork in terms of physical effects (e.g., sediment input, habitat quality) or biological response (e.g., number of fish or amphibians).

5. What is the relationship between this study and any others that may be planned, underway, or recently completed? Factors to consider in answering this question include, but are not limited to:

   a. Feasibility of obtaining more information to better inform Policy about resource effects.

      More information on the status of RMAP completion could be gathered from existing sources, but would require considerable effort. What has been presented to Policy is summary information on large landowner RMAPs compiled from data available from DNR and supplemented with recent surveys of landowners and regional DNR RMAP specialists.

      More detailed RMAP information is available in the individual RMAPs and RMAP annual reports filed at the DNR Regional offices. However, these reports are not in a consistent format, so compiling data would be a time consuming process. No effort is currently underway or planned to access the detailed information in individual RMAP files.

      The economic forecast presented to Policy was derived from third quarter 2010 reports. New economic forecasts will be forthcoming.

   b. Are other relevant studies planned, underway, or recently completed?

      The CMER final report for the first measurement period of the Road Sub-Basin Scale Effectiveness Monitoring Project is currently in peer review. This study is intended to determine the degree to which the road rule package is effective in meeting performance targets for surface erosion sediment and water delivery to streams. CMER intends to initiate the first re-measurement phase of the study after additional time has passed (~5 to 10 years) to test the progress toward meeting resource objectives. Preliminary study results and comparisons to regional performance targets were used in this report. The CMER work plan also includes several other studies that will be designed to evaluate the effectiveness of RMAP repairs and the performance targets established for road sediment control. However, because none of these additional studies have been scoped, they are many years away from initiation.

   c. What are the costs associated with additional studies?

      No effort is currently underway or planned to access the detailed information in individual RMAP files. No cost estimates for this or the other CMER projects noted above are available.

   d. What will additional studies help us learn?

      Additional information on large landowner RMAP progress would allow analysis by DNR region and data on the variation progress among individual large landowners. It would also facilitate a data driven estimate the effectiveness of the worst-first policy and a clearer view of the nature and cost of remaining road work and fish barrier repair.

   e. When will these additional studies be completed (i.e., when will we learn the information?)

No effort is currently underway or planned to access the detailed information in individual RMAP files and work to address the amount and location of remaining SFLO work is in the conceptual stages. No time estimates for this work are available.

f. Will additional information from these other studies reduce uncertainty?

Yes, however, these additional studies and information sources will not be available in the timeframe needed for the purpose of considering an extension to the RMAP schedule for large landowners.

6. What is the scientific basis that underlies the rule, numeric target, performance target, or resource objective that the study informs? How much of an incremental gain in understanding do the study results represent?

Research indicates that fine sediment delivery from forest roads can cause a significant functional reduction in the quality of fish habitat. The reduction occurs because fine sediments can reduce interstitial spaces in gravels potentially affecting spawning success. In addition, increased turbidity can interfere with the natural movements of fish potentially affecting feeding behavior. High landslide rates triggered by improperly constructed or poorly maintained roads can destabilize channels, fill pools, and degrade riparian functions.

Extending the surface water drainage system in forested basins by constructing roads with ditches that deliver surface water directly to the natural stream system may increase peak flows that can mobilize sediments, erode stream banks and scour spawning gravels, all of which can damage fish habitat.

Fish barriers artificially caused by improper forest road stream crossings reduce the amount of habitat that is available to fish thus preventing river systems from reaching their natural productive capacity.

Upgrading forest roads to a standard that minimizes sediment and surface water delivery and repairing man-made fish barriers will reduce or eliminate these negative effects on fish habitat. From a scientific basis, the sooner the work is completed the sooner the habitat improves or becomes accessible.

The 15 year timeline was not based on science. At the time the Forest and Fish rules were developed, 15 years of 'worst-first' implementation was considered a reasonable time frame to balance economic and resource protection considerations.

V. Impacts of the Economic Downturn

The United States is slowly emerging from a large recession.[8,9] The health of the wood products industry in Washington is heavily dependent on the strength of the housing market which has also been heavily affected by the current recession. The

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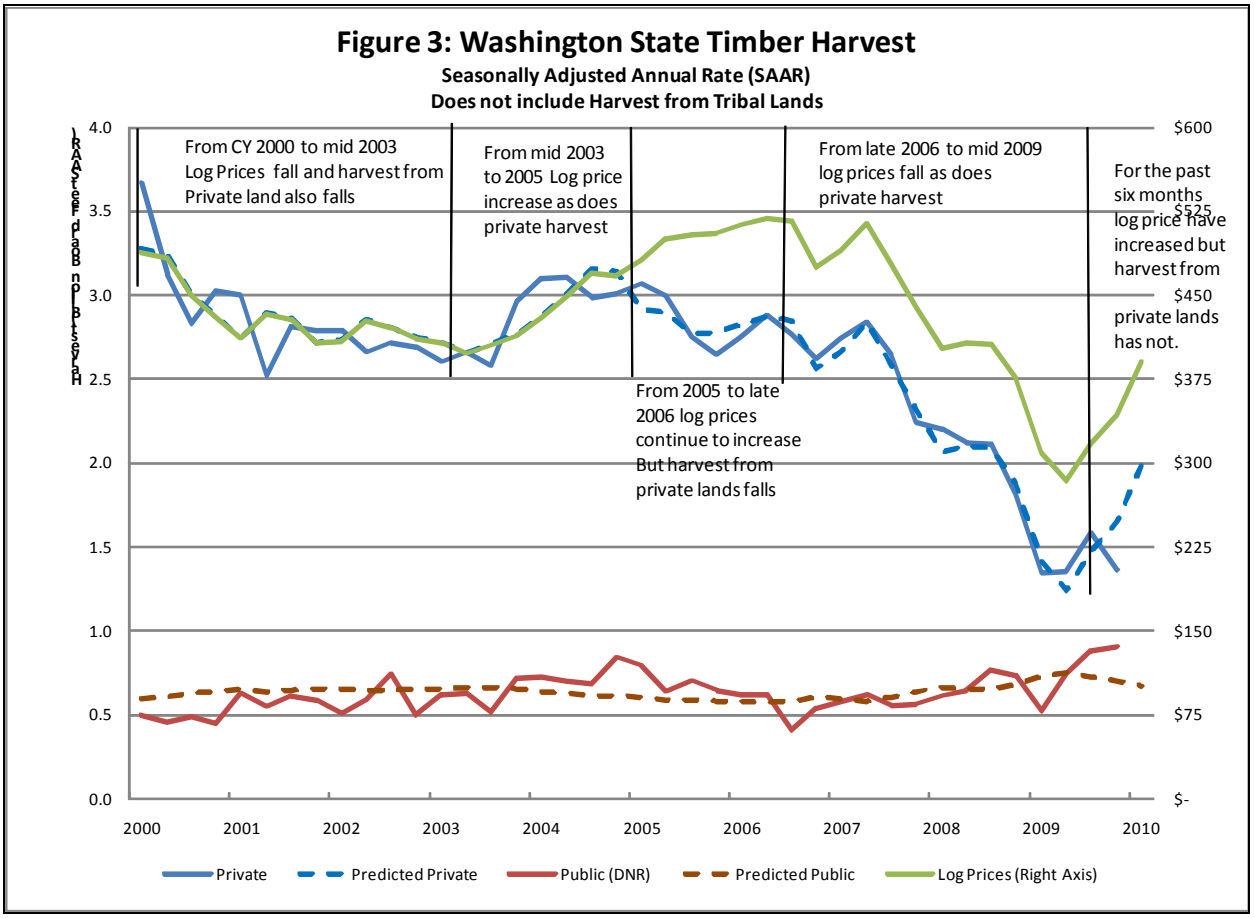
[8] ^ Three top economists agree 2009 worst financial crisis since great depression; risks increase if right steps are not taken. (2009-2-29). *Reuters*. Retrieved 2009-9-30, from Business Wire News database.

[9] "IMF says US crisis is 'largest financial shock since Great Depression' www.Gardian.co.uk 9 April 2008

following discussion summarizes data and findings provided by the Phillip Aust, lead economist with the Washington Department of Natural Resources. This data was extracted from:

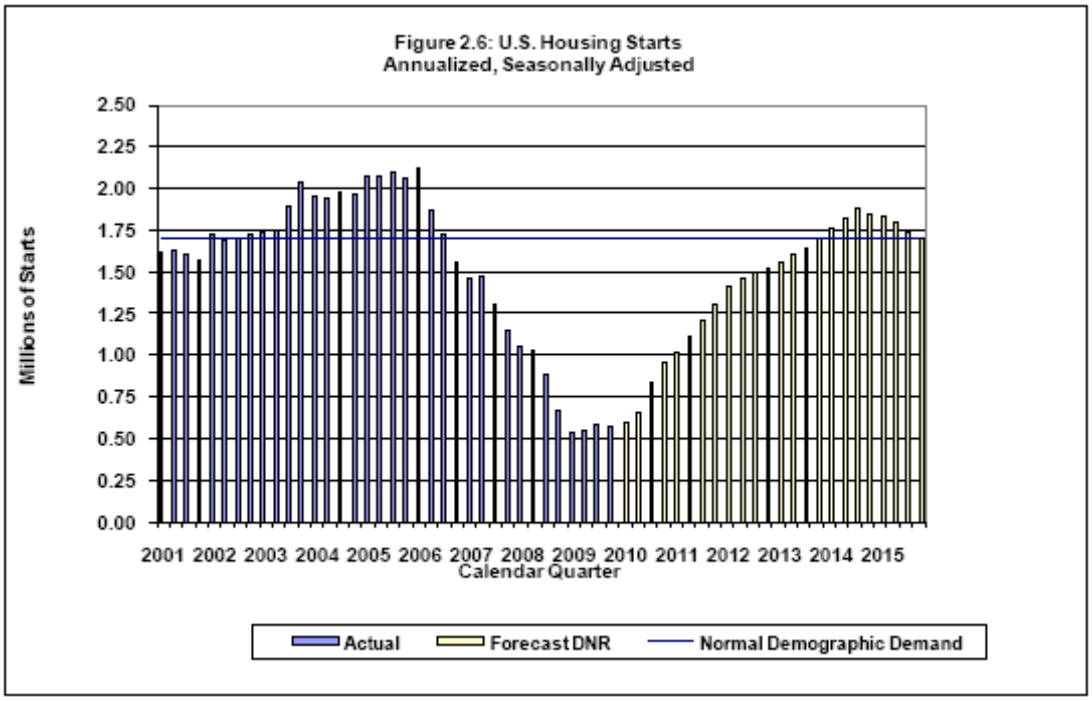
- Washington State Department of Revenue Harvest Statistics, (http://dor.wa.gov/content/FindTaxesAndRates/OtherTaxes/Timber/forst_stat.aspx), and
- Washington State Department of Natural Resources' February 2010 Economic and Revenue Forecast – Fiscal Year 2010 Third Quarter, (http://www.dnr.wa.gov/Publications/obe_econ_rprts_revfor_feb10.pdf)

"New home construction declined in concert with the general downturn in the economy. Construction in 2009 was down 38 percent from 2008; representing the lowest rate of housing starts since 1945. This resulted in only 7.2 billion board feet of lumber used in new construction in 2009, and represents only 26 percent of the annual lumber production that occurred in 2005, just four years earlier (See Figure 3 below from the Washington Department of Revenue Harvest Statistics).



"The reduction in new home construction is likely the consequence of a number of factors that have depressed demand. Not only have 8 million Americans lost their job, but many are under-employed, afraid of being laid off, or concerned with potential increases in benefit costs. Further, new home sales are expected to remain depressed in the near term because of a current surplus of less expensive existing homes on the market.

"DNR's economists currently predict that housing starts should begin to increase mid-year with an initial increase of 37 percent (757,000 starts). Although a substantial increase, this represents only one-half of the new construction in 2007. Housing starts are not expected to exceed 1 million units before 2011, and are not expected to reach the normal demand for new housing until in late 2013 (See Figure 2.6 below from the Washington State Department of Natural Resources' February 2010 Economic and Revenue Forecast Fiscal Year 2010 Third Quarter)."



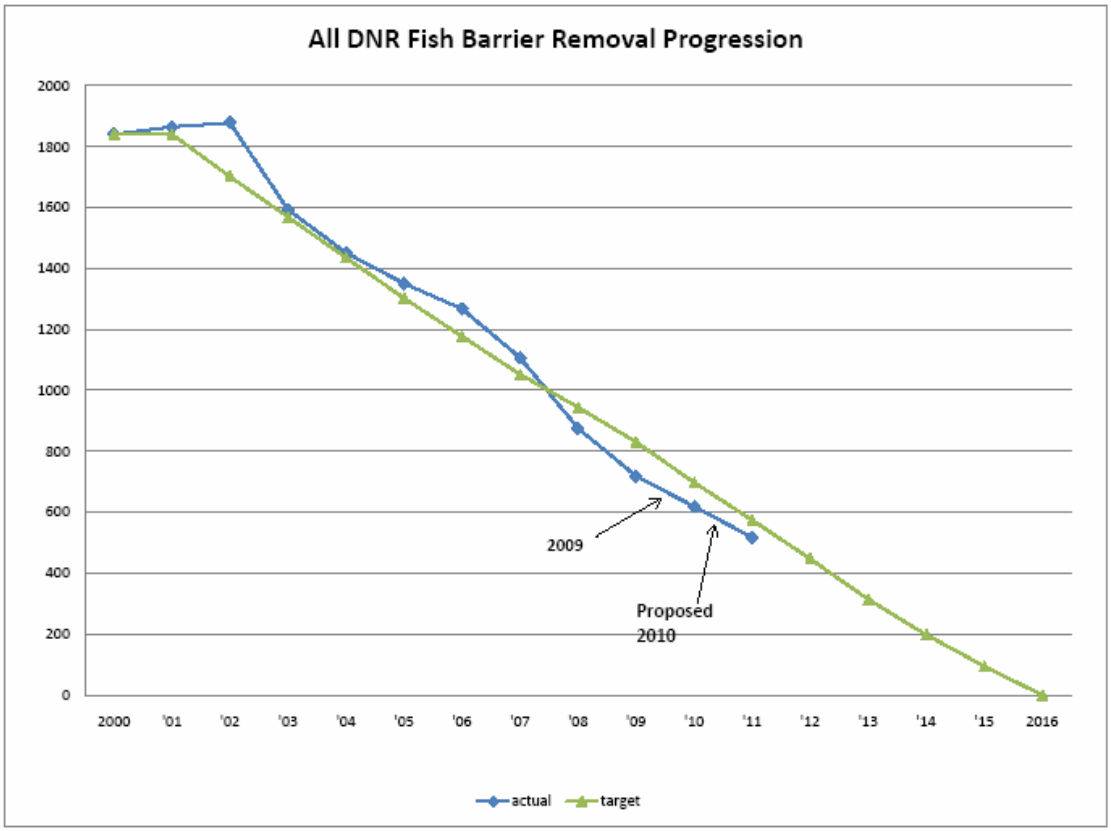
Impacts on Washington Department of Fish and Wildlife Lands

WDFW has requested and consistently received state capital funds for RMAP corrective actions each biennium. One million dollars were allocated to address issues during the 2009/2011 biennium. The legislature, through the fiscal year 2010 Supplemental Capital Budget, removed $50,000 of RMAP funding, leaving $950,000 for 2009/2011. With continued funding at a similar level, WDFW anticipates being able to address passage and sedimentation issues on all currently owned WDFW lands by 2016. Any new acquisitions will be evaluated to determine continuing RMAP obligations, and capital funds will be requested as needed.

Impacts on Washington Department of Natural Resources State Trust Lands

To contain costs, DNR State Trust Lands has intentionally avoided working on a number of high cost barriers with low quality habitat behind them. Expenditures to remove fish barriers have increased from 2003 through 2009; however, in 2010 DNR's costs are down because contractors are charging lower rates to stay in business and keep people employed. Average costs for this year will depend on how many roads with fish barrier culverts DNR abandons this summer. For the 2009-2010 construction seasons, DNR has budgeted $4.147 million for removing fish barriers. The progression of fish barrier removals is shown in Figure 2 below.

Figure 2



VI. Protection of Public Resources under Forest Practices Rules during RMAP Extension

While RMAPs are being implemented to bring entire road systems into compliance with the road rules, all roads and active haul routes are regulated under forest practices rules. This section provides a summary of the road maintenance

requirements for active roads, and a perspective on the amount of erosion to be expected from unused road surfaces.

Forest practices rules regarding Road Construction and Maintenance (WAC 222-24) are summarized below. The Policy section (010) and the maintenance rules (052) are appended at the end of this report so that the reader can read the actual rule language in the pertinent sections (Appendix E).

A. Road Maintenance

The road maintenance section of WAC is prefaced "To the extent necessary to prevent potential or actual damage to public resources…." The following paragraph is a summary of the road maintenance rules found in WAC 222-24-052, (1) and (2).

The basic maintenance rules call for drainage structures to be kept functional; for groundwater captured by the road to be directed onto stable forest floor; for the road surface to be maintained to minimize erosion and to direct surface- and ground-water and sediment onto stable forest floor. Basic maintenance is required during and after haul and road building. Before the rainy season, drainage structures need to be cleared, roads crowned, out-sloped or water barred, or otherwise be left in a condition to prevent accelerated erosion. Drainage structures and ditches need to be kept clear where they may impact public resources. DNR Forest Practices Division has the authority to require additional drainage structures to protect resources if it determines that the existing drainage is not adequate. All of these activities are Class I forest practices that do not require a permit and so are not tracked, nor have they been included in compliance monitoring in Washington. Therefore, the authors cannot assess how extensive is their implementation.

B. Perspective on Erosion from Uncompleted-RMAP Roads

New road construction and current haul routes are required to meet all the road standards – design, construction, maintenance, etc. Roads not up to present standards where RMAP work has not yet been completed would be the roads affected by a time extension for RMAP completion.

The uncompleted RMAP roads may have a suite of sub-standard conditions such as fish barrier stream culverts, undersized stream culverts for peak flow and debris, inadequate road drainage to bring ditch water across the road and onto the forest floor, inadequate road surface treatment – erodible material, rutting, and shaping needed for crowning or outsloping. A time extension for RMAP completion would allow most of these conditions to remain on the landscape for a longer time.

From many scientific studies and Watershed Analyses, we know that active haul road surfaces are typically, by far, the larger contributor of surface erosion to streams, compared to unused road surfaces. Unused road surfaces will "armor" themselves after a few seasons of rain – the surface fines wash off, and unless the surface is disturbed by traffic, the gravel in the road surfacing material protects the road from rainsplash erosion. Unless the road surface is exclusively fine material, or there is

some sort of design flaw or damage to the road, unused road surfaces will typically have 1% or less of the fines contribution of an active haul road surface.[10]

Fish barriers, undersized culverts, inadequate road drainage, as well as any mass wasting or eroding cut and fill slopes would remain until the RMAP is complete. The road surface erosion would decrease if the roads remain unused. If the roads in an uncompleted RMAP area are used for haul, road repairs are made as necessary to stop visible sediment input to streams. These improvements typically involve site-scale fixes such as surface rock patching and/or installing silt fences, hay bales or other sediment traps. Fish passage blockages on haul roads need to be identified in the RMAP but are not required to be repaired prior to haul.

C. Link to 'Worst First' Principle

The "worst first" principle is listed in both the FPHCP Biological Opinion and the WAC. Two sets of principles are applied in two separate prioritization processes. The first set was applied to the order of submission of RMAPs by landowners. The USFWS Biological Opinion states that the FPHCP requires large forest landowners to prioritize the submission of road maintenance and abandonment plans based on a worst first principle. These prioritization criteria include:

1) the presence of Federal and State listed threatened and endangered fish species or 303(d) listed water bodies;

2) the presence of sensitive geologic formations with a history of mass wasting;

3) the presence of planned or ongoing restoration projects; and

4) the presence of roads likely to have a high amount of forest practices use in the future.

Pertinent sections from the Biological Opinions on the FPHCP are included in the appendices to this report (Appendix F).

The second set of principles is to be applied within each RMAP to prioritize work. WAC 222-24-051 (Appendix D) has a list of priorities which state:

> *(4) Based upon a "worst first" principle, road maintenance and abandonment plans must pay particular attention to:
>
> (a) Roads with fish passage barriers;
>
> (b) Roads that deliver sediment to typed water;

[10] Watershed Analysis Manual, Appendix B, Surface Erosion, Table 8
http://www.dnr.wa.gov/Publications/fp_wsa_manual_appb.pdf

(c) Roads with evidence of existing or potential instability that could adversely affect public resources;

(d) Roads or ditchlines that intercept ground water; and

(e) Roads or ditches that deliver surface water to any typed waters.

As noted previously in Section II. C, the workgroup conducted a survey of DNR RMAP foresters to gauge the status of prioritizing worst first road fixes. The results suggest that 79% of the RMAPs are on or nearly on, or ahead of schedule, and 92% of the RMAPs placed good or fair focus on getting the worst problems corrected early in the RMAP process.

VII. Develop a long-term program for implementation of the small landowner road compliance provisions

Reserved for companion report

VIII. Develop a long-term program for County roads in forested areas focused on fish passage and culverts

Reserved for companion report

APPENDICES

Appendix A: Memo: Initial Staff Group Assignments

Appendix B: Forest Road Runoff Disconnection Survey of Private Timberlands in Washington

Appendix C: A Survey of RMAP Accomplishment on Salmon, Steelhead, and Bull Trout Waters

Appendix D: Survey on RMAP Progress

Appendix E: WAC 222-24-010, 051, 052

Appendix F: Excerpts from NMFS and USFWS Roads Biological Opinions

Appendix A

M E M O R A N D U M

To: Forest & Fish Policy Sub-Group
Staff Work Group

From: Stephen Bernath
Tom Robinson

Date: March 15, 2010

Re: Initial Staff Group Assignments

We have gone through the policy sub-group discussion at the first meeting and prepared a summary of work assignments that will help inform the work of the policy sub-group. This list of assignments will provide important information for informed decision-making.

Mark Hicks and Pete Heide have agreed to co-chair the staff group. The other members are Marty Acker (NOAA), Nancy Sturhan (NWIFC), and Chris Mendoza (Conservation Caucus).

In addition, DNR and WDFW have committed to be early and active reviewers of the staff group's initial drafts.

The staff group's initial assignments are:

1. Provide an assessment of progress and the status of RMAP implementation by State agencies and large private landowners. Summarize and document the following:

    a. Record of RMAP implementation to date.

    b. Benefits to public resources to date.

    c. The application of "Worst First" implementation.

    d. Funding provided by State and private parties to accomplish RMAP work to date.

2. Describe the level of RMAP work needed originally, how much funding has been spent to date, and what remains to be done? If an extension is needed to implement RMAP work, what would be the annual level of RMAP work?

3. Develop options for improving the tracking system for RMAP compliance and describe the resulting level of accountability to be achieved.

4. Prepare draft answers to the six questions for the adaptive management process.

5. Provide information documenting the current economic situation and impacts on revenue to private landowners and DNR.

6. Describe protection of public resources under the FPA rules that remain in place under the HCP and FP Rules for active operations and roads regardless of the proposed five year extension to the RMAP deadline. Link closely to the "Worst First" implementation.

7. Develop a schedule to accomplish the tasks identified above as soon as possible to support the sub-policy group.

The second set of staff group assignments will take longer to complete. They include:

8. Develop a long-term program for implementation of the small landowner road compliance provisions:

    a. Summarize the record of culvert and fish passage replacements, benefits to public resources and the funding provided by the state to date.

    b. In the short-term – Assemble the right people and put an action plan together.

    c. In the longer term – Determine the scope of the problem and develop a plan to address road maintenance and fish passage issues, including an assessment and inventory of roads and culverts needing improvements on small forest lands and funding and other decisions necessary to make these improvements.

9. Develop a long-term program for County roads in forested areas focused on fish passage and culverts.

The Policy sub-group may have additional questions or assignments for the staff group as we proceed ahead.

Appendix B

Forest Road Runoff Disconnection Survey of Private Timberlands in Washington

Prepared by:

Douglas Martin
Martin Environmental
2103 N 62nd Street
Seattle, WA 98103

Prepared for:

Washington Forest Protection Association
724 Columbia Street NW, Suite 250
Olympia, WA 98501

January 30, 2009

Executive Summary

Forest landowners conducted a road survey on private timberlands, during fall 2008, to document the cumulative effectiveness of past and ongoing road maintenance efforts, including recent Road Maintenance and Abandonment Plans (RMAP), to disconnect road runoff and reduce sediment delivery to streams. Road drainage and hydrologic connectivity data were collected from 179 randomly selected land sections over 1,047 miles of road that were distributed across 16 counties in eastern and western Washington. The results show that most of the surveyed road length (73%) has a low delivery potential (LDP) because the roads occur on flat terrain (e.g., valley bottoms or ridge tops) and do not intersect any particular channel or drain into a wetland that does not connected to a typed water. A small proportion of the road length is orphaned or abandoned (6%) and 21% of the road length had a high delivery potential (HDP) because the roads occur on sloped terrain that could potentially deliver runoff to a stream. Within the HDP road category, about one-half of the road length (9% of total road length) was hydrologically disconnected. Therefore 82% (i.e., 73% + 9% = 82%) of the entire road length had either a low delivery potential or was hydrologically disconnected. About12% of the road survey length was estimated to be hydrologically connected at the time of this survey.

The survey results indicate that road improvements have probably reduce road runoff and the potential delivery of fine sediment to streams. The hydrologic disconnectivity is occurring as a result of several key management activities. First, a high proportion of the road network (73%) has low delivery potential because the roads are located on landscapes that minimize hydrologic connectivity. This reflects initial road planning as-well-as road relocation activities that have occurred under the RMAP process. Second, the presence of orphaned and abandoned roads demonstrates a conscious effort to eliminate high risk roads. Although the proportion of orphaned and abandoned roads is relatively small (6%), they often occur in unstable areas or are very close to streams. Therefore, eliminating road use or complete removal can have a significant positive benefit to streams. Third, the disconnection of approximately one-half of the HDP roads reflects the implementation of multiple BMPs (e.g., increased cross drains, more frequent ditch-outs, grading). Collectively, these data show that a majority of the roads in the survey area have a low probability of delivering sediment to a typed water course. Also, because these data are spatially representative we assume that the results are reflective of the road conditions on most large private lands in Washington. Given the progress to date, we can assume that sediment delivery from forest roads has declined and that it will continue to decline as all of the RMAP's are completed by 2016.

Introduction

A major goal of the Washington Forests & Fish Rules is the implementation of Road Maintenance and Abandonment Plans (RMAP) which are intended to prevent sediment- and hydrology-related impacts to public resources. Forest roads are a significant contributor of management-related sediment to watercourses in forest environments. Therefore, FFR requires that forest landowners upgrade all roads to the new regulatory standards by 2016. As of 2008, all large forest landowners have developed one or more DNR-approved RMAP and are on track to complete their improvements by 2016. Some have completed all required road improvements. However, there is no quantification to date of the amount of the road system that has been disconnected by the RMAP process. To address this question, forest landowners conducted a road survey on private timberlands during fall 2008 to document the extent of road improvements that are designed to disconnect road runoff delivery to streams.

The purpose of the forest road runoff disconnection inventory (i.e., road inventory) is to document the cumulative effectiveness of past and ongoing road maintenance efforts, including recent RMAP efforts, to disconnect road runoff delivery to streams. The goal is to determine the current proportion of road miles that have been hydrologically disconnected. To achieve this goal, forest landowners submit data from a random sample that would provide an unbiased estimate of the proportion of road miles that are hydrologically disconnected. Below is a description of the survey methods and results for the road inventory. Note, this inventory does not try to estimate changes between pre- and post-FFR, but rather to establish current conditions against a time when cross-drain culverts were virtually nonexistent (i.e., pre-1974).

Methods

Data Collection

WFPA conducted a field training session for the road inventory on July 11, 2008. The study objectives, data needs, and reporting procedures were described to the participants. Particular attention was given to explaining how to identify a hydrologically disconnected road segment. The training emphasized the need to be consistent in interpretations and to be conservative in classifying road types. For example, if there was any doubt as to the effectiveness of a BMP to prevent sediment delivery from a road segment, the road segment should not be considered "disconnected." Representatives from 9 companies, WFPA, and the Department of Ecology attended the field training. Companies that were not able to attend the training were contacted by phone and were instructed on how to perform the road inventory.

Martin Environmental acquired road inventory data from fifteen landowners in Washington. Each company submitted road data from a minimum of nine randomly selected sections that are mostly or entirely owned or managed by the company within a county. Several companies with large ownership submitted data from two to four different counties. In some counties where private land ownership is limited, the private lands among adjacent counties were pooled for the purpose of randomly selecting nine sections (e.g., King and Pierce counties).

Each company provided road data from either an existing database or from a new inventory. Data that were submitted for each section included:

- section legal description,
- lengths of roads with high-delivery-potential (HDP),

- lengths of HDP road sub-segments that are hydrologically connected,
- lengths of roads with low-delivery-potential (LDP), and
- lengths of orphaned and abandoned roads.

The HDP roads were defined as roads within the active road network (i.e., all roads except orphaned and abandoned roads) that could potentially deliver runoff to a stream (Figure 1). The HDP road is composed of road segments that are either connected to or disconnected from a stream as shown in Figure 1. The HDP road does not include portions of the active road network that have a low potential to deliver runoff to a stream (i.e., LDP road).

The connected roads are road segments (Figure 1) that deliver road surface runoff, via the ditch or road surface, to a stream crossing or to a connected drain that occurs within the high delivery potential portion of the active road network. A connected drain was defined as any cross-drain culvert, water bar, rolling dip, or ditch-out that appears to deliver runoff to a defined channel. A drain was considered connected if there is evidence of surface flow connection from the road to a defined channel or if the outlet has eroded a channel that extends from the road to a defined channel.

The LDP roads are portions of the active road network that have a low potential to deliver runoff to a typed water course. A LDP road may include road segments on flat terrain (e.g., dry terraces or ridge tops) that do not intersect any particular channel. For this survey, the LDP roads also included segments that may drain to forested and open wetlands that have no outlet to a defined channel. The LDP segments should not be confused with disconnected segments (Figure 1) that occur within the HDP portions of the road network.

The orphaned and abandoned road types were defined as per WAC 222-24-052(3) and WAC 222-24-052(4), respectively. No data were collected on runoff deliverability from orphaned and abandoned roads.

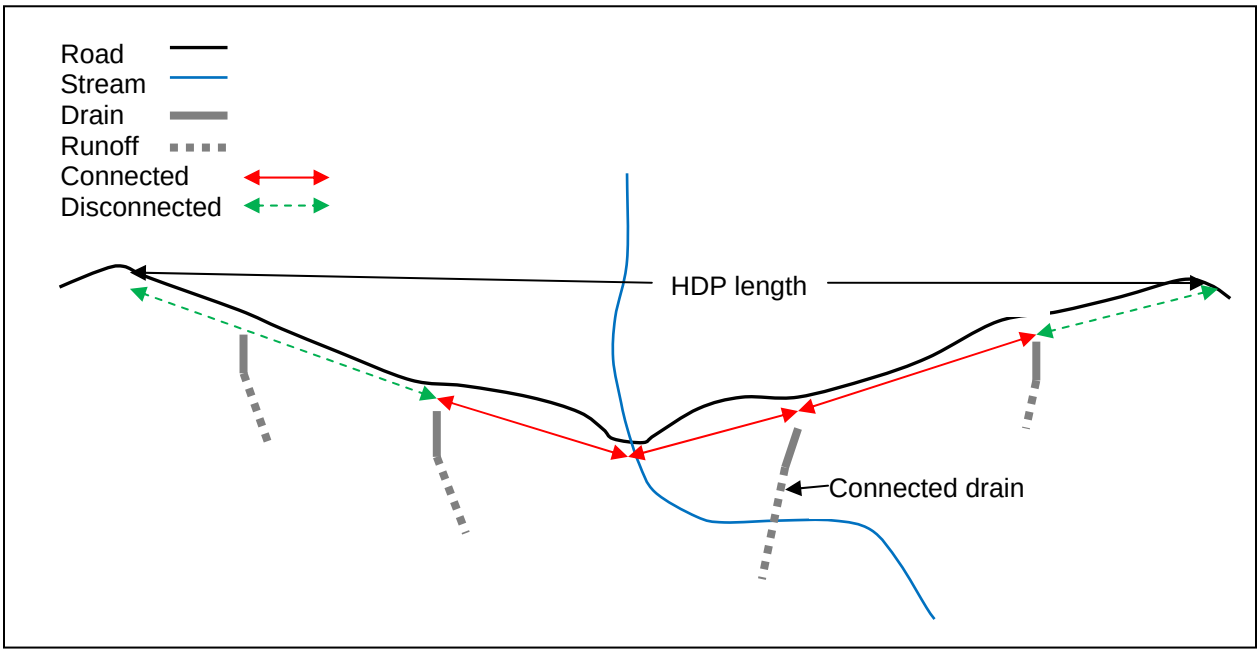


Figure 1: Diagram showing high delivery potential (HDP) road length (sum of the green and red segments) and the connected drainage length (sum of the red segments).

Analysis

The road data was summarized by county and section. In addition to direct summaries of road length by category, the proportion of road that is hydrologically disconnected by road improvements was computed. The proportion disconnected was computed as a function of the HDP road length as follows:

Results

The road inventory provided data from 16 counties, 179 sections, and 1,047 miles of road (Figure 2 and Table 1). Survey data were derived from 9 counties on the Westside and 5 counties on the Eastside of the state. The number of surveyed sections ranged from 4 in Pierce County to 27 in Grays Harbor County. A breakdown by road category shows that most of the surveyed road length (73%) is in the LDP category, a small proportion of the length is orphaned and abandoned (6%), and 21% of the total road length is in the HDP category (Figure 3a). Within the HDP road category, about one-half of the road length (9% of total road length; Figure 3b) is hydrologically disconnected. Therefore 82% (i.e., 73% + 9% = 82%) of the entire road length is either in the LDP category or is hydrologically disconnected. About 12% of the road survey length is estimated to be hydrologically connected.

The hydrologically disconnected roads ranged from 0% to 97% of the HDP road length in the surveyed sections (Figure 4). The distribution of disconnected road lengths is slightly skewed; in 34 sections less than 20% of the HDP road length was disconnected, and in 14 sections more than 80% of the HDP road length was disconnected. The median or 50% of the HDP roads had more than 47% of road length hydrologically disconnected.

A breakdown of the road data at the county scale shows that the proportion of roads in the HDP category ranges from 6% to 43% of the sampled road length in each county (Figure 5). Whatcom County had the highest percentage of HDP roads (43%) followed by Lewis (38%), and three counties (Clallam, Pacific, Pierce) had about 30%. In all other surveyed counties, the percentage of HDP roads was below 20%.

The proportion of HDP road length that is hydrologically disconnected ranged from 22% to 85% among the 16 counties (Figure 6 and Table 1). The highest levels of disconnected roads (> 69% disconnected) occur in five counties on the eastside (Ferry, Kittitas, Klickitat, Pend Oreille, and Stevens) and the lowest levels (< 30% disconnected) occur at three counties on the westside (Clallam, Cowlitz, and Wahkiakum). In Lewis and Whatcom counties, where the percentage of HDP roads is high, the proportion disconnected was also quite high: 44% and 61%, respectively.

Table 1: Summary of road inventory data by county.

		Road length (mi)					Connected drainage		
County	No. of sections	Orphaned	Abandoned	Low Delivery Potential	High Delivery Potential	Total Roads	(mi)	(%)	Hydrologically disconnected[1] (%)
Clallam	24	5.8	10.6	77.1	40.5	134.0	28.6	21.4	29.3
Cowlitz	9	3.3	0.6	47.0	4.8	55.7	3.6	6.5	24.2
Ferry	9	0.0	0.0	50.1	3.3	53.4	1.0	1.8	70.5
Grays Harbor	27	6.5	3.5	115.5	29.6	155.0	18.8	12.2	36.3
Jefferson	12	0.3	0.0	62.7	12.5	75.4	6.3	8.4	49.6
King	5	0.0	0.3	28.7	6.3	35.3	4.2	11.9	33.2
Kittitas	9	0.0	3.4	39.3	4.2	46.9	0.9	1.9	79.2
Klickitat	9	1.5	0.6	37.2	4.6	43.9	1.4	3.2	68.9
Lewis	17	1.2	5.7	46.6	32.7	86.2	18.3	21.3	43.9
Mason	9	0.7	4.0	40.1	8.4	53.1	3.7	7.0	55.5
Pacific	9	0.9	0.1	37.7	14.8	53.6	8.8	16.5	40.3
Pend Oreille	9	0.0	0.0	55.4	13.2	68.6	2.6	3.8	80.1
Pierce	4	0.2	1.3	17.0	7.7	26.2	4.1	15.8	46.3
Stevens	9	0.0	0.0	48.9	4.7	53.6	0.7	1.4	84.5
Wahkiakum	9	0.3	0.8	47.4	11.8	60.4	9.3	15.4	21.5

		Road length (mi)					Connected drainage		
County	**No. of sections**	**Orphaned**	**Abandoned**	**Low Delivery Potential**	**High Delivery Potential**	**Total Roads**	**(mi)**	**(%)**	**Hydrologically disconnected[1] (%)**
Whatcom	9	4.4	11.1	10.3	19.7	45.5	7.7	16.9	61.0
All counties	179	25.1	41.9	761.0	218.7	1046.7	120.2	11.5	45.0

[1]The percentage hydrologically disconnected is computed as a proportion of the HDP roads. See text for formula.

Figure 2: Samples for Forest Road Runoff Disconnection Survey

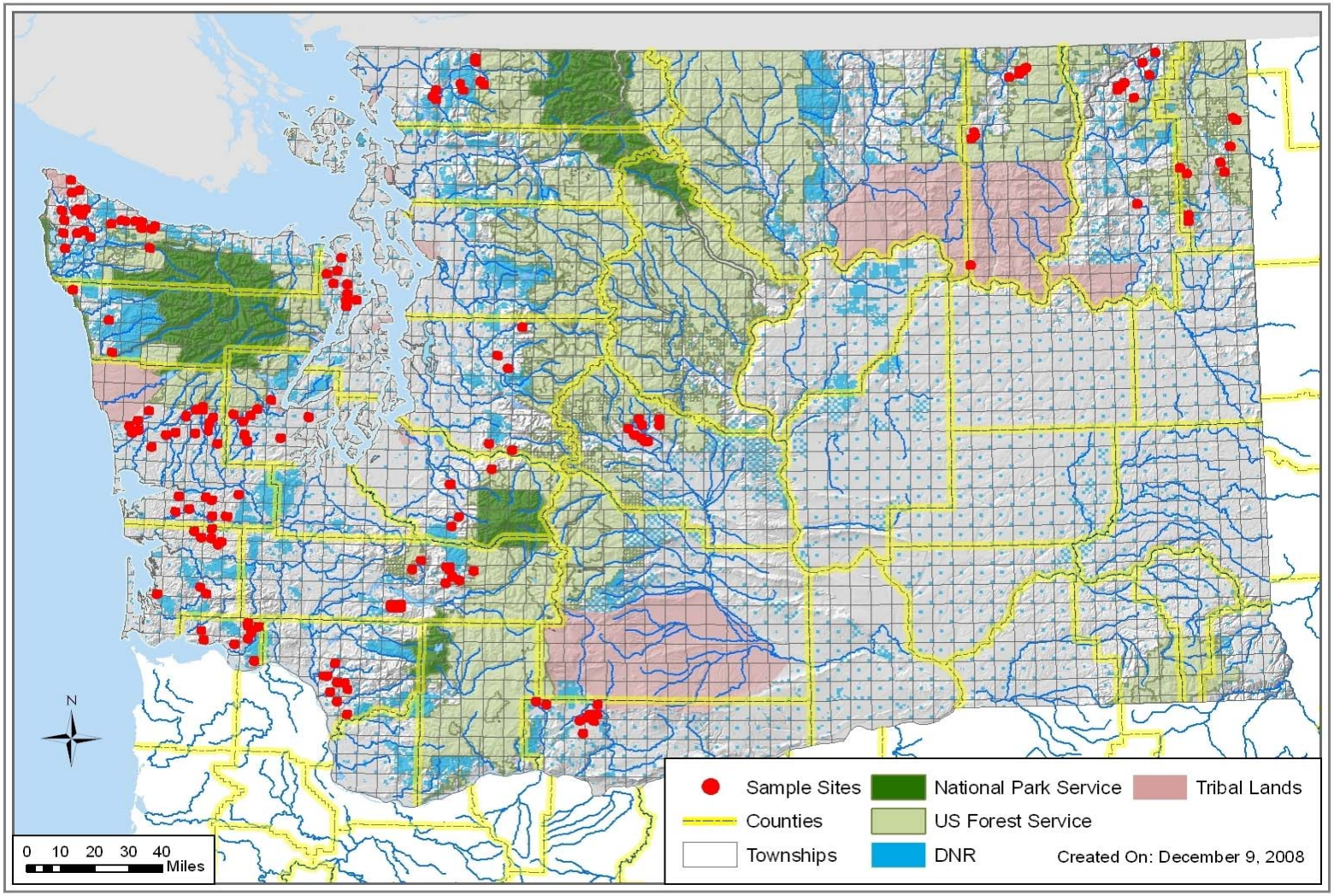


Figure 2: Location of surveyed sections for the road inventory.

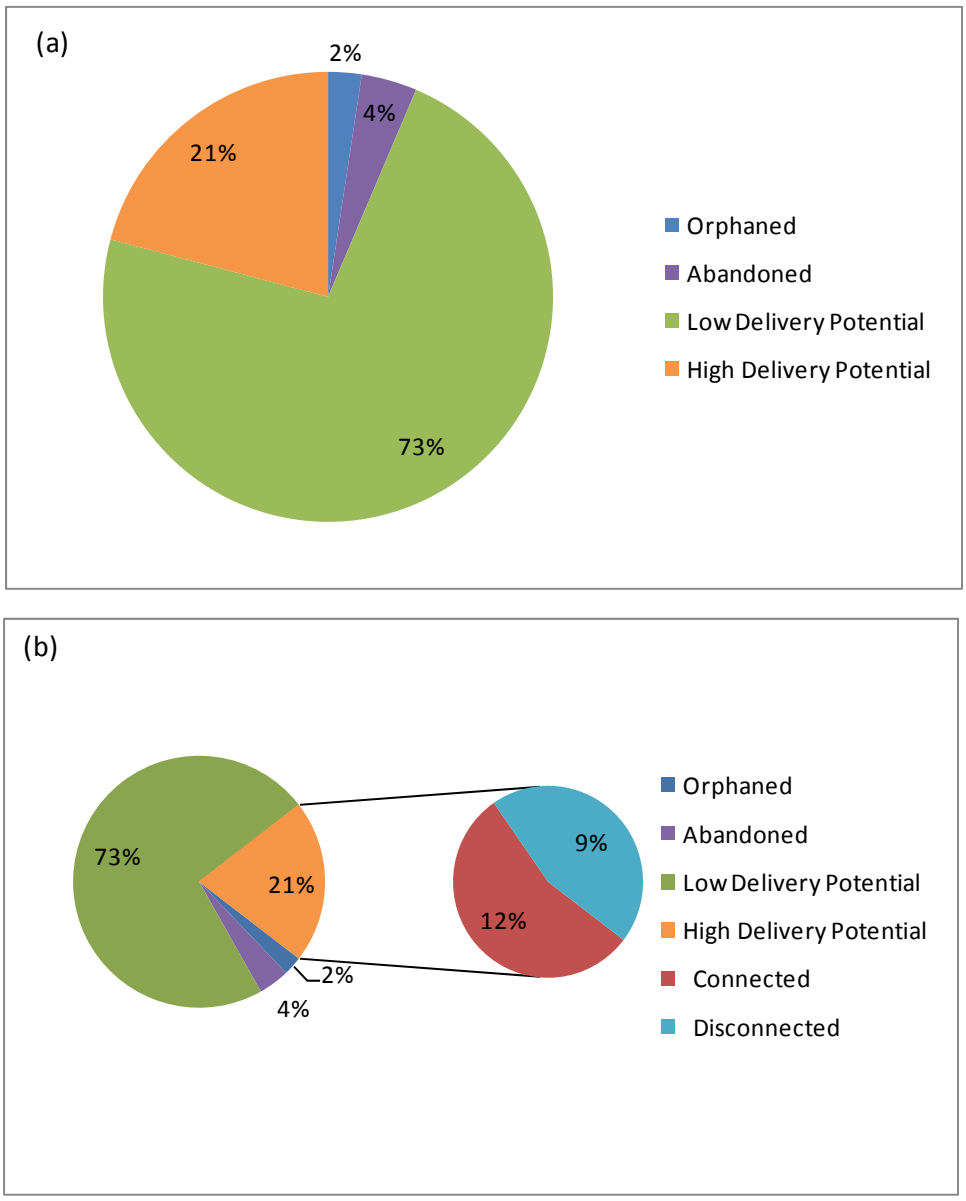


Figure 3: Percentage of total road length (1047 miles) by road category (a) and subcategory (b).

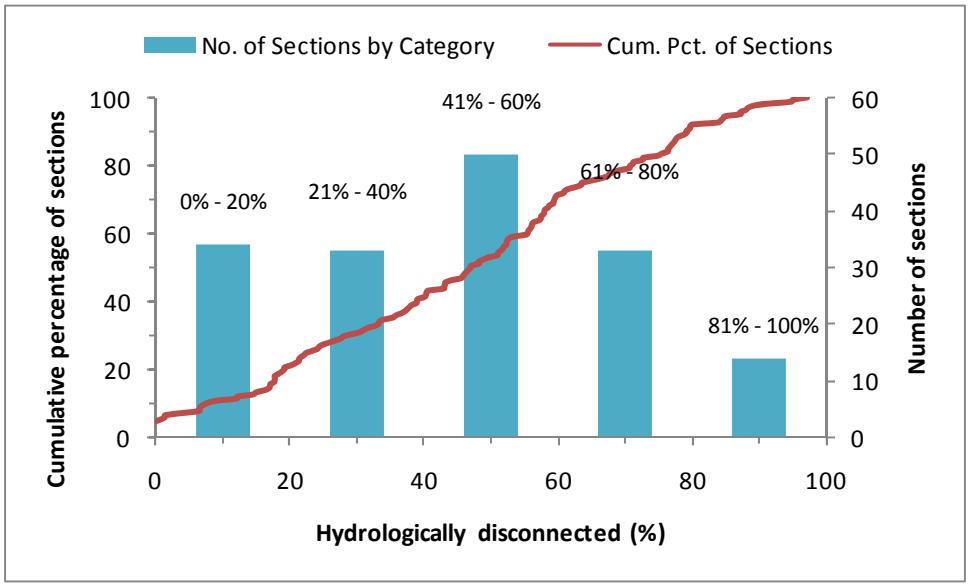


Figure 4: Cumulative percentage and frequency distribution plots of HDP road segments that are hydrologically disconnected by section (N = 164). (Note: 15 of the 179 sections are excluded from this plot because they had no HDP road segments.)

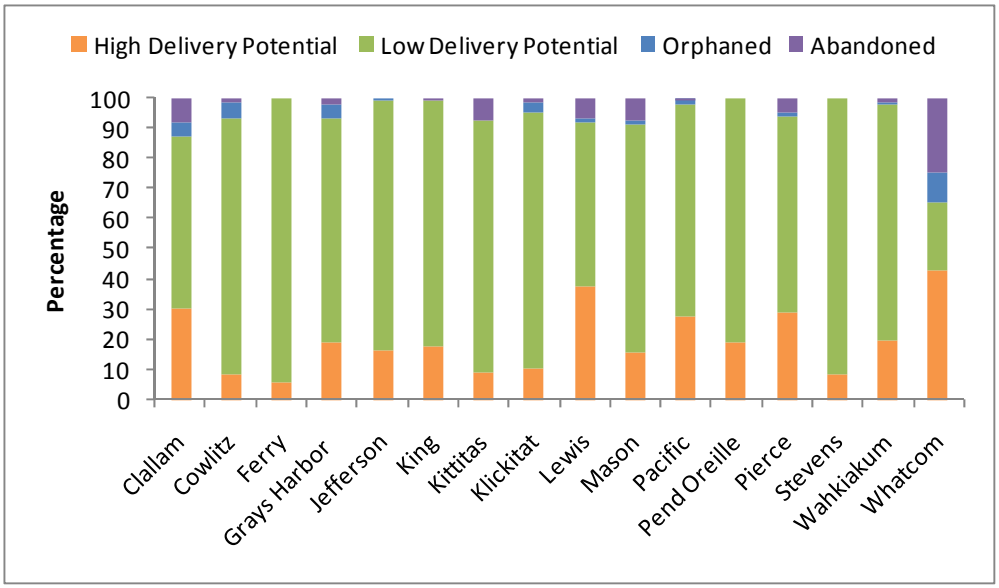


Figure 5: Percentage of total road length by road category for each county.

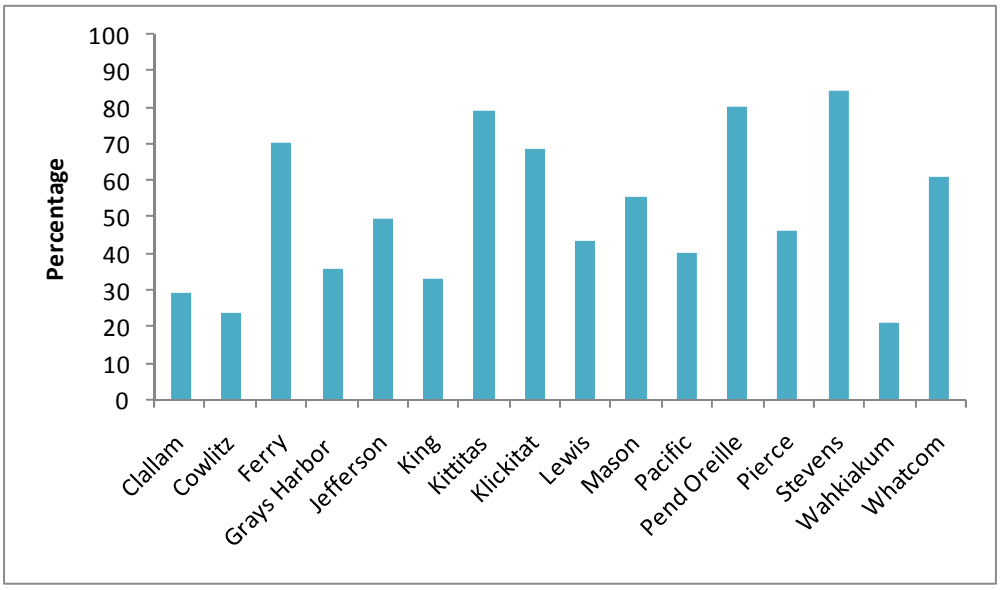


Figure 6: Percentage of HDP road length that is hydrologically disconnected by county.

Discussion

The survey results indicate that road improvements have probably reduce road runoff and the potential delivery of fine sediment to streams. It is well documented that disconnecting the road network from the stream and implementation of BMPs significantly decreases sediment delivered to watercourses (Furniss et al. 1991, Megahan et al. 1992). This survey shows that disconnectivity is occurring as a result of several key management activities. First, a high proportion of the road network (73%) has low delivery potential because the roads are located on landscapes that minimize hydrologic connectivity. This reflects initial road planning as-well-as road relocation activities that have occurred under the RMAP process. Second, the presence of orphaned and abandoned roads demonstrates a conscious effort to eliminate high risk roads. Although the proportion of orphaned and abandoned roads is relatively small (6%), they often occur in unstable areas or are very close to streams. Therefore, eliminating road use or complete removal can have a significant positive benefit to streams. Third, the disconnection of approximately one-half of the HDP roads reflects the implementation of multiple BMPs (e.g., increased cross drains, more frequent ditch-outs, grading). Collectively, these data show that a majority of the roads in the survey area have a low probability of delivering sediment to a typed water course. Also, because these data are spatially representative we assume that the results are reflective of the road conditions on most large private lands in Washington.

The RMAP program requires landowners to complete their road improvements by 2016. At this time, the RMAP's are only partially completed, but the majority are on track to meet the 2016 deadline[11]. Base on the progress to date, we can assume that sediment delivery from forest roads has declined and that it will continue to decline as all of the RMAP's are completed. In addition, it is important to recognize that while hydrologic disconnection is a very important tool, landowners apply a broad suite of BMP to eliminate and minimize sediment delivery. Some BMPs are temporal, such as not hauling on streamside parallel roads during wet weather. Others are spatial, such as stabilizing native surface roads with rock or vegetation.

Literature Cited

Furniss, M.J., T.D. Roelofs, and C.S. Yee, 1991. Road Construction and Maintenance. In: Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats, W. Meehan, (Editor). Special Publication 18, American Fisheries Society, Bethesda, Maryland, pp. 297-324.

Megahan, W.F., J.P. Potyondy, and K.A. Seyedbagheri, 1992. Best Management Practices and Cumulative Effects From Sedimentation in the South Fork Salmon River: An Idaho Case Study. In: Watershed Management: Balancing Sustainability with Environmental Change, Robert J. Naiman, (Editor). Springer-Verlag, New York, pp. 401-414.

[11] Personal Communication between Gary Graves, Washington Department of Natural Resources and Adrian Miller, Washington Forest Protection Association.

Appendix C

A Survey of RMAP Accomplishment on Salmon, Steelhead, and Bull Trout Waters

March 16, 2010

Introduction

The Washington State Forest Practice HCP requires annual reporting to the Federal Services to document progress on several elements of the HCP. Included in this report are statistics that demonstrate progress on implementing the Road Management and Abandonment Plans. While the statistics provided show progress on both fish crossing and road miles upgraded, the data do not provide an intuitive way to determine how landowners are meeting the "worst first" concept prescribed in the HCP. While individual landowners have policies and procedures and can demonstrate compliance in this regard, there is no formal way to aggregate these effective, but different approaches.

Survey

In order to provide some evidence across the broad scope of landowner strategies in meeting the "worst first" concept, WFPA has sent out a survey (attached) that focuses on quantifying the amount of work that has been completed specifically on salmon, steelhead, and bull trout waters. Utilizing a common data set to represent key threatened and endangered fish presence provides an ability to evaluate if progress is being focused on fish habitat for these key species.

WFPA sent surveys to all 54 agencies, municipalities or private landowners that have submitted RMAPs to the Department of Natural Resources. We received responses back from 20 landowners or municipalities. This represents approximately 3.6 million acres of the estimated 7.6 million acres of forestland required to submit RMAPs.

Results

Of the 1394 crossings that have been identified, 777 have been completed as of 2008. This represents a 56% completion rate on salmon steelhead, and bull trout waters (Table 1). This work has resulted in 327 miles of habitat being opened up.

Table 1. RMAP progress on salmon, steelhead, and bull trout waters.

Total Crossings Identified	Total Crossings Repaired	Total Miles Habitat Opened
1394	777	327

RMAPs STATUS SURVEY

For all RMAPs plans that you have on file with DNR for land you manage through the end of 2008[12] please report:

RMAP Number _____

1. Total number of stream crossings identified in your RMAPs for repair on salmon, steelhead and listed bull trout streams? (Total from the beginning in 2001)	Number _____
2. Number of fish passage repairs **completed** on salmon, steelhead or listed bull trout stream crossings for all RMAPs plans on file with DNR.	Number _____
3. Total length of stream habitat **opened** to salmon, steelhead or listed bull trout as a result of complete fish passage repairs for all RMAPs plans on file with DNR.	Miles _____

To be able to consistently answer questions above, we asking that participants in the survey use the Department of Fish and Wildlife's Salmonscape coverage to determine "salmon, steelhead or listed bull trout" presence for the purposes of this survey. The coverage can be accessed at:

http://wdfw.wa.gov/mapping/salmonscape/

Landowners may elect to utilize the web based interface to determine presence for a particular stream reach. You may also download the coverages from the map menu under the "tools" dropdown. However, it is limited to a scale less than 1:575,000 which does not allow large parts of the state at once, but you can download by WRIA and end up opening multiple shape files in GIS. Also, the data that is available to be downloaded is limited in this manner, but one could get all the salmon species distributions and be able to manipulate the file in their GIS program.

Alternatively, landowners may wish to request from DFW the specific GIS layers to complete the analysis. The WDFW Priority Habitats and Species Program (PHS) provides a catalog of the agency's GIS data, management recommendations for key species and habitats, and an outlet for requesting digital data or hard copy maps. Release forms and contact information for DFW can be found at:

http://wdfw.wa.gov/hab/release.htm

Irrespective of the method used, please consider the following:

[12] If you have year end 2009 data please report it separately. If we get enough end of 2009 data we will use it to supplement or replace the results for 2008.

Salmonscape displays twelve separate species/runs. For the purposes of this survey, any crossing on a stream that is attributed as spawning, rearing, presence documented, or presence presumed for these twelve species/runs will constitute "salmon, steelhead or listed bull trout" presence.

Please return this completed survey form to Adrian Miller at amiller@wfpa.org by February 19, 2010.

Appendix D

April 15, 2010

To: DNR Regional RMAP Specialists

From: Forest and Fish Policy Staff Group

Subject: A survey on RMAP progress

Thank you for taking time out of your schedule to respond to this survey. The Forest and Fish Policy Committee has been asked by the landowner and the state caucuses to consider the economic situation of state land management agencies and the forest industry and evaluate the potential for an extension to the current July 2016 RMAP completion date. The Policy Committee appointed a sub-committee who in turn engaged a group of staff to compile existing information so that Policy can make an informed recommendation. Eventually, the Forest Practices Board would have to act to change the completion date in the rules.

The staff group has summarized the statewide RMAP data collected by Terry Meisenhimer, Carol Walters and Charlene Rodgers at Division. To supplement this information, the Policy Committee asked the staff group to document the range of variation in RMAP status and the application of the worst-first policy. Without readily available data on the 100 plus RMAPs in the state and the need to get information quickly, we felt that a survey of DNR RMAP Specialist would be the most effective way to gather information helpful for responding to Policy's questions.

The only purpose of this survey is to help inform Policy as to RMAP progress. We appreciate Terry and Sue helping with distribution of the survey and collecting the responses. They will act as the go between and the F & F Policy staff group will see only the data, without the region or responding individual information. There is no need to identify any of the RMAP companies by name.

Instructions

This is a survey of your informed opinion. We do not expect you to do any data collection or other work other than what you need to do to feel comfortable answering the questions. Please pick 8 to 10 RMAPs in your region that represent the range of implementation progress that you see. For each RMAP, please answer the 10 questions using the response code below the survey form. Return the completed form to Terry or Sue by April 21. For consistency, run your question through Terry or Sue. If want more information on reason for the survey contact Peter Heide pheide@wfpa.org. We will work together to make this as quick and accurate a possible considering the limited time we have.

Thank you again.

Peter Heide, Curt Veldhuisen, Doug Martin, Nancy Sturhan, Chris Mendoza, Marty Acker and Mark Hicks.

Forest and Fish Policy Questionnaire for DNR Regional RMAP Specialists 4/14/2010

Name and region for Department use only **Name:**
Region:

1	2	3	4	5	6	7	8	9	10	11
		Approx.		**Worst first?**		**Road Functions - How well has each been addressed?**				
Owner	**LO Size**	**% complete**	**Delays?**	**Per Rule**	**Other Criteria**	**Fish Passage**	**Sed. Delivery**	**Instability**	**Intercept GW**	**Water Deliv**
A										
B										
C										
D										
E										
F										
G										
H										
I										
J										

Entry Codes

Column	Criteria	Enter	Using an attachment, please specify as indicated
1	Landowner ID	No entry	
2	Large industrial (>10,000 ac)	LI	
	Small industrial (1000-10,000)	SI	
	Agency	A	
	SLO (<1000)	SLO	Probably few or no small landowners doing an RMAP
3	Significantly behind schedule (<45% of the total work done)	B	
	On or nearly on schedule	OS	
	Ahead of Schedule (>60% done but not complete)	A	
	100% complete with RMAP up grades	C	
4	Have there been significant delays in implementation?	Yes or No	Please specify referencing the landowner ID
5	Has worst first been implemented by rule 222-24-051(4)?	Yes or No	
6	Or has other criteria been used to determine worst first?	Yes or No	Please specify referencing the landowner ID
4 - 11	How well has worst-first criteria been addressed?	H	Good/High
		M	Fair/Mod
		L	Poor/Low

Survey of Regional RMAP Specialists
Summary Tables

Level of Approximate Completion

Overall

Region	Behind	On Sched	Ahead	Complete	Other	Total
PC	4	4	1	1		10
SP	2	7	6	2		17
Oly	3	3	2			8
NW	6	2	1	1		10
SE		12	3	2		17
NE		4	4			8
Total	15	32	17	6		70
Percent	21%	46%	24%	9%		
			79%			

Large Industrial

Region	Behind	On Sched	Ahead	Complete	
PC	3	3	1	1	
SP	1	4	5	2	
Oly	2	2			
NW	4	1		1	
SE		8	2		
NE		2	4		
	10	20	12	4	46
	22%	43%	26%	9%	
			78%		

Small Industrial

Region	Behind	On Sched	Ahead	Complete	
PC	1				
SP		2	1		
Oly		1	1		
NW	2				
SE		1	1	2	
NE					
	3	4	3	2	12
	25%	33%	25%	17%	
			75%		

Agency

Region	Behind	On Sched	Ahead	Complete
PC		1		
SP	1			
Oly	1			
NW		1		
SE		2		
NE			2	

Small Landowner

Region	Behind	On Sched	Ahead	Complete	Other
PC					
SP		1			1
Oly			1		
NW			1		
SE		1			
NE					

RMAP Delays

Region	Yes	No	
PC	8	2	
SP	2	15	
Oly	5	3	
NW	7	3	
SE	7	10	
NE	0	8	
Total	29	41	70
Percent	41%	59%	

Worst First Criteria

Region	Per Rule	Other	
PC*	3	7	
SP	16	1	
Oly	6	2	
NW*	10	0	
SE	17	0	
NE	8	0	
Total	60	10	70
Percent	86%	14%	

*There appeared to be uncertianty in the response on this category

Worst First Priority Road Functions
How well has each been addressed?
All regions combined

	Fish Passage	Sed Delivery	Instability	Intercept GW	Water Delivery
	42	31	32	24	29
High	60%	44%	46%	34%	41%
	17	33	32	43	38
Medium	24%	47%	46%	61%	54%
	10	6	6	3	3
Low	14%	9%	9%	4%	4%
Other	1				
	70				

Worst First Implemntation

	Percent	Responses
High	45%	158
Medium	47%	163
Low	8%	28
	349	

Appendix E

SELECTED SECTIONS OF WAC 222-24: ROAD CONSTRUCTION AND MAINTENANCE

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;
- Diverting most road runoff to the forest floor;
- Providing for the passage of some woody debris;
- Protecting stream bank stability;
- Minimizing the construction of new roads; and
- Assuring 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 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.

(Note: Other laws and rules and/or permit requirements may apply. See chapter 222-50 WAC.)

[Statutory Authority: RCW 76.09.040. 06-11-112, § 222-24-010, filed 5/18/06, effective 6/18/06; 05-12-119, § 222-24-010, filed 5/31/05, effective 7/1/05. Statutory Authority: Chapter 34.05 RCW, RCW 76.09.040, [76.09.]050,[76.09.]370 , 76.13.120(9). 01-12-042, § 222-24-010, filed 5/30/01, effective 7/1/01. Statutory Authority: RCW 76.09.040, 76.09.170 and chapter 34.05 RCW. 94-01-134, § 222-24-010, filed 12/20/93, effective 1/1/94. Statutory Authority: RCW 76.09.040, 76.09.050 and chapter 34.05 RCW. 92-15-011, § 222-24-010, filed 7/2/92, effective 8/2/92. Statutory Authority: RCW 76.09.040. 87-23-036 (Order 535), § 222-24-010, filed 11/16/87, effective 1/1/88. Statutory Authority: RCW 76.09.040 and 76.09.050. 82-16-077 (Resolution No. 82-1), § 222-24-010, filed 8/3/82, effective 10/1/82; Order 263, § 222-24-010, filed 6/16/76.]

WAC 222-24-051

*Large forest landowner road maintenance schedule.

All forest roads must be included in an approved road maintenance and abandonment plan by July 1, 2006. 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).

*(1) Landowners must maintain a schedule of submitting plans to the department that cover 20% of their roads or land base each year.

*(2) For those portions of their ownership that fall within a watershed administrative unit covered by an approved watershed analysis plan, chapter 222-22 WAC, landowners may follow the watershed administrative unit-road maintenance plan, providing the roads they own are covered by the plan. A proposal to update the road plan to meet the current road maintenance standards must be submitted to the department for review on or before the next scheduled road maintenance plan review. If annual reviews are not required as part of the watershed analysis road plan, the plan must be updated by October 1, 2005. All roads in the planning area must be in compliance with the current rules by July 1, 2016.

*(3) Plans will be submitted by landowners on a priority basis. Road systems or drainages in which improvement, abandonment or maintenance have the highest potential benefit to the public resource are the highest priority. Based upon a "worst first" principle, work on roads that affect the following are presumed to be the highest priority:

(a) Basins containing, or road systems potentially affecting, waters which either contain a listed threatened or endangered fish species under the federal or state law or a water body listed on the current 303(d) water quality impaired list for road related issues.

(b) Basins containing, or road systems potentially affecting, sensitive geology/soils areas with a history of slope failures.

(c) Road systems or basins where other restoration projects are in progress or may be planned coincident to the implementation of the proposed road plan.

(d) Road systems or basins likely to have the highest use in connection with future forest practices.

*(4) Based upon a "worst first" principle, road maintenance and abandonment plans must pay particular attention to:

(a) Roads with fish passage barriers;

(b) Roads that deliver sediment to typed water;

(c) Roads with evidence of existing or potential instability that could adversely affect public resources;

(d) Roads or ditchlines that intercept ground water; and

(e) Roads or ditches that deliver surface water to any typed waters.

*(5) Road maintenance and abandonment plans must include:

(a) Ownership maps showing all forest roads, including orphan roads; planned and potential abandonment, all typed water, Type A and B Wetlands that are adjacent to or crossed by roads, stream adjacent parallel roads and an inventory of the existing condition; and

(b) Detailed description of the first years work with a schedule to complete the entire plan within fifteen years; and

(c) Standard practices for routine road maintenance; and

(d) Storm maintenance strategy that includes prestorm planning, emergency maintenance and post storm recovery; and

(e) Inventory and assessment of the risk to public resources or public safety of orphaned roads; and

(f) The landowner or landowner representative's signature.

*(6) Priorities for road maintenance work within plans are:

(a) Removing fish passage barriers beginning on roads affecting the most habitat first, generally starting at the bottom of the basin and working upstream;

(b) Preventing or limiting sediment delivery (areas where sediment delivery or mass wasting will most likely affect bull trout habitat will be given the highest priority);

(c) Correcting drainage or unstable sidecast in areas where mass wasting could deliver to public resources or threaten public safety;

(d) Disconnecting road drainage from typed waters;

(e) Repairing or maintaining stream-adjacent parallel roads with an emphasis on minimizing or eliminating water and sediment delivery;

(f) Improving hydrologic connectivity by minimizing the interruption of surface water drainage, interception of subsurface water, and pirating of water from one basin to another; and

(g) Repair or maintenance work which can be undertaken with the maximum operational efficiency.

*(7) Initial plans must be submitted to the department during the year 2001 as scheduled by the department.

*(8) Each year on the anniversary date of the plan's submittal, landowners must report work accomplished for the previous year and submit to the department a detailed description of the upcoming year's work including modifications to the existing work schedule.

The department's review and approval will be conducted in consultation with the department of ecology, the department of fish and wildlife, affected tribes and interested parties. The department will:

(a) Review the progress of the plans annually with the landowner to determine if the plan is being implemented as approved; and

(b) The plan will be reviewed by the department and approved or returned to the applicant with concerns that need to be addressed within forty-five days of the plan's submittal.

(c) Additional plans will be signed by the landowner or the landowner's representative.

*(9) The department will facilitate an annual water resource inventory area (WRIA) meeting with landowners, the department of fish and wildlife, the department of ecology, affected tribes, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, affected counties, local U.S. Forest Service, watershed councils, and other interested parties. The purpose of the meeting is to:

(a) Suggest priorities for road maintenance and abandonment planning; and

(b) Exchange information on road maintenance and stream restoration projects.

*(10) Regardless of the schedule for plan development, roads that are currently used or proposed to be used for timber hauling must be maintained in a condition that prevents potential or actual damage to public resources. If the department determines that log haul on such a road will cause or has the potential to cause material damage to a public resource, the department may require the applicant to submit a plan to address specific issues or segments on the haul route.

*(11) If a landowner is found to be out of compliance with the work schedule of an approved road maintenance and abandonment plan and the department determines that this work is necessary to prevent potential or actual damage to public resources, then the department will exercise its authority under WAC 222-46-030 (notice to comply) and WAC 222-46-040 (stop work order) to restrict use of the affected road segment.

(a) The landowner may submit a revised maintenance plan for maintenance and abandonment and request permission to use the road for log haul.

(b) The department must approve use of the road if the revised maintenance plan provides protection of the public resource and maintains the overall schedule of maintenance of the road system or basin.

*(12) If a landowner is notified by the department that their road(s) has the potential to damage public resources, the landowner must, within 90 days, submit to the department for review and approval a plan or plans for those drainages or road systems within the area identified by the department.

[Statutory Authority: RCW 76.09.040. 06-11-112, § 222-24-051, filed 5/18/06, effective 6/18/06; 05-12-119, § 222-24-051, filed 5/31/05, effective 7/1/05. Statutory Authority: Chapter 34.05 RCW, RCW 76.09.040, [76.09.]050,[76.09.]370 , 76.13.120(9). 01-12-042, § 222-24-051, filed 5/30/01, effective 7/1/01.]

WAC 222-24-052

Road maintenance.

*(1) Forest roads. Forest roads are defined in WAC 222-16-010. To the extent necessary to prevent potential or actual damage to public resources, the following maintenance shall be conducted on forest roads, except as addressed in subsections *(5) and *(6) of this section:

(a) Drainage structures shall be kept functional.

(b) Ground water that has been captured by ditchline must be diverted onto stable portions of the forest floor by using ditchouts, culverts or drivable dips.

(c) Road surface must be maintained as necessary to:

(i) Minimize erosion of the surface and the subgrade; and

(ii) Minimize direct delivery of surface water to typed water; and

(iii) Minimize sediment entry to typed water; and

(iv) Direct any ground water that is captured by the road surface onto stable portions of the forest floor.

(d) During and on completion of the following operations, the road surface shall be crowned, outsloped, or water barred and berms removed from the outside edge except those intentionally constructed for protection of fills:

(i) Log, pulp, chip, or specialized forest product haul;

(ii) Rock haul; and

(iii) Road building.

(e) Before the first winter rainy season following termination of operations, drainage structures must be cleared and the road surface must be crowned, outsloped, water barred or otherwise left in a condition which prevents accelerated erosion, interruption of water movement within wetlands, mass wasting, or direct delivery of water or sediment to a typed water. (See the board manual section 3 for specific guidance.)

(f) Thereafter, except as provided in (d) of this subsection, the landowner must clear or repair ditches or drainage structures that are known or should be known to be nonfunctional and causing or likely to cause material damage to a public resource.

(g) The landowner will not be liable for penalties or monetary damages, under the act, for damage occurring from a condition brought about by public use, unless the landowner fails to make repairs as directed by a notice to comply.

(h) During the regular course of road maintenance on stream-adjacent parallel roads, down wood that is blocking vehicle passage shall be placed on the side of the road closest to the adjacent water.

*(2) Additional drainage structure maintenance. If the department determines, based on a field inspection and physical evidence, that the above road maintenance has been or will be inadequate to protect public resources, and that additional measures will provide adequate protection, the department will require the landowner or operator to install additional or larger drainage structures or other drainage improvements identified as necessary by the department.

*(3) Abandoned roads. An abandoned road is a road which the forest landowner has abandoned in accordance with procedures of (a) through (e) of this subsection. Roads are exempt from maintenance under this section only after (e) of this subsection is completed.

(a) Roads are outsloped, water barred, or otherwise left in a condition suitable to control erosion and maintain water movement within wetlands and natural drainages;

(b) Ditches are left in a suitable condition to reduce erosion;

(c) The road is blocked so that four wheel highway vehicles cannot pass the point of closure at the time of abandonment;

(d) Water crossing structures and fills on all typed waters are removed, except where the department determines other measures would provide adequate protection to public resources; and

(e) The department shall determine whether the road has been abandoned according to procedures of this subsection. If the department determines the road is properly abandoned, it must notify the landowner in writing within thirty days that the road is officially abandoned.

*(4) Orphaned roads. An orphaned road is a road or railroad grade that the forest landowner has not used for forest practices activities since 1974. Many of these roads are overgrown or closed off, but have not satisfied the abandonment process.

(a) An inventory and assessment, of the risk to public resources, or public safety must be completed by the landowner in conjunction with the road maintenance and abandonment plan.

(b) Five years after the effective date of this rule, when the extent of any problems associated with the orphaned roads is known, the hazard-reduction statute will be evaluated to determine if it is still needed and if funds for cost-sharing are needed to effect repair or abandonment of orphan roads. See RCW 76.09.300.

(c) Landowners are not obligated under this rule to repair or abandon such roads before the end of the five year period, but they can voluntarily take this action.

*(5) Brush control. Chemical control of roadside brush will be done in accordance with WAC 222-38-020.

*(6) Road surface treatment.

(a) Apply oil to the road surface only when the temperature is above 55 degrees F and during the season when there is a minimal chance of rain for the next 48 hours. Use of waste oil is subject to RCW 70.95I.060(5).

(b) Water the road surface prior to application of oil to assist in penetration.

(c) Construct a temporary berm along the road shoulder wherever needed to control runoff of the applied chemical.

(d) Take extreme care to avoid excess application of road chemicals. Shut off the flow at all bridges.

(e) Dispose of the rinse water fluids on the road surface or in a place safe from potential contamination of water when cleaning out chemical storage and application equipment tanks used for storage and application of road treatment materials.

(f) Comply with WAC 222-38-020 when using dry road chemicals.

[Statutory Authority: Chapter 34.05 RCW, RCW 76.09.040,[76.09.]050 , [76.09.]370, 76.13.120(9). 01-12-042, § 222-24-052, filed 5/30/01, effective 7/1/01.]

Appendix F

EXCEPTS FROM

NMFS Biological Opinion

Road Construction. The number and location of roads will not be affected by the issuance of the incidental take permit. However, the standards to which roads will be constructed are more stringent than under the regulatory practices that have led to existing conditions. The improved construction standards address the way roads are constructed, but might still result in some level of impact to the physical environment to an extent that interferes with normal fish behavioral patterns in affected watersheds.

Under the FPHCP, road construction will include new road construction and road reconstruction. Re-construction is the upgrading of abandoned roads or construction of new roads at previously roaded locations. Reconstruction could be a common occurrence where timber-harvest activities are proposed in previously harvested areas where road maintenance has lapsed. Road reopening and reconstruction will occur under normal and emergency situations. Reopening closed roads occurs when a road has been abandoned or put to bed, and it becomes needed again. During emergency situations, closed roads might be reopened to allow access to emergency vehicles and personnel. Reopening closed roads might require removing barriers, knocking down excessively tall water bars, clearing vegetation and downed trees in the travel ay, snow-plowing, or reconditioning other roadway features. Temporary culverts could be installed with bedding and clean backfill. Closed roads that have been reopened might then need to be closed after use. Reconstruction is often needed when old roads were primarily composed of cut and fill slopes and used only native soils as surface materials. Reconstruction must meet new road construction standards.

The use of shorter yarding towers has increased the need for new roads. Shorter towers require more landings within (and closer to) harvest units. New road construction includes temporary construction of roads, spurs, and landings. New road construction will continue to decline in amount (number of miles and density per unit area) as road densities become stabilized on the landscape. The FPHCP is not likely to change the number, density, or general placement of these roads, but the standards to which they are built and maintained will be improved relative to historical and recent past practices.

Road construction will typically include: removal of surface vegetation and soil; blasting of rock; excavation of slopes with placement of fill material (cut-and-fill); excavation of slopes and removal (and disposal) of excavated material (full-bench); grading and compacting of sub-grade; rock placement to establish base course; installation of drainage and structural features;

placement and finishing of surface coarse; construction of quarries and gravel pits; and marking of road, installation of signs, and installation or construction of other safety features.

Road Maintenance, Abandonment, and Decommissioning. Road maintenance includes the activities that are needed to protect water quality and aquatic resources, meet access needs, provide safe and efficient road operations, and protect the capital investment in the road itself. Road maintenance consists of a variety of activities that contribute to the preservation of the existing road while minimizing delivery of water and sediment to streams. Table 5 describes the activities and tasks used to construct, maintain, repair, remove, and replace portions of roads and their features.

FPHCP maintenance standards require landowners to: (1) keep drainage structures functional; (2) divert captured groundwater from ditch lines onto stable portions of the forest floor; (3) maintain road surfaces to minimize erosion and delivery of water and sediment to typed waters; and (4) slope or water bar road surfaces to prevent water accumulation. Standards for road abandonment require landowners to: (1) slope or water bar roads to minimize erosion and maintain drainage; (2) leave ditches in a condition that minimizes erosion, (3) block roads so that four-wheel highway vehicles cannot pass the point of closure; and (4) remove water crossing structures and fills at high risk of erosion.

In general, the road work proposed in the FPHCP will be spread throughout the action area, over time, rather than concentrated in any one particular area for a short time. Decommissioning will most likely be associated with short spur roads accessing previously harvested units and the overall length of roads decommissioned will be small as many of the roads will be required for long-term silvicultural activities, such as harvest of adjacent stands, pre-commercial stand thinning, and access to monitoring sites.

Roads. The action area will experience a gradual reduction in road-source runoff over the life of the FPHCP as RMAPs are implemented. Landowners will be required to remove fish blockages, keep drainage structures functional, divert captured groundwater from ditchlines onto stable portions of the forest floor, maintain road surfaces to minimize erosion and delivery of water and sediment to typed waters, and slope or waterbar road surfaces to prevent water accumulation. Road decommissioning and stabilization will provide for a sizeable reduction in the number of road segments that deliver water to the channel network. The FPHCP lowers the potential for localized increases in peak flows associated with new road construction. Except for stream crossings, under the FPHCP, roads will be kept out of natural channels, CMZs, RMZs, Equipment Limitation Zones, and other sensitive sites, when there could be substantial damage to fish habitat. Considered here also are the effects of rock quarries and borrow pits, which function as roads. The effect of roads on hydrology are minimized by the proposed road construction and upgrading guidelines that call for hydrologically disconnecting much of the road network over the life of the FPHCP. Outlets of ditch relief culverts will be located to allow the dispersal of water to the forest floor before reaching any stream. Since much of the road network across FPHCP lands has been constructed, the effects of road-related peak-flow increases will diminish over the life of the FPHCP as roads are upgraded to FPHCP standards. In the long-term, effects of timber harvesting and road management on hydrologic processes will

be negligible. The measures proposed in the FPHCP should provide for more rapid improvements given the emphasis on (1) identifying sensitive sites and requiring greater environmental review for new roads; (2) inventorying existing roads; (3) scheduling and upgrading roads to new standards prior to 2016; and (4) testing basic assumptions related to road rules through the adaptive management program.

Sediment. Sediment inputs will be either chronic or acute. Chronic sediment inputs will occur at low levels at all locations where roads cross streams and are adjacent to streams. Sediment inputs will also occur from the continuing use of these roads throughout the term of the FPHCP. Chronic input is expected to decline over the life of the permit as FPHCP measures and projects addressing the effects of stream adjacent roads are completed (road decommissioning and stream-crossing improvements).

In contrast to chronic input, instances of acute sediment input will occur during and immediately after road decommissioning work on stream-adjacent roads and stream-crossing improvements or replacements. Road decommissioning is expected to occur in all stream types. Furthermore, timber harvest within the riparian areas adjacent to type N streams could decrease or eliminate the sediment capturing capacity of riparian areas until subsequent riparian revegetation regains the capture function, and thus enables sediment input to streams.

Acute sediment input will harm low numbers of juvenile lifestages of river-type Chinook, steelhead, and coho, which reside in riverine systems throughout the year. Adults of these species would avoid harm, as they are capable of leaving disturbed habitat areas during the short-term periods of high turbidity. Numbers of juveniles that will be harmed by acute sediment loading from road crossing or decommissioning work is anticipated to be low wherever effects arise because the proposed action includes measures to reduce the extent of effects and fish exposure (worksite isolation, restricted work timing, and ordinary brief persistence of turbid conditions).

The action area contains road crossings of fish-bearing streams at about 18,000 locations. The action area has an additional 9,000 road crossings of perennial non-fish-bearing streams. Each of these crossings will be replaced or upgraded at least once during the 50 year term of the FPHCP. Each replacement or upgrade will most likely include some amount of in-water work. The downstream extent of turbidity (the physical area where harm from turbidity is most likely to occur) is influenced by the size and velocity of the waterbody. Thus, for worksites in streams with flows not exceeding 10 cubic feet per second, the exemption from the take prohibition would cover turbidity up to but not beyond 100 feet downstream from the worksite. For streams with flows between 10 and 100 feet per second, the take exemption would cover turbidity up to but not beyond 200 feet downstream of the worksite. Finally, for streams with flows more than 100 cubic feet per second, the take exemption would reach but not extend beyond 300 feet downstream from the worksite.

Acute turbidity will not harm juvenile chum and ocean type Chinook in fish bearing streams, as work timing restrictions will focus work of this type during times when the juveniles will not be present. Juvenile fish might be harmed by acute sediment input from riparian timber practices

near Type N streams, but the extent of harm would be low because turbidity will decrease as the water from the Type N streams reaches fishbearing waters. The type harm would be in the form of temporary distress fish (injury). Acute sediment loading from riparian timber practices will likely last through the first growing season following the timber practice.

EXCERPTS FROM
USFWS Biological Opinion

7.4.3 Road Management

The aspects of road construction and maintenance in the Washington Forest Practices Rules, that are effects of permit issuance, are discussed in this section. For example, some of these rules changed slightly; there were minor changes in guidelines regarding placement of fill and water-crossings. Other aspects of these rules that represent a moderate to high risk of take of covered species, even though the rules did not change, are also considered to be a "result" of permit issuance. Therefore, the following aspects of road Management are expected to result from permit issuance:

1. Increased emphasis on existing water-crossing structures to improve fish, flood, wood, and bedload passage.

2. Utilization of additional BMPs to reduce or eliminate the delivery of road-generated sediment.

3. Improved hydrological connectivity from repair of existing road problems and improvement in design of new roads. Landowners are now required to inventory roads and identify maintenance needs and schedule work to correct them to prevent or curtail impacts to public resources. The requirements regarding the completion of Road Management and Abandonment Plans (RMAP) by 2006 and subsequent road improvements by 2016 is a substantial change from the November 1998 Forest Practices Rules.

4. Some additional road maintenance activities would occur. Road maintenance was already required under the November 1998 Forest Practices Rules. Road surfaces were maintained in specified conditions to prevent accelerated erosion, interruption of water movement within wetlands, mass wasting, or direct delivery of water or sediment to typed water. Although the November 1998 Forest Practices Rules generally addressed these same factors, the new road-maintenance measures are more-specifically and more-frequently articulated in the Washington Forest Practices Rules and the FPHCP.

5. Construction of some roads slightly closer to streams may occur under FPHCP because there would be take authorization, however, the FPHCP severely limits the ability of road building within 200 feet of streams.

7.4.3.9 Exceptions for Road Maintenance

Small forest (non-industrial) landowners must replace fish passage barriers only as the need arises or as otherwise identified through proposed FPAs. Small forest landowners may submit an RMAP checklist in lieu of a complete RMAP. In Watershed Administrative Units where watershed analysis has been conducted and approved, small forest landowners may elect to follow the watershed's road maintenance plan rather than development an RMAP. WDNR maintains authority to regulate road impacts associated with individual forest practices activities so that public resources are not damaged. Owners of 20-acre exempt parcels are not required to complete RMAPs or RMAP checklists, but must abide by the road construction and maintenance requirements and would be required to address repairs needed to protect public resources.

Based on the RMAP exceptions, barriers would be replaced at a slower pace than industrial landowners and, then, only based upon State priorities and funding availability. Some small landowners are choosing to replace fish passage barriers at their own expense and others are pursuing non-State sources (for example, private and tribal restoration groups) for replacement and cost-share assistance. Non-industrial landowners with a barrier on their land have three options at the time they submit an FPA: 1) fix it during the term of the FPA, 2) develop an RMAP checklist and schedule its repair, or 3) enroll in the Family Forest Fish-Passage Program (FFFPP). However, landowners may also sign-up for the FFFPP on a voluntary basis in the absence of an FPA. Approximately 70 to 80 percent of the current enrollment was derived from voluntary sign-up (Kirk Hanson, Personal Communication, January 13, 2006). The FFFPP was developed to help small landowners with the often high cost of correcting fish-passage barriers. This cost-share program was developed cooperatively between the WDNR and WDFW. The Interagency Committee for Outdoor Recreation is responsible for managing grant funds allocated to projects. The State legislature allocated $2 million for the FFFPP in the 2004-05 biennium and $4 million for the 2006-07 biennium.

> Landowners who submitted an FPA for timber harvest on or after May 14, 2003, may be required to provide a limited share (match) of the overall cost of the barrier correction. The most a landowner must pay is 25 percent of project costs, or $5,000, whichever is less. The cost-share program provides 75 to 100 percent of the cost of correcting the barrier and also provides technical assistance. The State would pay 100 percent of project costs under two scenarios:
>
> 1. A Forest Practices Application or Hydraulic Project Approval was previously provided for the existing barrier.

2. A Forest Practices Application for timber harvest has not been submitted by the landowner between May, 14, 2003, and the time the project has been selected for funding.

The second item serves as an incentive for landowners to repair passage barriers now rather than waiting until a future date. If a landowner corrects more than one barrier in a calendar year, the maximum required match per year varies according to the average annual timber volume harvested from the landowner's lands in this State during the three preceding calendar years, and whether the barrier is in eastern or western Washington. In addition, a number of conservation groups are involved in identifying, prioritizing, and funding correction of fish-passage barriers and would often sponsor such projects, including providing engineering and logistical experience and providing the matching funding for the landowner. The FFFPP helps link local project sponsors experienced in implementing fish-passage projects with landowners in need of technical assistance and project management.

Because many small landowners are located lower in the stream system, passage often becomes an issue affecting a considerable amount of potential habitat. Such culverts would be prioritized for replacement or upgrading. Fish-passage barriers are ranked within each WRIA. Projects are prioritized based on the

number and location of other upstream and downstream barriers, amount and quality of fish habitat addressed, the number of species benefiting, and project cost. In the first year of the FFFPP (2004), over 58 miles of habitat were opened to access as part of 36 projects. In comparison, as of the end of 2004, Statewide RMAPs had removed or replaced 1,217 structures and had opened 647 miles of fish habitat to passage.

FFFPP is utilizing county data and satellite imagery, in association with fish databases to identify existing barriers. They are working with local groups to contact landowners and encourage participation. In addition, FFFPP is advertising in newspapers and setting up public meetings to inform landowners about the program. On-the-ground inventories are ongoing and are being done in cooperation with the Lead Entity organizations (quasi-governmental planning groups under the State's Salmon Recovery Act), but completion of a statewide inventory is not expected for several years. In the meantime, annual ranking and repair of barriers is ongoing.

It is likely that high-priority, fish-passage barriers would receive State cost-share funding and would be replaced on non-industrial lands if the barrier occurs in conjunction with a proposed FPA. There is also a likelihood that other high-priority barriers would be identified through a number of other processes and that such potential projects would be addressed through a number of other funding sources (e.g., Salmon Recovery Funding Board). Lower-priority barriers (e.g., those that access very little upstream habitat) that occur in conjunction with a proposed FPA and those projects not associated with a proposed FPA may be replaced at any time, but non-industrial forest landowners are not required to replace these culverts prior to the same 2016 deadline that applies to industrial landowners. However, the State legislation on the FFFPP program requires legislative reports on the status of fish-passage barriers and replacements on small forest landowner forestlands in 2008 and 2013.

Orphaned roads are roads constructed prior to 1974 that have not been used for forest practices since that time (WAC 222-24-052*(4)). Such roads are typically not maintained, and many were constructed without a requirement to consider public resource and channel impacts. The mileage of orphaned roads in Washington is unknown; however, the associated hazards have been identified. The concern with orphaned roads is the lack of knowledge about their location and potential for failure and initiation of debris avalanches, debris flows, and debris torrents. Although the FPHCP would require landowners to inventory and assess orphaned roads, their repair or abandonment is not required. However, landowners may voluntarily fix problems identified during the inventory and assessment of orphaned roads.

USFWS Biological Opinion

hazard and risk. Where timber harvest and/or construction activities occur on unstable slopes, a variety of mitigation measures are employed to reduce the likelihood of mass wasting. Harvest-related mitigation measures typically include minimum stand-density requirements to maintain rooting strength and slope hydrology, and full-suspension log yarding to reduce soil disturbance and damage to residual vegetation. Construction-related mitigation measures often relate to the design and/or location of roads and landings. Full-bench end-haul (i.e., no fill or side-cast material) construction techniques are routinely required on unstable slopes. Where fill material is necessary, the use of quarried rock rather than "native" soil or fill is often required to increase the structural strength of road prisms and stream crossings. These are just a few examples of the many mitigation measures used to address unstable slopes issues. The measures used in a given situation are dependent upon the nature of the impact being mitigated.

Forest Roads

The FPHCP includes the Washington Forest Practices Rules that are designed to minimize negative road impacts through the proper location, design, construction, maintenance, and abandonment of forest roads.

Location and Design

Roads must fit to the topography to minimize alteration of natural features. This includes avoiding at-risk areas such as surface waters, wetlands, CMZs, RMZs, sensitive sites, unstable slopes, and ELZs. The FPHCP prohibits new road construction that would lead to duplicative or unnecessary roads. Design standards are mainly related to construction techniques and water management. The FPHCP encourages road designs that utilize balanced cut-and-fill construction to avoid side-casting of excess fill material. In steep terrain (>60 percent slopes), the FPHCP requires "full-bench" designs in which no fill material is used to construct the road prism and waste material is end-hauled or over-hauled to stable locations (e.g., on slopes less than 60 percent). Water-management requirements focus on maintaining hydrologic flow-paths and minimizing sediment delivery by limiting road-induced rerouting of water. Forest practices under the FPHCP include design standards for culvert sizing and drainage-structure spacing. The Washington Forest Practices Rules also require that roads be designed so that ditch water is relieved onto the forest floor to facilitate infiltration and minimize sediment delivery.

Construction

Road-construction requirements focus on maintaining stable road prisms and water-crossing structures, and on minimizing sediment delivery to surface waters and wetlands. The requirements are also intended to limit impacts to habitat during the construction process. New roads must maintain stable, intact prisms and water crossing structures to control erosion and sediment delivery. Road prism-related measures include limiting the volume of organic matter that can be incorporated into the road prism, compacting fills, removing construction-related debris and slash from culvert inlets, installing ditches and drainage structures concurrent with construction, depositing waste materials in stable locations and preventing side-casting of excess fill material on steep slopes. Measures that focus on maintaining the stability of water-crossing structures require the installation of structures that

pass the 100-year flow, the construction of fills and embankments to withstand the 100-year flow, and the construction of headwalls and catch basins to accommodate the 100-year flow.

Road-construction measures in the FPHCP are designed to minimize sediment delivery from roads during and after construction. Requirements include limiting construction to periods of low soil moisture, end-hauling or over-hauling of waste material when side-casting would deposit sediment in areas where delivery to waters or wetlands may occur, sloping roads and landings to prevent water accumulation, and stabilizing exposed soils by seeding or other techniques approved by WDNR. If WDNR determines that the installation of a water crossing structure would result in unacceptable water quality impacts, the agency may require flow diversion around the site during construction.

Construction must also minimize impacts to riparian and in-stream habitats. The channel bed, stream banks, and riparian vegetation disturbance will be minimized. Disturbed areas must be stabilized and restored according to established schedules and procedures.

Maintenance and Abandonment

The FPHCP includes a road maintenance and abandonment program to prevent sediment- and hydrology-related impacts to public resources. Forest landowners must operate according to Road Maintenance and Abandonment Plans (RMAP) for roads within their ownership. Planning requirements differ for small and large forest landowners.

Large Landowners

The FPHCP requires large forest landowners to prioritize road maintenance and abandonment planning based on a "worst first" principle. Prioritization criteria include: 1) the presence of Federal or State listed threatened or endangered fish species or 303(d) listed water bodies; 2) the presence of sensitive geologic formations with a history of mass wasting; 3) the presence of planned or ongoing restoration projects; and 4) the presence of roads likely to have a high amount of forest-practices use in the future. Within each RMAP, maintenance and abandonment work is also prioritized: 1) removing fish blockages; 2) preventing or limiting sediment delivery; 3) disconnecting the road and stream networks; 4) repairing or maintaining stream-adjacent parallel roads; 5) restoring hydrologic flow-paths; and 6) capitalizing on operational efficiencies.

Small Landowners

Small forest landowners have two options for meeting road maintenance and abandonment planning requirements. Small forest landowners may follow the RMAP process for large landowners described above, or they may submit a "checklist" RMAP with each forest practices application or notification. Where watershed analysis has been conducted and approved, small forest landowners may elect to follow the watershed administrative unit-road maintenance plan rather than working under a RMAP. The smallest landowners (individual ownership of less than 80 acres of forestland in Washington and an application to operate on 20 acres or less) are not required to submit a RMAP or checklist RMAP for that parcel.

RMAP Implementation

Road maintenance and abandonment work carried out under a WDNR-approved RMAP must: 1) keep drainage structures functional; 2) divert captured groundwater from ditchlines

onto stable portions of the forest floor; 3) maintain road surfaces to minimize erosion and delivery of water and sediment to typed waters; and 4) slope or waterbar road surfaces to prevent water accumulation. When abandoning roads, landowners must slope or waterbar roads to minimize erosion and maintain drainage, leave ditches in a condition that minimizes erosion, block roads so that 4-wheel highway vehicles cannot pass the point of closure, and remove water-crossing structures and fills.

Practices Addressing Rain-on-Snow

The FPHCP addresses road-induced changes in hydrology by establishing standards for road construction, maintenance, and abandonment in areas affected by snowmelt. The Washington Forest Practices Rules address rain-on-snow effects in two ways in areas that either have or have not undergone watershed analysis. Watershed analysis in Washington State includes an assessment of timber-harvest-induced changes in rain-on-snow generated peak flows and potential impacts to fish habitat, water quality, and public capital improvements. Specific management prescriptions are developed to address rain-on-snow effects in parts of the Watershed Analysis Unit (WAU) where significant hydrologic change is likely to occur and resources are sensitive to those changes. Prescriptions typically involve limits on clearcut harvesting.

Where watershed analysis has not been performed, a forest practices rule commonly known as the "rain-on-snow rule" gives WDNR authority to set conditions on permits for forest practices applications and notifications that propose clearcut harvesting in the significant rain-on-snow zone. Under the rain-on-snow rule, WDNR may limit clearcut size when it determines that peak flows have caused material damage to public resources including water, fish, wildlife, and public capital improvements. WDNR has prepared conditioning guidelines for implementing the rain-on-snow rule (FPHCP Appendix M). The guidelines describe the process for evaluating forest practices applications and notifications, and rely on a risk-based approach when conditioning clearcut size. Maximum clearcut size decreases as the risk of rain-on-snow effects increases. The guidelines direct applicants and WDNR to consider alternatives to clearcutting in high-risk situations.

Alternate Plans

An alternate plan is a tool forest landowners can use to develop site-specific management plans for forest practices regulated under the Forest Practices Act. WAC 222-12-0401 describes the alternate plan process, including their review by interdisciplinary teams. An alternate plan may deviate from the standard Washington Forest Practices Rules, as long as the plan provides public resource protection at least equal in overall effectiveness to the protections afforded by the Washington Forest Practices Act and Rules. Each plan must contain: 1) a map of the area covered; 2) a description of how the alternate plan provides public resource protection to meet the WDNR approval standard; 3) a list of the Washington Forest Practices Rules that the alternate plan is intended to replace; 4) descriptions of any monitoring or adaptive management strategies associated with the plan; 5) a description of an implementation schedule; and 6) justification showing that sufficient common physical characteristics exist for forest practices applications submitted separately under the same alternate plan.

June 21, 2010

TO: Forests and Fish Policy RMAP Subgroup

FROM: Darin Cramer, Forest Practices Division Manager

SUBJECT: Summary of Existing Regulatory Authority Regarding RMAP Implementation

Recent discussions within the subgroup have indicated a need to remind Forest and Fish cooperators of existing authority within the Forest Practices rules regarding RMAP implementation. The following summary is intended to clarify existing authority and help focus future discussion/effort.

Chapter 222-16 WAC defines a forest road as *"means ways, lanes, roads, or driveways on forest land used since 1974 for forest practices. Forest road does not include skid trails, highways, or local government roads except where the local governmental entity is a forest landowner. For road maintenance and abandonment planning purposes only, "forest road" does not include forest roads used exclusively for residential access located on a small forest landowner's forest land."*

Chapter 222-24 WAC governs road construction and maintenance on forestland subject to the Forest Practices rules. Pertinent subsections include:

1. **WAC 222-24-010 Policy -** This subsection describes the policy intent of the chapter and includes statements such as: *"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..."*

2. **WAC 222-24-050 Road maintenance and abandonment -** This subsection describes the goals of road maintenance for large and small forest landowners and includes statements such as:

- *"The goals for road maintenance outlined in this chapter are expected to be achieved by July 1, 2016. The strategies for achieving the goals are different for large forest landowners and small forest landowners;*
- *For large forest landowners, all forest roads must be improved and maintained to the standards of this chapter prior to July 1, 2016. Work performed toward meeting the standards must generally be even flow over the fifteen-year period with priorities for achieving the most benefit to the public resources early in the period;*
- *For small forest landowners, the goals will be achieved through the road maintenance and abandonment plan process outlined in WAC 222-24-0511, by participation in the state-led family forest fish passage program, and by compliance with the Forest Practices Act and rules."*

3. **WAC 222-24-051 Large forest landowner road maintenance schedule -** This subsection describes how large forest landowners are to implement RMAPs and includes statements such as:

    - *"Road systems or drainages in which improvement, abandonment or maintenance have the highest potential benefit to the public resource are the highest priority;*
    - *Each year on the anniversary date of the plan's submittal, landowners must report work accomplished for the previous year and submit to the department a detailed description of the upcoming year's work including modifications to the existing work schedule;*
    - *The department's review and approval will be conducted in consultation with the department of ecology, the department of fish and wildlife, affected tribes and interested parties;*
    - *The department will facilitate an annual water resource inventory area (WRIA) meeting with landowners, the department of fish and wildlife, the department of ecology, affected tribes, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, affected counties, local U.S. Forest Service, watershed councils, and other interested parties;*[1]
    - *If a landowner is found to be out of compliance with the work schedule of an approved road maintenance and abandonment plan and the department determines that this work is necessary to prevent potential or actual damage to public resources, then the department will exercise its authority under WAC 222-46-030 (notice to comply) and WAC 222-46-040 (stop work order) to restrict use of the affected road segment."*

4. **WAC 222-24-0511 Small forest landowner road maintenance planning -** This subsection describes the how small forest landowners are to implement RMAPs and includes statements such as:
    - *"Small forest landowners other than those described in subsection (1) of this section, are only required to submit a checklist road maintenance and*

[1] The Forest Practices Division is in the process of drafting updated guidance regarding review/approval of annual RMAP progress reports and WRIA meetings; we are also working with the Regions to better define criteria for determining completion of an RMAP.

abandonment plan when they submit a forest practices application or notification that includes timber harvest or salvage;

- *Forest roads must be maintained only to the extent necessary to prevent damage to public resources;*
- *If the department determines that a road will cause or has the potential to cause damage to a public resource, the department may require the applicant to submit a compliance schedule of work to fix the problem(s) identified by the department;*
- *Fish passage barriers will be assessed on a watershed basis focusing on fixing the worst barriers first;*
- *Small forest landowners who participate in the family forest fish passage program are not required to remove, replace or repair barriers until cost share funding is available and higher priority barriers on lands within the watershed have been removed or funded."*

Chapter 222-20 WAC also contains a subsection directly relevant to RMAP implementation, **WAC 222-20-050 Continuing forest land obligations**. This subsection includes statements such as:

- *"Continuing forest land obligations include reforestation, road maintenance and abandonment plans, and harvest strategies on perennial non-fish habitat waters in Eastern Washington;*
- *Prior to the sale or transfer of land or perpetual timber rights subject to continuing forest land obligations under the Forest Practices Act and rules, the seller must notify the buyer of the existence and nature of such a continuing obligation and the buyer must sign a notice of continuing forest land obligation indicating the buyer's knowledge of the obligations;*
- *Failure by the seller to send the required notice to the department at the time of sale will be prima facie evidence in an action by the buyer against the seller for costs related to the continuing forest land obligation prior to sale."*

Finally, Chapter 222-12 and 222-46 contains relevant subsections regarding compliance and enforcement of RMAP implementation. **WAC 222-12-050 Notices to comply--Stop work orders** includes statements such as:

- *"When a forest practice has been completed, the department may issue a notice to comply requiring the operator or landowner to correct or compensate for damage to public resources...;*
- *When a forest practice has not yet been completed, the department may issue either a notice to comply to the operator and/or landowner, or a stop work order to the operator, requiring him/her to prevent potential or continuing damage to a public resource..."*

WAC 222-46-030 Notice to comply includes statements such as:

- *"If a violation, a deviation, material damage or potential for material damage to a public resource has occurred and the department determines that a stop work order is unnecessary, then the department shall issue and serve upon the operator and/or landowner a notice."*

WAC 222-46-040 Stop work an order includes statements such as:

- *The department shall have the authority to serve upon an operator a stop work order which shall be a final order of the department if... immediate action is necessary to prevent continuation of or to avoid material damage to a public resource."*

I hope this summary helps address questions that have been raised within subgroup discussions regarding existing RMAP enforcement authority. Should you have any further questions, please contact Julie Sackett, Assistant Division Manager for Operations in the Forest Practices Division at (360) 902-1405.

cc: Heath Packard, Director of Legislative and External Affairs
Charles Turley, Deputy Supervisor for Regulatory Programs
Julie Sackett, Assistant Division Manager for Operations
Marc Engel, Assistant Division Manager for Policy and Services

Salmon Recovery, Working Forests, Renewable Forest Products, Jobs and Community Partnerships

A Significant Funding Opportunity

I. Background

Creating jobs

No state has been untouched by this recession. In Washington State, the unemployment rate is 9.9 percent and in rural counties, it is as high as 16.5 percent. In order to get the economy moving, job creation is key. Washington State is poised to create jobs in rural areas and put people to work immediately; the state is seeking federal funding to assist with this effort.

Washington is well-positioned to capitalize on the unique economic opportunities surrounding the growing green sector. This proposal would protect the environment as well as create and support jobs while stimulating the regional economy.

The state seeks a modest level of federal funding that would complement ongoing work in Washington's forested watersheds and support local economies and jobs in rural counties. This investment would directly support efforts in 14 counties, where the unemployment rate is as high as 16.5 percent. [1]

This investment would create well paying jobs, which are desperately needed in rural counties. Loggers, construction workers, engineers and contractors are just some of the jobs that would be created. According to data from Employment Security Department, logging workers' average hourly wage is just above $19, construction laborers' average hourly wage is just above $18, and environmental engineers' average hourly wage is just above $38[2].

This investment would not only create jobs in the short term but it would also provide the foundation for more jobs in the long term.

It is estimated that for every $100,000 invested in fish passage projects, 1.57 jobs are created for the three month construction season[3]. With additional funding at the $15.5

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[1] Unemployment Rates by County in March 2010, not seasonally adjusted: Clallam 11 %, Cowlitz 13.5%, Ferry 16.5%, Grays Harbor 14.5%, King 8.1%, Kitsap 8.5%, Lewis 14.2%, Pacific 14.3%, Pend Oreille 15.7%, Skamania 14.7%, Spokane 10.5%, Stevens 14.4%, Wahkiakum 14.4%, Whatcom 9.5% -- For illustration only, all counties would be eligible to seek funds under this initiative.

[2] Data as of March 2009 from state Labor Market Economic Analysis Branch. The average hourly wage for logging workers is $19.26, for construction laborers it is $18.09 and for environmental engineers it is $38.82.

[3] This estimate is based on guidance from the federal Office of Management and Budget issued on December 18, 2009.

million level, 243 jobs are expected to be created. If the multiplier is taken into effect (indirect jobs such as culvert and bridge manufacturing) the job creation number increases.

Washington's public values

Forestry and fishing have been the foundation of the Pacific Northwest's economy, environment and culture for generations – a foundation so deep it is protected by important federal Indian treaties. In Washington State, rainforests on the Olympic Peninsula give way to the high elevation Cascade forests that lead to pine forests of the eastern dry country. These forests are vital to salmon. Forests and salmon are inseparable and signature icons of the Evergreen State and the entire Northwest.

Washington State works hard to protect its forests – and to keep them working. State law requires the state to collaborate with federal, tribal and local governments, non-profit organizations, and private forest landowners to apply policies and regulations that guide forestry so that diverse public interests are best met while keeping the forest industry economically strong. Washington is clear about the public values it seeks to protect:

- Create green jobs and economic opportunities in rural communities;
- Rebuild salmon populations to harvestable levels;
- Honor and implement Indian treaty fishing rights;
- Sustain our forest industry and encourage renewable green products;
- Improve water quality in forested watersheds by reducing sediment delivery to streams and spawning areas; and,
- Minimize flooding and resulting downstream impacts.

Forest Practices Habitat Conservation Plan

Working collaboratively with local, regional and federal individuals, tribes, and organizations, Washington State crafted the science-based Forest Practices Habitat Conservation Plan (FPHCP) to protect fish and riparian-dependent species across 9.3 million acres of private and state forestlands. The FPHCP was approved by the federal departments of Interior and Commerce in 2006 and supports economically viable and healthy forests, provides regulatory certainty for forest landowners, protects fish and ensures compliance with the Federal Endangered Species and Clean Water Acts.

The scientists told the collaborators that roads were key to success of the FPHCP. Washington's working forests consist of networks of private and public roads that cross rivers and streams throughout watersheds. Some roads need to be properly abandoned. Others are essential but can block fish passage, deliver sediment to sensitive spawning beds, and cause flooding from old and undersized culverts and bridges. To address these problems, the FPHCP requires private and non-federal public landowners to develop Road Maintenance and Abandonment Plans (RMAPs) that detail and schedule the repair and

upgrade of roads and stream crossings. Almost all the plans are done. Projects have been identified and many implemented. Where projects have been completed, streams are now open to migrating fish. Sediment stays out of creeks. And flood risk is reduced.

But protecting public resources is costly. The RMAP program is dependent upon the revenues of a working forest. Small family landowners, who rarely have an even-flow timber harvest schedule, are aided by a cost-share program that was enacted by Washington State in 2003 – the Family Forest Fish Passage Program. But the burden of the economic downturn and the 62 percent drop[4] in housing starts in Washington since the start of the recession now puts the pace of road repair at risk – a risk that is borne by fish and other public resources found in Washington's working forests. Washington does not want to lose ground on the protection of fish and public resources – and it wants to put people to work. The state is investing in forest road maintenance and salmon recovery efforts. So too are cash-strapped private forest landowners. Programs are in place. Projects are ready for implementation. And people are ready to go to work. But the economy has slowed the program.

People can go to work as soon as funding is available.

Investment request

Washington State seeks an additional $13.5 to $15.5 million in annual funding: $7.5 million to accelerate the Family Forest Fish Passage Program per year, and an additional $6 to 8 million focused on road repairs and maintenance on county access roads. This additional funding will enable the state and its partners to implement high value forest road projects within an existing and cost-effective administrative system. These projects will bring jobs to rural economies and put restoration groups, local contractors, engineers, tribal staff, and others to work implementing projects that open blocked fish habitat. It is estimated that for every $100,000 invested in fish passage projects, 1.57 jobs are created for the three month construction season. This estimate is based on guidance from the federal Office of Management and Budget issued on December 18, 2009. With additional funding at the $15.5 million level, 243 jobs are expected to be created. This estimate does not include the multiplier effect of indirect jobs like culvert and bridge manufacturing.

Geography and landownership bring unlikely entities together that share a common natural link – forested watersheds. Over the decades federal forest roads, county access roads, and family forest roads have developed extensive road networks into these forestlands. Over time barriers to fish migration have developed at these road/stream crossings cutting off important habitat to fish survival. Additional funding targeted for county access roads and small forest landowners will go far to add value to existing federal, state, and tribal programs.

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[4] Source: Bank of Tokyo – Mitsubishi UFJ

II. Federal Forest Roads

Aging roads in federal forests impact water quality and fish passage; because many of these forests are at higher elevations, the downstream effects can be significant. The national Legacy Roads and Trails Remediation Initiative provides funding for work in federal forests to reduce these downstream impacts. Since 2008, this program has made significant progress in restoring fish habitat and improving US Forest Service roads. In Washington State, Legacy Roads investments of $7.1 million in FY 2009 restored or enhanced 63 miles of fish habitat, improved or maintained 733 miles of roads, and decommissioned 160 miles of road. This program is a critical link in a comprehensive and cost-effective system to improve and maintain forest roads and achieve the states' goals.

III. County Roads in Forest Watersheds

Forest landowners depend on an extensive network of county roads for access to their lands. With respect to fish passage blockages, county roads are currently an under addressed link in the forest road maintenance and repair system, with counties facing decreasing budgets for road projects. Focused federal investments for county road and fish passage barrier improvements will complement state, tribal, private and federal investments toward achieving the state's goals.

A proposed County Road Fish Passage Program for Forested Watersheds will be administered by the state Recreation and Conservation Office (RCO) and modeled on the successful Family Forest Fish Passage Program. The program will focus on areas where a downstream county road blocks fish passage upstream where private and federal landowners are working to restore fish passage within the watershed. With annual investments of $6 to 8 million, this program can strengthen the forest road system, put people to work, and protect public resources.

IV. Family Forest Landowners

About half of Washington's commercial forest lands are in small tracts owned by small family forest landowners. Thousands of fish-bearing streams flow through these mid- and low-elevation forest lands and provide high value as prime fish habitat. Compared to industrial forest landowners that have large operations and ongoing revenues, small family forest landowners have long periods between harvests and significant financial burdens to implement RMAP projects. The state Family Forest Fish Passage Program (FFFPP) provides financial assistance to small family forest landowners and is one of the critical links in a comprehensive approach to forest road management.

FFFPP is a successful program with a proven track record in repairing fish passage barriers on small family forest landowner parcels. The cost-share program provides public funds for prioritizing and implementing projects; it is managed jointly by three state agencies and implemented by local Conservation Districts, tribes, salmon enhancement groups, or other project sponsors. Projects are assessed and prioritized based a "worst first" strategy. Since its inception, nearly 200 projects have been completed, opening over 400 miles of stream habitat previously inaccessible to fish. The state has invested over $17 million in this

program since 2003, yet faces a backlog of over 400 project applications – a waiting list that grows by 50 to 80 applications each year.

The investment in FFFPP is proven. During the 2007-2008 winter storms, many stream crossings were destroyed, but only 3 of the 100 FFFPP projects required repairs after the storms – the other 97 handled high water and debris flows, thereby preventing additional flooding impacts downstream.

A typical project to replace a culvert with a bridge costs approximately $100,000; 31 projects completed during the 2009 construction season created approximately 48 jobs. Current funding allows for construction of about 30 projects annually that can open up 65 miles of stream habitat per year. To meet both current and anticipated needs, the only constraint is funding. An additional $7.5 million for the FFFPP will support an additional 60 fish passage projects that will open an estimated 130 miles of stream habitat – tripling the number of high value projects that can be completed.

V. Conclusion

Washington State is poised to create jobs in rural areas and put people to work immediately; the state simply needs federal funding to assist with this effort. The state seeks a modest and predictable level of federal funding that would complement ongoing work in Washington's forested watersheds and support local economies and jobs in rural counties. This investment would create well paying jobs, which are desperately needed in rural counties. This investment would not only create jobs in the short term (contractors, loggers, construction workers, engineers) but it would also provide the foundation for more jobs in the long term.

This modest investment of $13.5 million to $15.5 million will strengthen weak links in rural county road programs, enable public, tribal, and private partners to accelerate the pace of work on small family forestlands, bring county roads and stream crossings up to standards, and continue to inventory watersheds to identify and prioritize roads and fish passage barriers for repair or removal.

For every $100,000 invested in fish passage projects, in addition to the environmental benefits, an additional 1.57 jobs are created[5]. With additional funding at the $15.5 million level, 243 jobs can be anticipated. If the multiplier is taken into effect (indirect jobs such as culvert and bridge manufacturing) the job creation number increases.

Washington State is well-positioned to capitalize on the unique economic opportunities surrounding the growing green sector. This proposal would protect the environment as well as create and support jobs in rural areas that need support more than ever before.

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[5] This estimate is based on guidance from the federal Office of Management and Budget issued on December 18, 2009.