

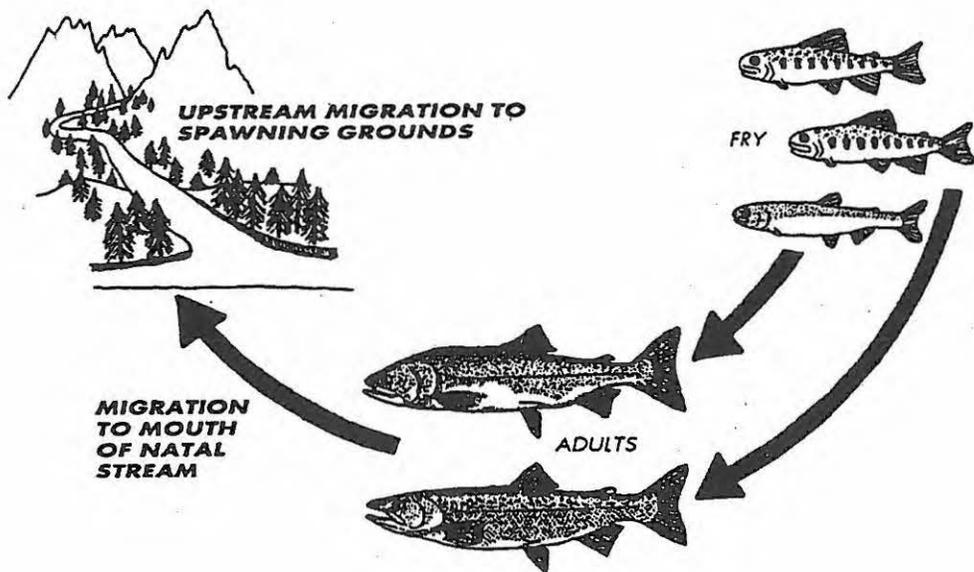
SSHB 2879
Fish Passage Barrier Removal Grant Program
Report

Prepared for

The Washington State Legislature
January, 1999

Submitted by

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Executive Summary

Salmon need access to spawning and rearing habitat. Physical barriers interrupt adult and juvenile salmonid migrations in many parts of the state. Loss of access to habitat reduces the overall salmonid productivity and results in loss of salmonid populations. Man-made barriers include culverts, diversion dams, debris jams, dikes, lake outlet screens and other man-made stream changes. By far the most common fish passage barriers are at road crossings.

There are approximately 170,000 miles of public and private roads in the state of Washington. Only a fraction of these roads have been inventoried for fish passage barriers. Over 100 years of road building, development, and hydrologic changes have resulted in an estimated minimum 2,400 to 4,000 human-made barriers. This number is extrapolated from surveys of less than 10% of the roadways of the state. An estimated 10% of the barriers are on state roads, 40% on county and municipal roads, and the remainder are on non-public roads. These structures block fish access to an estimated 3,000 to 4,500 linear miles of freshwater spawning and rearing habitat.

Acting on recommendations from the Fish Passage Task Force Report to the Legislature, 1997 (SSSB 5886), the Legislature passed SSHB 2879 during the 1998 session. SSHB 2879 empowered the Washington State Department of Transportation (WSDOT) and the Washington Department of Fish and Wildlife (WDFW) to create the Fish Passage Barrier Removal Grant Program. The intent of this program is to provide funding opportunities to local governments, tribes, conservation districts and non-governmental entities to identify and remove barriers to salmonid migration.

WDFW received \$5.75 million from the Supplemental Capital Budget for fish passage correction; \$2.078 million was utilized by WDFW for priority and proprietary projects and \$3.672 million was transferred to WSDOT for administration and funding for the Grant program. WSDOT and WDFW entered into a cooperative agreement for program implementation through a Memorandum of Agreement (Appendix H). The grant program requires a 25% match from the project sponsor. Matches include: funds, volunteer labor and in-kind services.

Program goals included:

- Promote barrier corrections through the direct involvement of citizens that live and work within watersheds.
- Enlist volunteer labor to stretch state dollars.
- Encourage "In-kind" matches.
- Fix as many high priority (high habitat gain) barriers in the summer of 1998 as possible.
- Identify and prioritize barriers for future correction.
- Develop a comprehensive statewide fish passage barrier database.

- Coordinate barrier corrections with other restoration efforts.
- Expand expertise for barrier design and inventory techniques to local governments, tribes and non-governmental entities.

Under cooperative agreement, WDFW evaluates the technical aspects of project proposals, such as need, feasibility and design and provides technical assistance to project proponents. WSDOT provides all aspects of program administration including call for projects, contract management and oversight, invoice approval and payment, and final project close out.

The Grant program very successfully executed a very aggressive timeline. Project money was on-the-ground three months after the bill was signed. Eight hundred fifty project applications were mailed on April 6, 1998. Application workshops were held the second week of April and applications were due on May 26. One hundred and sixty five applications were received requesting \$15.6 million. Fifty-three projects were funded for a total of \$3.5 million. Award letters were mailed on June 30. All applications were evaluated using scientific criteria approved by the Fish Passage Task Force. These criteria are designed to determine the projects that will provide the best habitat gain.

Four types of projects were funded: 1998 Design and Construction, 1999 Design and Construction, 1999 Design Only and Field Survey and Data Analysis.

The 53 Grant Awards were distributed for:

• 1998 Design & Construction	26
• 1999 Design & Construction	09
• 1999 Design Only	09
• Field Survey & Data Analysis.....	09

Additional Program Benefits:

- WDFW is providing technical training and assistance on barrier design and inventory protocols to all successful applicants.
- Approximately 100 additional barriers have been identified for correction.
- Program refinement and plans for continuation are underway.
- Networks of local partnerships and well-informed, active constituencies have formed under the Fish Passage Barrier Removal Grant Program.

It is estimated that 50% of the fish barriers in the state are on non-government roads and additionally that less than 80% of the state has been inventoried. The Fish Passage Barrier Removal Grant Program is the only state grant program that involves tribes, volunteer groups and private landowners. It is imperative that these groups continue to be included in statewide salmon recovery efforts. The Fish Passage Barrier Removal Grant Program restored access to 180 linear miles of stream habitat with 15 projects that were completed this summer. That is an average of 12 linear miles of prime habitat opened up per project, at an average cost of \$78,541 per project or \$6545 per linear mile.

Table of Contents

PROGRAM STAFF	ii
EXECUTIVE SUMMARY	iii
TABLE OF CONTENTS	v
BACKGROUND	1
CAUSES	1
CHALLENGES	1
CREATING SOLUTIONS	2
GRANT PROGRAM OVERVIEW:	3
GRANT PROGRAM GOALS	3
PROGRAM IMPLEMENTATION	3
TIMELINE.....	4
<i>Figure 1</i>	4
APPLICATION WORKSHOPS	4
APPLICATION EVALUATION.....	4
GRANT AWARDS.....	6
<i>Figure 2</i>	6
DESIGN AND CORRECTION PROJECTS	6
<i>Figure 3</i>	7
INVENTORY PROJECTS	7
<i>Figure 4</i>	8
INVENTORY WORKSHOPS	8
DESIGN WORKSHOPS	9
PROGRAM OUTREACH.....	9
PROJECT EVALUATION AND CLOSE-OUT	9
FUTURE PLANS	10
FUTURE NEEDS	10
CONCLUSION	11
APPENDIX A	PRIORITY INDEX CRITERIA
APPENDIX B	SUMMARY OF GRANT RECIPIENTS AND PROJECTS
APPENDIX C	BARRIER CORRECTION PROJECTS PHOTOS
APPENDIX D	CONSTRUCTION PROJECT EVALUATION CRITERIA
APPENDIX E	FIELD SURVEY AND DATA ANALYSIS CRITERIA
APPENDIX F	DESIGN & CONSTRUCTION GRANT APPLICATION
APPENDIX G	FIELD SURVEY AND DATA ANALYSIS GRANT APPLICATION
APPENDIX H	MEMORANDUM OF AGREEMENT WSDOT & WDFW
APPENDIX I	A SUCCESS STORY

Background

Upstream migration to spawning beds for adults salmonids and instream migration for juveniles is fundamental to the survival of salmonids. One-hundred years of human development in Washington State's rivers and streams has created numerous barriers to salmonid migration.

This problem is pervasive; fish passage barriers affect every watershed in the state. Barriers to fish passage can be found on federal, state, local government, tribal and privately held lands. The Washington State Department of Fish and Wildlife (WDFW) estimates that 2,400 to 4,000 human-made barriers block 3,000 to 4,500 miles of freshwater spawning and rearing habitat.

Causes

Man-made fish passage barriers are caused by a variety of conditions. Culverts represent a substantial portion of fish passage barriers in the state. Culverts may not have created fish passage barriers when initially placed, but alterations to the watershed or stream channel may change stream velocity, current, gradient, or morphology. Increased impervious surface in the watershed and changes to land use may increase surface water runoff and stream velocities. Insufficient maintenance may result in blocked culverts, down-cutting at the downstream culvert opening, upstream piping around the culvert, or, over time, general degradation of the culvert resulting in leakage or collapse. These changes may cause a previously passable culvert to become impassable. In addition, some culverts were not designed to provide appropriate fish passage. Examples include undersized or steep culverts which increase velocity, inadequate jump pools at the downstream culvert entrance, or insufficient flow across the bottom of the culvert. While most barriers occur at road crossings, man-made barriers include culverts, diversion dams, debris jams, dikes, lake outlet screens and other man-made stream changes.

Challenges

Programmatic challenges in addressing fish passage include the enormity and ubiquitous nature of the problem and the lack of specific information on where barriers are located, what species are being affected and how much habitat is lost for each barrier. Before the Fish Passage Barrier Removal Grant Program was created, inventories existed primarily for the Washington Department of Transportation and some county roads. Other inventories were completed by salmon enhancement groups and other non-governmental entities. Problems with inconsistent protocols and lack of a comprehensive watershed approach have complicated aggregating these data. Most of the state has not completed

comprehensive inventories and most of the inventories that have been completed are not prioritized from a watershed planning perspective. To date, county inventories have been limited to Western Washington. Additionally, barriers are not always obvious making identification a labor-intensive task.

There has been limited availability of individuals with the expertise to organize and conduct fish passage inventory, design, and construction. Training programs need to be expanded. Inventories for culverts on county roads, as conducted by WDFW, cost an estimated \$200,000 - \$300,000 per county and are proceeding at one county inventory per biennium. To date WDFW has completed inventory for Thurston County with Kitsap and Jefferson counties partially complete. With 39 counties in the state, it will take approximately 75 years to complete inventory work utilizing WDFW staff alone.

Creating Solutions

In 1990 the Washington State Department of Transportation in partnership with WDFW created the WSDOT Fish Passage Program. The purpose of this program is to inventory and fix fish passage barriers owned by WSDOT. The program budget is approximately \$4.0 million per biennium. WSDOT provides program administration while WDFW provides technical support.

In 1997 the legislature created the Fish Passage Task Force through passage of HB 5886. This is an interagency group co-chaired by WSDOT and WDFW. The task force made recommendations to the legislature regarding ways to expand the fish passage program. This group submitted their first report to the legislature in 1997 outlining recommendations to improve the fish passage program. One recommendation from the Task Force included the creation of the Fish Passage Barrier Removal Grant Program.

In 1998 the legislature passed SSHB 2879 which empowered the WSDOT to create the Fish Passage Barrier Removal Grant Program. The purpose of this program is to provide funding opportunities to local governments, tribes, conservation districts and non-governmental entities to remove barriers to salmonid migration. The grant program requires a 25% match from the project sponsor.

The legislature allocated \$5.75 million from the Supplemental Capital Budget for fish passage projects. Of these \$ 2.078 million was allocated to WDFW to fix barriers at hatcheries and other high priority barriers. The remainder of the funds (\$3.672 million) was passed through to WSDOT for grant program administration and grant funding through a cooperative Memorandum of Agreement (MOA) (Appendix H) between WSDOT and WDFW. The MOA requires WSDOT/WDFW to jointly establish a program to provide funds to local

governments, tribes and nonprofit organizations for the purpose of removing impediments to anadromous fish passage. A minimum of \$842,000 was allocated for projects in the lower Columbia River Evolutionarily Significant Unit (ESU).

WDFW is responsible for providing technical assistance to grant applicants, developing a comprehensive statewide data base of fish barriers and conducting training sessions for state, local, and private entities on standardized techniques for inventorying and prioritizing fish barriers and for design of fish barrier correction projects.

WDFW has developed a standardized and centralized fish barrier database to facilitate watershed planning. This database, of fish blockages statewide, is GIS based and will be Internet accessible. To facilitate statewide salmon recovery it is paramount that this database include all fish passage barriers in the state.

WSDOT is responsible for managing all other aspects of the program, including grant application design and preparation, evaluation of proposals, preliminary proposal selection and grant award, non-technical oversight of funded projects, program administration and fiscal management.

Grant Program Overview:

Grant Program Goals

- Promote barrier corrections through the direct involvement of citizens that live and work within watersheds.
- Enlist volunteers to stretch state dollars and encourage "In-kind" matches.
- Fix as many high priority barriers in the summer of 1998 as possible.
- Identify and prioritize barriers.
- Coordinate barrier corrections with other restoration efforts.
- Expand expertise for barrier design and inventory techniques to local governments, tribes and non-governmental entities.
- Develop a comprehensive prioritized inventory database.

With the Fish Passage Barrier Removal Grant Program operated by WSDOT and WDFW, progress is being made in utilizing volunteers, local government staff, and consultants in identifying and prioritizing existing fish passage barriers.

Program Implementation

The program milestones are summarized in Figure 1, the Timeline.

Timeline

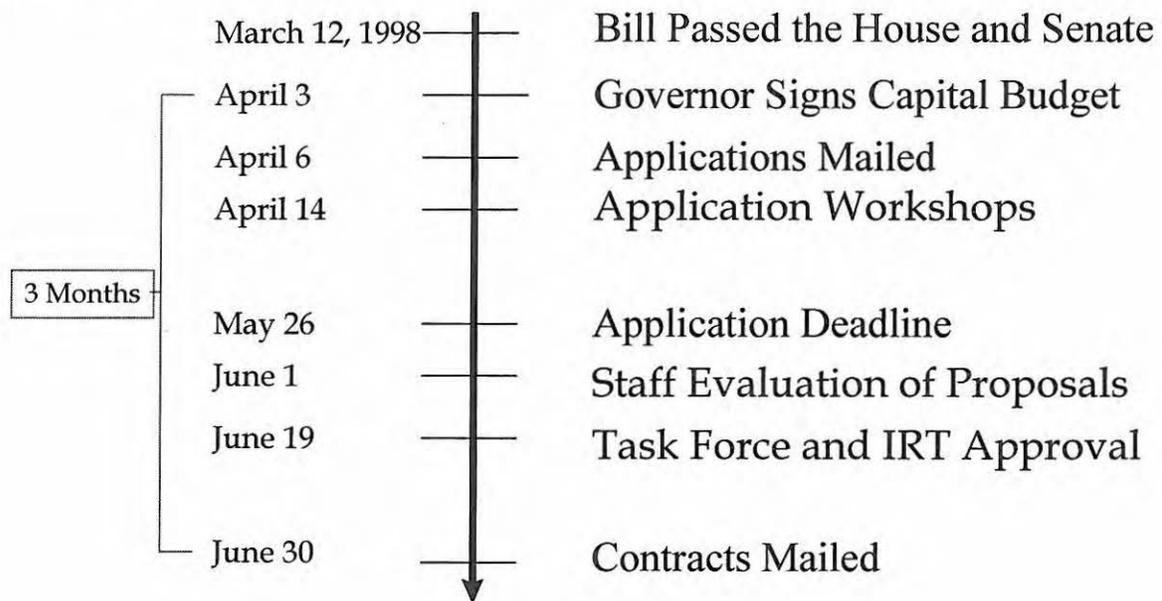


Figure 1

Application Workshops

Application workshops were held in the third week of April. The purpose of the workshops were to review program goals and application procedures and to address specific questions from potential applicants. One workshop was held in Tumwater with 33 attendees and one workshop was held in Ellensburg with 11 attendees. The Design and Construction application is Appendix F and the Field Survey and Data Analysis is Appendix G.

Application Evaluation

Project evaluation criteria were developed cooperatively between WDFW and WSDOT. Due to the short timeline of the program, project evaluation criteria were developed after the call for projects was issued. Draft criteria were distributed to the Fish Passage Task Force for their review and approval.

Criteria for barrier correction applications included a Priority Index number (Appendix A) based on the potential number of fish that would be produced on an annual basis by the habitat made accessible, the status of fish stocks (endangered, healthy, depressed, critical), the number of affected species and the cost of the project. This index value was then refined by multipliers that accounted for the degree of coordination in the watershed between partnering organizations, whether the watershed was protected, the degree of post-project

monitoring and evaluation planned, and the monetary and voluntary in-kind contributions by the partners.

Field Survey and Data Analysis applications were scored with a system that included the priority index (PI) number, the potential number of fish passage barriers that would be discovered by the inventory, the status of fish stocks in the inventory area, number of species in the basin, whether the inventory included field work and barrier prioritization, and how many partners were involved. This index value was then refined by multipliers that accounted for the methodology used, the geographic extent of the inventory, and the monetary and in-kind contribution by the partners.

All grant applications were due on May 26, 1998. All projects were reviewed by a team composed of WSDOT and WDFW staff. WSDOT staff reviewed applications for minimum requirements, reviewed non-technical aspects of the application and logged results. WDFW staff review the technical aspects of the applications including potential project effectiveness, and salmon stock status. Internal reviews were completed within a week.

Because the lower Columbia region had already established a lead entity, projects for that region were reviewed and prioritized by Lower Columbia Fish Recovery Board. The WSDOT/WDFW review team worked closely with their staff on final prioritization for this region.

After internal review, the proposed funding list was reviewed and approved by the Fish Passage Task Force. Grant award letters were mailed on June 30.

The Fish Passage Barrier Removal Grant projects were then coordinated with the Habitat Recovery Grant projects under ESHB 2496. This was accomplished through the Interagency Review Team (IRT) before awarding Habitat Recovery Grants. The IRT utilized the Fish Passage Barrier Removal Grant list to leverage the results of other restoration activities through project coordination.

6589

Future Plans

Approximately 100 applications for barrier removal are on file awaiting funding. Additional barriers are being identified through the inventory projects. The current program work plan calls for a new round of project applications for fiscal year 2000 to broaden the project pool. Materials will be distributed the first week of March of 1999. Five application workshops are also planned for March and April. As a part of these day-long workshops, WSDOT and WDFW will provide an introduction to the application, training on what is expected of groups conducting field survey and data analysis and an overview of scoring criteria. Applications will be due by the middle of May. New applications will be scored with a refined set of criteria.

If the program receives funding, new project applications and applications already on file will be granted in order of priority. The nine projects that received funding for design in 1998 all received high ratings and should receive funding first. Grants will be awarded by the start of the new biennium. As with the previous year, projects will be closely coordinated with other habitat recovery projects through the Interagency Review Team established under ESHB 2496.

Future Needs

Fish passage barriers are a significant factor in fish recovery and thousands of barriers still remain. Land and road managers are making progress in removing these barriers but, *funding is still a limiting factor*. During the first round of applications to the Fish Passage Barrier Removal Grant Program, over \$15.5 million of projects were identified for \$3.5 million of funds. The application time frame for this program was extremely short and limited the number of applications. This program provides an important and needed service and should be continued and expanded. Direct funding should be expanded for survey, inventory and prioritization of unknown barriers and for the correction of known barriers. Additionally, funds are needed for the monitoring, maintenance and replacement of existing structures to avoid the creation of new fish passage barriers.

Existing inventory and prioritization efforts need to be expanded to cover the entire state. The Survey and Data Analysis Grant recipients have started the process of identifying barriers and compiling data for the database but, approximately 80% of the state remains to be inventoried and prioritized.

Because estimates indicate that 50% of the barriers are on non-public roads, it is imperative that the Fish Passage Barrier Removal Grant Program continue to include volunteer groups, tribes and private landowners as well as state and local governments.

Training in fish barrier correction design for WSDOT and consultant hydraulic engineers should be expanded and continue to be offered. Ongoing intra/interagency training programs should be continued to educate professionals on the current fish passage statutes and encourage early consideration of fish passage issues when developing roadway projects. Annual training courses in both protocol and design options should be continued to support the development of firm guidelines on barrier assessment methods.

There is also a need for funding to compile hydrologic data and fish species distribution information to promote quality assessment and design work. Funding should be provided to update the 1992 Salmon and Steelhead Stock Inventory (SASSI) report and incorporate this information into the database.

Conclusion

Networks of local partnerships and well-informed, active constituencies have formed under the Fish Passage Barrier Removal Grant Program and are operating with a watershed approach. They are accelerating fish barrier identification and correction by promoting the direct involvement of citizens that live and work within the watersheds. Enlisting volunteers and coordinating efforts with Regional Enhancement Groups in programs that combine hands-on stream restoration with fish passage barrier removal enhances the overall effectiveness of the program.

As a whole the Fish Passage Grant Program was a remarkable success. Strong working relationships were created between WSDOT, WDFW and grant applicants. This program developed a strong base for continued salmon recovery projects.

Appendix A
Priority Index Criteria

Priority Index

The variety in costs, amounts of habitat gain, and species utilizing potential project sites throughout Washington State can make the characterization and prioritization of corrections to fish passage barriers complex. The WDFW Fish Passage Inventory process uses a Priority Index model to consolidate the many factors which affect a project's feasibility (expected passage improvement, production potential of the blocked stream, fish stock health, etc.) into a manageable framework for developing prioritized lists of projects. The result is a numeric indicator giving each project's relative priority that includes production benefits to both anadromous and resident salmonid species adjusted for sympatric species interactions (species complexes). The Priority Index (PI) for each barrier is calculated as follows:

$$PI = \sum_{\text{all species}} \sqrt{[(BPH) \times MDC]}$$

Where:

PI = Priority Index

- Relative project benefit considering cost.
- The PI is actually the sum ($\sum_{\text{all species}}$) of individual PI values, one of which is calculated for each species present in a stream (*e.g.*, PI_{coho} is added to PI_{chum} to obtain $PI_{\text{all species}}$).
- The quadratic root in the equation is used because it provides a more manageable number and represents a geometric mean of factors used.

B = Proportion of passage improvement

- Proportion of fish run expected to gain access due to the project (passability after project minus passability before project); gives greater weight to projects providing a greater margin of improvement in passage.
- Barriers are assumed to be total and have a value of 1.0. Modifications to this approach can be applied with advanced levels of expertise.

P = Annual adult equivalent production potential per m²

- Estimated number of adult salmonids that can potentially be produced by each m² of habitat annually.

- The values (adults/m²) are species specific; chinook salmon = 0.016, chum salmon = 1.25, coho salmon = 0.05, pink salmon = 1.25, sockeye salmon = 3.00, steelhead = 0.0021, brook trout = 0.04, brown trout = 0.0019, bull trout = 0.0007, cutthroat trout = 0.037, and rainbow trout = 0.0048.

H = Habitat gain in m²

- Measured/calculated from physical survey; gives greater weight to projects which will make greater amounts of habitat available.
- Spawning area values used for species complexes normally limited by spawning habitat (sockeye, chum, pink salmon) and rearing area values used for species complexes normally limited by rearing habitat [(coho, chinook, steelhead) and (cutthroat, rainbow, bull trout) and (brook and brown trout)].
- When more than one species within a species complex is present H is modified to reflect sympatric interactions among species with similar freshwater life histories. The result is a reduction of single species habitat area values when competing species coexist.

M = Mobility Modifier

- Accounts for benefits to each fish stock for increased mobility (access to habitat being evaluated); gives greater weight to projects that increase productivity of species that are highly mobile and subject to geographically diverse recreational and commercial fisheries by providing access to habitat currently limiting productivity.
- 2 = Highly mobile stock subject to geographically diverse recreational and commercial fisheries (anadromous species)
- 1 = Moderately mobile stock subject to local recreational fisheries (resident species)
- 0 = Increased mobility of stock would have negative or undesirable impacts on productivity or would be contrary to fish management policy. By default, exotic salmonid species such as brook trout and brown trout are assigned a 0 value unless they are the only salmonid species present in the system.

D = Species Condition Modifier

- Representation of status of species present; gives greater weight to less healthy

species as listed in *Washington State Salmon and Steelhead Stock Inventory (SASSI)* (WDF, et al. 1993) and *Washington Salmonid Stock Inventory, Bull Trout/Dolly Varden* (WDFW 1997). In the absence of a SASSI assignment, stock condition should be estimated using the best available information.

3 = Condition of species considered critical.

2 = Condition of species considered depressed or stock of concern.

1 = species not meeting the conditions for 2 or 3.

C = Cost Modifier

➤ Representation of projected cost of project; gives greater weight to less costly projects.

3 = incremental funds needed \leq \$100,000...

2 = incremental funds needed $>$ \$100,000 and \leq \$500,000...

1 = incremental funds needed $>$ \$500,000...

➤ All barriers receive a cost modifier value of 2 until engineering evaluations are completed.

Appendix B

Summary of Grant Recipients and Projects

SSHB 2879
1998 Grant Recipients

<i>Recipient Name</i>	<i>Project or WRIA*</i>	<i>Award \$</i>	<i>Match \$</i>	<i>Contact</i>	<i>Phone</i>
Adopt A Stream Foundation	Survey-WRIA 7,8	\$38,900	\$18,255	Tom Murdock	425-316-8592
Chelan County	Chumstick Creek	\$2,400	\$800	David Koberstein	509-664-5415
Chelan County	Squilchuck Creek	\$45,000	\$15,000	David Koberstein	509-664-5415
City of Olympia	Mottman Road SW	\$26,719	\$8,907	Andy Haub	360-753-8475
City of Woodinville	NE 195th Street	\$2,250	\$750	Marsha Fisher	425-489-2700
City of Woodinville	NE 205th Street	\$1,500	\$500	Marsha Fisher	425-489-2700
Clallam County	Hoko-Ozette, MP 11.33	\$98,391	\$41,725	Rich Fox	360-417-2316
Clark County	Riley Creek/Finalburg Road	\$13,119	\$4,374	Sam Giese	360-737-6118
Clark County	Cedar Creek/Amboy Road	\$27,198	\$16,258	Sam Giese	360-737-6118
Clark County	John Creek/Cedar Creek Road	\$67,778	\$22,593	Sam Giese	360-737-6118
Clark County	Brickie Creek/Lucia Falls Road	\$24,746	\$8,249	Sam Giese	360-737-6118
Clark County	Lockwood Creek/Taylor Valley Road	\$30,644	\$10,215	Sam Giese	360-737-6118
Clark County	Dean Creek/NE 66th Place	\$53,334	\$17,778	Sam Giese	360-737-6118
Clark County	Winkler Creek/NE Borin Road	\$23,556	\$7,852	Sam Giese	360-737-6118
Clark County	Coyote Creek/Washougal River	\$21,445	\$7,149	Sam Giese	360-737-6118
Clark County Conservation District	Survey-WRIA 27	\$55,308	\$18,436	Lisa Bucy	360-696-7631
Colville Confederated Tribes	Camp Seven Creek	\$23,988	\$18,052	Wayne Kensler	509-634-2551
Cowlitz Conservation District	Survey-WRIA 25,26,27	\$87,250	\$56,200	Darin Houpt	360-425-1880
Cowlitz Conservation District	Monahan Creek	\$200,000	\$90,950	Darin Houpt	360-425-1880
Grays Harbor County Conservation District	Survey-WRIA 22	\$118,924	\$46,630	Terry Nielsen	360-249-5980
Island County	Glendale Creek	\$18,900	\$18,900	Dick Snyder	360-679-7336
Jefferson County	Hoh River Tributary	\$247,500	\$173,500	Darrel Erfle	360-385-9218
Jefferson County	Barnhouse Creek	\$118,380	\$39,460	Darrel Erfle	360-385-9218
Jefferson County	E. Fork Tarboo Creek #2	\$6,000	\$19,680	Darrel Erfle	360-385-9218
Jefferson County	East Fork Tarboo Creek	\$16,500	\$5,500	Darrel Erfle	360-385-9218
King Co.	Evans Creek	\$60,500	\$69,399	Matt Nolan	206-296-8063
Kitsap County	Little Bear Creek	\$92,025	\$30,675	Jonathon Brand	360-895-8990
Kitsap County	Big Scandia Creek/NW Scandia Road	\$132,195	\$44,065	Jonathon Brand	360-895-8990
Kitsap County	Big Scandia Creek Fishway/Viking Way NW	\$62,250	\$20,750	Jonathon Brand	360-895-8990
Klickitat County	Turkey Ranch Road	\$60,000	\$20,000	James Amundsen	509-773-4616
Klickitat County	Soda Springs Road	\$52,500	\$17,500	James Amundsen	509-773-4616
Lewis County	Survey-WRIA 11,13,23,26	\$183,607	\$61,212	Ed Oliphant	360-740-1175
Lewis County	Spencer Road/Jones Creek	\$146,711	\$48,904	Ed Oliphant	360-740-1175
Lewis County	Toledo-Salmon Creek Rd/Little Salmon Creek	\$104,364	\$34,789	Ed Oliphant	360-740-1175
Lewis County	Lost Valley Road/Lost Creek	\$238,703	\$79,568	Ed Oliphant	360-740-1175
Mason County	White Creek Crossing	\$75,000	\$25,000	Alan Tahja	360-427-9670
Mason County Conservation District	Huson Creek	\$66,589	\$26,667	Mike Madsen	360-427-9436

SSHB 2879
1998 Grant Recipients

<i>Recipient Name</i>	<i>Project or WRIA*</i>	<i>Award \$</i>	<i>Match \$</i>	<i>Contact</i>	<i>Phone</i>
Mason County Conservation District	Ludvick Lake	\$59,570	\$26,667	Mike Madsen	360-427-9436
Mason County Conservation District	Oak Lake Creek	\$98,308	\$32,828	Mike Madsen	360-427-9436
Pierce County	East Fork Rocky Creek Bridge	\$40,000	\$40,000	John Trent	253-798-7250
Pierce County Conservation District	Survey-WRIA 10	\$129,715	\$50,200	Brian Abbott	253-845-9787
Skagit County	Lornezan Creek	\$20,000	\$20,000	Sky Miller	360-336-9400
Skagit County	Parsons Creek	\$30,000	\$10,000	Sky Miller	360-336-9400
Skagit Systems Cooperative	Survey-WRIA 3,4	\$45,244	\$204,200	John Klochak	360-466-1021
Snohomish County	Trib 30/229th St. NW	\$54,150	\$18,050	Giti Aslani	425-388-3464
South Puget Sound Salmon Enhancement	Deschutes River "Oxbow"	\$50,000	\$75,000	Todd Alsbury	253-984-0431
Thurston County	#3161 Vantine Road SE	\$1,500	\$500	Jeanne Kinney	360-754-3355
Thurston County	#1296 Houston Drive	\$5,250	\$9,450	Jeanne Kinney	360-754-3355
Washington Trout	2 Surveys-WRIA 7	\$116,901	\$336,418	Stephen Conroy	425-788-1167
1998 Construction	\$ 2,036,510.00				
1999 Design and Construction	\$ 669,241.00				
1998 Field Survey & Data Analysis	\$ 775,849.00				
TOTAL **	\$ 3,481,600.00				
* Note: WRIA = Water Resource Inventory Area					
** Note: Some grant money was returned due to project complications.					
Contact: Cliff Hall					
WSDOT					
PO Box 47331					
Olympia, WA 98504					
360-705-7499					

Appendix C

Barrier Correction Projects Photos

Male Coho Salmon

16 pgs

Appendix D
Construction Project Evaluation Criteria

DESIGN AND CONSTRUCTION (DC) APPLICATION SCORING CRITERIA
5/4/98

THRESHOLD QUESTIONS/ITEMS

1. Completeness of form
2. Section 1 (Project Leader Signature and Barrier Owner Signature)
3. Section 2.3.d-2.3.f (logistics and design compatible with problem)
4. Section 5 (permits and access will be assured for project completion)

FOLLOWUP QUESTIONS FOR TECHNICAL ASSISTANCE

1. Section 2.3

BASE FORMULA

**Priority Index = response to Section 3.2 preferred
or response to Sections 3.3-3.6 assessed with Appendix 4
(in which case the surrogate Priority Index is multiplied by 0.8)**

NOTE: Stock status utilizes response to Section 3, SASSI for DV/BT, and ESA map assessed with Appendix 2. Stock mobility utilizes response to Section 3 and SASSI (92). Project cost utilizes response to Section 6.

VALUE ADDED MULTIPLIERS

COORDINATION (Section 4 response assessed with following table)

		Project is part of a coordinated inventory of barriers and/or a coordinated salmonid habitat restoration effort			
		Degree of effort	Neither	Inventory <u>or</u> restoration effort	Inventory <u>and</u> restoration effort
Project is in a watershed that is prioritized and /or protected	Neither		1	1.1	1.2
	Prioritized <u>or</u> protected		1.1	1.2	1.3
	Prioritized <u>and</u> protected		1.2	1.3	1.4

NOTE: Add 0.1 to each of the values in the table above if one partner is involved in the project, 0.2 if two partners are involved, or 0.3 if three or more partners are involved.

POST-PROJECT EVALUATION (Section 2.3.g assessed with following table)

		Baseline information		
		Degree	None or limited	Well documented and useful
Monitoring and Evaluation	None or limited		1	1.1
	Well documented and useful		1.1	1.2

MATCHING \$ (Section 6 response assessed with following formula)

$$1 + \frac{(\% \text{ match} - 25)}{100}$$

DC INDEX = Priority Index times multipliers for Coordination, Post-project Evaluation, and Matching \$

NOTE: a higher index equals a higher priority (expected range 1 to 120)

Appendix E

Field Survey and Data Analysis Criteria

COUNTY PRIORITIZATION FOR ROAD CULVERT INVENTORY

COUNTY	C/L MILES	X TO FIX DENSITY	X TO FIX
Adams	1760	0.00766	13.4816
Asotin	393	0.0121	4.7553
Benton	878	0.0121	10.6238
Chelan	658	0.02116	13.92328
Clallam	487	0.09355	45.55885
Clark	1250	0.0551	68.875
Columbia	504	0.0121	6.0984
Cowlitz	538	0.0551	29.6438
Douglas	1640	0.02116	34.7024
Ferry	725	0.00766	5.5535
Franklin	1021	0.0121	12.3541
Garfield	457	0.0121	5.5297
Grant	2501	0.02116	52.92116
Grays Harbor	574	0.09355	53.6977
Island	594	0.051	30.294
Jefferson	389	0.09355	36.39095
King	2396	0.051	122.196
Kitsap	957	0.09355	89.52735
Kittitas	565	0.0121	6.8365
Klickitat	1083	0.0551	59.6733
Lewis	1052	0.0551	57.9652
Lincoln	2041	0.00766	15.63406
Mason	619	0.09355	57.90745
Okanogan	1392	0.02116	29.45472
Pacific	353	0.0551	19.4503
Pend Orielle	542	0.00766	4.15172
Pierce	1848	0.09355	172.8804
San Juan	273	0.051	13.923
Skagit	804	0.051	41.004
Skamania	256	0.0551	14.1056
Snohomish	1589	0.051	81.039
Spokane	2954	0.00766	22.62764
Stevens	1501	0.00766	11.49766
Thurston	993	0.09355	92.89515
Wahkiakum	143	0.0551	7.8793
Walla Walla	967	0.0121	11.7007
Whatcom	971	0.051	49.521
Whitman	1929	0.00766	14.77614
Yakima	1754	0.0121	21.2234
	41351		1442.273

X to Fix Density based on DOT road data available by District
 X to Fix=X to Fix Density times C/L Miles

**FIELD SURVEY & DATA ANALYSIS (FSDA) APPLICATION SCORING CRITERIA
5/4/98**

THRESHOLD QUESTIONS/ITEMS

1. Completeness of form
2. Sections 2.8, 2.9, and 2.10

FOLLOWUP QUESTIONS FOR TECHNICAL ASSISTANCE

1. Sections 2.4 and 2.5

BASE FORMULA

A = X to Fix = Section 2.7 response (.12)(.67) preferred
or Section 2.6 (X to fix density from Appendix 1)

B = Information from Section 3, SASSI for DV/BT, and ESA maps assessed with Appendix 2

C = Information from Section 3 and SASSI (92)

1 = primarily resident salmonids 2 = resident and anadromous salmonids

D = Section 2.3 response assessed with following table:

	Field <u>or</u> Data Analysis	Field <u>and</u> Data Analysis
Single party (no other partner in addition to \$ contributors)	1	2
One partner	1.5	2.5
Two partners	1.8	2.8
Three or more partners	2	3

Priority Index = geometric mean of A, B, C, and D

VALUE ADDED MULTIPLIERS

METHODS (Section 2.4 response assessed as follows)

- | | | |
|--------------|---------------|---------------------|
| a only = 1.0 | a and b = 1.3 | a and b and c = 2.0 |
| b only = 1.1 | a and c = 1.4 | |
| c only = 1.2 | b and c = 1.6 | |

GEOGRAPHIC EXTENT (Section 2.2 response assessed with Appendix 3 and following table)

		BR		
PR	Methodology	BR1	BR2	BR3
	TD1	1.0	1.2	1.4
	FL1	1.1	1.3	1.5
	TD2	1.2	1.4	1.6
	FL2	1.3	1.5	1.7
	TD3	1.4	1.6	1.8
	FL3	1.5	1.7	1.9
	FL4	1.6	1.8	2.0

MATCHING \$ (Section 4 response assessed with following formula)

$$1 + \frac{(\% \text{ match} - 25)}{100}$$

FSDA INDEX = Priority Index times multipliers for Methods, Geographic Extent, and Matching \$

NOTE: a higher index equals a higher priority (expected range 1 to 50)

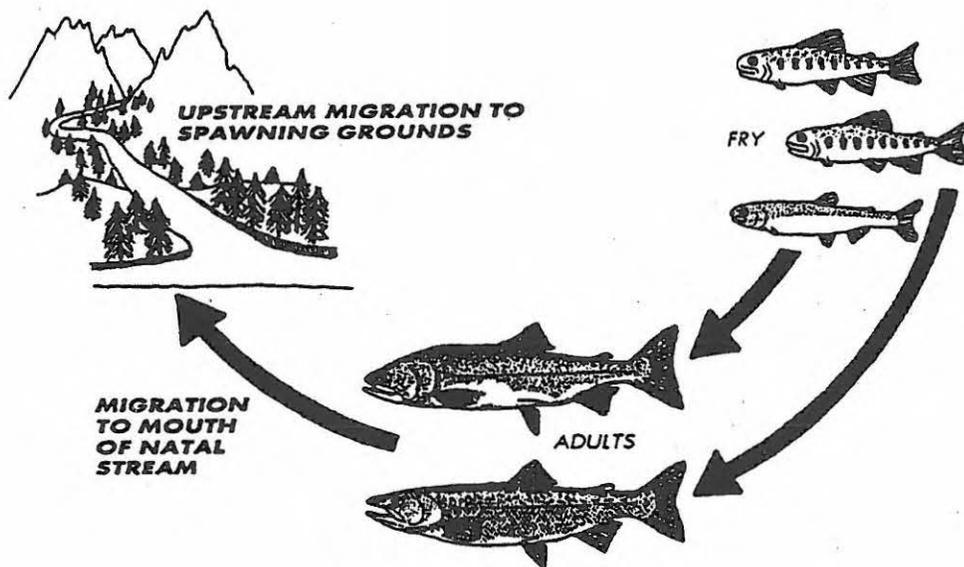
Appendix F

Design & Construction Grant Application

Washington State Fish Passage Grant Program

Application For

Fish Passage Barrier Removal Design and Construction Grants



WSDOT Official Use Only

Application # DC-

Grant #

INSTRUCTIONS

BARRIER REMOVAL DESIGN AND CONSTRUCTION APPLICATION

Note : Fill out one application for each proposed barrier removal project.

Section 1. General Information

page 6

Fill out the lead organization information completely. Applications that fail to indicate the project lead will not be accepted. Unsigned applications cannot be accepted. Fill out the barrier owner information completely. Applications without the barrier owner's signature cannot be accepted.

Preference will be given to projects that coordinate effort with one or more organizations. Each partner organization must sign the application to gain preference. Merit points will be given for each partner organization up to three partner organizations per project. Attach extra copies of the signature sheet with partner information and signatures as needed.

Section 2. Project Summary

page 7

This section will be used to determine overall project feasibility.

Question 1. Include a title for this project.

Question 2. Provide all information as indicated. When answering questions c) and d) refer to the statewide map of Watershed Resource Inventory Areas, provided in Appendix A. Attach a map of the area where the barrier is located. The map should be of sufficient detail to pinpoint the barrier location. The map attachment should be no larger than 8.5" by 11". A portion of a United States Geographic Survey (USGS) quadrangle map will suffice.

Question 3. Do not exceed the space provided when describing the existing barrier in question 3a). Attach pertinent sketches and photos. Attachments should be no larger than 8.5" x 11".

When answering question 3b), check all categories that apply. If the barrier type is "Other" please explain the nature of the barrier in the space provided.

When answering question 3c) check "Summer 1998 construction" only if all design work is completed and permits have been applied for. Priority will be given to those projects that rank high in the scoring and are ready for construction in the summer 1998 construction season. If design work has not been completed and permits have not been applied for, check the "Summer 1999 construction" box.

When answering question 3d) if no design work has been completed on the proposed barrier correction, a written description will suffice. If design work is completed, attach plans and sketches. 8.5" x 11" format is preferred, however full construction plans will be accepted.

When answering 3f) indicate any impediments to project completion. Such impediments could include land owner permission for access or barrier correction work, chronic flooding, difficult site access, etc. If impediments are indicated note how these impediments will be overcome.

Describe any plans for evaluating the effectiveness of the barrier correction in 3g). Include the methods you intend to use for determining baseline data prior to barrier construction and methods to be used in monitoring the project after construction.

Section 3. Species/Habitat Information

page 9

Question 1. Refer to the Table in Appendix B for fish stock status. This table is taken directly from the Salmon and Steelhead Stock Index (SASSI) published by the Washington State Department of Fish and Wildlife in 1992. If other information is used to determine stock status, please indicate the information source. (e.g. name and title of tribal biologist, more recent WDFW surveys, etc.) Check each box in the matrix to indicate presence of a species.

Question 2. Enter the Priority Index (PI) number if a formal WDFW Survey and Inventory has been completed for the proposed barrier correction. If the PI number is known you may skip to Section 4. If the PI number is not known or has not been generated for this barrier correction, questions 3 through 6 will provide enough information to generate a PI number. The methodology that the department will use to generate the PI number is located in Appendix C.

Question 3 & 4. Stream length and width must be reported in lineal meters. Make sure that the amount of stream bed opened up due to this barrier correction is indicated in meters. The conversion factor from feet to meters is 0.3048 (multiply the number of lineal feet by 0.3048 to get lineal meters.)

Question 5. If there are known barriers downstream from the proposed barrier correction, indicate where the downstream barriers are located and the extent of the downstream barrier (partial or full barrier). Also indicate if there are proposed barrier corrections for the downstream barriers. Use additional paper if necessary (8.5" x 11" format please).

Question 6. If the percent of blockage is unknown, indicate whether the barrier is total or partial to fish passage for any salmonid species. Partial blockages will be assumed to block 50% of fish from passing. If the percent blockage is known with some certainty, indicate the percent blockage for each species, the information source and the method used for determining blockage.

Section 4. Coordination**page 10**

Answers in this section will increase the overall score of the project. Projects that are part of a comprehensive recovery program will be given preference.

Question 1. Describe any other activities for fish restoration that are being coordinated within the watershed or governmental jurisdiction. Be sure to include habitat enhancement projects as well as other fish passage barrier corrections. Note the location of these projects compared to the proposed barrier correction. Use additional paper if needed.

Question 2. Indicate who conducted the survey, the survey methods used and the date of the survey. Be sure to include the ranking of this barrier correction if the barriers in the survey have been prioritized.

Question 3. Indicate if the stream or watershed has been identified by a local government as a priority for salmonid restoration or protection. Indicate the entity that made the determination, the method used to make the determination and the date of the determination. You may be asked to provide written documentation.

Question 4. Indicate if the county is planning under the Growth Management Act and if the watershed has been given any special protections.

Question 5. Indicate if the barrier was identified in a local government sponsored inventory of barriers. If the barrier was identified and the inventory was ranked, indicate the ranking of this barrier.

Section 5. Permit Information**page 11**

This section is used to determine the readiness of the project for construction. Projects that are proposed for the summer 1998 construction season should have initiated and acquired most of the required permits. Projects that are proposed for the summer 1999 construction season are not expected to have acquired permits.

NOTE: *Fish Restoration project permit process was streamlined during the 1998 Legislative Session. Your project is probably eligible for this streamlined process. At the time of this printing, process changes have not been finalized. Process changes only apply to local and state permits. All relevant federal permits are still required.*

Fill out the matrix as completely as possible. Indicate the status of each permit. If the project is newly proposed, and permit status is unknown, indicate unknown in the column next to the agency name. If information is unknown and the barrier correction is proposed for the summer 1998 construction

season, your application may not be accepted or funding may be deferred to the summer 1999 construction season.

Section 6. Financial Summary

page 12

Indicate the grant request amounts for design, construction and the total amount of the request.

Indicate all other funding sources in the space provided. Be sure that other funds (including in-kind matches) equal a minimum of 25% of the total project cost. Previously developed design materials may be used in the match and should be valued at the actual cost of development. Only costs associated with this barrier correction may be used in the match.

In-Kind matches include: volunteer time, donated equipment time, and donated materials. All volunteer time, donated equipment time and donated materials must be valued at prevailing rates. Include a separate schedule that indicates the source of the contribution, the assumed hourly wage for valuing volunteer time, the number of volunteer hours, and the tasks to be completed by volunteers; the hourly rate for donated equipment time and the number of equipment hours; and the actual cost and description of materials for all donated materials. Note that if materials are donated by a wholesaler, the reported material costs must be the wholesaler's cost, not the retail cost. If exorbitantly high wages and costs are reported, the department may deny the match.

Section 1: General Information

LEAD ORGANIZATION NAME _____
Address _____
Project Lead _____
Phone number _____ FAX number _____
Email _____

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION IN THIS APPLICATION IS TRUE AND CORRECT AND THAT I AM AUTHORIZED TO SIGN AND SUBMIT THIS INFORMATION ON BEHALF OF THE APPLICANT. If the signatory is not a board chair, city manager, county executive, tribal chair, board of commissioners chair, etc., a resolution authorizing the signatory to sign on behalf of the public body must be attached.

Signature of Project Lead _____ Date _____
Signature of Organization
Chief Executive Officer _____ Date _____

Barrier Owner

Name _____
Address _____
Phone number _____ FAX number _____
Email _____

I certify as the owner of the fish passage barrier identified herein, that once corrected I will assume ownership and maintenance of the completed fish passage project and maintain it so as to freely pass fish per RCW 75.20.060 and RCW 77.16.210.

Signature of Owner _____ Date _____

Partnering Organization Name _____
Address _____
Lead person _____
Phone number _____ FAX number _____
Email _____

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION IN THIS APPLICATION IS TRUE AND CORRECT AND THAT I AM AUTHORIZED TO SIGN AND SUBMIT THIS INFORMATION ON BEHALF OF THE APPLICANT. If the signatory is not a board chair, city manager, county executive, tribal chair, board of commissioners chair, etc., a resolution authorizing the signatory to sign on behalf of the public body must be attached.

Signature of Organization
Chief Executive Officer _____ Date _____

Partnering Organization Name _____
Address _____
Lead person _____
Phone number _____ FAX number _____
Email _____

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION IN THIS APPLICATION IS TRUE AND CORRECT AND THAT I AM AUTHORIZED TO SIGN AND SUBMIT THIS INFORMATION ON BEHALF OF THE APPLICANT. If the signatory is not a board chair, city manager, county executive, tribal chair, board of commissioners chair, etc., a resolution authorizing the signatory to sign on behalf of the public body must be attached.

Signature of Organization
Chief Executive Officer _____ Date _____

Partnering Organization Name _____
Address _____
Lead person _____
Phone number _____ FAX number _____
Email _____

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION IN THIS APPLICATION IS TRUE AND CORRECT AND THAT I AM AUTHORIZED TO SIGN AND SUBMIT THIS INFORMATION ON BEHALF OF THE APPLICANT. If the signatory is not a board chair, city manager, county executive, tribal chair, board of commissioners chair, etc., a resolution authorizing the signatory to sign on behalf of the public body must be attached.

Signature of Organization
Chief Executive Officer _____ Date _____

Partnering Organization Name _____
Address _____
Lead person _____
Phone number _____ FAX number _____
Email _____

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION IN THIS APPLICATION IS TRUE AND CORRECT AND THAT I AM AUTHORIZED TO SIGN AND SUBMIT THIS INFORMATION ON BEHALF OF THE APPLICANT. If the signatory is not a board chair, city manager, county executive, tribal chair, board of commissioners chair, etc., a resolution authorizing the signatory to sign on behalf of the public body must be attached.

Signature of Organization
Chief Executive Officer _____ Date _____

- d) Proposed correction. (Attach engineering plans or sketches)

- e) Is there more design work planned for this project? (explain)
 - i) Name of design organization:
 - ii) Name of design contact:
 - iii) Phone number:

- f) Are there any impediments to project completion (e.g. remote or inaccessible site, inability to gain access permission, etc.)

- g) Please describe any plans and methods for verifying the benefits of the project.
 - i) Baseline Information: Please list who did the assessment, what method was used, and the date of the report.

 - ii) Monitoring: Please list who will do the assessment, what method will be used and the anticipated dates of progress and final reports.

Section 3: Species/Habitat Information

1. In the matrix below check the salmon and trout species occurring in this stream and their status according to the SASSI report. (See Appendix B) (If source is other than SASSI reference it in the "Info Source" column below.)

	Healthy	Depressed	Critical	Unknown	Info Source
Chinook					
Coho					
Sockeye					
Chum					
Pink					
Steelhead					
Bull Trout/ Dolly Varden					
Rainbow					
Cutthroat					
Cutthroat (sea run)					
	Present	Info Source			
Brown Trout					
Atlantic Salmon					
Brook Trout					

2. Has this project been identified by WDFW and received a Priority Index (PI) Number?

a) Yes

b) No

c) If yes enter the PI# _____ and skip to **Section 4**.

3. How many lineal **METERS** of stream will be opened through this project?

4. What is the average stream width, in **METERS**, above the barrier that will be opened?

5. Are there fish passage barriers upstream or downstream from this project?

- a) Yes
- b) No
- c) If yes, please identify:

6. Is this a partial or total barrier? _____

- a) Information Source:
- b) Method Used:

Section 4: Coordination

1. Describe any coordination with other fish enhancement projects in the watershed (federal, state, local, etc.).

2. Was this barrier identified in a comprehensive inventory of fish passage barriers in this watershed?
 - a) Yes
 - b) No
3. If yes, please list who did the inventory, what method was used and the date of the report.

4. Has the stream or watershed been identified by local government as a priority for salmonid habitat restoration or protection?
 - a) Yes
 - b) No
5. If yes, please list who identified it, what method was used and the date of the report.

6. Has the stream or watershed been protected through Critical Area Ordinances (CAO), Habitat Conservation Plans (HCP) or other mechanisms? Please explain.

7. Was this barrier identified in a local government inventory of barriers?

a) Yes

b) No

c) If yes, how did it rank?

Section 5: Permit Information

Please complete the appropriate permit status boxes for your project.

PERMIT	NOT REQUIRED	REQUIRED	PENDING	OBTAINED	PERMIT #
HPA					
Corps Section 404					
Ecology 401 Cert.					
Shorelines					
Local (County/City)					
NEPA/SEPA					
Access					
Fed ESA Coord					

PERMIT	Agency	Date	Contact/Phone #
HPA			
Corps Section 404			
Ecology 401 Cert.			
Shorelines			
Local (County/City)			
NEPA/SEPA			
Access			
Fed ESA Coord			

Section 6: Financial Summary

GRANT REQUEST	Design	Construction	Total
Fish Passage Grant Request			

LEAD ORGANIZATION NAME :

Phase	Design	Construction	Total
Fund Source(s)			
State			
Local Funds			
Private Funds			
In-Kind			
Other:			
SubTotal			

Participating Organization:

Phase	Design	Construction	Total
Fund Source(s)			
State			
Local Funds			
Private Funds			
In-Kind			
Other:			
SubTotal			

Participating Organization:

Phase	Design	Construction	Total
Fund Source(s)			
State			
Local Funds			
Private Funds			
In-Kind			
Other:			
SubTotal			

Total Contributions

--	--	--	--

In-Kind Total Percent

Anticipated Completion Date

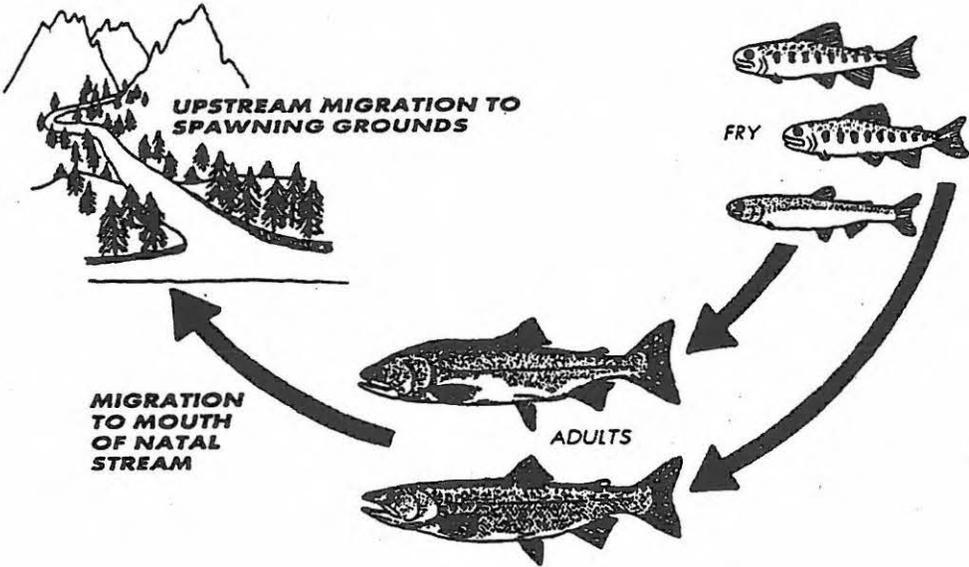
Appendix G

Field Survey and Data Analysis Grant Application

Washington State Fish Passage Grant Program

Application For

Fish Passage Field Survey and Data Analysis Grants



WSDOT Official Use Only

Application #SI-

Grant #

INSTRUCTIONS

FIELD SURVEY AND DATA ANALYSIS GRANT APPLICATION

Note: WDFW and WSDOT will hold workshops in the Fall of 1998 to train individuals in Field Survey and Data Analysis methods. Successful applicants are expected to attend a workshop to gain competency or show proof of competency.

Section 1. General Information

page 4

Fill out the lead organization information completely. Applications that fail to indicate the project lead will not be accepted. Unsigned applications cannot be accepted.

Preference will be given to projects that coordinate effort with one or more organization. Each partner organization must sign the application to gain preference. Merit points will be given for each partner organization up to three partner organizations per project. Attach extra copies of the signature sheet with partner information and signatures as needed.

Section 2. Project Summary

page 5

This section will be used to determine overall project feasibility.

Question 1. Include a title for this project.

Question 2. Provide all information as indicated. When answering question 2 a) refer to the statewide map of Watershed Resource Inventory Areas, provided in Appendix A.

When answering question 2c), if only a segment of a WRIA is proposed for this project, indicate specifically what area will be included. Attach a map for the area where the Field Survey and Data Analysis will be completed. A portion of a United States Geographic Field Survey (USGS) quadrangle map will suffice.

Question 3 through 5 . Do not exceed the space provided for written descriptions. If methods for evaluating barrier locations, assessment of passability or barrier prioritization are not determined at this time, indicate how these methods will be determined,

Question 6. Estimate the number of road miles covered by the proposed Field Survey. If the Field Survey is oriented to stream miles and not road miles, specify streams miles and indicate the number of stream miles to be inventoried.

Question 7. If the number of stream crossings is inestimable then write unknown in the space provided.

Question 8. If there are many private owners, do not list individual owner, but break out ownership by percentage private, state, local government, federal government, etc.

Section 3. Species/Habitat Information **page 7**

Question 1. Refer to the Table in Appendix B for fish stock status. This table is taken directly from the Salmon and Steelhead Stock Index (SASSI) published by the Washington State Department of Fish and Wildlife in 1992. If other information is used to determine stock status, please indicate the information source. (e.g. name and title of tribal biologist, more recent WDFW Field Surveys, etc.) Check each box in the matrix to indicate presence of a species.

Section 4. Financial Summary **page 8**

Indicate the grant request amount for Field Survey, Data Analysis and total request. Indicate all other funding sources in the space provided. Be sure that other funds including in-kind match equals at least 25% of the total project cost. Previously developed Field Survey and Data Analysis data for this area that will be used in this project may be used in the match and should be valued at the actual cost of development. Only costs associated with this Field Survey and Data Analysis may be used in the match.

In-Kind matches include volunteer time, donated equipment time, and donated materials. All volunteer time, donated equipment time and donated materials must be valued at prevailing rates. Include a separate schedule that indicates the source of the contribution, the assumed hourly wage for valuing volunteer time, the number of volunteer hours, and the tasks to be completed by volunteers; the hourly rate for donated equipment time and the number of equipment hours; and the actual cost and description of materials for all donated materials. Note that if materials are donated by a wholesaler, the reported material costs must be the wholesalers cost, not the retail cost. If exorbitantly high wages and costs are reported, the department may deny the application.

Section 1: General Information

Lead Organization Name _____
Address _____
Contact person _____
Phone number _____ FAX number _____
Email _____

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION IN THIS APPLICATION IS TRUE AND CORRECT AND THAT I AM AUTHORIZED TO SIGN AND SUBMIT THIS INFORMATION ON BEHALF OF THE APPLICANT. If the signatory is not a board chair, city manager, county executive, tribal chair, board of commissioners chair, etc., a resolution authorizing the signatory to sign on behalf of the public body must be attached.

Signature of Agency
Chief Executive Officer _____ Date _____

Partnering Organization Name _____
Address _____
Contact person _____
Phone number _____ FAX number _____
Email _____

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION IN THIS APPLICATION IS TRUE AND CORRECT AND THAT I AM AUTHORIZED TO SIGN AND SUBMIT THIS INFORMATION ON BEHALF OF THE APPLICANT. If the signatory is not a board chair, city manager, county executive, tribal chair, board of commissioners chair, etc., a resolution authorizing the signatory to sign on behalf of the public body must be attached.

Signature of Agency
Chief Executive Officer _____ Date _____

Partnering Organization Name _____
Address _____
Contact person _____
Phone number _____ FAX number _____
Email _____

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION IN THIS APPLICATION IS TRUE AND CORRECT AND THAT I AM AUTHORIZED TO SIGN AND SUBMIT THIS INFORMATION ON BEHALF OF THE APPLICANT. If the signatory is not a board chair, city manager, county executive, tribal chair, board of commissioners chair, etc., a resolution authorizing the signatory to sign on behalf of the public body must be attached.

Signature of Agency
Chief Executive Officer _____ Date _____

Section 2: Project Summary

1. **Title:**
2. **Location:** (Attach Map)
 - a) Name and number of Water Resource Inventory Area (WRIA):
 - b) County(s) in which project will be implemented.
 - c) Describe the geographic extent of the Field Survey proposed.

3. **Coordination:**
 - a) Describe any existing/ongoing Field Survey and Data Analysis efforts in this WRIA.

 - b) Describe proposed coordination efforts for Field Survey and Data Analysis with partners in this WRIA.

4. **Field Survey Methods:** Describe the specific activities proposed for each applicable phase of Field Survey.
 - a) *Identifying the location of barriers.*— Explain how data will be collected and organized.

 - b) *Barrier assessment, evaluating passability*—Explain what measurements and criteria will be used.

- c) *Prioritizing identified barriers for correction*—Explain what measurements and criteria will be used.
5. Describe how the data will be stored, what format is proposed and how this data can be accessed by others.
6. Estimate the number of road miles covered by the proposed Field Survey_____
7. Estimate the number of stream crossings that will be examined for this project_____
8. Who owns the culverts to be examined by this Field Survey? (i.e. Name(s) of state agency(s), local agency(s), private owner(s), etc.)
- a) Who are the landowners along the stream? (i.e. Name(s) of state agency(s), local agency(s), private owner(s), etc.)
9. If the applicant(s) are not the owner(s) of these facilities, how will access be obtained?
10. Please provide the Name, Address and Phone # of the person responsible for ensuring that this Field Survey is conducted in an effective manner.

Section 3: Species/Habitat Information

In the matrix below check the salmon and trout species occurring in this stream and their status according to the SASSI report.

	Healthy	Depressed	Critical	Unknown	Extinct	Info Source
Chinook						
Coho						
Sockeye						
Chum						
Pink						
Steelhead						
Bull Trout/ Dolly Varden						
Rainbow						
Cutthroat						
Cutthroat (sea run)						
	Present	Info Source				
Brown Trout						
Atlantic Salmon						
Unknown						

Section 4: Financial Summary

GRANT REQUEST	Field Survey	Data Analysis	Total
Fish Passage Grant Request			

LEAD ORGANIZATION NAME :

Phase	Design	Construction	Total
Fund Source(s)			
State			
Local Funds			
Private Funds			
In-Kind			
Other:			
SubTotal			

Participating Organization:

Phase	Design	Construction	Total
Fund Source(s)			
State			
Local Funds			
Private Funds			
In-Kind			
Other:			
SubTotal			

Participating Organization:

Phase	Design	Construction	Total
Fund Source(s)			
State			
Local Funds			
Private Funds			
In-Kind			
Other:			
SubTotal			

Total Contributions

In-Kind Total Percent			
Anticipated Completion Date			

Appendix H

Memorandum of Agreement WSDOT & WDFW

INTERAGENCY
AGREEMENT
BETWEEN

STATE OF WASHINGTON
DEPARTMENT OF FISH AND WILDLIFE

AND

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

THIS AGREEMENT, Pursuant to Chapter 39.34 RCW is made and entered into by and between the Washington Department of Fish and Wildlife, hereinafter referred to as "WDFW" and the Washington State Department of Transportation hereinafter referred to as "WSDOT."

IT IS THE PURPOSE OF THIS AGREEMENT TO provide cost support for the administration and funding of a grant program to assist state agencies, local governments, private landowners, tribes, and volunteer groups in identifying and removing impediments to salmonid fish passage.

THE 55TH SESSION OF THE WASHINGTON STATE LEGISLATURE, pursuant to E2SHB 2879, authorized WSDOT to administer a grant program for identifying and removing impediments to fish passage and, pursuant to SSB 6455, provided funds to the WDFW for identifying and removing impediments to fish passage.

IT IS THEREFORE MUTUALLY AGREED THAT:

STATEMENT OF WORK

(1) Through this Agreement WDFW and WSDOT jointly establish a program to provide funds to local governments, tribes and nonprofit organizations for the purpose of implementing projects that remove impediments to anadromous fish passage.

(2) WSDOT shall manage all aspects of the program, including grant application design and preparation and evaluation of proposals, preliminary proposal selection and grant award, oversight of funded projects, program administration and fiscal management.

(3) WSDOT shall administer the program consistent with the following:

(a) Eligible projects include corrective projects, and inventory, assessment, and prioritization efforts;

(b) Projects shall be subject to a competitive application process that will be defined by WSDOT and WDFW with the exception of projects in the lower Columbia River evolutionarily significant unit with a cumulative cost up to \$842,000.

(c) Priority shall be given to projects that immediately increase access to available and improved spawning and rearing habitat for depressed, threatened, and endangered stocks. Priority shall also be given to project applications that are coordinated with other efforts within a watershed;

(d) All projects shall be reviewed and approved by the fish passage barrier removal task force as established in SSB 5886.

(e) To be eligible for funding under this grant program, a match of at least twenty five percent of total project funds per project shall be required. In-kind contributions may be counted toward the match requirement in lieu of funds.

(4) WSDOT shall proceed expeditiously in implementing the grant program with the goal of awarding at least a portion of the funds transferred under this agreement to projects that are ready to proceed during the 1998 summer construction season.

(5) A minimum of \$842,000 must be reserved for projects for the lower Columbia River evolutionary significant unit.

(6) WDFW shall provide technical assistance to fish passage grant applicants; develop a comprehensive state-wide data base of fish barriers; and conduct training sessions for state, local, and private entities on standardized techniques for inventorying and prioritizing fish barriers and design of fish barrier correction projects.

(7) WDFW shall provide \$3,672,000 to WSDOT in funds for a fish barrier removal grant program as described in this Agreement.

PERIOD OF PERFORMANCE

All projects funded under this agreement shall be completed June 30, 2000. This memorandum of agreement expires on July 31, 2000.

PAYMENT AND BILLING PROCEDURE

WDFW agrees to pay WSDOT the sum of \$3,672,000 to be used for administration and funding of the grant program. This payment shall be made in full upon receipt of an invoice from WSDOT and shall be made prior to any grant project selections or contracting. WSDOT will maintain these funds in its Z account for grant programs. WSDOT may expend no more than \$175,000 of these funds for program administration. In the event that WSDOT does not expend the entire amount of \$3,672,000 for project grants or program administration by June 30, 2000, WSDOT shall reimburse WDFW any unexpended funds by no later than July 31, 2000.

RECORDS MAINTENANCE

The WSDOT and the WDFW shall keep available for inspection by representatives of the STATE and the United States for a period of three years after completion date of this Agreement, the cost records and accounts pertaining to this Agreement and all items related to or bearing upon these records with the following exception: If any litigation, claim or audit arising out of, in connection with, or related to this contract is initiated before the expiration of the three year period, the cost records and accounts shall be retained until such litigation, claim or audit involving the records is completed.

INDEMNIFICATION

Each party shall defend, protect, and hold harmless the other party from and against all claims, suits and/or actions arising from any negligent or intentional act or omission of the party's employees, agents and/or authorized subcontractors while performing this Agreement.

AGREEMENT ALTERATIONS AND AMENDMENTS

The WSDOT and WDFW may mutually amend this Agreement at any time. Such amendments must be in writing and signed by personnel authorized to bind WSDOT and WDFW.

TERMINATION

Except as otherwise provided in this Agreement, either party may terminate this Agreement upon 30 days written notification. If this Agreement is so terminated, the terminating party shall be liable for performance in accordance with the terms of this Agreement for the performance rendered prior to the effective date of termination. Unless extended, this Agreement shall automatically terminate on July 31, 2000.

SAVINGS

In the event funding from state, federal or other sources for the program that is the subject of this Agreement is withdrawn, reduced, or limited in any way after the effective date of this Agreement and prior to normal completion, this Agreement may be terminated under the "Termination" clause, or may be renegotiated under those new funding limitations and conditions.

ORDER OF PRECEDENCE

In the event of an inconsistency in this agreement, unless otherwise provided herein, the inconsistency shall be resolved by giving precedence in the following order:

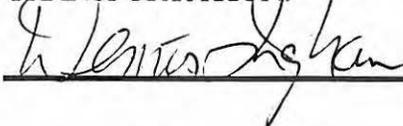
- a) Applicable Federal and State Statutes and Regulations;
- b) The Terms and Conditions of this Agreement; and

ALL WRITINGS CONTAINED HEREIN

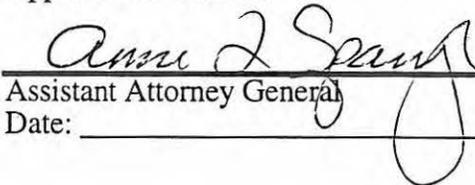
This agreement contains all the terms and conditions agreed upon by the parties. No other understandings, oral or other wise, regarding the subject mater of this agreement shall be deemed to exist or to bind any of the parties hereto.

IN WITNESS WHEREOF, parties have executed this agreement this 5th day of May, 1998.

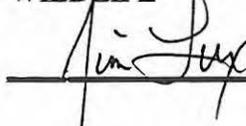
FOR THE DEPARTMENT OF
TRANSPORTATION:



Approved as to form:


Assistant Attorney General
Date: _____

FOR THE DEPARTMENT OF FISH AND
WILDLIFE



Approved as to form:

Assistant Attorney General
Date: _____

Appendix I

A success story

40

2-9

Ludvick Lake
Creek
Downstream



First Hurdle



Male Coho



Entering Culvert



That was easy!



Heading for the second hurdle.



First Jump



Second Jump



Made It



Resting



Heading for the
Third Hurdle



Picking up
speed!



Here I am!



First Jump



Second Jump



Made It!



Completed Projects Summer 1998



Photo by Cliff Hall

Male Coho Salmon
Ludvick Lake Creek
November 19, 1998
Mason County

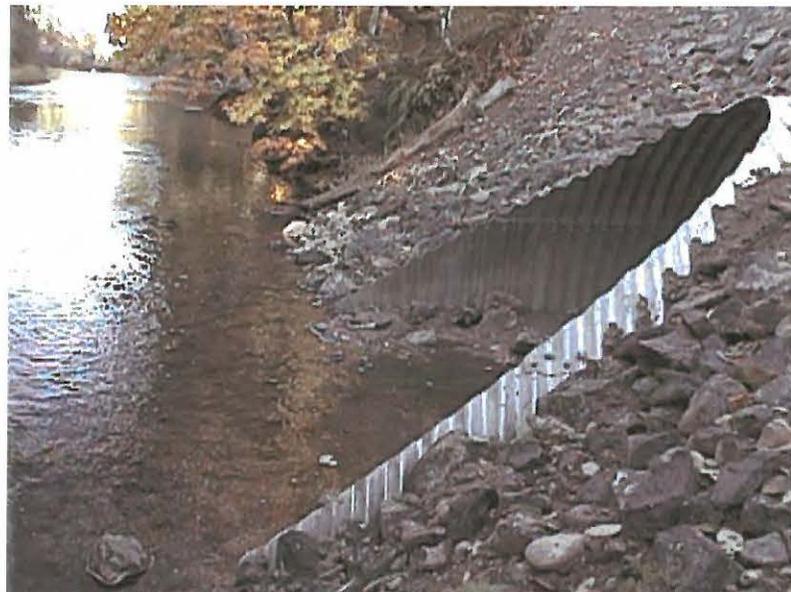
DESCHUTES OXBOW - OUTLET

Thurston County

Before



After



South Puget Sound Salmon Enhancement Group, in partnership with Thurston County Parks and Recreation, replaced a deteriorated 30 inch corrugated steel pipe with a 24 foot bottomless arch culvert opening passage to approximately 4 acres of prime spawning and rearing habitat.

DESCHUTES OXBOW - INLET

Thurston County

Before



After



BOE CREEK

Jefferson county

Before



After



Heavy flows through this undersized culvert scoured the stream-bed leaving the culvert perched 10 feet above Boe Creek. The Clallam County Road Department replaced this 72 inch culvert with a 144 inch culvert countersunk and installed at 0% gradient. Approximately 1 linear mile of stream was opened.

HUSON CREEK

Mason County

Before



After



Heavy flows through this undersized culvert scoured Huson Creek creating a deep plunge pool and leaving the pipe perched 1.6 feet above the stream. The Mason County Conservation District, with five partners, replaced the existing 71" x 46" arch pipe with a 132" x 96" arch culvert countersunk and placed it at a grade of 0.5%. This project opened up approximately 5 miles of stream.

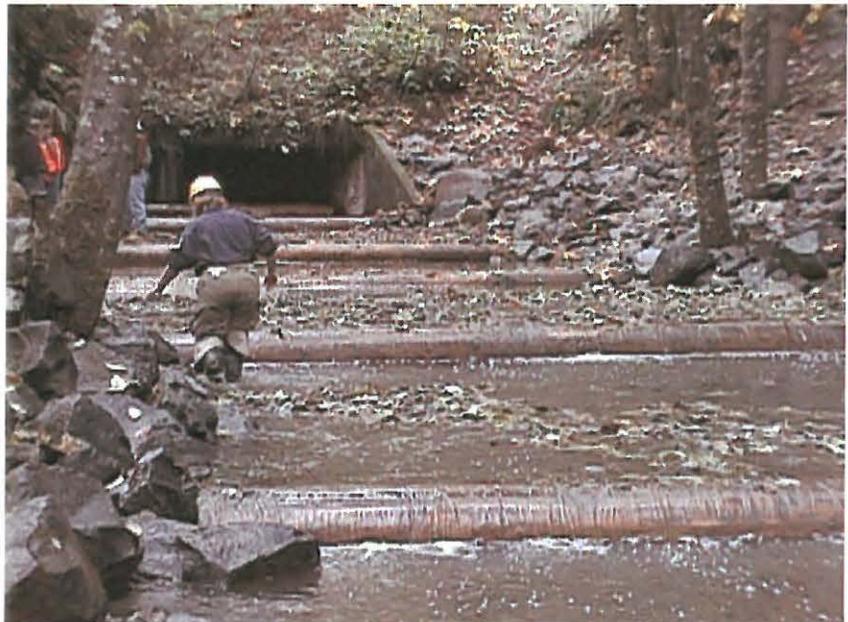
LITTLE SALMON CREEK

Lewis County

Before



After



This twin concrete box culvert was perched 2 feet above the downstream channel bed with insufficient depth of flow over the concrete bottom for fish passage. Lewis County Public Works and the Washington Conservation Corps, with 3 additional partners, installed seven log weir structures downstream to eliminate the outfall drop, provide grade control and a minimum of one foot depth of flow. This project opened approximately 13 miles of stream.

LUDVICK LAKE CREEK

Mason County

Before



After



This culvert was undersized and had scoured the streambed on the outlet side resulting in a 1.7 foot perch. The Mason County Conservation District, with five partners, replaced this pipe with a 10' 4" x 6' 7" horizontal ellipse culvert, countersunk and installed at a 0.5% grade. This project opened up approximately 2.6 miles of stream.

JONES CREEK

Lewis County

Before



After



The original crossing consisted of two broken 36" circular concrete culverts. Lewis County Public Works, with 5 partners, replaced these with an oversized corrugated metal culvert opening up approximately 16 miles of stream.

JONES CREEK Lewis County

Before



After



OAK LAKE CREEK

Mason County

Before



After



Two existing culverts, one 30" and one 38" x 58", were perched 9.5 feet above the streambed at the outfall. Slope, velocity and scouring problems were corrected by installing a 14' x 9' horizontal ellipse culvert, countersinking it and installing weirs to control flows. This project opened up approximately 3.1 miles of stream with prime habitat. For the first time in decades Coho were observed spawning upstream.

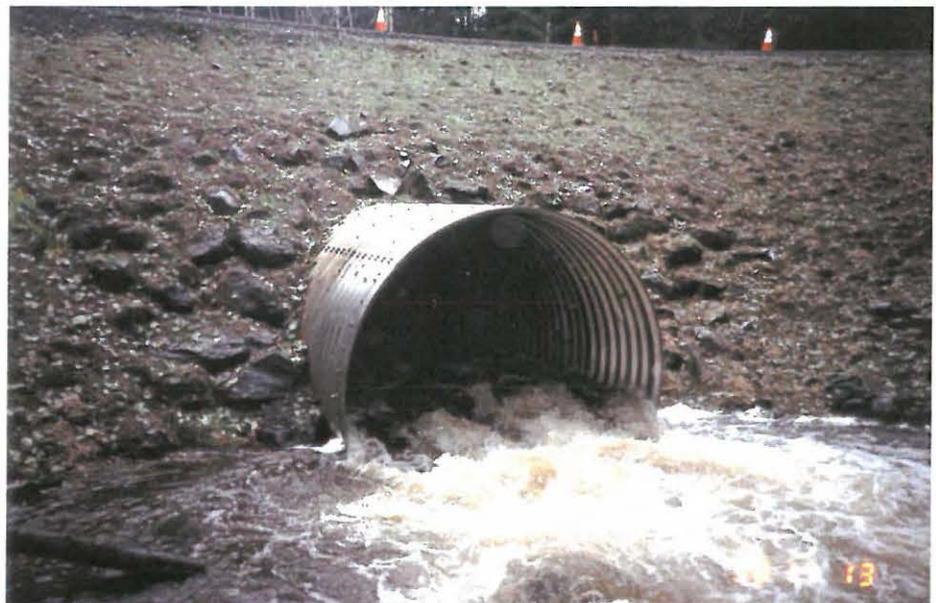
OIL CITY ROAD

Jefferson County

Before



After



The original culvert was a 6.5' round corrugated pipe with a 4.5' out fall drop off. The Jefferson County Department of Public Works Department, in partnership with the Hoh Indian Tribe and WDFW, regraded the upstream channel and installed a 12' diameter culvert with a roughened stream channel constructed inside the pipe.

SODA SPRINGS Klickitat County

Before



After



Two culverts, one 60" diameter and one 36" diameter, at the crossing of Canyon Creek and Soda Springs Road created a complete barrier to anadromous fish passage. The Klickitat County Road Department installed a 16' x 7' bottomless arch culvert that restored the natural stream bed and eliminated slope and velocity problems.

TURKEY RANCH ROAD

Klickitat County

Before



After



The original undersized 6' x 4' arch culvert concentrated flows creating a velocity and outfall drop-off barrier. The Klickitat County Road Department replaced this culvert with a 16' x 4' bottomless arch culvert that restored the streambed and eliminated flow and velocity problems.

Camp Seven Colville Confederated Tribes



The original culvert was perched, undersized and located in an eroded gully; not the historic channel. The Colville Confederated Tribes, in partnership with the Bureau of Indian Affairs, replaced this culvert with a pre-fab bridge over the historic channel. Channel guards were placed upstream to ensure that the stream remains in the historic channel and rip rap overflow controls were installed to handle flows in excess of the 100 year flood event (40ft./sec.).

Trib 30 Snohomish County

Before



After



The original culvert was a deteriorated and undersized 30" pipe with a 1.5' outfall perch. Snohomish County replaced this pipe with an 84" countersunk aluminized steel culvert.

1296 Houston Drive
Thurston County

Before



After

No Photo Available

This culvert was undersized and perched 1.4 ft on the outfall creating a total barrier to anadromous fish passage. The 24" diameter culvert was replaced with a 50" x 31" arch pipe at 0.33% gradient. Chum salmon were observed spawning upstream in November.

