John Day Watershed Restoration Projects

Annual Report
2000 - 2001

DOE/BP-00004282-2

December 2002

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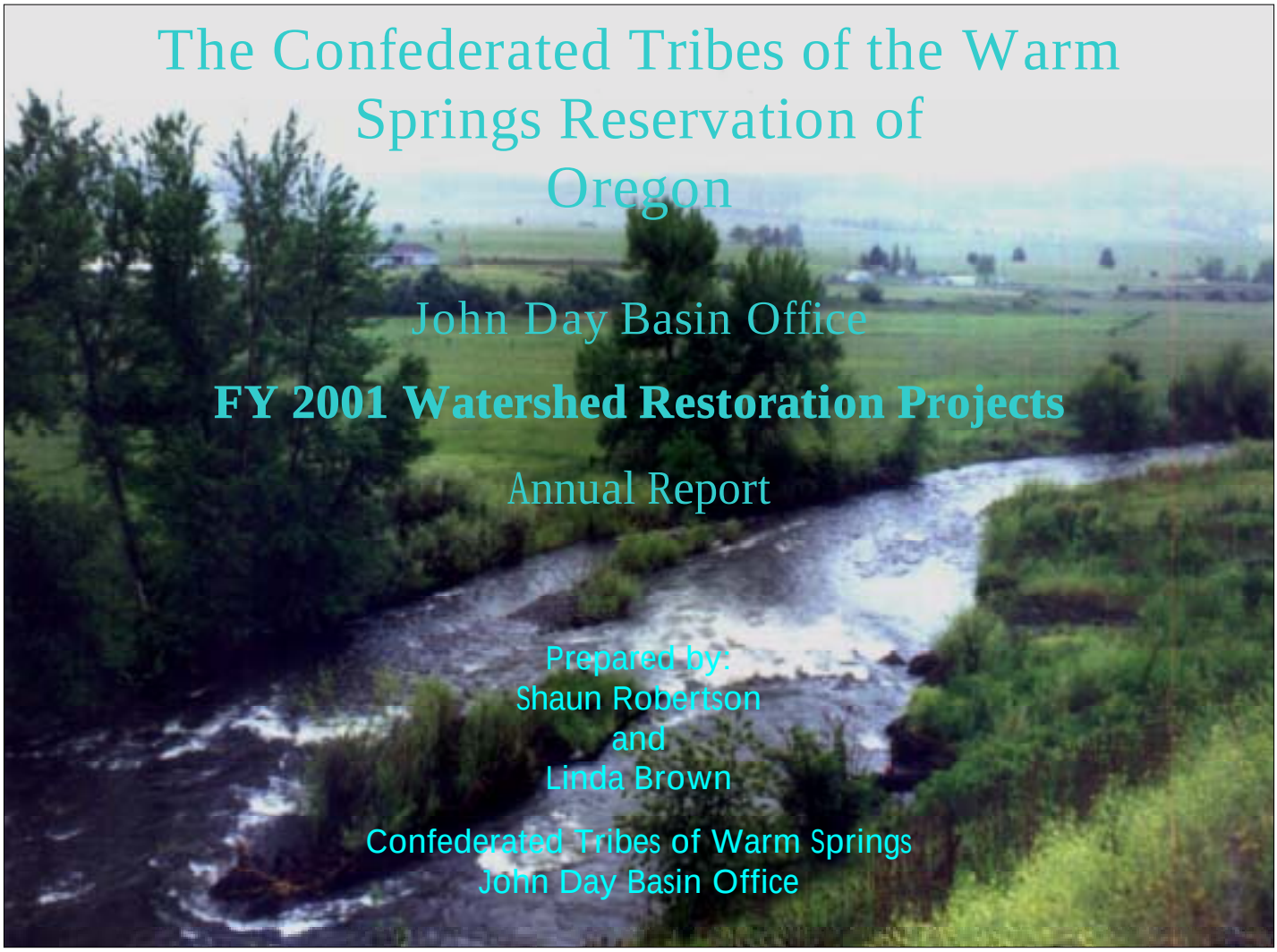

The Confederated Tribes of the Warm Springs Reservation of Oregon

John Day Basin Office

FY 2001 Watershed Restoration Projects

Annual Report

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Confederated Tribes of Warm Springs
John Day Basin Office

Prepared for:

U.S. Department of Energy
Bonneville Power Administration
Environment, Fish and Wildlife Division

Project Number: 98-018-00

Contract Number: 98BI-09782

10 December 2002

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Abstract

The John Day River is the nation's second longest free-flowing river in the contiguous United States, which is entirely unsupplemented for it's runs of anadromous fish. Located in eastern Oregon, the John Day Basin drains over 8,000 square miles, is Oregon's fourth largest drainage basin, and the basin incorporates portions of eleven counties. Originating in the Strawberry Mountains near Prairie City, the mainstem John Day River flows 284 miles in a northwesterly direction entering the Columbia River approximately four miles upstream of the John Day dam. With wild runs of spring Chinook salmon, summer steelhead, westslope cutthroat, and redband and bull trout, the John Day system is truly a basin with national significance.

The Majority of the John Day Basin was ceded to the Federal government in 1855 by the Confederated Tribes of the Warm Springs Reservation of Oregon (Tribes). In 1997, the Tribes established an office in John Day to coordinate basin restoration projects, monitoring, planning, and other watershed restoration activities on private and public lands. Once established, the John Day Basin Office (JDBO) formed a partnership with the Grant Soil and Water Conservation District (GSWCD), also located in John Day, who subcontracts the majority of the construction implementation activities for these restoration projects from the JDBO.

The GSWCD completes the landowner contact, preliminary planning, engineering design, permitting, construction contracting, and construction implementation phases of most projects. The JDBO completes the planning, grant solicitation/defense, environmental compliance, administrative contracting, monitoring, and reporting portion of the program. Most phases of project planning, implementation, and monitoring are coordinated with the private landowners and basin agencies, such as the Oregon Department of Fish and Wildlife and Oregon Water Resources Department.

In 2001, the JDBO and GSWCD continued their successful partnership between the two agencies and basin landowners to implement an additional ten (10) watershed conservation projects. The project types include permanent lay flat diversions, pump stations, and return-flow cooling systems.

Project costs in 2001 totaled $572,766.00 with$361,966.00 (67%) provided by the Bonneville Power Administration (BPA) and the remainder coming from other sources, such as the Bureau of Reclamation (BOR), Oregon Watershed Enhancement Board (OWEB), and individual landowners.

Figure 1. Upper John Day Basin Map

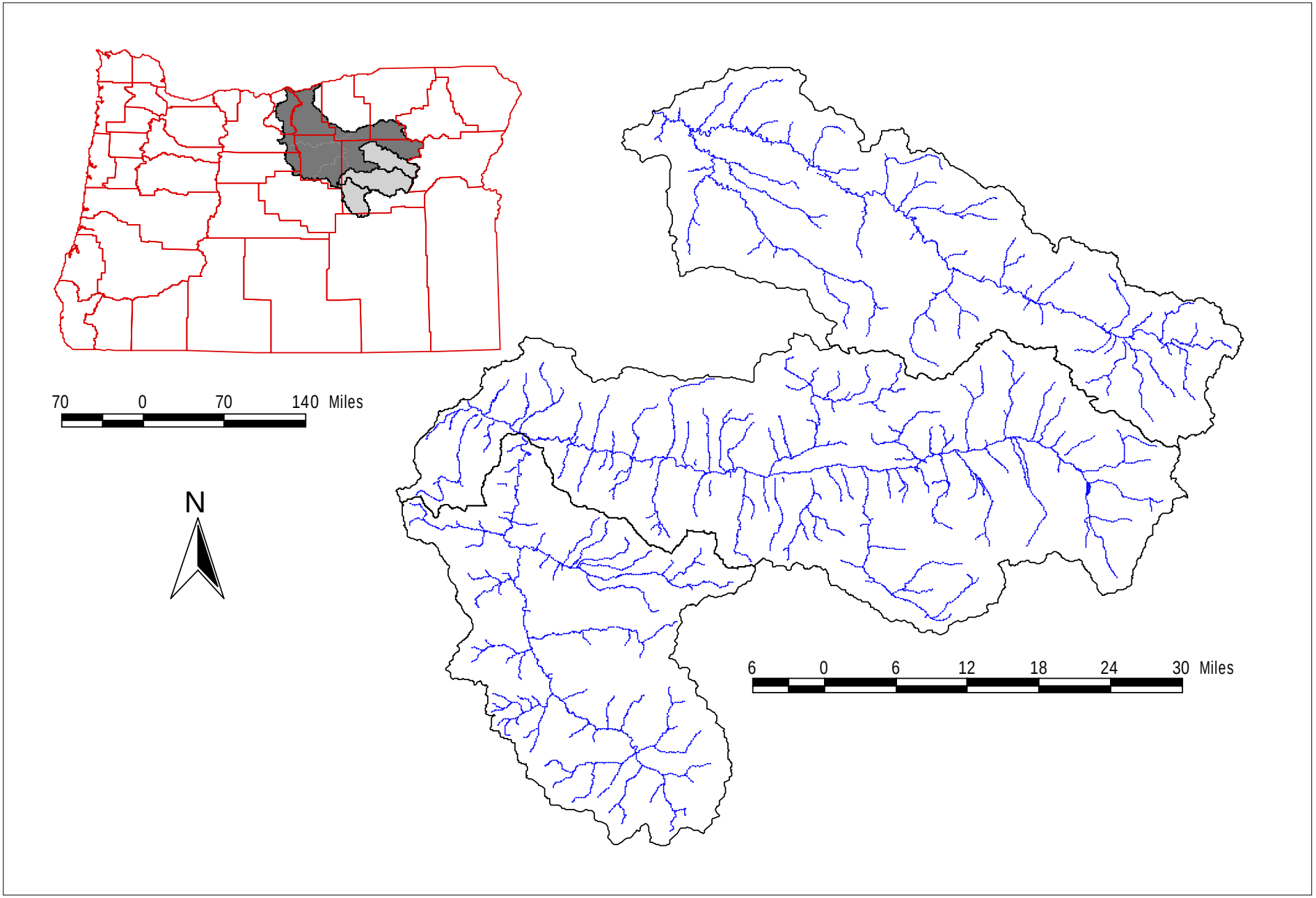


Figure 2. Upper Mainstem John Day River Project Location Map

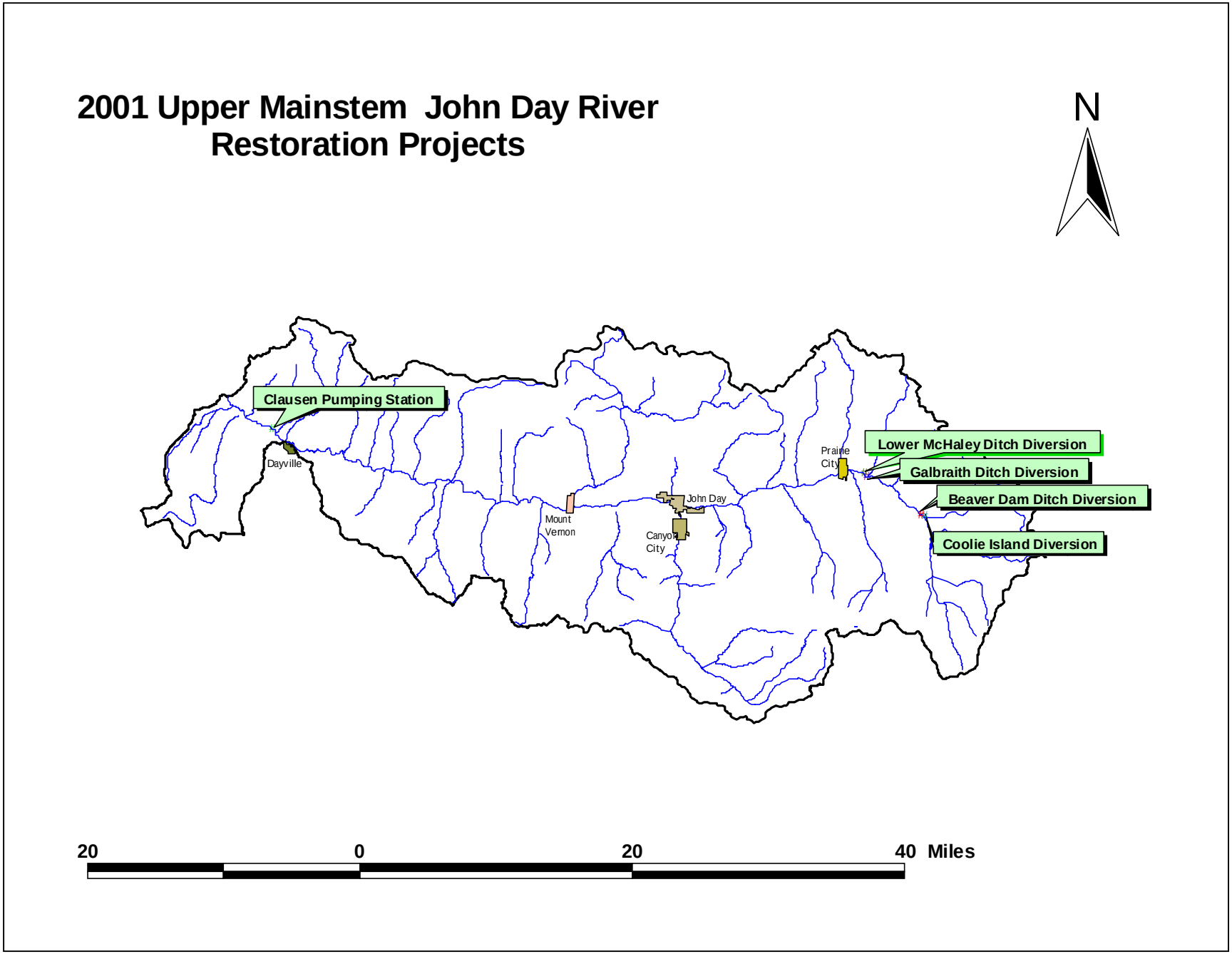
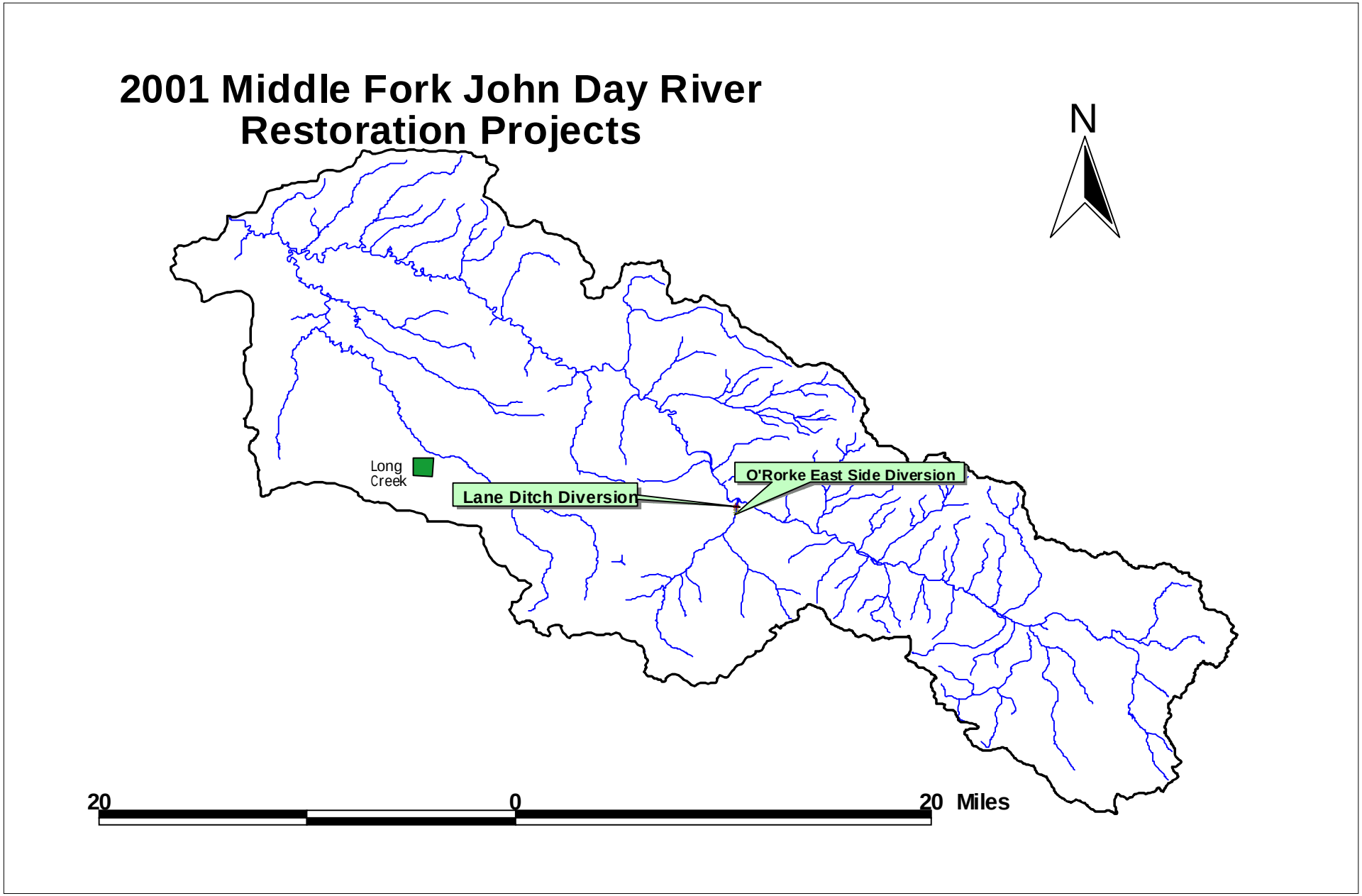


Figure 3. Middle Fork John Day River Project Location Map



Project Descriptions

PROJECT: BEAVER DAM DIVERSION

Photo 1. Pre-project photo of the Beaver Dam Diversion site at high flows

Project Background:

Irrigation water on the Riverside Ranch (Alan Jacobs, owner) historically has been diverted by a gravel and rock push-up diversion, which directed water through an open canal. Typically, this diversion type is reconstructed several times on an annual basis. The diversion is constructed using material generally excavated from the riverbed and surrounding stream channel. Commonly, materials such as boulders and concrete support the gravel and cobble structure while tin, plywood, or plastic/fabric cloth seal the upstream face of dam (*see* Appendix 1, Photo 14. Typical gravel push-up diversion). Structurally, these types of diversions can be extremely inefficient due to their physical construction and site location.

Photo 2. Beaver Dam Diversion Post-Construction

Commonly, the diversion is left in place following the end if the irrigation season. While in place, the diversions can become a partial to total barrier to migrating fish, depending upon river flow conditions, affecting both the up and downstream movement of subadult and the upstream movement of adult anadromous and resident fish. Subsequent spring high flows generally wash the diversions away (although on some low snow pack years they may not), necessitating reconstruction of the

dam the following irrigation season. In addition to the potential issues with fish passage, the process of diversion construction, which periodically requires use of heavy equipment in the river, may cause significant bank/streambed scouring and a gradual lowering of the riverbed.

Permanent, "lay-flat" stanchion diversions are promoted in the John Day basin as a replacement option for gravel push-up diversions. These structures consist of pre-cast concrete boxes that span the width of the stream, sheet-steel pilings to direct water flow and protect banks from erosion, and stanchions to allow for installation of flashboards to impound water (*see* Appendix 1, Typical Permanent Diversion Installation Photos). A fish-way notch provides for fish passage for all life-history stages at all instream flow levels and a headgate allows for accurate regulation of the water right to rate and duty (*see* Figure 9).

Project Objective: Improve water quality, fish habitat, and eliminate a fish passage barrier to anadromous and resident fish in the John Day River.

Project Description:

1. Input and analyze data collected under the 2000 monitoring plan for the project site.
2. Complete the engineering survey and design layout.
3. Replace annually installed push-up diversion with a permanent lay flat diversion.
4. Install PVC pipe to connect existing open irrigation conveyance system to new diversion.
5. Install a water use measuring device.
6. Rebuild fences removed during construction.
7. Plant grasses and hardwoods on both banks to increase rates of habitat recovery.

Project Monitoring:

Monitoring Objective: Evaluate improvement in water quality and rate of channel and riparian recovery.

Monitoring Completed: Permanent photo point locations have been installed and pre- and post-project photographs have been taken. Stream flows were recorded. Snorkel surveys where conducted prior to construction to determine number of juvenile salmonids present.

Project Cost:

Local Cost Share	1,565.00	(06%)
BPA Contribution	23,391.00	(94%)
TOTAL	$ 24,956.00	

Start Date: 1 May 2001 Completion Date: 1 August 2001

Figure 4. Beaver Dam diversion site & structure map

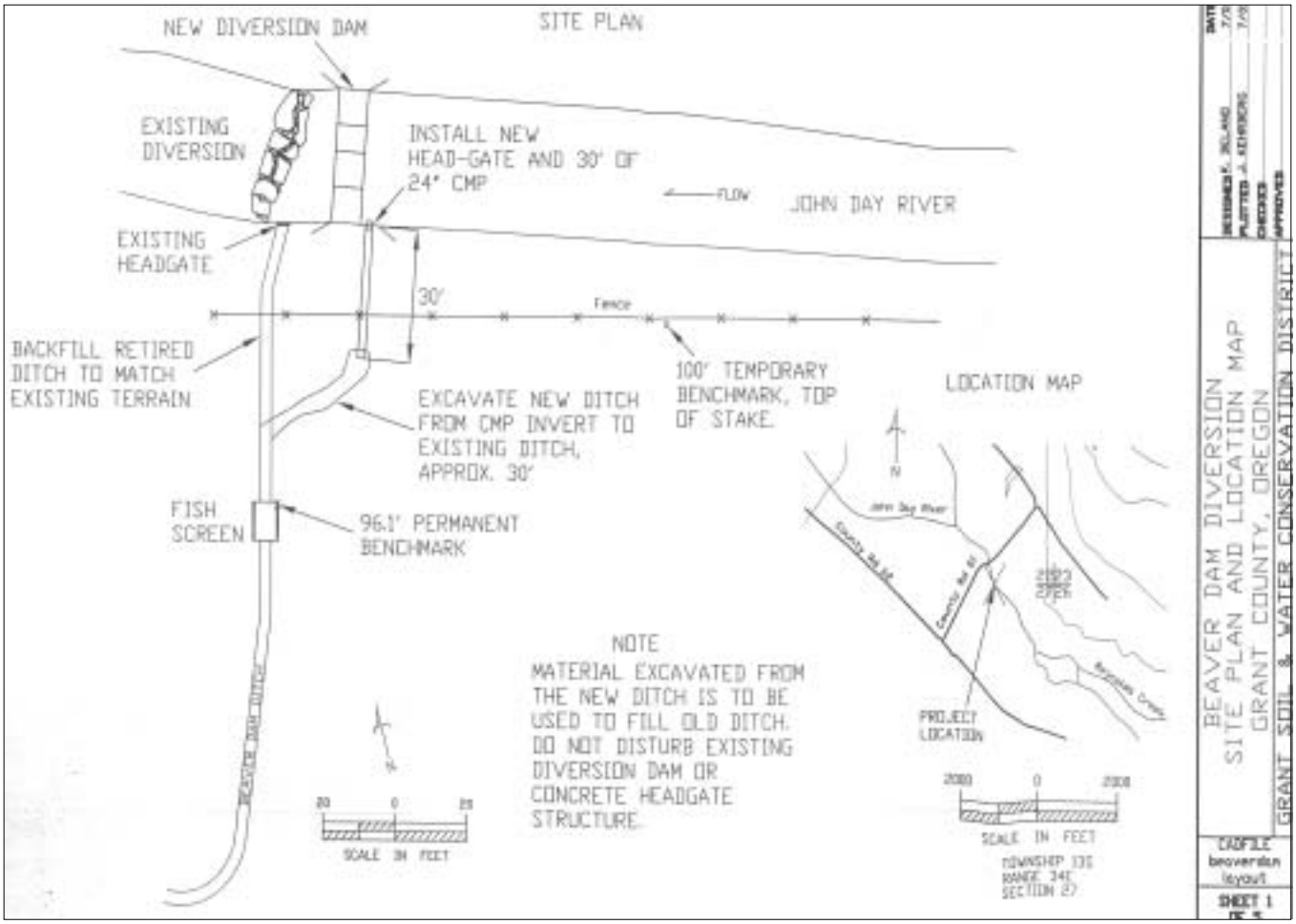


Photo 3. Pre-project photograph of Clausen pumping station

PROJECT: CLAUSEN PUMPING STATION

Project Background: Currently, water for irrigation is diverted using annually installed push-up structures. Typically, these types of diversions are reconstructed at least on an annual basis and frequently as river flows decline during the summer irrigation season. Materials used in the construction of the diversion are generally excavated from the riverbed and surrounding stream channel. Commonly, materials such as boulders and concrete support the gravel and cobble structure while tin, plywood, or plastic/fabric cloth seal the upstream face of dam (*see* Appendix 1, Photo 14. Typical gravel push-up diversion). Structurally, these types of diversions can be extremely inefficient due to their physical construction and site location. Commonly, the diversion is left in place following the end if the irrigation season. While in place, the diversions can become a partial to total barrier to migrating fish, depending upon river flow condition, affecting both the up- and downstream movement of subadult and the upstream movement of adult anadromous and resident fish. Subsequent spring high flows generally wash the diversions away (although on some low snow pack years they may not), necessitating reconstruction of the dam the following irrigation season. In addition to the potential issues with fish passage, the process of diversion construction, which periodically requires use of heavy equipment in the river, may cause significant bank/streambed scouring and a gradual lowering of the riverbed.

Photo 4. Post-construction photo,

To eliminate the use of the gravel push-up diversion, we replaced at rate and duty, the annually installed diversion with a pressure pump system. *(see*

Appendix 3*)* The point of diversion was relocated down stream approximately 2 ditch miles, closer to the point of application. A permanent pump station and sump with an approved fish screen and totalizing flow meter was installed at the new location. Approximately 2640 feet of buried PVC mainline pipe were installed to convey the water to the 44.5 acres of farmland that has been converted from flood irrigation to sprinkler irrigation. This pump station represents phase one in the project to retire the Throop Snyder Diversion and approximately 0.7 miles of inefficient open conveyance ditch. This diversion is a potential fish barrier and the landowners are anxious to replace it. Phase two is scheduled for implementation in 2002.

Project Objective: Replace annually installed diversion with a diversion system that employs a pressure pump system.

Project Description:

1. Install pre-project photopoints and collect baseline information consistent with the proposed 2000 Interim Monitoring Plan.
2. Complete the engineering survey and design layout.
3. Replace annually installed push-up diversions with pump station.
4. Install pump station with fish screen and totalizing flow meter.
5. Install buried PVC pipe to connect new pump station to the fields of use.
6. Retire the existing fish screen.
7. Convert 44.5 acres from flood to sprinkler irrigation by installing sprinkler wheel lines and conveyance mainlines.
8. Shape all construction spoils and disturbed ground, as appropriate, to reduce erosion and to promote rapid riparian vegetative recovery.
9. Rebuild the existing riparian exclusion fence, where necessary, around construction areas.
10. Plant grasses and hardwoods, as appropriate, to reduce erosion and increase the rate of vegetation recovery.
11. Monitor consistent with the proposed 2001 Interim Monitoring Plan.

Project Monitoring:

Monitoring Objective: Determine overall water use in new irrigation system (via consultation with the landowner and standard monitoring protocol).

Monitoring Completed: Permanent photopoints were installed and pre- and post-project photographs were taken. A permanent thermal-logger location has been established to monitor water temperatures in the area.

Project Cost:

Local Cost Share	58,756.00	(46%)
BPA Contribution	66,598.00	(54%)
TOTAL	$ 125,354.00	

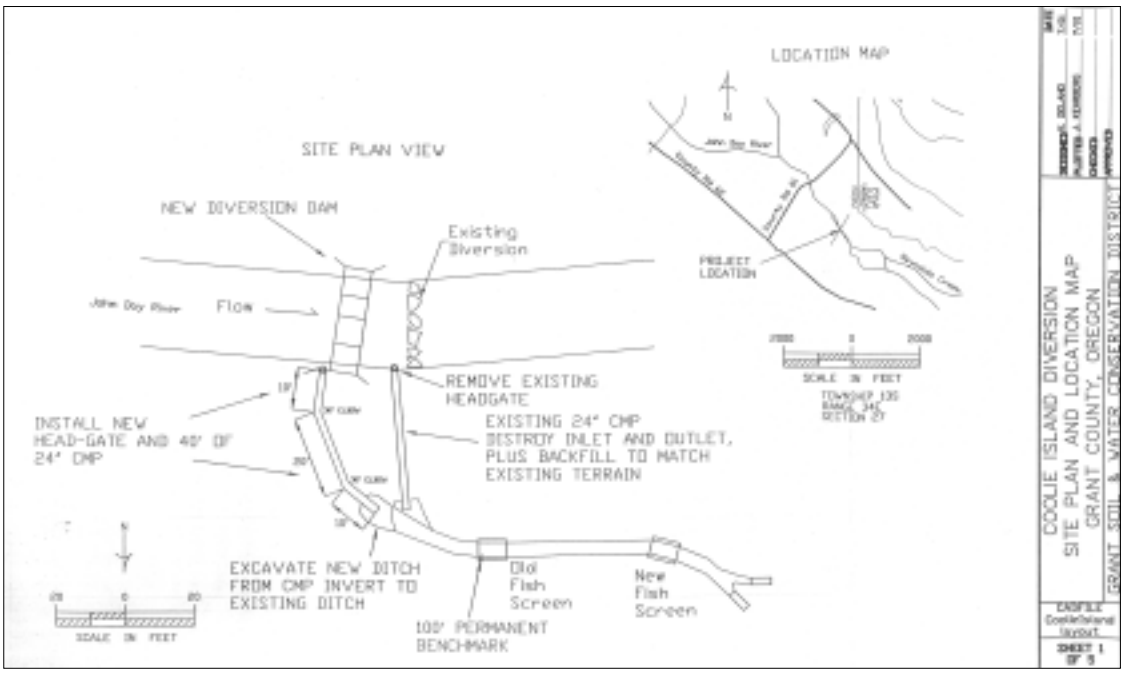
Start Date: 1 August 2001 Completion Date: 1 April 2002

PROJECT: COOLIE ISLAND DIVERSION

Project Background: The project involved the installation of a permanent lay-flat diversion to replace the temporary push-up diversion. Removing the push-up diversion allows unrestricted fish passage at all river levels, reduced sediment input, halts streambed/streambank degradation, and allows the aquatic and terrestrial system to recover. Typically, these types of diversions are reconstructed at least on an annual basis and frequently as river flows decline during the summer irrigation season. Materials used in the construction of the diversion are generally excavated from the riverbed and surrounding stream channel. Commonly, materials such as boulders and concrete support the gravel and cobble structure while tin, plywood, or plastic/fabric cloth seal the upstream face of dam (*see* Appendix 1, Photo 14. Typical gravel push-up diversion). Structurally, these types of diversions can be extremely inefficient due to their physical construction and site location. Commonly, the diversion is left in place following the end if the irrigation season. While in place, the diversions can become a partial to total barrier to migrating fish, depending upon river flow condition, affecting both the up- and downstream movement of subadult and the upstream movement of adult anadromous and resident fish. Subsequent spring high flows generally wash the diversions away (although on some low snow pack years they may not), necessitating reconstruction of the dam the following irrigation season. In addition to the potential issues with fish passage, the process of diversion construction, which periodically requires use of heavy equipment in the river, may cause significant bank/streambed scouring and a gradual lowering of the riverbed.

Photo 5. Coolie Island diversion, post-construction

Figure 5. Coolie Island Diversion, site location and design map



Project Objective: Improve water quality and fish habitat and eliminate a fish passage barrier to anadromous and resident fish in the John Day River.

Project Description:

1. Input and analyze data collected under the 2000 monitoring plan for the project site.
2. Complete the engineering survey and design layout.
3. Replace annually installed push-up diversion with a permanent lay-flat diversion.
4. Install measuring device.
5. Retire existing fish screen.
6. Rebuild fences removed during construction.
7. Plant grasses and hardwoods on both banks to increase rates of recovery.

Project Monitoring:

Monitoring Objective: Evaluate improvement in water quality and rate of channel and riparian recovery.

Monitoring Completed: Permanent photopoints were installed and pre- and post-project photographs were taken.

Project Cost:

Local Cost Share	1,405.00	(06.5%)
BPA Contribution	20,011.00	(93.5%)
TOTAL	$ 21,416.00	

Start Date: 1 June 2001 Completion Date: 1 August 2001

PROJECT: GALBRAITH DIVERSION (UPPER MCHALEY)

Photo 6. Lower McHaley diversion, pre-construction

Project Background: This project combines two separate diversions into one point of diversion for both irrigation ditches. Irrigation flows were previously diverted from the John Day River using two gravel push-up diversions.
Typically, these types of diversions are reconstructed at least on an annual basis and frequently as river flows decline during the summer irrigation season. Materials used in the construction of the diversion are generally excavated from the riverbed and surrounding stream channel. Commonly, materials such as boulders and concrete support the gravel and cobble structure while tin, plywood, or plastic/fabric cloth seal the upstream face of dam (*see* Appendix 1, Photo 14. Typical gravel push-up diversion). Structurally, these types of diversions can be extremely inefficient due to their physical construction and site location. Commonly, the diversion is left in place following the end if the irrigation season. While in place, the diversions can become a partial to total barrier to migrating fish, depending upon river flow condition, affecting both the up- and downstream movement of subadult and the upstream movement of adult anadromous and resident fish. Subsequent spring high flows generally wash the diversions away (although on some low snow pack years they may not), necessitating reconstruction of the dam the following irrigation season. In addition to the potential issues with fish passage, the process of diversion construction, which periodically

requires use of heavy equipment in the river, may cause significant bank/streambed scouring and a gradual lowering of the riverbed.

To combine the two diversions into one location the POD will be moved upstream approximately 200 feet from the upper diversion site to a more stabile location. The project will combine the upper and lower diversions into one diversion located at a new POD. To aid fish passage and improve river flow, a permanent lay-flat diversion was constructed. These structures consist of a concrete wall, with lay-flat stanchions. When not in use these diversions can be lowered for unrestricted fish passage. When in use the diversions allow more efficient headgate control and water measurement promotes legal rate and duty at all flow conditions. Maintenance is reduced and sediment input reduced with the use of these structures, as well as a reduction in streambank/streambed degradation. This allows for both aquatic and terrestrial recovery in the system.

Photo 7. Upper McHaley diversion, post-construction

At the Lower McHaley site approximately 40 feet of PVC pipe will be installed to connect the existing open conveyance system to the new diversion system and the POD will need to be moved to the new location. The existing fish screen was incorporated into the projects and a measuring device was installed for water use regulation at the new diversion site.

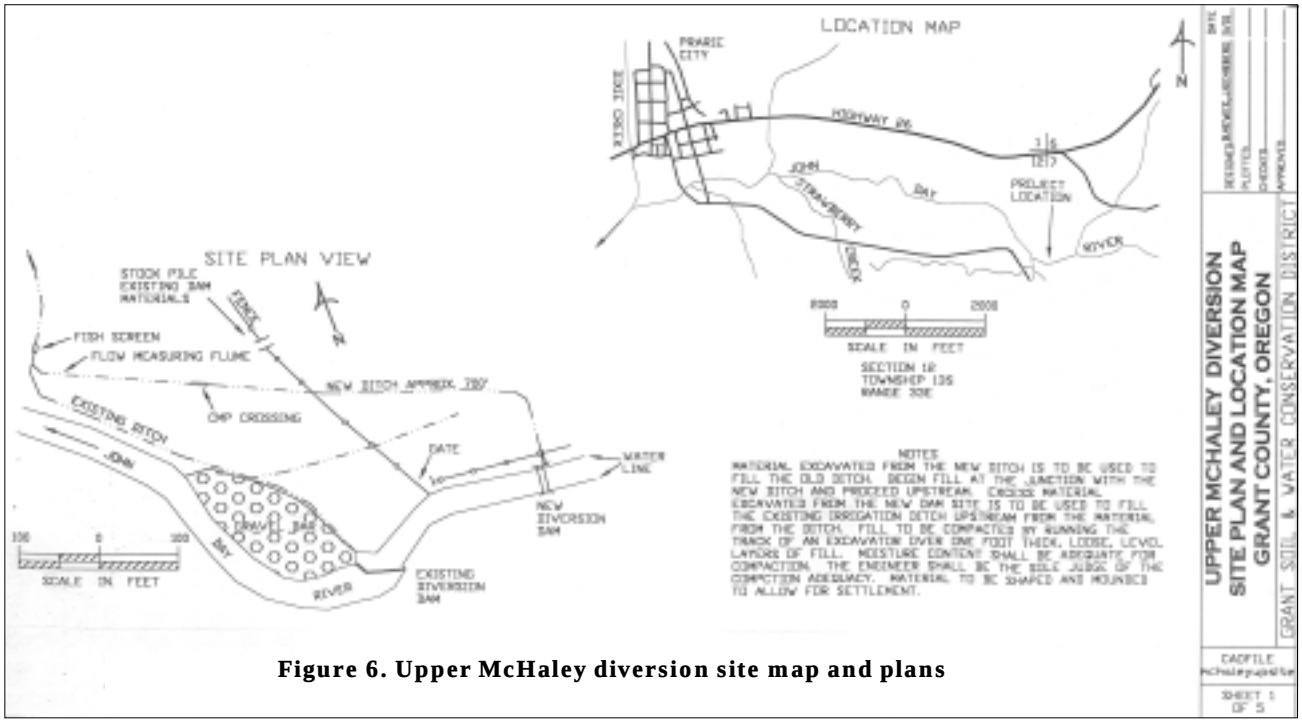


Figure 6. Upper McHaley diversion site map and plans

Project Objective: Construct a permanent diversion to facilitate fish passage and potentially improve stream flows by removing two inefficient diversion structures. Combine two diversion sites into one location with one POD.

Project Description:

1. Install pre-project photopoints and collect baseline information consistent with the proposed 2000 Interim Monitoring Plan.
2. Complete the engineering survey and design layout.
3. Replace two annually installed push-up diversions with one permanent lay-flat diversion.
4. Install measuring device.
5. Use existing fish screen.
6. Complete POD transfer to new location.
7. Rebuild the existing riparian exclusion fence, where necessary, around construction areas.
8. Plant grasses and hardwoods, as appropriate, to reduce erosion and increase the rate of vegetation recovery.
9. Monitor consistent with proposed 2000 Interim Monitoring Plan.

Project Monitoring:

Monitoring Objective: Determine overall water use in new irrigation system (via consultation with landowner and standard monitoring protocol). Evaluate improvement in water quality and rate of channel and riparian recovery.

Monitoring Completed: Permanent photopoints were installed and pre- and post-project photographs were taken. Production estimates where completed along with vegetation surveys and channel cross sections for the site. A permanent Thermal-logger site has been established near the new POD.

Project Cost:

Local Cost Share	2,640.00	(06%)
BPA Contribution	39,945.00	(94%)
TOTAL	$ 42,585.00	

Start Date: 1 May 2001 Completion Date: 1 August 2001

PROJECT: O'RORKE EAST SIDE DITCH INFILTRATION GALLERY

Project Background: An infiltration gallery to replace the temporary push-up diversion was installed on property owned by Charlie O'Rorke. The diversion is located on Camp Creek, which is a tributary of the Middle Fork John Day River. The point of diversion is on national forest land.

Typically, these types of diversions are reconstructed at least on an annual basis and frequently as river flows decline during the summer irrigation season. Materials used in the construction of the diversion are generally excavated from the riverbed and surrounding stream channel. Commonly, materials such as boulders and concrete support the gravel and cobble structure while tin, plywood, or plastic/fabric cloth seal the upstream face of dam (*see* Appendix 1, Photo 14. Typical gravel push-up diversion). Structurally, these types of diversions can be extremely inefficient due to their physical construction and site location. Commonly, the diversion is left in place following the end if the irrigation season. While in place, the diversions can become a partial to total barrier to migrating fish,

Photo 8. O'Rorke East Side infiltration gallery, pre-construction

Photo 9. O'Rorke East Side infiltration gallery, post-construction

depending upon river flow condition, affecting both the up- and downstream movement of subadult and the upstream movement of adult anadromous and resident fish. Subsequent spring high flows generally wash the diversions away (although on some low snow pack years they may not), necessitating reconstruction of the dam the following irrigation season. In addition to the potential issues with fish passage, the process of diversion construction, which periodically requires use of heavy equipment in the river, may cause significant bank/streambed scouring and a gradual lowering of the riverbed. Removing the push-up diversion allows unrestricted fish passage at all river levels, reduces sediment input, halts streambed/streambank degradation, and allows the aquatic and terrestrial systems to recover.

A complete infiltration gallery system consisting of a well screen collector, valve station and measuring device was install at the project site. The old fish screen for the diversion was retired. *(see* Appendix 2*)* The existing point of diversion was used for this project. Approximately 600 feet of buried PVC pipe was installed to connect the existing open irrigation conveyance system to the new diversion. A total of 0.6 CFS is to be diverted to serve 22.6 acres of pastureland.

Project Objective: Construct infiltration galleries to remove a fish passage impediment and potentially improve stream flows by removing an inefficient diversion structure.

Project Description:

1. Input and analyze data collected under the 2000 monitoring plan for the project site.
2. Complete the engineering survey and design layout.
3. Replace the annually installed push-up diversion with an infiltration gallery.
4. Install PVC pipe to connect existing open irrigation conveyance system to the new infiltration gallery.
5. Install measuring device.
6. Retire existing fish screen.
7. Rebuild fences removed during construction.
8. Plant grasses and hardwoods on both banks to increase rates of recovery.

Project Monitoring:

Monitoring Objective: Evaluate improvement in water quality and rate of channel and riparian recovery.

Monitoring Completed: Permanent photopoints were installed and pre- and post-project photographs were taken. Stream flows were recorded. Thermal loggers were installed near the site to monitor stream temperatures.

Project Cost:

Local Cost Share	1,371.00 (05%)
BPA Contribution	25,263.00 (95%)
TOTAL	$26, 634.00

Start Date: 1 May 2001 Completion Date: 1 November 2001

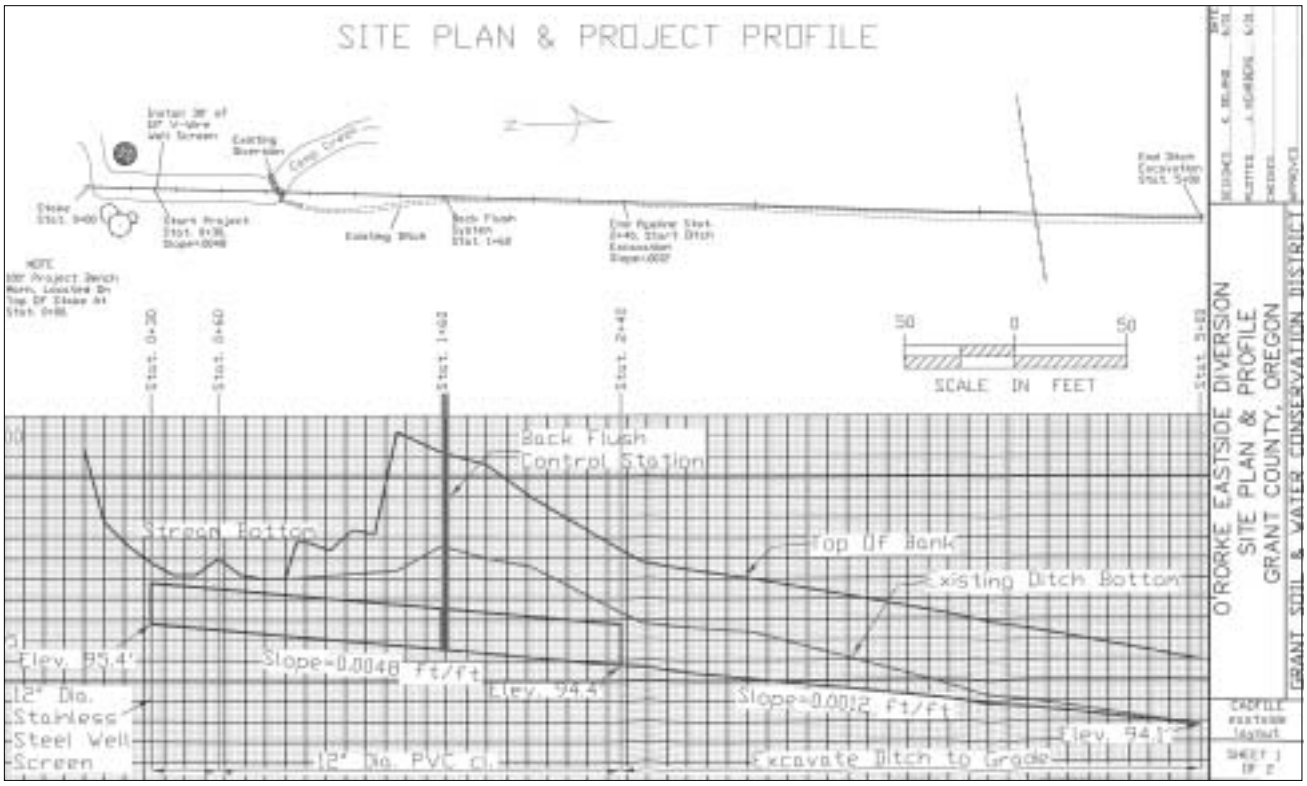


Figure 7. O'Rorke East Side infiltration gallery site map and plans

PROJECT: O'RORKE LANE DITCH INFILTRATION GALLERY

Project Background; An infiltration gallery to replace the temporary push-up diversion (*see O'Rorke East Side Infiltration Gallery for a description of a typical push-up diversion*) was installed on property owned by Charlie O'Rorke. The project is located near the O'Rorke East Side Ditch diversion on Camp Creek, a tributary to the Middle Fork of the John Day River and within the Blue Mountain Demonstration Area. Removing the push-up diversion allows unrestricted fish passage at all river levels, reduced sediment input, halts streambed/streambank degradation, and allows the aquatic and terrestrial system to recover. A complete infiltration gallery system consisting of a well screen collector, valve station and measuring device was installed. *(see* Appendix 2*)* The old fish screen for the project site was retired. The existing point of diversion was used for this project. Approximately 400 feet of buried PVC pipe was used to connect the existing open irrigation conveyance system to the new diversion. A total of 1.0 CFS is to be diverted to serve 39 acres.

Photo 10. O'Rorke Lane Infiltration Gallery Installation.

Project Objective: Construct infiltration gallery to remove a fish passage impediment, potentially improving stream flows by removing an inefficient diversion structures.

Project Description:

1. Input and analyze data collected under the 2000 monitoring plan for the project site.
2. Complete the engineering survey and design layout.
3. Replace annually installed push-up diversion with infiltration gallery.
4. Install PVC pipe to connect existing open irrigation conveyance system to new diversion.
5. Install measuring device.
6. Retire existing fish screen.
7. Rebuild fences removed during construction.
8. Plant grasses and hardwoods on both banks to increase rates of recovery.

Project Monitoring:

Monitoring Objective: Evaluate improvement in water quality and rate of channel and riparian recovery.

Monitoring Completed: Permanent photopoints were installed and pre- and post-project photographs were taken. Stream flows were recorded.

Project Cost:

Local Cost Share	1,573.00	(6%)
BPA Contribution	22,705.00	(94%)
TOTAL	$24,278.00	

Start Date: 1 May 2001 Completion Date: 1 November 2001

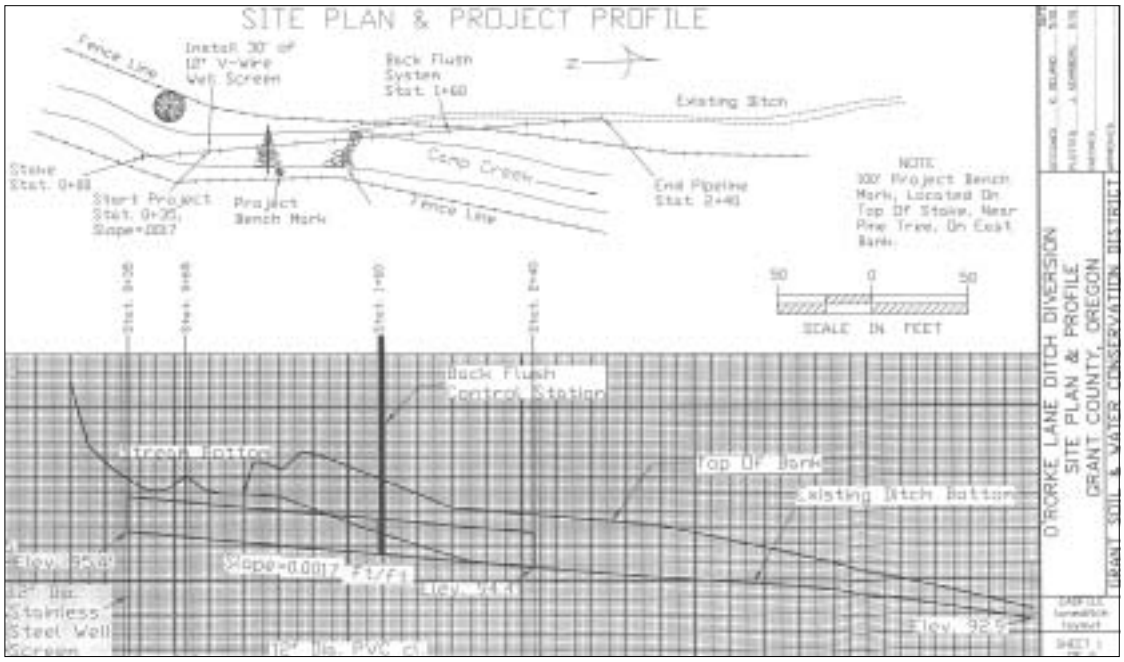


Figure 8. Plans for Infiltration Gallery at O'Rorke Lane Ditch.

PROJECT: 2001 MONITORING EFFORT

Project Background: A consensus water quality monitoring plan is being prepared for the John Day basin. In the interim, an annual plan is prepared which includes evaluations of competed, proposed, and planned restoration projects. Evaluating completed projects is critical to assessing the biological benefits of the project as well as for effective planning of future activities.

The monitoring program evaluates projects at varying levels. While each project is evaluated and monitored to a certain extent, some projects or project types receive a greater level of monitoring dependent upon factors such as level of activity, expected biological response, resource issues proposed to be addressed by the project, and representative nature of project to other project types. For example, a return flow cooling project may be monitored for water temperatures, while a permanent diversion may be monitored for riparian vegetation and stream channel condition.
At a minimum, each proposed project has a permanent photo point installed, pre- and post-project photopoints taken, and a GPS location marked on the GIS project location map. In addition, a representative sample of projects are monitored as follows:

1. Permanent diversions (and pump station projects) may be monitored for channel structure, riparian vegetation, and fish passage.
2. Return flow cooling projects may be monitored for water temperatures and river thermal profile.
3. Infiltration galleries are being monitored for water temperature and flow improvement, effects on aquatic populations including macroinvertebrates.
4. Other projects are monitored according to resource objectives and information needs.

Project Objective: Improve assessments of completed projects and evaluate to a sufficient level in order to assist with future planning efforts.

Project Description:
1. Amend or revise the 2000 annual monitoring plan to incorporate 2001 and 2002 projects as necessary.
2. Implement the monitoring plan.

3. Prepare annual monitoring and individual project monitoring assessment reports.

Project Monitoring:

Monitoring Objective: Varies by project.

Monitoring Completed:

1. Permanent photopoints were installed and pre- and post-project photographs were taken at the proposed project locations.

2. Riparian greenline transects and vegetation surveys were done at locations through out the basin.

3. Stream flows were recorded at project sites and gauging stations within the John Day Basin and data compared with historic records.

4. A mark-recapture study was conducted to evaluate gross movement patterns and passage over diversion structures at the following locations.

5. Collection of macroinvertebrate samples for classification and population estimates.

Photo 11. Permanent Transect Location along Middle Fork John Day River

6. Return Flow project sites were monitored for temperature and thermal profile.

7. Cross-sections were surveyed at sites within the basin including the following permanent transect sites.
   - ❖ Oxbow Ranch Reach #4 & #5
   - ❖ Middle Fork John Day River
   - ❖ St. Claire Ranch

8. Forty seven (47) thermal loggers were installed throughout the basin to evaluate stream temperatures, included in these were the 2001 project construction sites.

Project Cost:			
	Local Cost Share	6,618.00	(50%)
	BPA Contribution	6,724.00	(50%)
TOTAL		$ 13,342.00	

Start Date: June 2001 Completion Date: December 2001

Appendix 1

TYPICAL PERMANENT DIVERSION INSTALLATION PHOTOS

Photo 14. Typical gravel push-up diversion

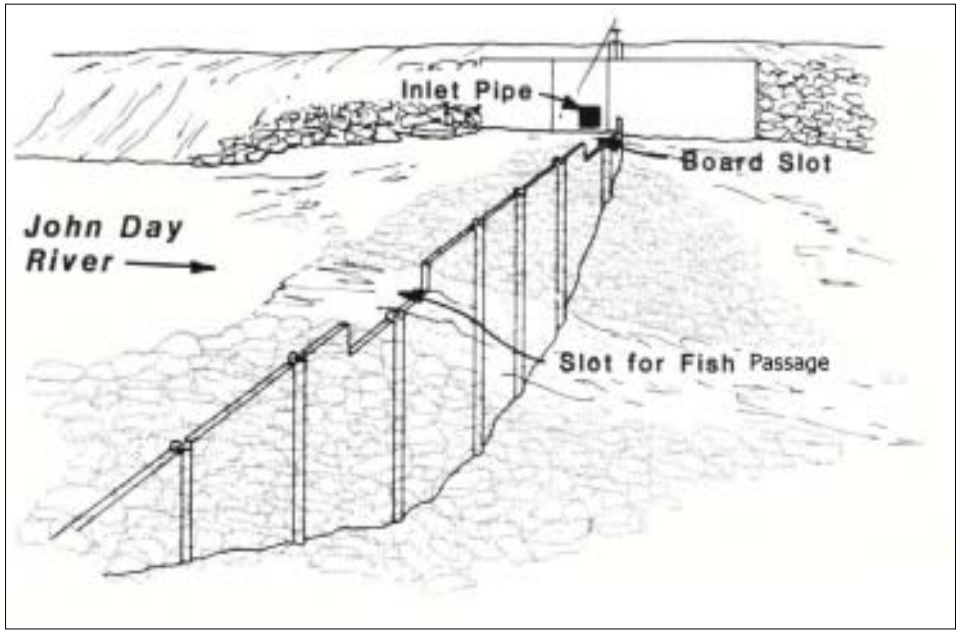


Figure 9. Typical permanent diversion design drawing

Photo 12. Installation of Pre-cast Sill Boxes

Photo 13. Filling Pre-cast Sill Boxes

Photo 15. Installation of sheet steel piling

Photo 18. Typical permanent diversion, layflat stanchions up, no flashboards

Photo 17. Typical permanent diversion with flashboards installed

Photo 16. Typical permanent diversion, flashboards not installed

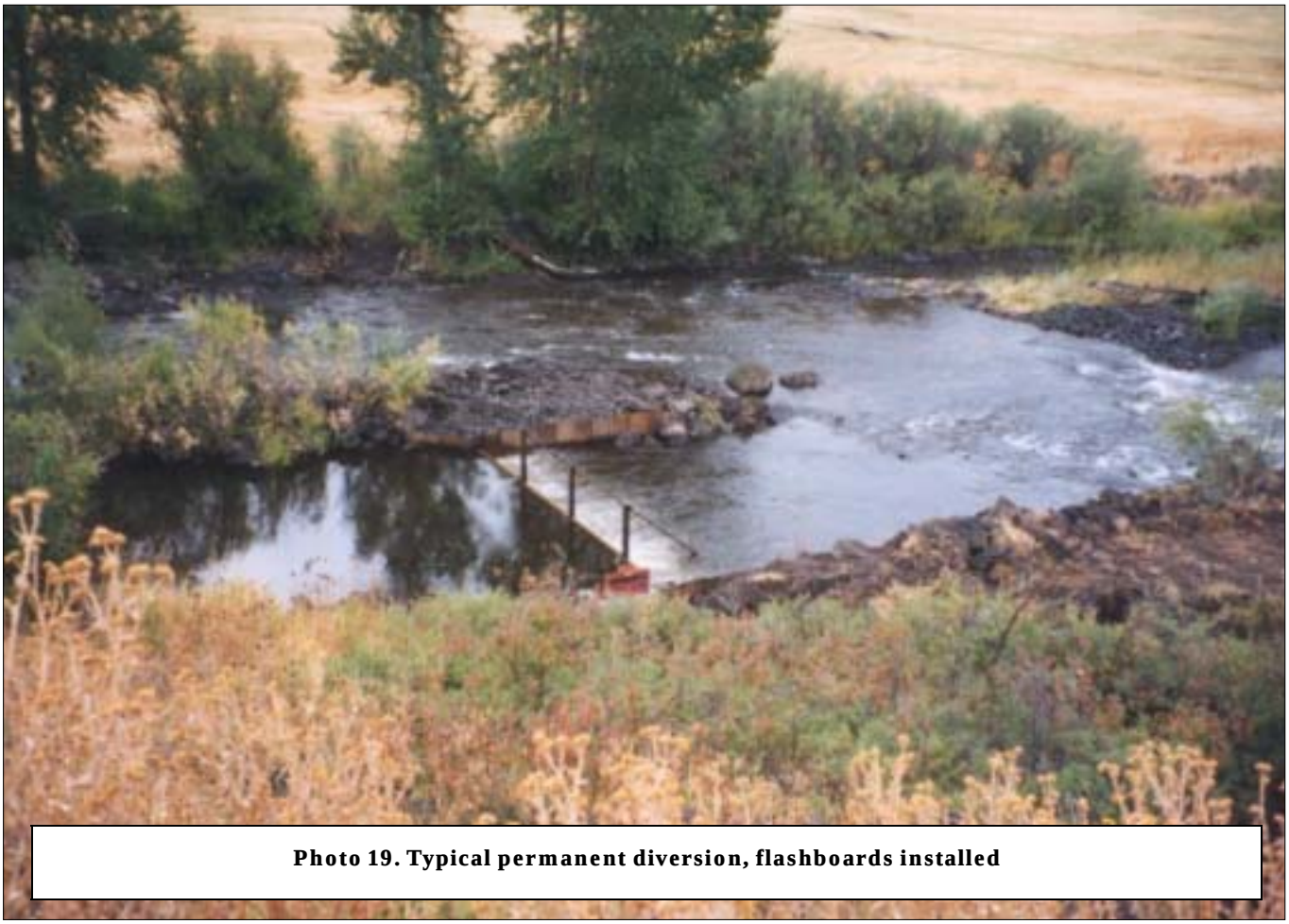


Photo 19. Typical permanent diversion, flashboards installed

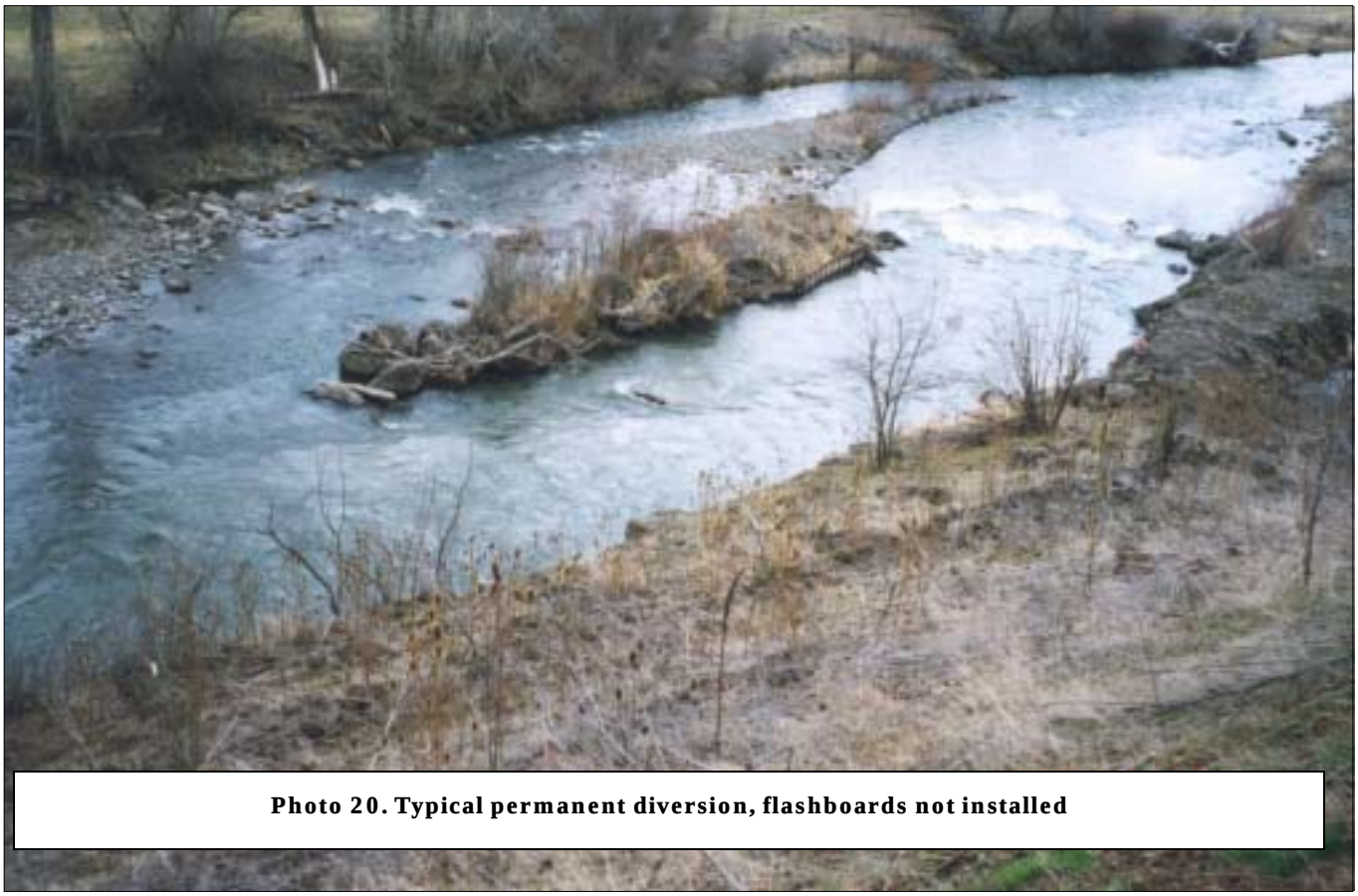


Photo 20. Typical permanent diversion, flashboards not installed

Appendix 2

TYPICAL INFILTRATION GALLERY INSTALLATION PHOTOS AND PLANS

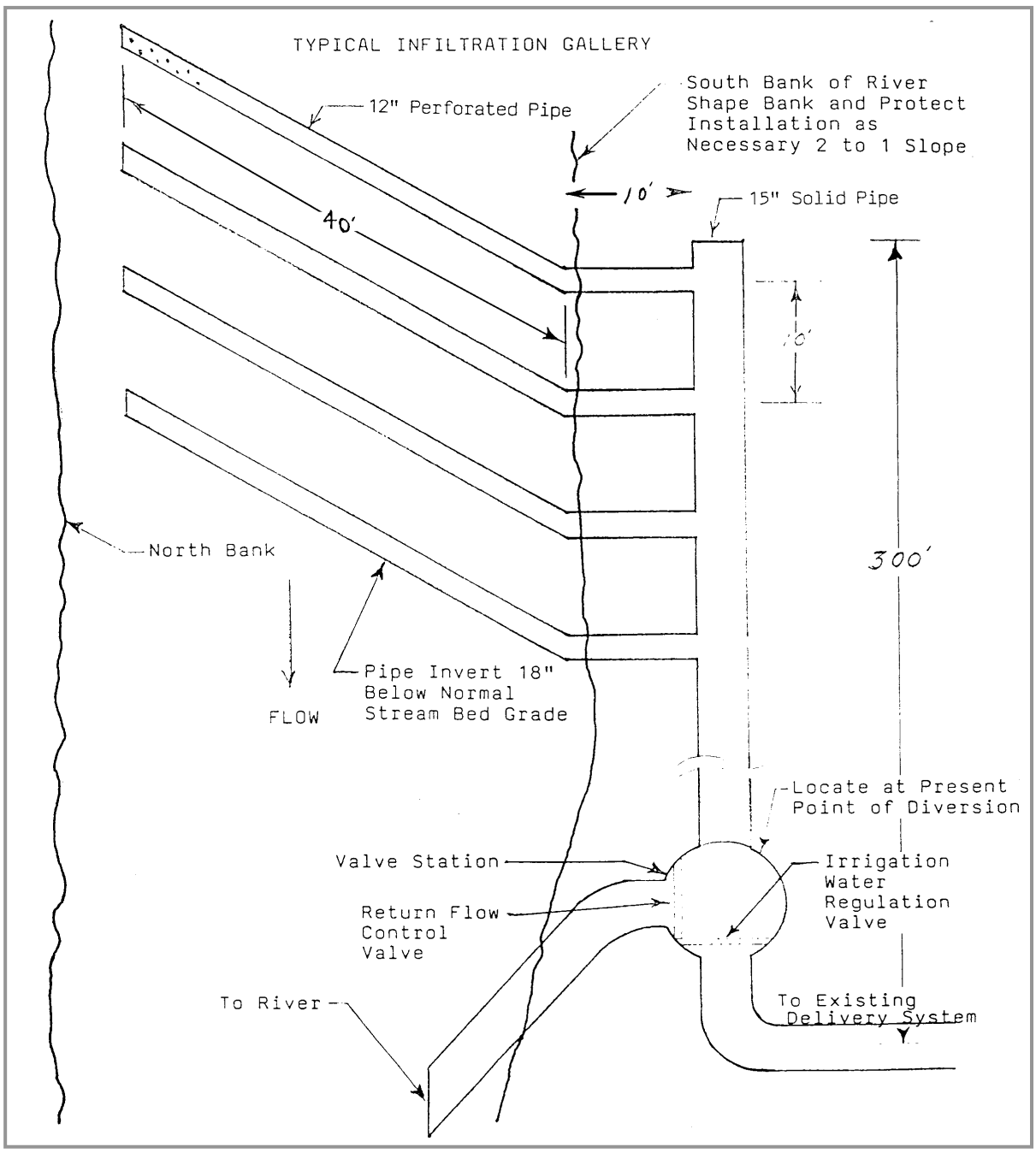


Figure 10. Typical Infiltration Gallery Plans.

Photo 21. Well Screen Collectors in Riverbed.

Photo 22. Well Screen Collectors attached to conveyance system.

Photo 23. Well Screen Collectors in Riverbed

Photo 24. Well Screen Collectors attached to Conveyance

Photo 25. Stream channel rock replaced to cover well screen collectors.

Photo 26. Finished Infiltration Gallery Location.

Appendix 3

TYPICAL PUMPING STATION PLANS AND PHOTOS

Photo 27. Typical Pump Station Setup

Photo 28. Turbine pumps and valves.

Photo 29. Suction Pipes from River to Pumps.

Figure 11. Pump Station Design Plans