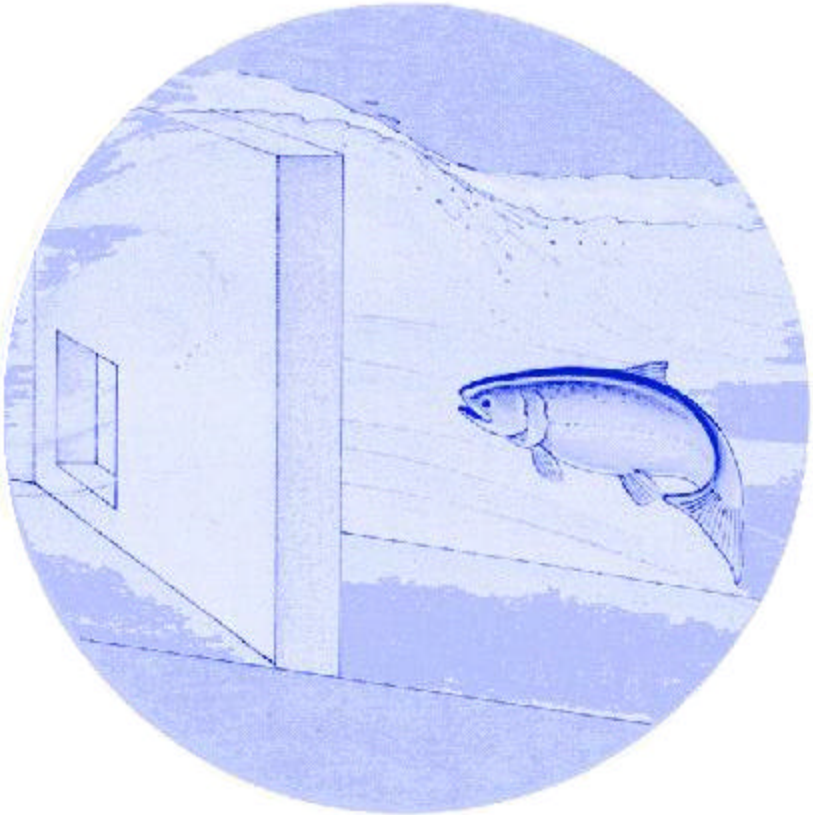
Yakima Tributary Access and Habitat Program

Action Plan

Final Report
2002



DOE/BP-00009726-1

April 2003

This Document should be cited as follows:

Myra, D., C. Ready, "Yakima Tributary Access and Habitat Program", Project No. 2002-02500, 36 electronic pages, (BPA Report DOE/BP-00009726-1)

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Portland, Oregon 97208

This report was funded by the Bonneville Power Administration (BPA), U.S. Department of Energy, as part of BPA's program to protect, mitigate, and enhance fish and wildlife affected by the development and operation of hydroelectric facilities on the Columbia River and its tributaries. The views in this report are the author's and do not necessarily represent the views of BPA.

Yakima Tributary Access and Habitat Program

Action Plan

Final Report

April 2003

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Prepared for:

The U.S. Department of Energy
Bonneville Power Administration
Project 2002-025-00

EXECUTIVE SUMMARY

This report covers activities conducted by the Yakima Tributary Access and Habitat Program under Bonneville Power Administration (BPA) grant project # 2002-025-00 for fiscal year 2002. The Yakima Tributary Access and Habitat Program (YTAHP, Program) was organized to restore salmonid passage to Yakima tributaries that historically supported salmonids and improve habitat in areas where access is restored. Specifically, this program is designed to a) screen unscreened diversion structures to prevent fish entrainment into artificial waterways; b) provide for fish passage at man-made barriers, such as diversion dams, culverts, siphons and bridges; and c) provide information and assistance to landowners interested in to contributing to the improvement of water quality, water reliability and stream habitat.

The YTAHP developed from a number of groups actively engaged in watershed management, and/or habitat restoration within the Yakima River Basin. These groups include the Washington State Fish and Wildlife (WDFW), Kittitas County Conservation District (KCCD), North Yakima Conservation District (NYCD), Kittitas County Water Purveyors (KCWP), and Ahtanum Irrigation District (AID). The US Bureau of Reclamation (Reclamation) and Yakama Nation (YN) both participated in the development of the objectives of YTAHP. Other entities that will be involved during permitting or project review may include the YN, the federal Natural Resources Conservation Service (NRCS), the US Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and US Army Corps of Engineers (COE).

Achievements of YTAHP with BPA Action Plan funding during FY 2002 were to:

- Establish contracts with RC&D and YTAHP participants.
- Determine contract mechanism for MWH engineering services.
- Provide engineering designs and services for 11 early action projects, including inverted siphons, pump and gravity diversion screening, diversion metering, rock weirs for improved fish passage, headgates and fishways. These designs were used to submit for project implementation funding through the WA Salmon Recovery Funding Board.
- Complete 6 early action projects on Ahtanum Creek -
  One gravity diversion was replaced with a pump and pump end screen and
  5 pump end screens were installed.
- Conduct two topographic surveys -
  For the City of Yakima on the Fruitvale diversion for the North Yakima Conservation District to support the installation of a pumping plant which would eliminate the need to divert directly from the Naches River and build the gravel berm each year during low flows.
  For the Taylor Ditch system for the North Yakima Conservation District to support as feasibility of opening the ditch for habitat and at the same time maintaining irrigation deliveries.
- Procure materials for use in future YTAHP projects, including siphon pipe, delivery pipe, rock, screens, and water meters. These materials will act as match and support the completion of these subsequent YTAHP projects.

Overall, with broad agency support and Action Plan funding through BPA, the YTAHP has achieved substantial enhancements that support aquatic species and which will leverage subsequent work through engineering designs and materials. The program was also able to establish the personnel and equipment support for beginning the stream assessment process on tributaries in Yakima and Kittitas Counties. Completion of this year's effort has provided significant inroads to working on the private lands in two counties which will be vital to future efforts by YTAHP and others to protect and enhance Yakima River Basin habitat.

ACKNOWLEDGEMENTS

The successful execution of this project is due in large part to the cooperation and participation of many people including particularly the following:

David Byrnes, Bonneville Power Administration
R. Dennis Hudson, U.S. Bureau of Reclamation
Kate Puckett, U.S. Bureau of Reclamation
George Marshall, Ahtanum Irrigation District
Anna Lael, Kittitas County Conservation District
Mike Tobin, North Yakima Conservation District
Pat Schille, Washington Department of Fish and Wildlife
Eric Egbers, Washington Department of Fish and Wildlife
Richard Visser, Washington Department of Fish and Wildlife
Scott Nicolai, Yakama Nation, Yakima/Klickitat Fisheries Project
William R. Hinkle, SCW RC&D & Kittitas County Commissioner (former)

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LIST OF ACRONYMS

ACOE/COE	US Army Corps of Engineers
AID	Ahtanum Irrigation District
BLM	US Bureau of Land Management
BPA	Bonneville Power Administration
BOR	US Bureau of Reclamation
cfs	cubic feet per second
CREP	Conservation Reserve Enhancement Program
CWA	federal Clean Water Act
Ecology	WA Department of Ecology
EPA	US Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
ESA	Endangered Species Act
HPA	Hydraulic Project Approval
JARPA	Joint Aquatic Resources Permit Application
KCCD	Kittitas County Conservation District
KCWP	Kittitas County Water Purveyors
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NYCD	North Yakima Conservation District
RC&D	So. Central WA Resource Conservation and Development Council
SFRB	Salmon Recovery Funding Board
SEPA	Washington State Environmental Policy Act
USFS	United States Forest Service
USFWS	United States Fish & Wildlife Service
WDFW	Washington Department of Fish and Wildlife
YTAHP	Yakima Basin Tributary Access and Habitat Program
YN	Yakama Nation

Yakima Tributary Access and Habitat Program

1.0 INTRODUCTION

This report covers activities conducted by the Yakima Tributary Access and Habitat Program under BPA grant project #2002-025-00 for fiscal year 2002. The Yakima Tributary Access and Habitat Program (YTAHP, Program) was organized to restore salmonid passage to Yakima River tributaries that historically supported salmonids and improve habitat in areas where access is restored. The program was developed to screen unscreened diversion structures to prevent fish entrainment into artificial waterways; provide for fish passage at man-made barriers, such as diversion dams, culverts, siphons and bridges; and provide information and assistance to landowners interested in to contributing to the improvement of water quality, water reliability and stream habitat.

The YTAHP developed from a number of groups actively engaged in watershed management, and/or habitat restoration within the Yakima River Basin. These groups included the US Bureau of Reclamation (Reclamation, US BOR), Washington State Fish and Wildlife (WDFW), Kittitas County Conservation District (KCCD), North Yakima Conservation District (NYCD), Kittitas County Water Purveyors (KCWP), Ahtanum Irrigation District (AID) and the South Central Washington Resource Conservation and Development Council (RC&D). The Yakama Nation (YN) also participated in the early stages of the program's development and ongoing coordination. Collectively, the WDFW, KCCD, NYCD, KCWP, AID and RC&D are referred to as the core team.

This report covers activities funded under the FY02 Action Plan (April-October 02). These activities primarily reflect YTAHP efforts to plan, engineer and implement Early Action Projects (EAP) as outlined in the YTAHP Strategic Plan.

2. BACKGROUND

Native salmon populations in the Yakima River Basin have declined from historic levels. The significance of these declines is reflected in recent listings under the Endangered Species Act (ESA). The Middle Columbia River steelhead evolutionarily significant unit, which includes the Yakima Basin, was listed by National Marine Fisheries Service (NMFS, now National Oceanographic and Atmospheric Administration (NOAA) Fisheries), as threatened under the ESA on March 25, 1999 (64 FR 14517). The U.S. Fish and Wildlife Service (USFWS) listed the Columbia River bull trout distinct population segment, including the Yakima Basin, as threatened on June 10, 1998.

Several planning and recovery documents covering the Yakima River Basin list barrier removal and diversion screening as needed to support fish recovery, including the Yakima Subbasin Summary, Yakima Limiting Factors Analysis, federal Biological Opinions and watershed plans. Habitat quality is also identified as a key factor limiting the productivity of these listed species.

There has been active screening of Yakima River mainstem diversions for nearly 20 years through the Fish Passage and Protective Facilities Program, a cooperative effort lead by the Reclamation with BPA Fish and Wildlife Program funding. Phases I (1980s) and II (1990s to present).

In spite of these significant past efforts, there are still many unscreened diversions and other passage and habitat challenges for fish in the Yakima Basin tributaries. There may be more than 500 barriers to passage, ranging from complete passage barriers to minor impediments. The YTAHP was designed to continue to address screening and passage needs in the basin using a well coordinated, prioritized approach.

3. PROGAM OVERVIEW

The YTAHP was organized to restore salmonid passage to Yakima tributaries that historically supported salmonids and to improve habitat in areas where access is restored. This section describes the entire YTAHP program with emphasis on Action Plan FY02 funded activities. Program elements described below are: program organization, planning and project prioritization, permitting, engineering, communications, monitoring and funding. Section 4 lists specific YTAHP objectives, progress and accomplishments supported by Action Plan funding.

Program Organization

The YTAHP takes advantage of the local, state and federal parties with interest and experience in fish enhancement activities, water management and/or farm stewardship. The RC&D joined the core team as a logical choice for program administrator, as it addresses natural resource and economic needs in the entire Yakima Basin. The administration of the BPA AP FY02 and Provincial Review FY03-04 grants will be through the RC&D, with participating core members vouchering the RC&D for program related expenses. The core team members will work with the RC&D on program management and be instrumental selecting projects, overseeing permitting, engineering services and communications. Other grants relating to YTAHP project may be through the RC&D, core team members or project proponents, such as municipalities, irrigation districts or individuals.

Engineering support came primarily from Montgomery Watson Harza (MWH), but also by local engineers, conservation engineer or by project cooperators. Communication with entities outside the core team, including the NMFS, USFWS, COE and YN was ongoing and addressed program progress and individual projects. Additional funding was sought though various programs.

Core team members with a tradition of local assistance (conservation districts and irrigation interests) worked with local project proponents and acted as liaison with regulatory agencies, funding entities and engineering service providers on projects, stream assessments and community outreach. The conservation districts also assisted in coordinating complementary programs such as irrigation efficiencies, environmental quality incentives program (EQIP), conservation reserve and enhancement program (CREP), etc.

The program is organized into five functional areas: administration, program management, regulatory compliance, engineering and technical support, and tributary projects. The groups working in these areas are labeled teams, workgroups or committees, as seems appropriate. See

Table 1 and Figure 1. A liaison group for addressing permitting may also be created, however the YTAHP does not have direct oversight of this group (shaded box on Figure 1).

1. Administration	RC&D
2. Program Management	Core Team
3. Regulatory Compliance	Permits and Approvals Team
4. Engineering and Technical Support	Technical Workgroup, or TWG
5. Tributary Projects	Tributary Teams

In addition to the core team, other entities involved during permitting, water right verification or project review stages include the USFWS, NMFS, COE, Washington Department of Ecology (Ecology), NRCS, YN and others. The cooperative nature of this program and collaborative approach was intended to accelerate permitting and thereby completion of early action and subsequent projects.

Planning and Project Prioritization

A YTAHP Strategic Plan was drafted by core team members prior to grant funding of the program. This plan is a work in progress and provides framework for the YTAHP process, including scope, organization, communication, stream surveys, barrier prioritization method, project implementation and funding options. As information is developed, individual tributary plans will be prepared and identify potential projects for each tributary based on the prioritization method. Individual project plans would then define permitting, engineering, scheduling and costs for individual projects.

Action Plan funding for FY02 supported the development of 11 early action projects, including planning, permitting, engineering support, procurement and implementation. Prioritization of remaining barriers will occur in subsequent years and will be done in a systematic manner by the YTAHP using and existing WDFW barrier prioritization manual. The program will inventory barriers and rank them based on meaningful parameters, creating a prioritized project list which will be implemented when funded.

Permitting

Compliance with necessary permits and environmental review processes is addressed in several ways. For early action projects individual environmental assessments or checklists were submitted to review agencies. As the program develops, a programmatic approach will be pursued where feasible to collectively address permitting needs and reduce permit review time. Agency permit reviewers will be invited to participate in ongoing project development, permit and engineering review to accelerate the process.

In 2002, NMFS was consulted in advance of specific projects to better understand ESA consultation requirements and to share information and ideas on YTAHP and how to facilitate the permit process.

Engineering Services

A key component for projects is engineering services including skilled designs, procurement of materials, scheduling and construction oversight. The YTAHP utilized an existing service contract MWH has with BPA for such engineering services. MWH engineering and procurement tasks will be directed by the core team and RC&D. MWH provided engineering services including design, plan review of designs created by others, job cost estimates, procurement services as well as

construction scheduling, contracting and construction oversight where applicable. MWH will generally be the engineer of record, with responsibility for quality assurance. MWH worked with WDFW, NMFS and others to design for individual project needs. As possible, standard designs may be developed to reduce costs where uniform designs will meet multiple needs.

Communication

Communication is vital to the success of the YTAHP. Communication included outreach to local communities in the program area to inform about available assistance and to request access for stream surveys; coordination with other groups working on fish enhancements, conservation and land management in the Yakima Basin; and collaboration with others where project integration is beneficial and mutually agreeable. Effective communication is intended to avoid duplication of effort and parlay available funding to greater watershed benefits.

Outreach will be multifaceted and be made through meeting presentations, printed materials, local media, local agricultural groups and workshops, tours, and one to one contacts with local landowners.

Monitoring

The core team and RC&D will examine the progress of the program and compare it with desired outcomes. The program and its projects monitored for their effectiveness is achieving their intended goals. The monitoring program will address whether projects are being implemented efficiently and effectively; how effective are individual projects in treating fish passage problems; and whether program implementation expanding fish distribution across the Yakima basin. The latter will be achieved by working with other basin experts to evaluate screen effectiveness and review fish distribution in the watershed.

Funding

The YTAHP's first year (FY01) was supported by individual agencies and entities who recognized the need for ongoing tributary work. The BPA Action Plan supported the YTAHP during its second year (FY02). Out years (FY03, FY04) are also scheduled for BPA Provincial Review funding. In addition, other funding sources are being pursued, including WA State Salmon Recovery Funding Board, Fisheries Restoration and Irrigation Mitigation Act, and other cost share programs through the Natural Resource Conservation Service and State Conservation Commission.

The Action Plan funding was anticipated to be issued in October 2001, grants were actually announced in March/April 2002, and the contract with BPA signed in June of 2002. The Action Plan funding terminated September 30, 2002.

Figure 1. Yakima Tributary Access and Habitat Program Organizational Chart.

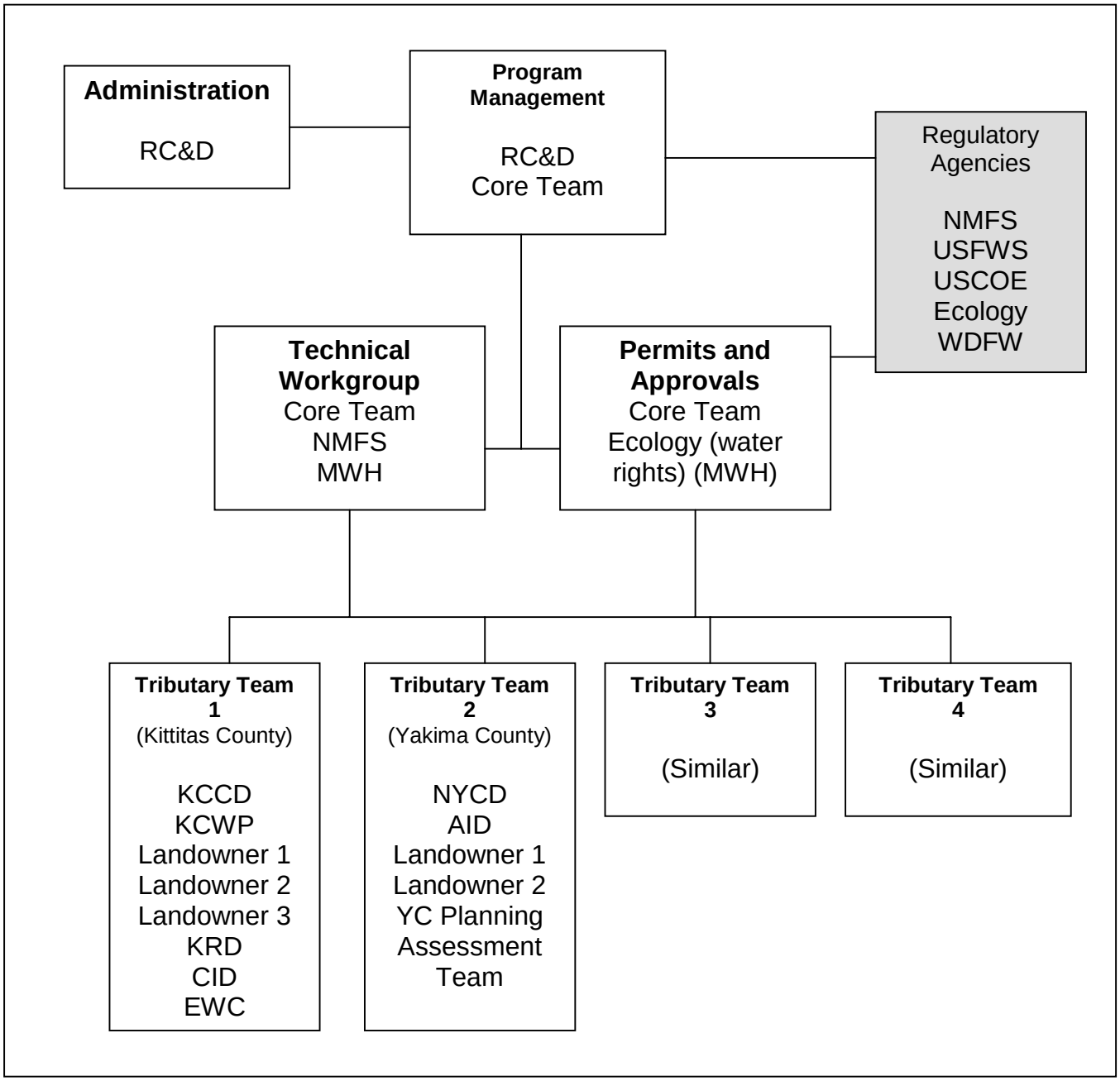

Table 1. Yakima Tributary Access and Habitat Program Roles and Responsibilities.

Role	Membership[1, 2]	Responsibilities
Administration	RC&D	Grant administration, accounting, invoice preparation, coordinating with BPA Contract Officer on budget tracking and project updates for grantor(s), reporting.
Program Management	RC&D WDFW KCWP KCCD NYCD AID	Program organization and schedules, assigning tasks and tracking progress, program consistency, forming partnerships, updating the strategic plan, producing applications for funding, finding and organizing technical support, producing the program annual plans, producing the tributary plan outline for each tributary plan, determining when to refer items to the permit team, review of tributary plans, and other functions as necessary.
Permits and Approvals	WDFW NMFS KCWP USFWS KCCD COE NYCD Ecology AID BOR	Preparation of environmental documents and site visits for environmental evaluation purposes. This team may assist in obtaining funds to implement the overall program. Project proponents or their representatives may also participate.
Engineering and Technical Support	WDFW NMFS KCWP USFWS KCCD COE NYCD Ecology AID BOR MWH YN	The technical workgroup will perform the engineering design work and provide technical assistance on screens and barriers, including materials and contract specifications. Maintenance of GIS information and data base. Project proponents or their representatives may also participate.
Tributary	KCCD NRCS NYCD YN KCWP AID Local Stakeholders Individual Irrigation Entities Trained Interns Other affected parties	The tributary teams will perform the bulk of the project planning, local outreach and implementation work, and maintenance of data bases and maps. Trib. Teams may manage surveys. The tributary teams will also be responsible for most of the habitat enhancement work, including on-farm water use efficiency and riparian modifications. The NRCS may assist in these efforts also.

[1] The core team includes the RC&D, WDFW, KCWP, KCCD, NYCD, AID and may include the BOR as resources allow. MWH will perform engineering, procurement and other services under the direction of the core team.

[2] (ABC) Entities not included in the core team, but will be integral to the success of the program include the NMFS, USFWS, YN, COE Ecology, NRCS and others.

A list of acronyms can be found in the introductory pages.

4. SCOPE of WORK and FY02 ACCOMPLISHMENTS

To meet the objectives of the Yakima Tributary Access and Habitat Program the following key objectives were pursued to identify and implement several early action items; establish a systematic approach to identifying barriers and projects basin-wide through stream assessments and a priority setting process; and taking advantage of opportunities to improve habitat where possible.

OBJECTIVE 1: Complete Strategic Plan

Complete a YTAHP Strategic Plan to guide management, planning and implementation of program. The plan should address scope of work, communication and cooperation, a project identification and prioritization process, funding opportunities and effectiveness monitoring.

Accomplishments:
A draft strategic plan was prepared prior to receiving grant funding. During FY02, this draft plan was revised to a final draft stage when grant monies were awarded. A presentation of this YTAHP was given to the Northwest Power Planning Council in July of 2002 and referenced the strategic plan. This plan is intended to be a dynamic document and change as program needs change.

OBJECTIVE 2: Implement Early Action Projects

Implement early action projects identified as priority issues and which may have biological priority and/or extraordinary opportunity (such as strong local and/or entity support, supplemental funding, or address specific ESA compliance issues). This objective covers early actions initiated in 2002 and 2003. There may be 20 or more sites appropriate for early action. For these purposes unscreened diversions are considered barriers.

Task 1. Contact landowners and irrigation entities about barriers and screens, engage in discussions and agreements as may be appropriate, confirm status of water right (location and quantity), prepare submittal for engineering team and draft application(s) for applicable permits for early action projects in Kittitas and Yakima Counties.

Accomplishments: YTAHP participants notified their respective constituents of program goals and objectives and requested information on possible early action projects. Early action projects could include various project elements such as diversion screening, siphon installation, culvert replacement, gravity to pump conversions, stream regrading, diversion consolidations, on-farm irrigation efficiency and riparian habitat improvements. Approximately 25 individual projects were compiled with about 40 project elements (for example some projects included screening and irrigation efficiency elements).

The KCWP worked with the Ellensburg Water Company to collect information on the EWC-Cooke Creek Siphon and Currier Creek Siphon projects. The KCCD and NYCD worked with approximately 15 landowners on specifics on numerous potential early action projects. Eleven projects were selected to advance to Task 2.

During the execution of this task, many contacts were made and information shared on both YTAHP and other program activities and some areas were identified where mutual benefits could be realized. For example, the YTAHP may be able to assist the Yakama Nation to complete a barrier removal project in an Upper Yakima tributary and the NRCS may be able to coordinate on-farm efficiency projects to complement barrier removal and diversion screening.

Task 2. Prepare engineering designs for screens and barrier removal, and complete and submit permit applications for early action projects in Kittitas and Yakima Counties. If any suitable permit application or engineering designs exist related to projects, they should be incorporated as possible.

Accomplishments: Engineering plans and cost estimates were prepared for 11 early action projects by MWH, the conservation district's engineer and a private engineer. Permit documents were prepared by project proponents, agency representatives and a consulting fisheries biologist working together. Permit documents included Joint Aquatic Resource Permit Application (JARPA), Hydraulic Permit Approval (HPA), biological assessment (for NMFS), and dredge and fill application (404, COE). Pre-engineering surveys were completed on the Naches Diversion at Fruitvale and the Taylor Ditch Diversion in Yakima County.

Task 3. Procurement and use of screens and materials for facilities to address early action projects in Kittitas and Yakima Counties. This task will be coordinated by proponents, and may include agency-built facilities or facilities constructed and installed by contractors. Materials may include pipe, rock, gravel, concrete, fencing, etc.

Accomplishments:
The AID identified 6 early action projects on Ahtanum Creek, which were corrected during FY02. A gravity diversion (Diversion 13) was converted to a pump screen diversion. This involved moving the point of delivery to a site more readily available to bring electrical power. Underground electrical service was installed along with the pump panel control post for placement of a 15 hp pump and associated siphon and pump screen. (See photos-Div 13) In addition, 5 other unscreened pump diversions were converted to NMFS compliant pump screens.

Procured items included siphon pipe for two large (>100 cfs) siphons, conveyance pipe, diversion screens, flow meters and rock. These items were either used during FY02 or will be used in subsequent YTAHP projects.

OBJECTIVE 3: Restore Salmonid Access

Restore salmonid access to tributaries that historically supported those species, remove barriers and screen diversion structures to prevent entrainment into artificial waterways. Conduct efforts using a systematic approach to evaluate, prioritize and implement projects. There may be hundreds of small to medium diversions and many other passage barriers in the project area.

Task 1. Prioritize tributaries based on existing available data (Yakima River watershed assessment and planning documents, limiting habitat factors analyses, subbasin plans, etc).
a) Gather data from information source(s) for prioritization.
b) Review by agency resource managers and others.

Accomplishments:
Information was gathered from the Yakama Nation and the Washington Department of Fish and Wildlife fisheries personnel and utilizing publications such as the Limiting Factors Analysis published by the Washington State Conservation Commission (2001) and the Yakima River Basin Watershed Management Plan, Chapter 7 sub 7.1 table 7.1., the tributaries to the Yakima River were prioritized for the surveys to be conducted in Task 2. The goal is to survey all fish-bearing Yakima River tributaries.

Task 2. Conduct surveys in tributaries to identify and locate barriers.
a) Create survey team(s).
b) Train per SSHEAR barrier assessment protocol (citation below).

c) Conduct surveys.
d) Troubleshoot, as needed.
e) Re-prioritize tributaries as needed, based on new data.
f) Create GIS data base to manage barrier information.

The YTAHP will utilize an existing protocol to inventory barriers, and the core team will determine an approach to correcting barriers based on biologic factors, available funding, local sponsorship and inventory data. The WDFW has prepared a *Fish Passage Barrier and Surface Water Diversion Screening Assessment and Prioritization Manual* (WDFW-Salmonid Screening, Habitat Enhancement, and Restoration (SSHEAR) Section, August 2000) to assist itself and others interested the assessment and prioritization of barriers. If the YTAHP deems modifications appropriate, they will be described in subsequent documents. The assessment manual may be found on the Internet or obtained from the WDFW.

Accomplishments:
The KCCD and NYCD contacted landowners with property adjoining tributaries to provide information on YTAHP and request authorization to access streamside properties for the purpose of conducting stream surveys. Scheduled instruction session on survey tools for stream assessments.

Task 3. Develop tributary teams and work plans to address identified barriers for each tributary.
a) Create tributary team and establish roles and responsibilities for members.
b) Tributary team to review survey information.
c) Tributary team to create tributary work plan, including individual projects within tributary.
d) Outreach to diverters, landowners and irrigation entities will be a part of this task.

Accomplishments:
This item will be addressed upon completion of the tributary surveys. Outreach has already begun in many areas.

Task 4. Implement each tributary work plan.
a) Create Project Work Plans for each identified barrier in consultation with core team.
b) Draft permit applications, submit with preliminary engineering design in coordination with permits and approvals team.
c) Conduct engineering review and prepare design in coordination with technical workgroup.
d) Prepare contracting documents, as needed.
e) Construct and install project.
f) Troubleshoot as needed, track problems, constraints and responses.

Accomplishments:
This item will be addressed through the efforts of the tributary teams working in conjunction with core team.

Task 5. Monitor project to ensure effectiveness, consistency with program goal and regulatory requirements.
a) Prepare a brief status report annually to include projects completed, projects underway, troubleshooting outcomes and priorities for following year.
b) Monitor the installation.

Accomplishments:

Monthly core team meeting are held to ensure that the goals and objectives are being met. The function of installed screens will be monitored in conjunction with a third party expert as projects are implemented. Monitoring of fish distribution will be a long-term goal and be carried out by third parties in the basin.

OBJECTIVE 4: Provide Opportunities to Improve Habitat

Provide opportunities to improve habitat including water quality, stream habitat and water use efficiency, water reliability for in-stream flow in project areas for landowners with identified barrier removal or screening needs, or riparian areas. Landowner participation in these activities is entirely voluntary. It is expected that some or all of the financial assistance will be on a cost-share basis.

Task 1. Provide outreach and educational opportunities to participating landowners relative to improving water delivery systems and water use while improving water quality, in-stream flows and riparian habitat.

a) Conduct outreach efforts such as press release, public meetings, providing speakers to grower groups and other landowner venues, including information in existing newsletters, etc.
b) For specific tributaries, conduct in-person outreach and education and offer on-site reviews and consultations about options best suited to individual operation.

Accomplishments:
Brochures and press releases have been utilized to disseminate information about the YTAHP project. YTAHP has been discussed at landowner meetings, with irrigation entities and others.

Task 2. Provide technical assistance specific to individual landowner needs regarding improvement of water delivery systems and water use that will improve water quality, in-stream flows and riparian habitat.

a) For interested individuals, provide technical assistance to create a plan to implement improvements, such as NRCS farm plan, mapping, data gathering ideas (soil moisture, other), piping, irrigation methods, etc.
b) Provide follow-up communication to determine interest level to proceed to Task 3.

Accomplishments:
This is an ongoing process for all entities in the YTAHP core group.

Task 3. Provide financial assistance for individual landowner needs regarding improvement of irrigation systems and methods that will improve water quality, water reliability for in-stream flows and riparian habitat.

a) For interested individuals, assist with gaining financial assistance to implement on-farm improvements determined to appropriate and feasible in Task 2, above. Grower shall have flexibility in selecting from a menu of options.
b) Provide follow-up communication to determine progress on implementation. This will assist grower as well as be used for reporting and monitoring purposes.

Accomplishments:
Task 3 will follow the recommendations derived from the Tributary Team work groups.

5.0 SUMMARY and FUTURE YTAHP ACTIVITIES

Overall, the Yakima Tributary Access and Habitat Program has achieved important enhancements that support aquatic species in a short period of time. The involvement of local conservation and

irrigation entities as well as communication local elected representatives has broadened the awareness of the program and enhanced its ability to achieve its objectives. In addition, the program accomplishments will leverage subsequent work through the engineering designs, procured materials and general cost share that this program has provided. Additional grant applications have been or will be made to further support program objectives.

The program was able to establish the personnel and equipment for beginning the stream assessment process on tributaries in Yakima and Kittitas Counties. The stream assessments will identify the number and location of barriers and help to guide overall project selection and implementation.

Future work that will use the FY02 as a foundation include separating two creek-canal intersections, installation of properly screened diversions, both pump and gravity, removal of various fish passage barriers and on-farm irrigation improvements. The program will also supplement work done under other local, state and federal programs that support farm and environment projects.

Completion of this year’s effort has provided significant inroads to working on the private lands in two counties which will be vital to future efforts by YTAHP and others to protect and enhance Yakima River Basin habitat.

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APPENDIX

YTAHP Scope of Work

Goal, Objectives, Tasks and Deliverables

YTAHP Early Action Project Matrix

YTAHP Procurement
MWH inventory
YTAHP inventory

Yakima Tributary Access and Habitat Program*

Goal: *To restore fish access to Yakima River tributaries that historically supported anadromous salmonids, but are currently blocked due to passage barriers; to improve habitat as possible.*

Objective 1: Implement Early Action Items previously identified as priority issues and which may have agreed biological priority and/or extraordinary opportunity. There are 5 to 20+ sites appropriate for early action.

Task 1 – Contact landowners/irrigation entities re barriers and screens, engage in discussions and agreements as necessary, confirm status of water right, prepare submittal for engineering team, and draft applicable permits.	**Deliverable –** List of interested individuals, preliminary information on barriers, initial permitting and engineering prepared. General idea of number of interested parties in the basin.
Task 2 – Prepare or finalize engineering designs and submit or confirm permits. There will likely be projects in excess of what can be accomplished in 2002	**Deliverable –** Engineering designs, materials lists, cost estimates for materials and site work.
Task 3 – Manufacture/construct/purchase screens and install and initiate operation of facilities. Operation of facilities may begin following installation or wait until the following year's water use season.	**Deliverable –** Manufacture, construction and installation of 2 to 5 facilities.

Objective 2: Complete Strategic Plan for Yakima Tributary Access and Habitat Program.

Task 1 - Select managing entity for Strategic Plan. Outline of roles and responsibilities for managing entity established.	**Deliverable** – Managing entity selected for finalization of Strategic Plan.
Task 2 - Prepare final draft, distribute for comments. Distribution list to include at a minimum participating entities, and may also include NMFS, USFWS, YN, Ecology and others.	**Deliverable** – Final draft of Strategic Plan prepared and distributed for comments.
Task 3 - Address and incorporate comments, and finalize document. The document to be reviewed by pertinent individuals and agencies involved in program access issues and local habitat improvement.	**Deliverable** – Final document prepared that provides a framework for the execution of the Program.

Task 4 – Distribute, as appropriate to participating entities and others. Elected officials, agency heads, etc informed of program and Strategic Plan that guides the program.	**Deliverable** – Strategic Plan distributed to participating entities and stakeholders.
Task 5 – Update, as needed, to include new project information, available scientific findings or other pertinent information. Supplemental sheet may be satisfactory rather than a complete revision of document.	**Deliverable** – Strategic Plan is review annually and supplemented or amended, as deemed appropriate.

Objective 3: Restore Salmonid Access to tributaries that historically supported those species, remove barriers and screen diversion structures to prevent entrainment into artificial waterways.

Task 1- Prioritize tributaries based on existing data (watershed and subbasin planning, etc).

a) Existing information source(s) for prioritization, organized as possible to assist in understanding and evaluating information.	**Deliverable** – Organized compilation of existing information on Yakima River tributaries.
b) Review of existing data by participating entities to evaluate voracity and quality of information and establish a preliminary prioritization based on existing data. Questionable data will be used with caution or discarded.	Deliverable **–** Critical review of existing data.

Task 2- Conduct surveys in tributaries to identify and locate barriers.

a) Create survey team(s) and establish roles and responsibilities. Individuals may serve on more than one team. (Survey teams may be a subset of the Tributary Team, see below.)	**Deliverable** – Individual survey teams and roles and responsibilities established.
b) Train Survey Teams per SSHEAR salmon habitat assessment protocol to ensure expertise and cross team consistency in assessment.	**Deliverable** – Survey Teams are trained in consistent salmon habitat assessment protocol.
c) Conduct systematic surveys of Yakima River tributary barriers, with results documented in organized fashion (database), digital or other images and preliminary measurements included where possible.	**Deliverable** – Database of barriers location and preliminary information.
d) Troubleshoot survey process, as needed.	**Deliverable** – Survey protocol critically evaluated and amended as needed.
e) Re-prioritized list of Yakima River tributary barriers for use as guide for conducing	**Deliverable** – Re-prioritized list of Yakima River tributary barriers.

enhancement activities.	

Task 3- Develop tributary teams and tributary work plans to address identified barriers for each tributary.

a) Create tributary team and establish roles and responsibilities for members.	Deliverable - Established tributary teams.
b) Tributary team to review survey information.	Deliverable - Review of tributary survey data.
c) Tributary team to create tributary work plan, incl. individual projects within tributary.	Deliverable - Tributary Work Plans that describe barriers and schedule of projects.

Task 4- Implement each tributary work plan.

a) Create Project Work Plans for each identified barrier project.	Deliverable - Individual Project Work Plans.
b) Draft permit applications, submit with completed engineering design.	Deliverable – Initial Permit Applications, preliminary Engineering Designs.
c) Conduct engineering review and prepare design.	Deliverable – Final Engineering Designs.
d) Prepare contracting documents, as needed.	Deliverable – Contract documents
e) Construct and Install.	Deliverable – Barrier corrected, installed screen, fishway or other facility.
f) Troubleshoot as needed, track problems, constraints and responses.	Deliverable – Critical review of process, improvements as needed.
g) O/M on installed facilities (~ by users).	Deliverable – Properly functioning facility.

Task 5- Monitor project to ensure effectiveness, consistency with program goal and regulatory requirements.

a) Monitor the installation to evaluate effectiveness of program and projects.	Deliverable – Evaluation of program and project effectiveness.
b). Prepare a brief status report annually to include projects completed, projects underway, project monitoring, troubleshooting outcomes and priorities for following year.	Deliverable – Progress reports.

Objective 4: Provide Opportunities to Improve Habitat including water quality, water reliability and stream habitat in project areas for landowners with identified barrier removal and screening needs. Landowner participation is entirely voluntary.

Task 1- Provide outreach and educational opportunities to participating landowners relative to improving water quality, water reliability and stream habitat.

a) Conduct outreach efforts such as press release, public meetings, providing speakers to grower groups, existing newsletters and other landowner venues.	Deliverable – Outreach materials (brochure, press release, newsletter articles), speakers, meetings, media coverage.
b) For specific tributaries, conduct in-person outreach and education and offer on-site reviews and consultations about options best suited to individual operation.	Deliverable – Individual consultations, as requested.

Task 2- Provide technical assistance specific to individual landowner needs regarding improvement of water quality, water reliability and stream habitat.

a) For interested individuals, provide technical assistance to create a plan to implement improvements, such as NRCS farm plan, mapping, data gathering ideas (soil moisture, other), piping, irrigation methods, etc.	Deliverable – Farm plans, farm maps, additional acres using best management practices.
b) Provide follow-up communication to determine interest level to proceed to Task 3.	Deliverable – Estimated numbers of individuals and potential costs for additional on-farm improvements.

Task 3- Provide financial assistance for individual landowner needs regarding improvement of water quality, water reliability and stream habitat.

a) For interested individuals, assist with gaining financial assistance to implement on-farm improvements determined to appropriate and feasible in Task 2, above. Grower shall have flexibility in selecting from a menu of options.	Deliverable – Irrigation improvements, water quality and habitat improvements, additional acres using best management practices.
b) Provide follow-up communication to determine progress on implementation. This will assist grower as well as be used for reporting and monitoring purposes.	Deliverable **– Progress report on habitat improvement projects.**

Reference for Objective 3, Tasks 1 & 2:

Washington Department of Fish and Wildlife. August 2000. *Fish Passage Barrier and Surface Water Diversion Screening Assessment and Prioritization Manual*. Environmental Restoration Division, Habitat Program, Salmonid Screening, Habitat Enhancement and Restoration (SSHEAR) Section.

* As submitted to BPA

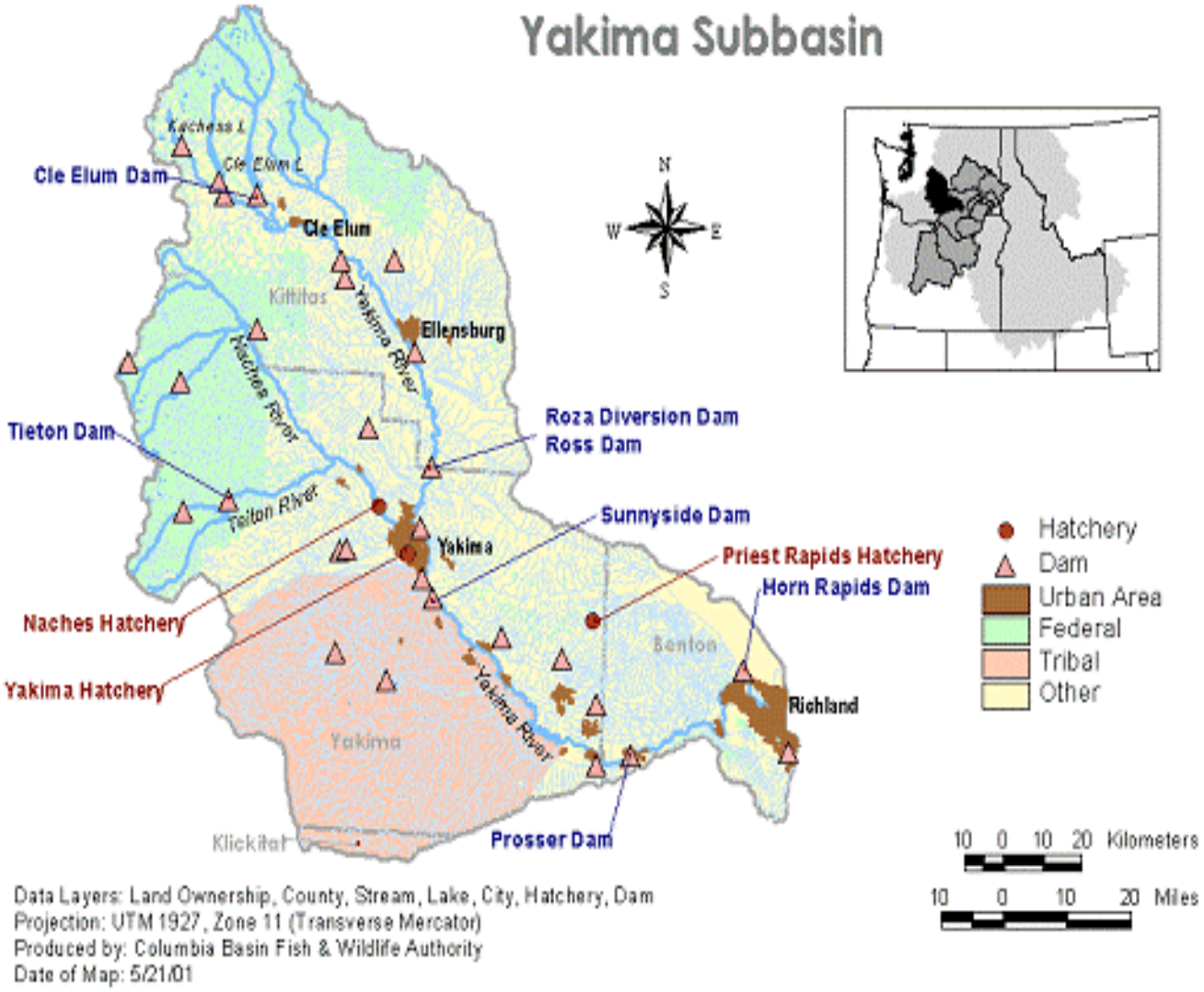
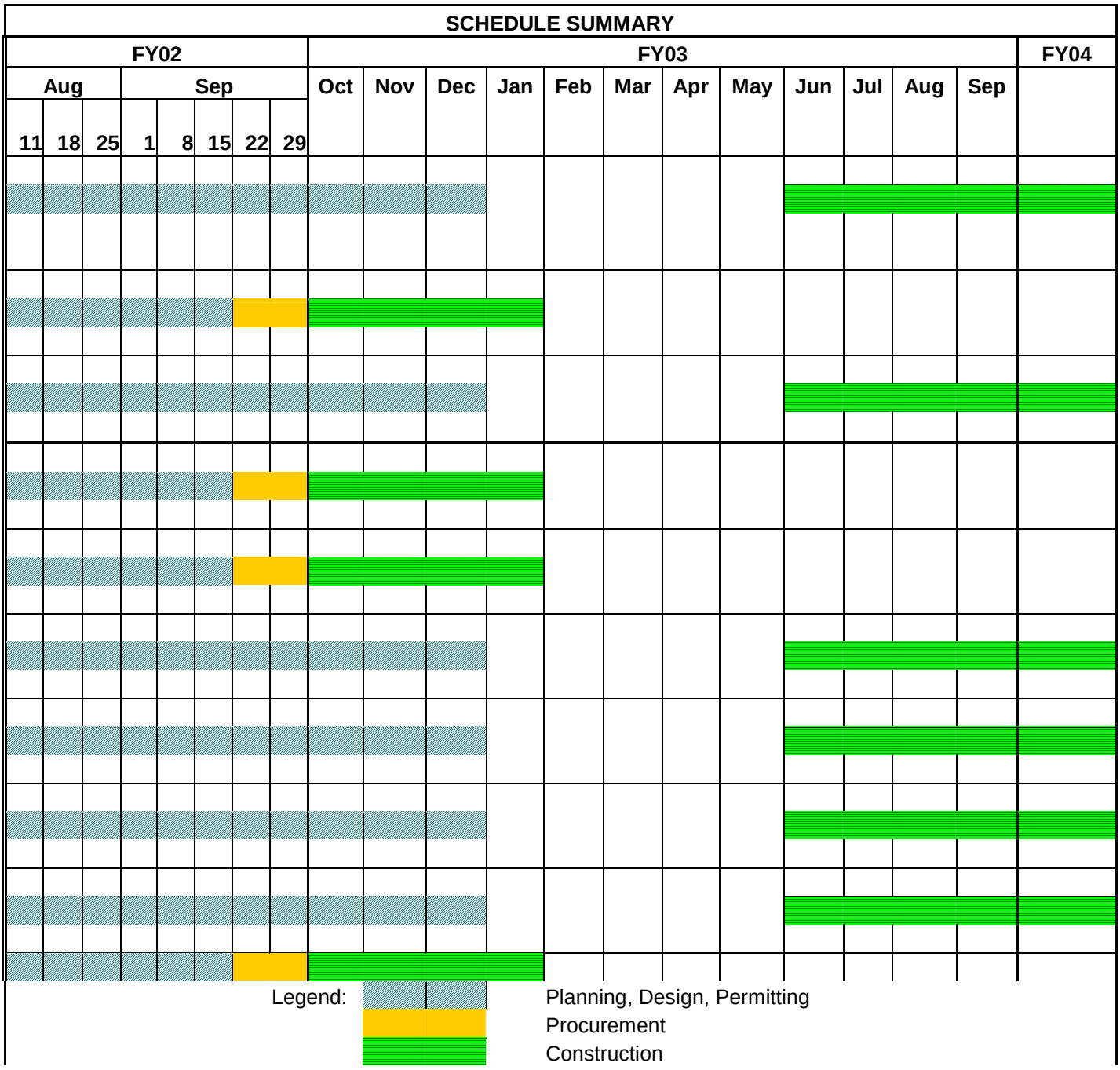


Figure 1. Map of Yakima River Basin

PROJECT INFORMATION							BUDGET ALLOCATION				
Project	Description	Scope	Basin	MWH PDP ($1,000)	MWH Proc ($1,000)	Procurement Items	Const ($1,000)	Total ($1,000)	FY02	FY03	FY04
Diversion 14 Ahtanum River	10 cfs screen, gravity div rock weir fishway / grade ctrl levee setback, habitat enhance? pipe to dist box?	DO	Y	$ 35	$ 40	screen fabrication, rock, pipe, gate flow msmt equip, rebar nursery vegetation contract	$ 85	$ 150 ?	$ 20	$ 95	$ 35
Fines Diversion Wide Hollow Crk	3.6 cfs screen, gravity div rock weir fishway / grade control	DPC	Y	$ 20	$ 35	YSS $25k screen rock, flow msmt, headgate bypass pipe	$ 45	$ 100	$ 55	$ 45	
Div's #1 & #2. Cowichee Creek (scope unknown)	div consolidation ? gravity and/or pump div's ~6 cfs (?)	DO	Y	$ 25	$ -	survey; planning concept design only design unknown, study options 1st		$ 150	$ 15	$ 70 ?	$ 65 ?
Towne Ditch Siphon at Currier Crk	250 cfs siphon, creek isolation 15 - 20 cfs grav div screen fishway	DPC	K	$ 50	$ 100	siphon pipe, rebar, level sensors grade control rock, gates?, piping (div to ditch) screen fabrication, flow measurement equipment	$ 200	$ 350	$ 150	$ 200	
Towne Ditch Siphon at Cooke Crk	220 cfs siphon, creek isolation 35 (?) cfs grav div screen fishway	DPC	K	$ 50	$ 100	siphon pipe, rebar, level sensors grade control rock, gates?, piping (div to ditch) screen fabrication, flow measurement equipment	$ 200	$ 350	$ 150	$ 200	
Bull Ditch - Hernandez Div Coleman Crk	4 cfs siphon / hinged flume new pump w/ screen rock weir fishway, regrade chan	DO	K	$ 25	$ 25	landowner delay channel regrade	$ 125	$ 175	$ 25	$ 100	$ 50
Taylor Div @ Dry Crk Dry Creek	3 cfs gravity screen stabilization / grade control	DO	K	$ 20	$ 15	screen, rock	$ 65	$ 90	$ 20	$ 40	$ 30
Taylor Div @ Spring Brk Spring Brk / Cabin Crk	9 cfs screen, gravity div fishway	DO	K	$ 20	$ 25	screen, rock	$ 65	$ 100	$ 20	$ 50	$ 30

	grade control										
Esslinger Diversion Caribou Creek	4.5 cfs new pump w/ screen rock weir grade ctrl and fishway diversion structure	DO	K	$ 30	$ 40	pump, pump screen, rock rebar, stoplogs	$ 105	$ 175	$ 30	$ 100	$ 45
Rosbach Diversion Cooke Creek	~5 cfs intake reconfiguration Pump sump, new pumps Piping, div screens (pump or on-channel screens)	DPC	K	$ 35	$ 40	pump(s), pipe, screens, rock stoplogs?,	$ 75	$ 150 ?	$ 75	$ 75	
Total				$ 310	$ 420		$ 965	$ 1,790	$ 560	$ 975	$ 255


SCHEDULE SUMMARY
FY02
FY03
FY04
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
11
18
25
1
8
15
22
29
Legend:
Planning, Design, Permitting
Procurement
Construction

Yakima Tributary Access and Habitat Program - Early Action Projects

Separation of Creek and Canal using Inverted Siphon, Kittitas County*

Cooke Creek-Ellensburg Water Company Canal intersection, left, and when separated after project.

Fish screens, siphon pipe and siphon pipe installed, above. Functioning fish screen, left. Fish ladder at right in picture below.

*This project was initiated with Action Plan funding and continued into 2003. This project separated a creek and canal intersection, screened a diversion and removed in-stream barriers.

Yakima Tributary Access and Habitat Program - Early Action Projects

Ahtanum Diversion 13 Gravity to Pump Conversion, Yakima County

Diversion 13 start of electrical service to pump panel post

Diversion 13 pump panel post

Diversion 13 pump and example of pumpend screen in foreground

Yakima Tributary Access and Habitat Program - Early Action Projects

On-Farm Irrigation Efficiency, Kittitas County*

Installation of pipe.

Assembly of overhead irrigation.

Functional irrigation system.

*This project was initiated with Action Plan funding and continued into 2003, with BPA and NRSC EQIP funding. This project reduces or eliminates creek

MWH EAP Inventory, FY02
Funding

Revision: 1

Updated: 3/17/2003

MWH PO #	**Vendor**	**Amount**
P7010913-001	Hendrick Screen	$25,874.39

Inventory List

Line	Qty Ordered (Each)	Qty Installed	Qty Stored	Item	Unit Cost	Total Cost	Project	Location	Notes
1	6	6	-	Screen Panels	$2,156	$ 12,937	Cooke Creek Siphon	Installed at Cooke Creek	
2	6	0	6	Screen Panels	$2,156	$ 12,937	Currier Creek Siphon	Stored at Ellensburg Water Companies Yard	
Total						**$ 25,874**			

MWH PO #	P7010913-002
Vendor	Herke Rock
Total Cost	$21,412.40

Inventory List

Line	Qty (Tons)	Qty Installed	Qty Stored	Item	Unit Cost	Total Cost	Project	Location	Notes
1	640	0	640	36 to 48 Rock	$16	$ 10,381	Fines Creek	Herke Rock's Yard - 19320 Ahtanum Road - Yakima, WA - Contact - Steve Herke - 509 966-7625	FOB Quarry
2	56	0	56	36 to 3 Rock	$14	$ 757	Fines Creek		FOB Quarry
3	640	0	640	36 to 48 Rock	16.22	$ 10,381	Diversion 14		FOB Quarry
Total						**$ 21,518**			

MWH PO #	P7010913-003
Vendor	Spokane Culvert
Total Cost	$18,189.24

Inventory List

Line	Qty (Each)	Qty Installed	Qty Stored	Item	Unit Cost	Total Cost	Project	Location	Notes
1	1	1	-	103 X 71 CMP	$7,677	$ 7,677	Town Ditch at Cooke Creek	Installed	
2	1	0	1	112 X 75 CMP	$10,512	$ 10,512	Currier Creek	Stored at Currier Creek Project Site	
Total						**$ 18,189**			

MWH PO #	P7010913-004
Vendor	Valley Excavating
Total Cost	$16,664.00

Inventory List

Line	Qty (CY)	Qty Installed	Qty Stored	Item	Unit Cost	Total Cost	Project	Location	Notes
1	110	80	30	48 to 36 Rock	$15	$ 1,635	Cooke Creek	Valley Excavating's Quarry just west of Ellensburg - Contact Jim Pfeffer 509 925-2141	FOB Quarry
2	155	-	155	48 to 36 Rock	$15	$ 2,304	Currier Creek		FOB Quarry
3	20	-	20	48 to 36 Rock	$15	$ 300	Taylor @ Cabin Creek		FOB Quarry
4	20	-	20	48 to 36 Rock	$15	$ 300	Hernandez @ Coleman		FOB Quarry
5	215	-	215	48 to 36 Rock	$15	$ 3,196	Eslinger @ Parke		FOB Quarry
6	200	-	200	48 to 36 Rock	$15	$ 2,973	Rosbach @ Cooke		FOB Quarry
Subtotal	**720**	**80**	**640**						
7	140	140	-	36 to 3 Rock	$15	$ 2,081	Cooke Creek	Ellensburg	FOB Quarry
8	145	-	145	36 to 3 Rock	$15	$ 2,155	Currier Creek	Ellensburg	FOB Quarry
9	15	-	15	36 to 3 Rock	$15	$ 223	Taylor @ Cabin Creek	Ellensburg	FOB Quarry
10	20	-	20	36 to 3 Rock	$15	$ 297	Hernandez @ Coleman	Ellensburg	FOB Quarry
11	40	-	40	36 to 3 Rock	$15	$ 600	Eslinger @ Parke	Ellensburg	FOB Quarry
12	40	-	40	36 to 3 Rock	$15	$ 600	Rosbach @ Cooke	Ellensburg	FOB Quarry
Subtotal	**400**	**140**	**260**			**$ -**			
Total						**$ 16,664**			

MWH PO #	P7010913-005
Vendor	Hancor
Total Cost	$25,626.14

Inventory List

Line	Qty (LF)	Qty Installed	Qty Stored	Item	Unit Cost	Total Cost	Project	Location	Notes
1	120		120	8" Blue Seal HDPE Pipe	$ 2.16	$ 259	Hernandez @ Coleman	Stored in Ellensburg Water Company's Yard	
2			-	8" Blue Seal HDPE Pipe	$ 2.16	$ -	Diversion 14 @ Ahtanum		

3			-	8" Blue Seal HDPE Pipe	$ 2.16	$ -	Fines @ Hollow	
4			-	8" Blue Seal HDPE Pipe	$ 2.16	$ -	Rosbach @ Cooke	
5	20	20	-	12" Blue Seal Pipe			Towne Canal @ Cooke Creek	Stored in Ellensburg Water Company's Yard
6	160		160	15" Blue Seal HDPE Pipe	$ 5.68	$ 908		Stored in Ellensburg Water Company's Yard
7	280		280	24" Blue Seal HDPE Pipe	$ 11.35	$ 3,178	Diversion 14 @ Ahtanum	Stored in Ellensburg Water Company's Yard
8	360	360	-	30" Blue Seal HDPE Pipe	$ 17.30	$ 6,227	Cooke Creek Siphon	Installed
9	500		500	30" Blue Seal HDPE Pipe	$ 17.30	$ 8,648	Currier Creek Siphon	Stored in Ellensburg Water Company's Yard
10	82	82	-	36" Blue Seal HDPE Pipe	$ 21.40	$ 1,755	Cooke Creek Siphon	Installed
11	123		123	36" Blue Seal HDPE Pipe	$ 21.40	$ 2,633	Currier Creek Siphon	Stored in Ellensburg Water Company's Yard
12			-	36" Blue Seal HDPE Pipe	$ 21.40	$ -	Hernandez @ Coleman	
13			-	36" Blue Seal HDPE Pipe	$ 21.40		Rosbach @ Cooke	
14						$ -		
15						$ -		
Total						**$ 23,608**		

MWH PO #	P7010913-005
Vendor	Crown Controls
Total Cost	$9,212.64

Inventory List

Line	**Qty**			**Item**	**Unit Cost**	**Total Cost**	**Project**	**Location**	**Notes**
1	1			9" Parshall Flume	$990	$ 990	Taylor @ Cabin	Stored in Ellensburg Water Company's Yard	
1	1			9" Parshall Flume	$990	$ 990	Fines @ Wide Hollow		
2	1			12" Parshall Flume	$2,081	$ 2,081			Ordered but not specifie d
3	1			24" Parshall Flume	$ 2,576	$ 2,576	Eslinger @ Parke		
4	1			24" Parshall Flume	$ 2,576	$ 2,576	Diversion 14 @ Ahtanum		

Total						**$ 9,213**			
MWH PO #				P7010913-005					
Vendor				HD Flower					
Total Cost				$32,363.64					
Inventory List									
Line	**Qty**			**Item**	**Unit Cost**	**Total Cost**	**Project**	**Location**	**Notes**
1	1			30" magmeter	$16,182	$ 16,182	Town Siphon	Installed	
2	1			30" magmeter	$16,182	$ 16,182	Currier Siphon	Stored in Ellensburg Water Company's Yard	
Total						**$ 32,364**			