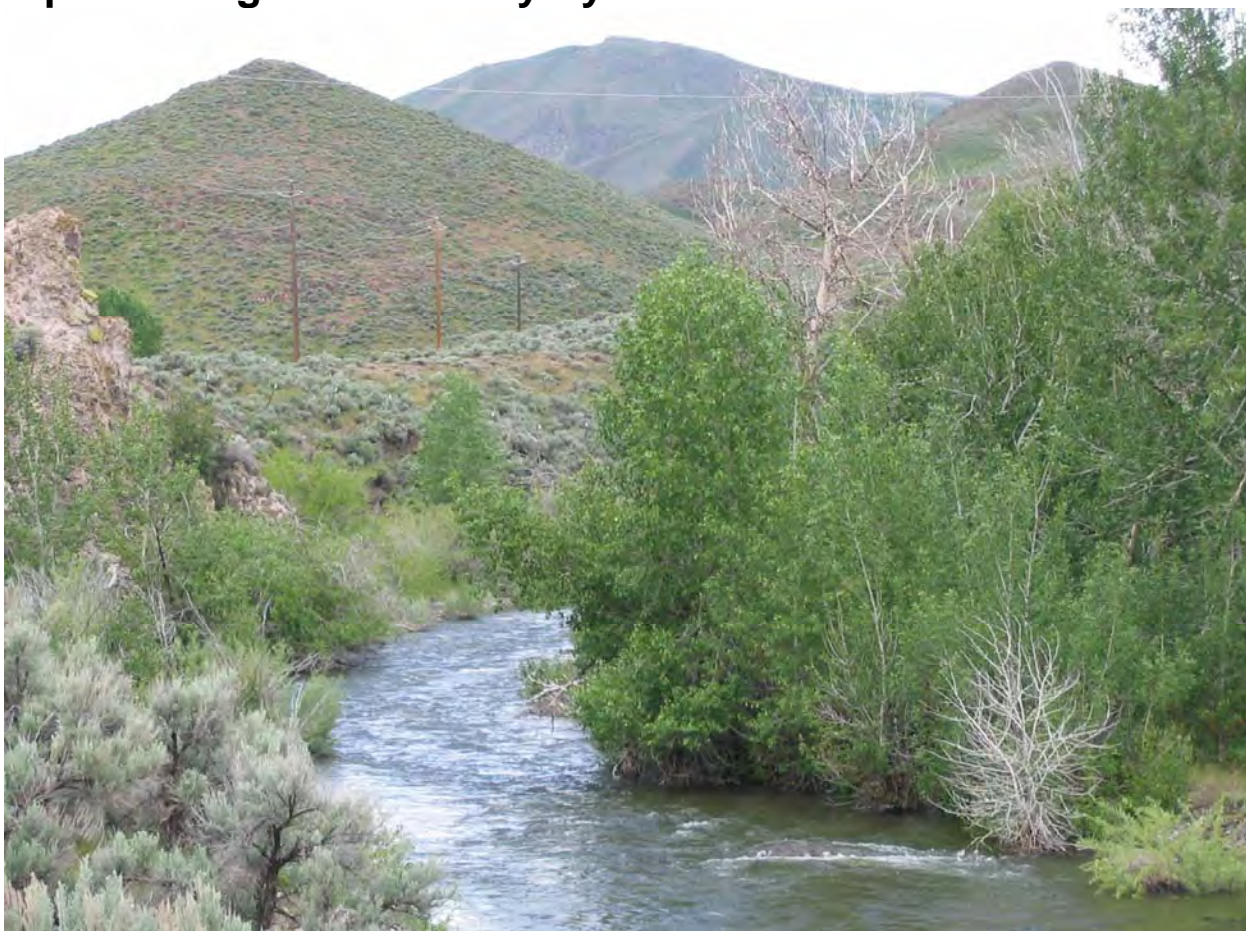


# RECLAMATION

*Managing Water in the West*

## **Draft Environmental Assessment for the Little Wood River Irrigation District Pressurized Pipeline Irrigation Delivery System**



U.S. Department of the Interior  
Bureau of Reclamation  
Pacific Northwest Region  
Snake River Area

March 2010

*The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to tribes.*

*The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.*

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# Acronyms and Abbreviations

|             |  |
|-------------|--|
| BLM         | U.S. Bureau of Land Management             |
| BPC         | Bonneville Pacific Corporation             |
| cfs         | cubic feet per second                      |
| DEQ         | Idaho Department of Environmental Quality  |
| DPS         | Distinct Population Segment                |
| EA          | environmental assessment                   |
| EIS         | environmental impact statement             |
| EPA         | U.S. Environmental Protection Agency       |
| FONSI       | Finding of No Significant Impact           |
| IDFG        | Idaho Department of Fish and Game          |
| IDWR        | Idaho Department of Water Resources        |
| kWh         | kilowatt-hours                             |
| LWRID       | Little Wood River Irrigation District      |
| NEPA        | National Environmental Policy Act          |
| NHPA        | National Historic Preservation Act of 1966 |
| NRCS        | Natural Resources Conservation Service     |
| NRHP        | National Register of Historic Places       |
| PEM         | palustrine emergent                        |
| PSS         | palustrine scrub-shrub                     |
| Reclamation | U.S. Bureau of Reclamation                 |
| RPW         | Relatively Permanent Water                 |
| SCI         | Soil Condition Index                       |
| SHPO        | State Historic Preservation Office         |
| SISL        | Surface Irrigation Soil Loss Model         |
| TMDL        | Total Daily Maximum Load                   |
| TNW         | Traditional Navigable Water                |
| USDA        | U.S. Department of Agriculture             |
| USACE       | U.S. Army Corps of Engineers               |
| USFWS       | U.S. Fish and Wildlife Service             |
| USGS        | U.S. Geological Survey                     |



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# 1.0 Introduction and Background

- Energy
- Cultural resources
- Cultural resources
- Environmental justice

## 1.1 General

This Environmental Assessment (EA) has been prepared for the U.S. Bureau of Reclamation (Reclamation) and the Little Wood River Irrigation District (LWRID) to address the environmental impacts of the construction and operation of a new proposed pressurized pipeline irrigation delivery system.

The National Environmental Policy Act (NEPA) of 1969 requires Reclamation to explore possible alternative approaches and the environmental effects that would be likely to occur as a result of this action. Two alternatives were evaluated and compared in this document: a No Action Alternative and the Proposed Action, Optimized System Upgrade Alternative. The potential impacts of each alternative were evaluated for the following resource areas:

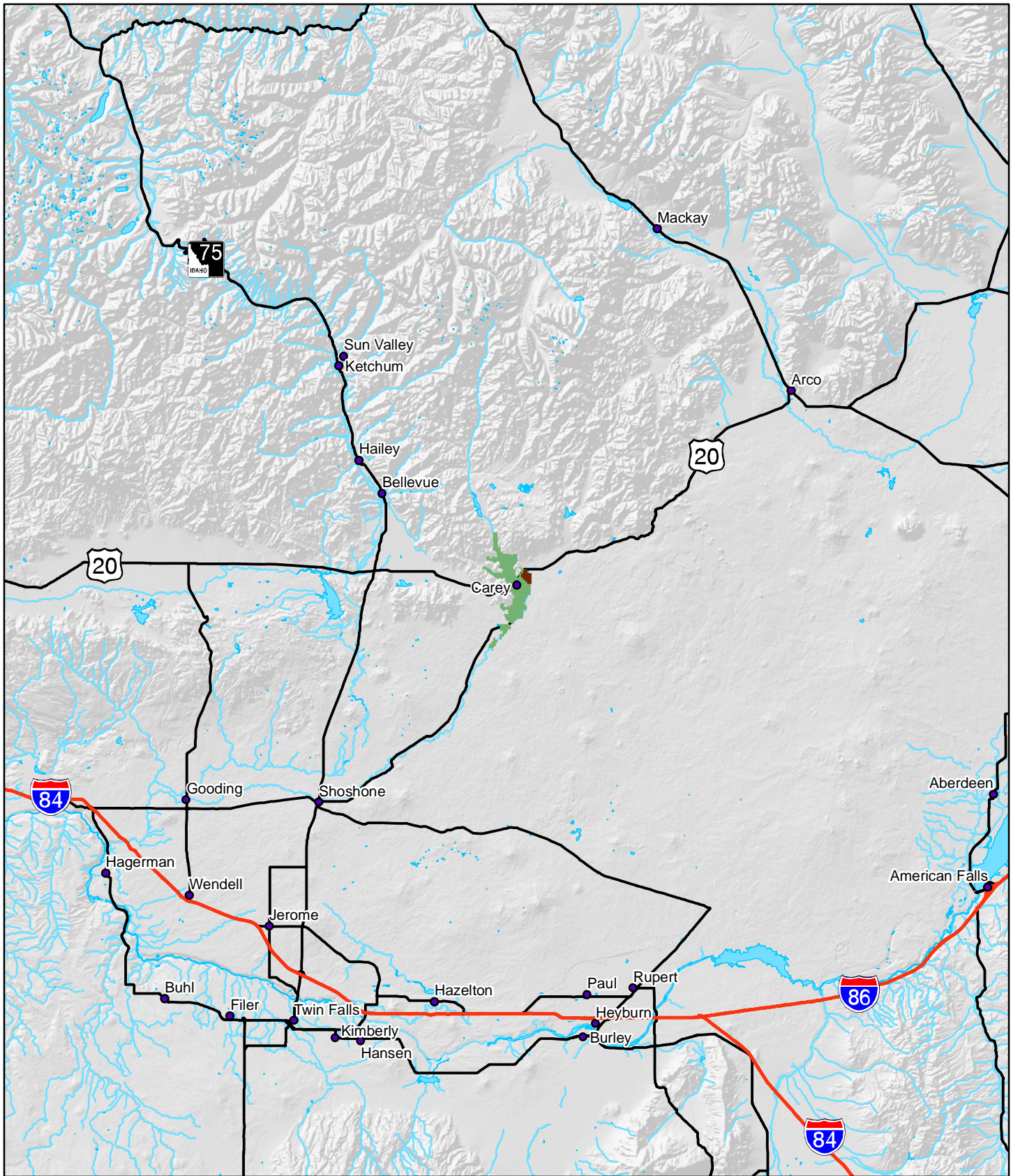
- Geology
- Noise
- Wild and Scenic Rivers
- Air Quality
- Soils
- Water resources
- Fisheries
- Vegetation
- Wildlife
- Federally protected species
- Wetlands
- Recreation
- Land use
- Visual resources
- Socioeconomics
- Transportation and traffic

## 1.2 Location

The Proposed Action extends throughout the service area of the LWRID, which generally encompasses the land from the Little Wood River Reservoir north of Carey, Idaho, to the confluence with the Little Wood River and Silver Creek to the south (see Figure 1, *Location Map*). The LWRID boundary encompasses approximately 10,678 acres. The project is located in Township 1 North, 1 South, and 2 South of Range 21 East of the Boise Meridian, including the city of Carey, Blaine County, Idaho.

## 1.3 Background

The Little Wood River Dam was initially constructed between 1936 and 1941. Dam reconstruction was completed in the 1950s to raise the height of the dam by 35 feet. The original construction was funded by the Works Progress Administration and the reconstruction was funded by a loan from Reclamation to LWRID. Reclamation owns the dam and part of the land associated with the reservoir, while the LWRID owns the remaining land in the reservoir area and holds the water rights for the water impounded by the dam. In 1984, a hydroelectric generation plant was constructed at the outlet of the dam. It is now owned by the LWRID. Prior to 1996, two entities were responsible for the operation and



- Rivers
- Lakes
- Highways
- Interstates
- LWRID Project Area
- Carey Lake WMA



Source: ESRI base data,  
INSIDE Idaho, NRCS, LWRID

**Figure 1**  
**Vicinity Map**  
*Little Wood River Irrigation District  
Pressurized Pipeline Irrigation  
Delivery System*

**CH2MHILL**

maintenance of the reservoir and the delivery system, LWRID and Little Wood Canal Company, respectively. In 1996, the LWRID and Little Wood Canal Company merged to form one combined entity under the name of the Little Wood River Irrigation District.

A series of studies have previously been conducted on the existing LWRID irrigation delivery system. A resource study of the existing canal and delivery ditch system was prepared by the Natural Resource Conservation Service (NRCS) in 1972. In 1981, EHM, Inc., prepared the original feasibility study for converting the existing open channel, gravity delivery system to a gravity pressurized pipeline distribution system. Funding for implementing the 1981 study was not available and no action was taken. An updated feasibility study on the economics of the 1981 study was prepared by J-U-B Engineers, Inc., in 1997. The project was awarded a \$500,000 Congressional appropriation in 2001 to prepare a detailed feasibility study. Because this was a Congressionally mandated action, NRCS determined that an Environmental Impact Statement (EIS) would be required based on the provisions of NEPA. A Final EIS was completed and published by NRCS in April 2004.

## **1.4 Proposed Action and Project Description**

LWRID proposes to replace the existing open channel canal irrigation delivery system to district members with a pressurized pipeline delivery system. CH2M HILL was contracted to plan and design a pressurized irrigation distribution system as proposed by LWRID. This process involved working with LWRID staff to evaluate the delivery needs of district farmers, identify system turnout locations,

and locate a pipeline alignment to provide an efficient network delivery system. The design that was prepared for the Proposed Action consists of constructing approximately 32 miles of new pipeline, a new headworks facility, two new pump stations, three farmed floodways totaling approximately 1.5 miles in length, pressurized connections at over 100 farm turnouts, and a dedicated turnout to Carey Lake (see Figure 2, *Proposed Action Map*).

The Proposed Action would provide irrigation service to approximately 10,678 acres within the LWRID boundary and be capable of delivering a peak flow rate of 7.0 gallons per minute per acre to the farm turnouts. The mainlines have been sized to convey a total of 180 cubic feet per second (cfs) of water during the irrigation season. The Proposed Action would provide for 6 cfs of flow to Carey Lake Wildlife Management Area during the irrigation season and 20 cfs, as needed, during the non-irrigation season. To reduce the impacts of flooding in the Little Wood River, the distribution system is sized to convey 180 cfs from the inlet screening structure to discharge points at abandoned gravel pits and the Little Wood River south of Carey. Preservation of the existing riparian vegetation in the upper reaches of the east and west canal would be accomplished by passing 15 to 30 cfs of water through the existing canals. Varying amounts of water would continue to be released into the Little Wood River from the existing diversion structure.

Recharging of the Carey water supply well would occur through seepage from the water released into the Little Wood River and east and west canals. The local fire department may, in cooperation with LWRID, ultimately install hydrants at specified locations to provide water for fire flow in the event of an emergency. The new pipe would have a minimum

depth of cover of 3 feet in non-farmed lands and 4 feet in farmed lands to prevent damage during and after potato harvest.

The Proposed Action presented in this EA differs from the recommendations of the previous feasibility studies and the preferred alternative identified in the Final EIS prepared by NRCS. Figure 3, *Pipe Route Comparison Map*, depicts the difference in the pipe alignment previously studied and the current pipe alignment design. The gravity pressurized pipeline contained in the NRCS Final EIS consisted of approximately 43 miles of pipeline and required 13 booster pumps. The Proposed Action consists of approximately 32 miles of pipeline, 2 pump stations, and 18 booster pumps, with the changes resulting from hydraulic modeling and optimization of the delivery system for reduction in cost and more efficient water delivery.

## 1.5 Purpose and Need

The purpose of the project is as follows:

- Maximize the conservation and use of available water for irrigation of cropland and municipal areas within the service district boundary.
- Conserve energy required to deliver the irrigation water.
- Continue to provide water to the upper end of the existing east and west canals to preserve riparian vegetation.
- Continue to recharge the aquifer.
- Provide water to Carey Lake Wildlife Management Area during the non-irrigation season.
- Facilitate improved fire protection.

The project is needed because water in the existing open channel canal delivery

system is being lost to seepage and evaporation, and energy requirements are elevated because of the large number of individual farm pumps required to irrigate the cropland.

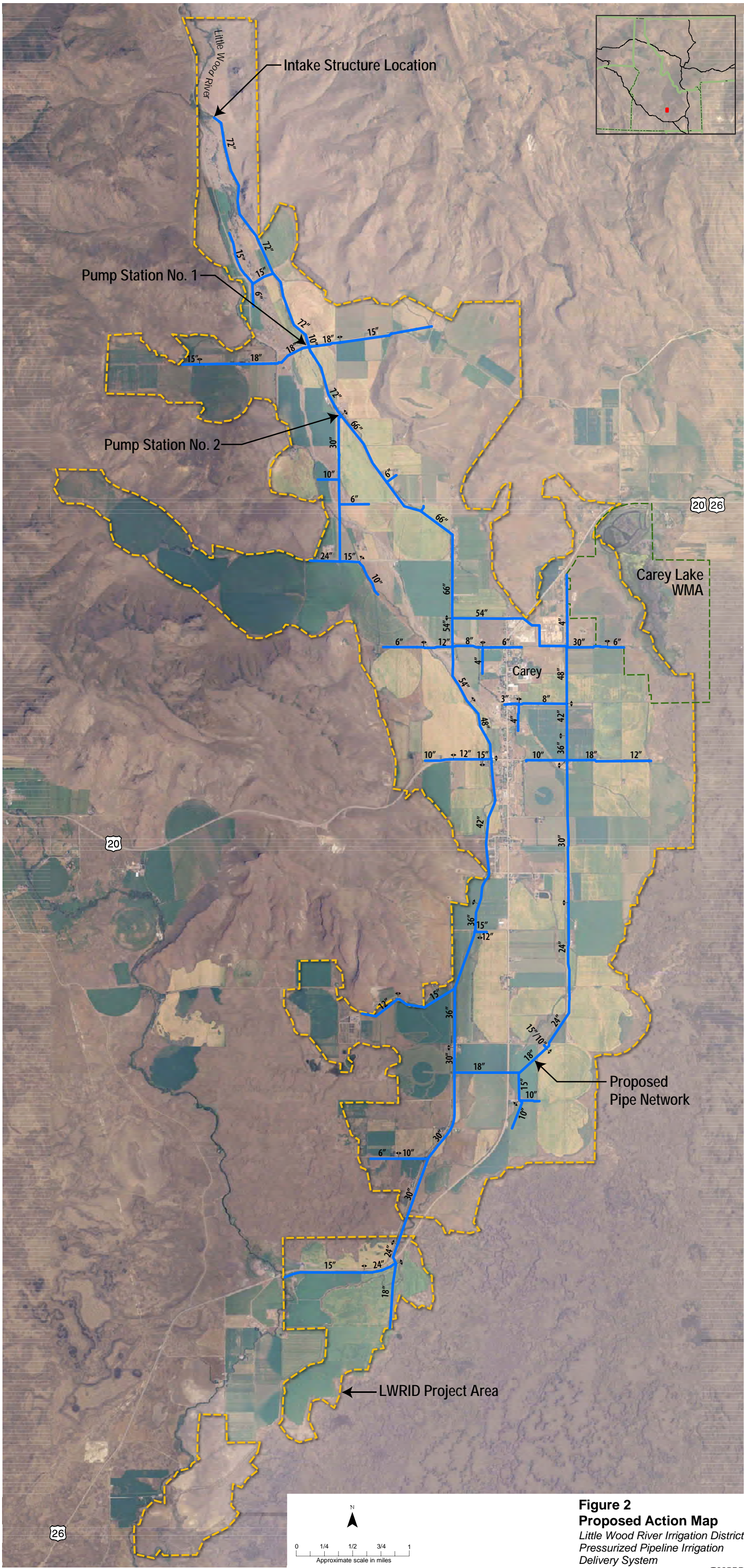
Implementing the Proposed Action would reduce the number of pumps required throughout the system on both a district and individual farm level, thereby reducing energy requirements.

Additionally, the proposed pipeline would reduce the amount of system water loss and improve the overall efficiency of the delivery system. If the Proposed Action were not implemented, the current water loss rates and energy requirements will continue at higher levels than can be sustained over the long term.

## 1.6 Public Involvement

The NEPA process is designed to involve the public in federal action decision making. Public involvement and intergovernmental coordination and consultation are recognized as essential elements in developing a NEPA document. Formal notification and opportunities for public participation, as well as informal coordination with government agencies and planners have occurred and will continue to occur throughout the EA process. Specifics on public involvement for this project are discussed in Chapter 4, *Consultation and Coordination*.



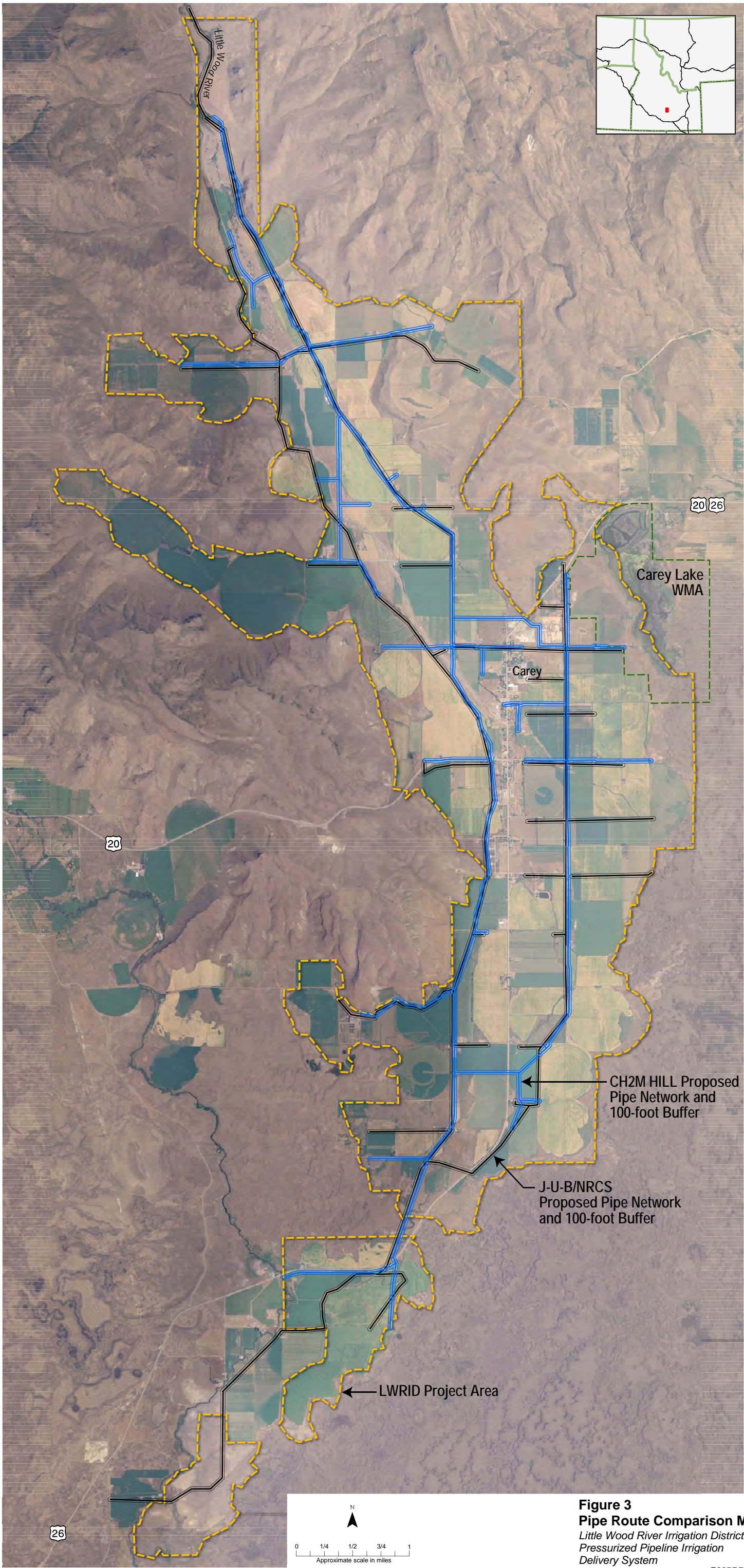


**Figure 2**  
**Proposed Action Map**  
Little Wood River Irrigation District  
Pressurized Pipeline Irrigation  
Delivery System









**Figure 3**  
**Pipe Route Comparison Map**  
*Little Wood River Irrigation District  
Pressurized Pipeline Irrigation  
Delivery System*





## 1.7 Permits

All project activities would occur on private land. Several local, state, and/or federal permits would be required for

construction. The LWRID will be responsible for securing them and payment of any related costs incurred. Table 1 shows the list of the potential required permits.

TABLE 1  
List of Permits Potentially Required for the Little Wood River Gravity Pressurized Pipeline Construction

| Permit Name                         | Issuing Agency                      | Work Description/Coverage   | Permit Expiration              | Responsible Party |
|-------------------------------------|-------------------------------------|---|--------------------------------|-------------------|
| <b>Local Permits</b>                |                                     |   |                                |                   |
| Street Excavation Permit            | City of Carey                       | Excavating within a City street   | ND                             | LWRID             |
| Street Repair and Excavation Permit | Blaine County Road and Bridge Dept. | To excavate, dig in, trench or otherwise disturb the surface or subsurface of any public street | ND                             | LWRID             |
| Encroachment Permit                 | Blaine County Road and Bridge Dept. | Installing pipes parallel to a County road  | 1 year                         | LWRID             |
|                                     |                                     | Installing pipeline across a County road  | 1 year                         | LWRID             |
|                                     |                                     | Installing pipeline through existing culvert  | 1 year                         | LWRID             |
|                                     |                                     | Attaching small-diameter pipeline to County bridges   | 1 year                         | LWRID             |
| Access/Approach Permit              | Blaine County Road and Bridge Dept. | Driveway access for pump stations   | 1 year                         | LWRID             |
| Conditional Use Permit              | Blaine County                       | Pipelines and structures in floodplains   | 2 year (may extend with Board) | LWRID             |
| Conditional Use Permit              | Blaine County                       | Pipelines and structures in wetlands  | 2 year (may extend with Board) | LWRID             |
| Stream Alteration Permit            | Blaine County                       | Stream alteration   | 1 year (may extend with Board) | LWRID             |

TABLE 1  
List of Permits Potentially Required for the Little Wood River Gravity Pressurized Pipeline Construction

| Permit Name   | Issuing Agency                             | Work Description/Coverage  | Permit Expiration | Responsible Party |
|---|--|--|-------------------|-------------------|
| <b>State Permits</b>  |  |  |                   |                   |
| Stream Alteration Permit  | Idaho Department of Water Resources        | Installing pipeline within or across a stream channel  | ND                | LWRID             |
| Water Quality Certification   | Idaho Department of Environmental Quality  | Construction activities that may impact water quality standards                              | ND                | LWRID             |
| Encroachment Permit   | Idaho Transportation Department            | Pipeline installation within state R/W   | ND                | LWRID             |
| <b>Federal Permits</b>  |  |  |                   |                   |
| Section 404 Clean Water Act Permit (including 401 water certification)      | U.S. Army Corps of Engineers               | Construction resulting in temporary and permanent impacts on wetlands and waters of the U.S. | ND                | LWRID             |
| Section 402 Clean Water Act Permit (including NPDES for construction sites) | U.S. Environmental Protection Agency (EPA) | Stormwater discharge prevention  | ND                | LWRID             |

ND = Not determined

## 2.0 Alternatives

### 2.1 General

This chapter presents the alternatives considered for improving the current irrigation delivery system within the LWRID service boundary and a summary of the potential environmental impacts associated with each of the alternatives. For this EA, two primary alternatives are presented: the No Action Alternative and the Optimized System Upgrade Alternative. Depending on funding availability, the LWRID may have to implement the Proposed Action in phases; however, it is assumed that the Proposed Action would be implemented in its entirety for the purpose of this report and comparison of the alternatives.

### 2.2 Description of the Proposed Action

The LWRID proposes to improve the existing method of irrigation delivery to its members. Currently, flow from the Little Wood River is diverted via a concrete dam structure into two open channel canals referred to as the East and West Canals. The current diversion structure allows varying amounts of water to flow into the canals and river channel. The East and West Canals convey the diverted water south through unimproved stone-lined channels that were excavated at the turn of the 20<sup>th</sup> century. Irrigation water is then withdrawn from these two primary canals or from a myriad of secondary canals at farm turnouts. The current open channel delivery system is comprised of approximately 36 miles of primary and

secondary canals. At a majority of the farm turnouts, the water is then pressurized by individual pumps for sprinkler irrigation. A small percentage of the turnouts provide water for flood farm irrigation systems.

The Proposed Action would entail constructing a new pressurized pipeline system to convey the water withdrawn from the Little Wood River to members of the LWRID at the existing turnout locations. This proposed system would allow for more efficient delivery in terms of system water loss and total energy requirements.

### 2.3 Courses of Action or Alternatives

The LWRID has the option of following two courses of action or alternatives that would meet the following needs of LWRID and its members:

- Continue operation of the existing irrigation delivery system (No Action Alternative).
- Construct a new delivery system for improved efficiency (Proposed Action).

The objectives of the alternatives and the basis of the Proposed Action are as follows:

- Conserve water.
- Conserve energy.
- Preserve riparian vegetation in upper ends of the East and West Canals.
- Provide year-round flow to the Carey Lake Wildlife Management Area.
- Continue to provide flow to the Little Wood River.

- Continue to recharge the aquifer.
- Reduce the impacts of flooding in the Little Wood River.
- Mitigate the impacts of flooding in the Little Wood River.
- Facilitate pressurized irrigation to farms and other LWRID members.
- Facilitate improved fire protection.

### 2.3.1 No Action Alternative

Under the No Action Alternative, it is assumed that the LWRID would continue use, operation, and maintenance of the existing open channel canal delivery system, with sprinkler irrigation pressure provided by pumps at individual farm turnouts. The No Action Alternative does not meet the stated objectives, but serves as a baseline against which the Proposed Action can be compared.

### 2.3.2 Proposed Action

The Proposed Action is to construct an optimized pressurized pipeline irrigation delivery system as depicted in Figure 2, *Proposed Action Map* in Chapter 1. The *Proposed Action Map* is based on the construction plans at 99 percent completion dated April 2005. The drawings were prepared by CH2M HILL for the LWRID. As part of the iterative design process, the system was continuously evaluated to provide an efficient layout in terms of required pipe diameter, pipe length, and size and location of pump stations while meeting the needs of the farms and other LWRID members. A new screened intake structure would be constructed in the East Canal downstream of the existing diversion structure to provide water withdrawal for the approximate 32 miles of proposed new pipeline. Table 2 provides a summary of

the pipe lengths by diameter for the proposed distribution system.

TABLE 2  
Distribution System Pipe Summary

| Pipe Diameter<br>(inches) | Total Pipe Length<br>(feet) |
|---------------------------|-----------------------------|
| 72                        | 15,576                      |
| 66                        | 11,728                      |
| 54                        | 10,627                      |
| 48                        | 5,504                       |
| 42                        | 8,574                       |
| 36                        | 8,011                       |
| 30                        | 25,334                      |
| 24                        | 10,913                      |
| 18                        | 17,577                      |
| 15                        | 18,595                      |
| 12                        | 6,732                       |
| 10                        | 10,353                      |
| 8                         | 4,087                       |
| 6                         | 10,115                      |
| 4                         | 5,895                       |
| 3                         | 689                         |

Flow measurement in the mainline of the pipe downstream from the new intake structure would be accomplished by constructing a flow meter structure. Two new pump stations would be constructed as part of the Proposed Action. One station, Pump Station 1, would be located on the north side of Little Wood Reservoir Road, approximately 0.3 mile east of Hunt Lane. Pump Station 1 would house two 200-horsepower pumps to pressurize one 10-inch-diameter lateral and two 18-inch-diameter laterals. The second pump station, Pump Station 2, would be located west of Little Wood Reservoir Road,

approximately 0.60 mile south of Barton Road. Pump Station 2 would contain two 150-horsepower pumps to pressurize one 30-inch-diameter lateral.

Installing the distribution pipe would require a temporary construction zone that would be a maximum of approximately 100 feet wide along the pipeline. This temporary construction work space could shift horizontally in relation to the pipe centerline to avoid existing roadways or environmentally sensitive areas. The actual trench width would vary between 3 and 15 feet depending on the pipe diameter and depth of installation. The remainder of the temporary work space would be needed for material staging, soil excavation stockpiles, and construction equipment. Pipe installation at some roadway crossings would be bored rather than installed in open trenches.

The existing canals would remain in place and not be altered with the exception of three locations that would be regraded and converted into farmable floodways to mitigate for the potential impacts of flooding. These floodways would be wide at the bottom with gently sloping sides as required to allow for cultivation. One farmable floodway totaling 2,233 linear feet would be constructed in the East Canal south of Little Wood Reservoir Road and approximately 0.3 mile east of Hunt Lane. A second floodway, totaling 2,392 linear feet, would be constructed along the East Canal south of the Little Wood Reservoir Road crossing located approximately 0.8 mile north of Dry Creek Road. The third farmable floodway, totaling 2,791 linear feet would be constructed along the Dry Creek/West Canal just west and south of the terminus of North Griffin Loop.

In addition to the items described in Section 1.4, the design meets the

objectives of the Proposed Action by conserving approximately 20,000 acre-feet of water per year and more than 4,000 horsepower. As much as 25 cfs of water would continue to be diverted to the West Canal and as much as 30 cfs would continue to flow past the new intake structure in the East Canal. The flow discharged into the Little Wood River at the existing diversion structure would be increased from the existing rates. Aquifer recharge would be achieved by seepage from water released into the East Canal, West Canal, and the Little Wood River channel. Recharge flows in the East Canal would be measured with a Parshall flume 150 feet downstream of the intake screening structure.

## **2.4 Alternatives Eliminated from Further Study**

The other alternative that was considered was the preferred alternative as published in the 2004 Final EIS by NRCS. This alternative was not fully developed in terms of construction plans and specifications, but would require more pipe and increased construction cost than the Proposed Action of this EA. Therefore, this NRCS-preferred alternative was not recommended for consideration as an alternative for evaluation in this EA.

## **2.5 Summary of Impacts**

Table 3 summarizes the impacts associated with the No Action Alternative and the Proposed Action. The information provides a brief description of the potential environmental consequences based on each of the resources identified for evaluation. This summary is based on the detailed information in Chapter 3 of

this EA. A list of environmental commitments that are part of the Proposed

Action is included in Appendix A, *Environmental Commitments*.

TABLE 3  
Summary of Potential Environmental Consequences under the Action Alternatives

| <b>Resources</b>            | <b>No Action Alternative <sup>a</sup></b>     | <b>Optimized System Upgrade Alternative<br/>(Proposed Action) <sup>a</sup></b>       | <b>Mitigation<br/>Required <sup>b</sup></b> |
|-----------------------------|---|--|---|
| Soils                       | Short-term: No impact<br>Long-term: No impact | Short-term: Minimal impact, if any<br>Long-term: No impact                           | Yes   |
| Water Resources             | Short-term: No impact<br>Long-term: No impact | Short-term: No impact<br>Long-term: Beneficial effect                                | Yes   |
| Fisheries                   | Short-term: No impact<br>Long-term: No impact | Short-term: No impact<br>Long-term: Beneficial effect                                | Yes   |
| Vegetation                  | Short-term: No impact<br>Long-term: No impact | Short-term: Minimal impact<br>Long-term: No impact to beneficial effect              | Yes   |
| Wildlife                    | Short-term: No impact<br>Long-term: No impact | Short-term: Minimal impact<br>Long-term: No impact to beneficial effect              | Yes   |
| Federally Protected Species | Short-term: No impact<br>Long-term: No impact | Short-term: No to minimal impact<br>Long-term: No impact to beneficial effect        | Yes   |
| Wetlands                    | Short-term: No impact<br>Long-term: No impact | Short-term: Minimal impact<br>Long-term: No impact to beneficial effect              | Yes   |
| Recreation                  | Short-term: No impact<br>Long-term: No impact | Short-term: Minimal impact, if any<br>Long-term: Minimal impact to beneficial effect | Yes   |
| Land Use                    | Short-term: No impact<br>Long-term: No impact | Short-term: Minimal impact<br>Long-term: Minimal impact to beneficial effect         | No  |
| Visual Resources            | Short-term: No impact<br>Long-term: No impact | Short-term: Minimal impact<br>Long-term: Minimal to no impact                        | No  |
| Socioeconomics              | Short-term: No impact<br>Long-term: No impact | Short-term: Beneficial effect<br>Long-term: Beneficial effect                        | No  |
| Transportation and Traffic  | Short-term: No impact<br>Long-term: No impact | Short-term: Minimal impact<br>Long-term: No impact                                   | Yes   |
| Energy                      | Short-term: No impact<br>Long-term: No impact | Short-term: No impact<br>Long-term: Beneficial effect                                | No  |
| Cultural Resources          | Short-term: No impact<br>Long-term: No impact | Short-term: Minimal impact<br>Long-term: Minimal impact                              | No  |
| Environmental Justice       | Short-term: No impact<br>Long-term: No impact | Short-term: No impact<br>Long-term: No impact  | No  |

<sup>a</sup> Short-term impacts are considered those that would occur for less than 1 year after constructing the proposed project. Long-term impacts are considered those that would occur for greater than 1 year after constructing the proposed project.

<sup>b</sup> See Environmental Commitments (Appendix A)



## 3.0 Affected Environment

### 3.1 Introduction

#### 3.1.1 Overview

Chapter 3 is organized by resource topic. This is not a comprehensive discussion of every resource topic within the study area, but rather focuses on those aspects of the environment that were identified as issues during scoping or may be affected by the alternatives. Resource topics analyzed in detail include soils, water resources, fisheries, vegetation, wildlife, federally protected species, wetlands, recreation, land use, visual resources, socioeconomics, transportation and traffic, energy, cultural resources, cultural resources, and environmental justice.

Within each resource area, the affected environment is addressed first and describes the current conditions for the resource in the study area. The potential impacts of the alternatives are described next within each resource topic in the environmental consequences section. Under the alternatives subheading, the specific impacts of each of the alternatives are discussed in terms of the actions that would occur and specific information about the potential impact. The depth of analysis of the alternatives corresponds to the scope and magnitude of the potential environmental impact. Overarching impact determinations for each resource area range from no impact to minimal impact (which is considered not significant), to having potentially beneficial effects. A summary of impacts for each alternative is provided in Chapter 2, Table 3.

#### 3.1.2 Resource Areas not Discussed in Detail

Preliminary analysis indicated that the new LWRID proposed gravity pressurized pipeline irrigation delivery system has no potential to affect certain resource areas or is anticipated to affect certain resources to such a limited extent that a detailed discussion of those areas is not justified. These resource areas are geology, noise, Wild and Scenic Rivers, and air quality. Because there is either no affect or very limited potential for affect, these resource areas would not influence the decision to be made regarding the Proposed Action and are not discussed in detail. The rationale for eliminating these resource areas from detailed discussion and further consideration is provided in the following sections.

##### 3.1.2.1 Geology

No impacts on geologic resources would occur; therefore geology will not be addressed further in this EA.

##### 3.1.2.2 Noise

A temporary increase in noise would occur during construction. This temporary, short-term impact would occur mostly in rural areas during daylight hours. The areas where the pipeline would be constructed is typically impacted by large machinery associated with farming and the additional temporary noise associated with construction is not expected to be a significant impact. Construction would be limited to daylight working hours (8 a.m. to 5 p.m.) in locations where sensitive receptors, such as residential areas, are located.

##### 3.1.2.3 Wild and Scenic Rivers

No Wild and Scenic Rivers occur within the project area. None could be potentially

affected by the Proposed Action; therefore this Wild and Scenic Rivers will not be addressed further in this EA.

#### **3.1.2.4 Air Quality**

There may be an increase in fugitive dust during construction. Mitigative measures such as application of water to bare dirt areas during construction would be used to reduce any potential impacts.

## 3.2 Soils

This section addresses the affected environment and environmental consequences of the proposed project on soil. Prime Farmland, Farmland of Statewide Importance, and soil erosion and sedimentation are the main issues addressed for soil resources.

### 3.2.1 Affected Environment

#### 3.2.1.1 Overview

The *General Soils Map* (Figure 4) gives a broad overview of the soils within the project area. A soil association is a landscape that has a distinct proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil and is named for the major soils. Soils in one association may occur in another, but in a different pattern.

Soils in the project area developed primarily in water-deposited material on stream terraces and fan terraces along the Little Wood River. A small area in the southern part of the project area is influenced by recent lava flows that have soils formed from basalt bedrock being weathered (NRCS and LWRID, 2004).

Five different soil-mapping units are present within the project area occurring on three landforms. The three landform associations are “stream and river terraces” (Little Wood-Balaam-Adamson and Carey Lake-Bringmee map units), “lava flows” (McCarey-Justesen-Lava Flows map unit), and “fan terraces” (Justesen-Molyneux-Peevywell map unit). The remaining soil map unit is “water.”

#### 3.2.1.2 Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the United

States Department of Agriculture (USDA). It is of major importance in meeting the nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the USDA recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our nation’s prime farmland.

A recent trend in land use in the project area is the loss of prime farmland to other uses, mainly urban/residential. This typically puts pressure for agricultural uses on marginal lands that generally are more erodible, droughty, less productive, and difficult to cultivate.

Nearly all of the 10,800 acres of cropland in the project area are designated as prime farmland or statewide important farmland. Some of the units meet the requirements only if an adequate and dependable supply of irrigation water is available. Urban or built-up areas of the soils listed are not considered prime farmland. This does not constitute a recommendation for a particular land use.

#### 3.2.1.3 Farmland (Soils) of Statewide Importance

This is land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. Criteria for defining and delineating this land are to be determined by the appropriate state agency or agencies. Generally, farmlands (soils) of statewide importance include those that are nearly prime farmland and that produce high economic yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable. Approximately 2,362 acres of

Farmland Soils of Statewide Importance exist in the project area.

#### **3.2.1.4 Soil Erosion and Sedimentation—Sheet and Rill, Gully, Irrigation-Induced Erosion**

Sheet and rill erosion was evaluated using the Revised Universal Soil Loss Equation. Erosion rates from the current agronomic program are estimated at less than 1 ton per acre per year. Sustainable erosion rates are 5 tons per acre per year (NRCS and LWRID, 2004).

Irrigation induced erosion was evaluated using the Surface Irrigation Soil Loss Model (SISL) to determine erosion and sediment generated from irrigated cropland. The results of the SISL analysis showed an estimated average annual soil loss of less than 1 ton per acre year (NRCS and LWRID, 2004).

There is no gully erosion on cropland within the project area.

The effects of the current agronomic program were evaluated to determine if it has an overall positive or negative effect on soil condition. The Soil Condition Index (SCI) was used to make this determination. SCI considers climate, soil erosion, tillage, crop rotation and residue management to determine if the agronomic program is depleting, sustaining or building soil condition. SCI showed that the agronomic program currently followed in the project area has a positive-building effect on soil condition (NRCS and LWRID, 2004).

### **3.2.2 Environmental Consequences**

#### **3.2.2.1 Significance Criteria**

Impacts on soils would be considered significant if either of the following would occur:

- Project implementation would be expected to reduce soil productivity or negatively impact the ability of local producers to continue farming operations.
- Project implementation would be expected to lead to increased erosion and sedimentation.

#### **3.2.2.2 No Action Alternative Soils**

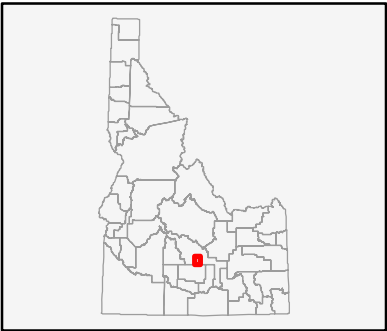
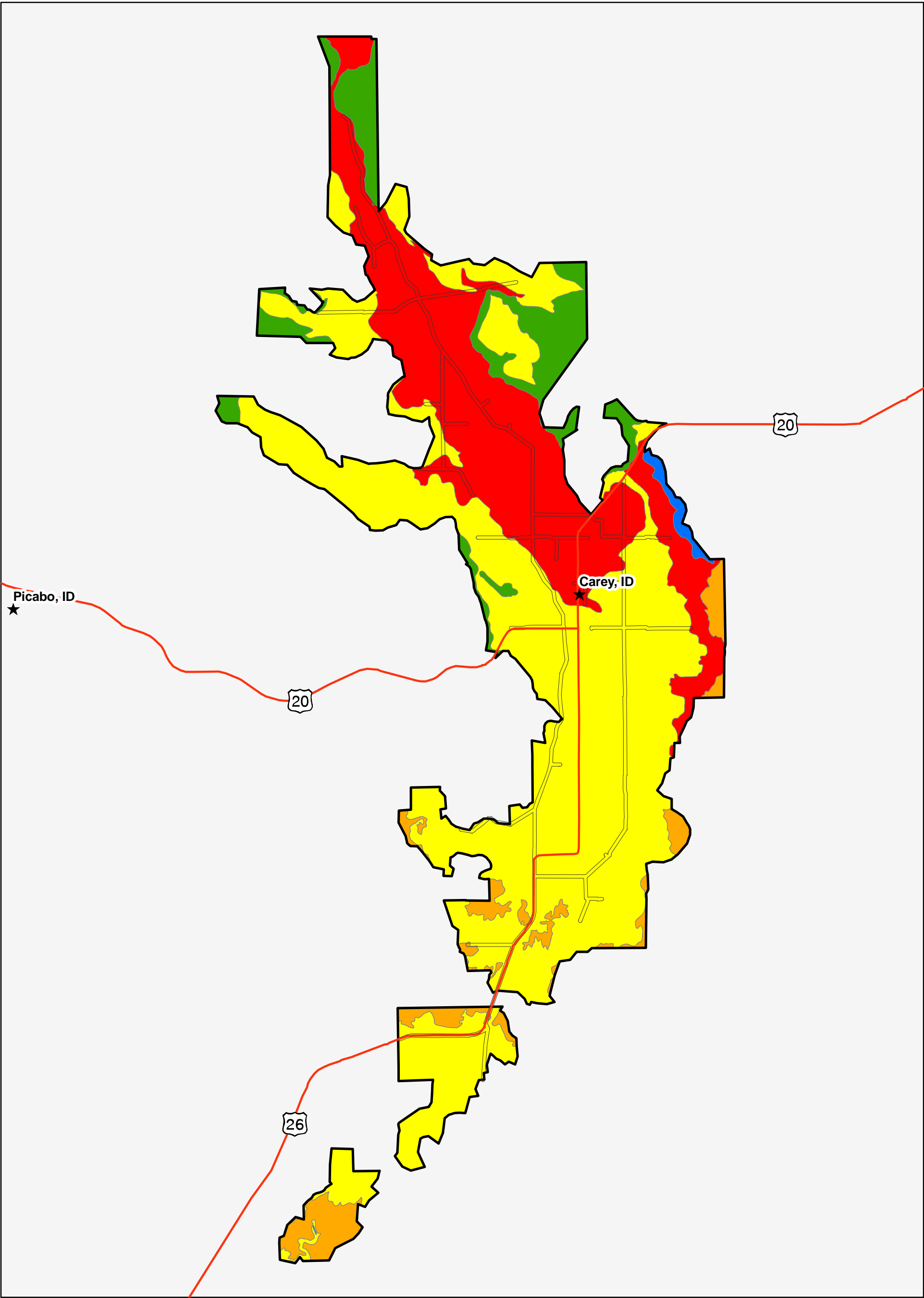
Under the No Action Alternative, conditions would remain the same as currently found in the project area. Therefore the No Action Alternative would have no direct, indirect, or cumulative impacts.

#### **Sheet and Rill, Gully, and Irrigation Induced Erosion**

Under the No Action Alternative, no changes in current operation of the reservoir and irrigation system would occur. Therefore, the No Action Alternative would have no direct, indirect, or cumulative impacts.

#### **3.2.2.3 Proposed Action—Optimized System Upgrade Alternative Soils**

No crop or soil management changes, other than more efficient delivery of irrigation water, would be implemented under the Proposed Action. Soil productivity would remain at current levels. Topsoil will be removed and stockpiled during pipeline construction and replaced as the top soil layer during pipeline trench backfilling. Therefore, no direct, indirect, or cumulative impacts would occur under the Proposed Action.



Irrigation District Boundary

Pipe Network Buffer 100ft

Highways

General Soils

Little Wood-Balaam-Adamson

Carey Lake-Bringmee

McCarey-Justesen-Lava flows

Justesen-Molyneux-Peevywell

Water

00.512

Miles

N

Source: LWRID GIS Data

**Figure 4**  
**General Soils**  
Little Wood River Irrigation District  
Pressurized Pipeline Irrigation  
Delivery System

BOI \\OWL\PROJ\LITTLEWOODRIVER\IRRI\G375033\GIS\MAPFILES\LWRID\_11X17\_SOILS.MXD LWRID\_11X17\_SOILS.MXD JCARR3 7/15/2009 14:28:03

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### **Sheet and Rill, Gully, and Irrigation-Induced Erosion**

Sheet and rill erosion was evaluated by the NRCS using the Revised Universal Soil Loss Equation (NRCS and LWRID, 2004). Erosion rates from the current agronomic program were estimated at less than 1 ton per acre per year. Erosion rates of 5 tons per acre per year or less for these soils are acceptable for long-term crop production.

Irrigation induced erosion was also evaluated by the NRCS using the SISL, to determine erosion and sediment generated from irrigated cropland. The results of the SISL analysis predicted that the average annual irrigation induced soil loss would be less than 1 ton per acre per year.

There is no gully erosion on cropland within the project area.

Based on this analysis, significant erosion leading to sedimentation would not be expected to occur with implementation of the Proposed Action. Although over the short term, the risk of minimal erosion does exist, no direct, indirect, or cumulative impacts would occur over the long term.

## **3.3 Water Resources**

Water resources evaluated for this EA include surface water, groundwater, and channel erosion and sedimentation.

### **3.3.1 Affected Environment**

Surface water resources include the Little Wood River, the East and West Canals, and the Little Wood Reservoir (reservoir). Groundwater includes the subsurface hydrological resources of the physical environment. Groundwater properties are often described in terms of depth to the aquifer water table, water quality, and surrounding geologic composition.

Historic monitoring does not indicate any ground water quality problems in the project area, specifically in the Carey area. The construction of a pipeline does not add any chemical constituents to the groundwater that would result in impacts. Therefore groundwater quality will not be discussed further in this EA.

#### **3.3.1.1 Surface Water**

The segment of the Little Wood River that would be influenced by the Proposed Action is that section of river below the existing East Canal Diversion dam to the confluence of Silver Creek.

#### **Surface Water Quality**

The Idaho Department of Environmental Quality (DEQ) identified five segments of the Little Wood River to be assessed for water quality conditions:

- Headwaters to Little Wood Reservoir (Segment 1)
- Little Wood Reservoir
- Little Wood Reservoir to East Canal Diversion (Segment 2)
- East Canal Diversion to Silver Creek (Segment 3—Proposed Action Location)
- Silver Creek to Big Wood River (Segment 4)

According to IDAPA 58.01.02.101.01, beneficial uses that are to be protected for the Little Wood River within the Proposed Action Location (Segment 3, East Canal Diversion to Silver Creek) are cold water aquatic life, salmonid spawning, and primary contact recreation.

Pursuant to Section 303 of the federal Clean Water Act, DEQ developed and published the Section 303(d) List of water quality limited water bodies in 1998, which identifies those water bodies where at least

one of the beneficial uses is not supported or that exceed water quality standards. According to the DEQ 1998 303(d) List, the reach that contains the Proposed Action (Segment 3, East Canal Diversion to Silver Creek) was listed as impaired because of nutrients, sediment, and temperature.

In 2005, DEQ completed a Subbasin Assessment and total maximum daily load (TMDL) for the Little Wood River (DEQ, 2005). This report summarizes available biological data, chemical data, and hydrology. This segment of the Little Wood River is intermittent. River flows in the Proposed Action Location are dependent on spring melt flows beginning in April. Continued flow after June is determined by the year's precipitation, release rates from the reservoir based on storage requirements, and diversion for irrigation. A 1909 decree gives water users the right to choose to use their water, even if the Little Wood River in this segment gets dewatered (DEQ, 2005). Currently, return flows from the canals (after irrigation use) are the only source of water to this segment of the Little Wood River.

The Subbasin Assessment and TMDL recommended that this segment be delisted for all pollutants (sediment, nutrients, and temperature) and remain listed as impacted by flow alteration (DEQ, 2005). These recommendations were approved by EPA in 2005 and are reflected in the DEQ 2008 Integrated 303(d)/305(b) List that was published in May 2009. In this list, the Proposed Action Location (Segment 3, East Canal Diversion to Silver Creek) is included in Category 4c. This category includes waterbodies that are impaired but do not need a TMDL because nonsupport of the water quality standard is not caused by a pollutant.

### **Surface Water Quantity**

The nearest U.S. Geological Survey (USGS) gage station (Stream Site 13148500) to the

project site is 1.3 miles upstream from the East Canal and 0.3 mile upstream from the West Canal. This gage station is at an elevation of 4,990 feet above mean sea level and serves a drainage area of 312 square miles. This USGS gage station on the Little Wood River recorded the average annual watershed runoff as 123,667 acre-feet between 1971 and 2000.

Snowmelt is the primary source for annual peak flows on the Little Wood River. Peak flows can occur between the middle of March and the middle of June, but predominantly occur in May. Snowmelt runoff between March and July averages 96,524 acre-feet, or 78 percent of the average annual water year (October 1 to September 30) runoff. However, because of the large mid-elevation area in the basin the highest flow in a year can occur anytime between November and June, because of rain-on-snow events or the rapid melting of low elevation snowpack. In fact, 55 percent of annual precipitation in the Little Wood basin falls between November and March and is mostly stored until it melts in the spring and early summer. While summer does have localized, high-intensity precipitation events, they are too isolated to provide significant flows to the river, leaving late summer and early fall with the lowest annual stream flow levels.

Runoff for some years is insufficient to fill the Little Wood Reservoir. The smallest volume of March-July runoff recorded to date occurred in 1977, at only 21 percent of the average. Contrasting runoff of 217,500 acre-feet, recorded in March-July of 1983 (which had enough volume to fill the reservoir 7 times), demonstrates the high variability of this system.

Based on information provided by the LWRID, the current sprinkler irrigation methods require 55,000 to 60,000 acre-feet of water per growing season released



from the reservoir to deliver 40,000 to 42,000 acre-feet to the users (Simpson, 2009). While more efficient than the previous practice of surface irrigation, the resulting reduced demand still goes unmet 18 percent of the time. Currently during the irrigation season, up to 125 cfs and 175 cfs is diverted to the West Canal and East Canal, respectively, and a variable amount flows through the river channel as depicted in Figure 5. At the peak of the growing season (in terms of water usage),

a maximum of approximately 90 cfs and 120 cfs is actually utilized for crop irrigation from the West and East Canals, respectively, with the balance of the water lost to seepage, evaporation, and consumption by riparian vegetation. Approximately 10 to 15 cfs is delivered to Carey Lake from the East Canal through the entire irrigation season. Therefore, up to 35 cfs are lost to groundwater and ET in the West Canal and up to 40 cfs are lost to groundwater and ET in the East Canal.

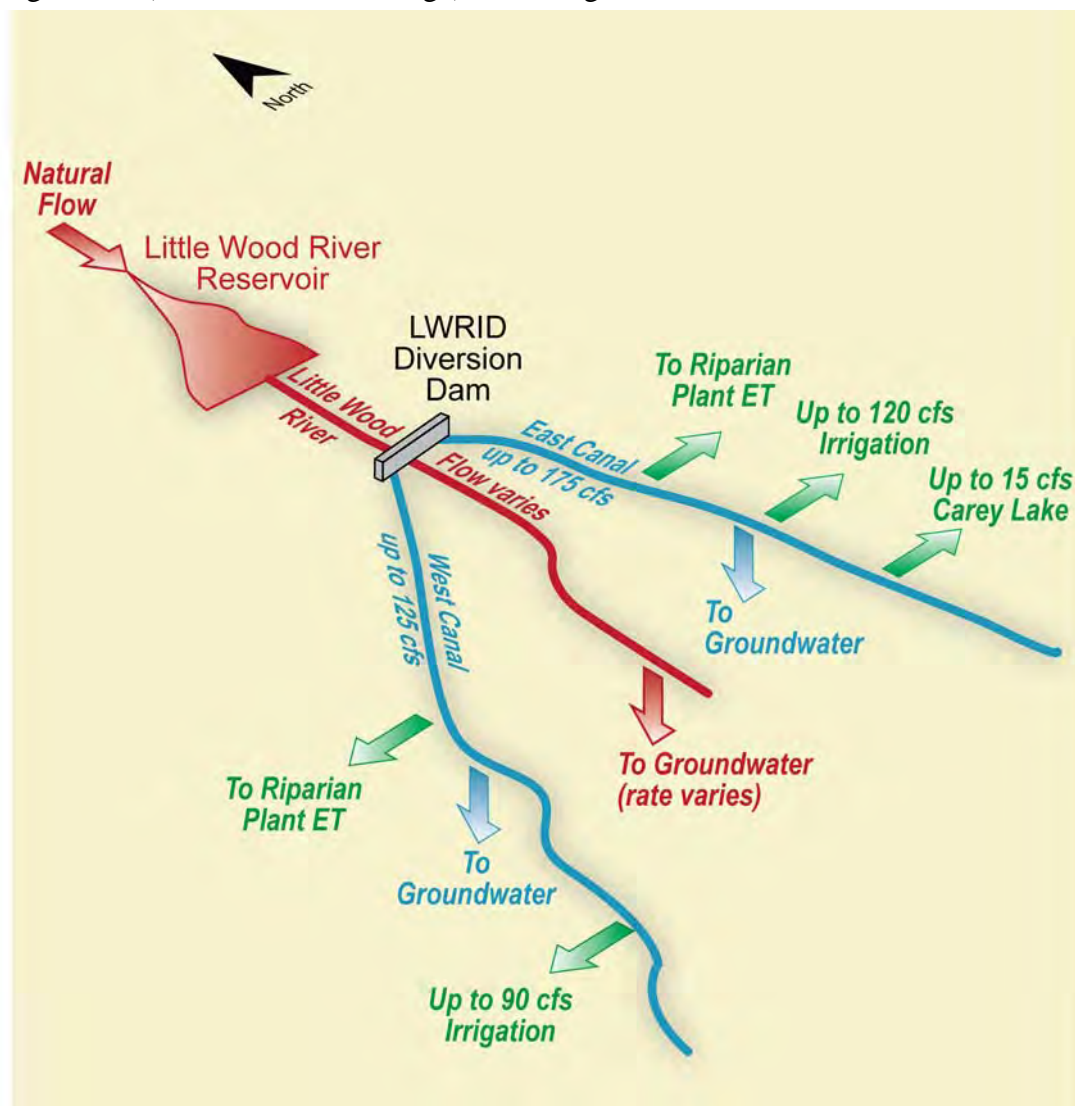


FIGURE 5  
Pre-Project Water Budget

### **3.3.1.2 Groundwater Groundwater Quantity**

A shallow, perched (local) aquifer lies under the project area. It is primarily recharged through infiltration from the irrigation system canals, losses in the river channel, and surface irrigation in the upstream third of the basin. Snowmelt from the Pioneer Mountains to the north also contributes to the total aquifer recharge. The existing irrigation canal system provides a significant source of water for aquifer recharge. As stated previously, approximately 15,000 to 18,000 acre-feet is lost to seepage, evaporation, and riparian vegetation during a typical irrigation season in the existing canal and ditch delivery system with a relatively high percentage of this loss attributed to seepage that recharges the local aquifer. Visible surface flows through Carey do not normally begin until late April or early May, and quickly cease in June or July. An NRCS analysis of gage data showed that flows of up to 75 cfs in the river disappear shortly downstream of the diversion dam, and, therefore, must be contributing to groundwater recharge (NRCS and LWRID, 2004).

Groundwater is withdrawn from individual wells throughout the area and used domestically for irrigation and to water livestock. Additionally, Carey has two wells withdrawing from the aquifer. The individual wells located north of Carey are typically between 80 and 100 feet deep, but wells south of the town can reach depths of 600 feet. New wells have been drilled deeper to combat the fluctuations in water table depths and even failure of existing wells as a result of drought and changes in irrigation delivery techniques from flood irrigation to sprinkler irrigation. Groundwater levels increase in

relation to the flow in the river and canals (NRCS and LWRID, 2004).

Wells surrounding Carey have had summer static water levels drop from around 20 feet below ground level to more than 60 feet below ground level recently. Since 2000, IDWR's groundwater level monitoring implies that groundwater levels have been increasing in wells near Carey. However, this inference was based on a limited number of data points. The long term dropping of the water table is thought to coincide with the installation of more efficient sprinkler irrigation systems which replaced the predominant gravity channel irrigation methods. While sprinkler irrigation has conserved water for surface application and decreased the number of water-short irrigation seasons, it appears to have lead to less recharging of the aquifer.

### **3.3.1.3 Channel Instability, Erosion, and Sedimentation**

IDWR has declared the Little Wood River channel(s) from the Diversion to the confluence with Silver Creek a dry stream. The existing river channel(s) are currently used only during peak spring runoff when water storage in the Little Wood Reservoir has reached capacity and inflow exceeds irrigation requirements. This typically occurs from April to June. The Little Wood River in the project area does not experience "channel-forming flow" (about a 2-year runoff occurrence) typical of perennial streams. Channel-forming flow is the flow that essentially shapes perennial channels to transport both water and sediment most efficiently with the least amount of channel instability. Instead, the river flow characteristics are more like that of an ephemeral system. The channel is dry most of the year and may not ever flow in drier years.

Flows that do occur during high-water spring runoff (April to June) are greater than an average 2-year occurrence flow and generally are of longer duration. The existing channel geometries have readjusted to the “managed” or manipulated flows. Some of this readjustment has occurred naturally in response to the altered flows, and some channel sections have been mechanically changed.

On a gross scale the river channel(s) exhibits three separate reaches. The upper reach is from the Diversion to the Hill Road bridge crossing. The second reach is from Hill Road to the splitter structure near the center of Carey. The third reach is from the splitter to the confluence with Silver Creek and includes two channels through most of the reach.

Reach 1 is roughly 2-1/4 miles long. This reach exhibits remnant “natural” riparian characteristics with an existing floodplain, defined channel and multi-layer riparian vegetation. The channel is developed in coarse cobble and gravel. No areas of accelerated channel instability were noted in this reach. The lack of year-round flow and attenuation of the peak flood flows have probably resulted in the channel becoming underfit. That is, the bedload deposits in this reach likely exceed what would occur with a “natural” hydrograph. Capacity of the channel is also likely diminished. However, because of the presence of the available floodplain, any flooding that does occur in this reach does not result in greatly accelerated channel erosion or impacts on man-made structures or facilities within the reach.

Reach 2 is roughly 3-1/2 miles long. This reach is the most unstable channel section of the existing river. Frequent mechanical manipulation of the channel (bulldozers) has resulted in a channel that is too wide

and shallow to transport bedload during the spring runoff and flooding events. The channel is developed in loose gravel and cobble, and frequent manipulation ensures that the channel bed and banks remain fairly mobile. This increases bedload movement and deposition, while decreasing associated channel stability, translating to capacity problems during higher flow events. The “channel maintenance” activities have also resulted in a nearly total lack of any type of riparian vegetation in this reach, further exacerbating channel instability. Gravel mining occurs in this reach, with the bedload materials in the channel used as an unofficial gravel pit.

Reach 3 is roughly 14 miles long, with two river channels in the upper 10 miles. These channels are also highly managed but have developed into fairly stable conveyances. The channels in this reach are more canal-like with established u-shaped channels, cobble and gravel bed with some sections of trash and riprap covered banks. The bed and bank materials get progressively finer downstream, with the lower parts developed in sandy-loamy banks and gravel bed. Very narrow bands of riparian vegetation consisting mainly of herbaceous vegetation bank cover and occasional sage, cottonwood and willow exist along most of the reach. There is very little evidence of any accelerated instability or erosion along reach 3.

### **3.3.2 Environmental Consequences**

#### **3.2.2.1 Significance Criteria**

Impacts on water resources would be considered significant if any of the following would occur:

- The Proposed Action would result in degraded water quality to surface

waters within and downstream of the project area.

- Flows in the Little Wood River, East Canal, or the West Canal downstream of the diversion structure would decrease such that the riparian vegetation found in the upper section of the project area could not be sustained.
- Groundwater recharge would decrease from current levels resulting in a reduction to the groundwater table as a direct result of the Proposed Action.
- Flow diversions to Carey Lake could not be maintained at current levels.
- Project-related flow releases from Little Wood Reservoir would result in increased Little Wood River channel instability and bank erosion below the dam.

#### **3.3.2.2 No Action Alternative**

No impacts on floodplains or water resources would occur under the No Action Alternative. A slight change to groundwater levels would likely occur by conversion to sprinkler irrigation from the remaining flood irrigation systems.

#### **3.3.2.3 Proposed Action**

##### **Surface Water Quality**

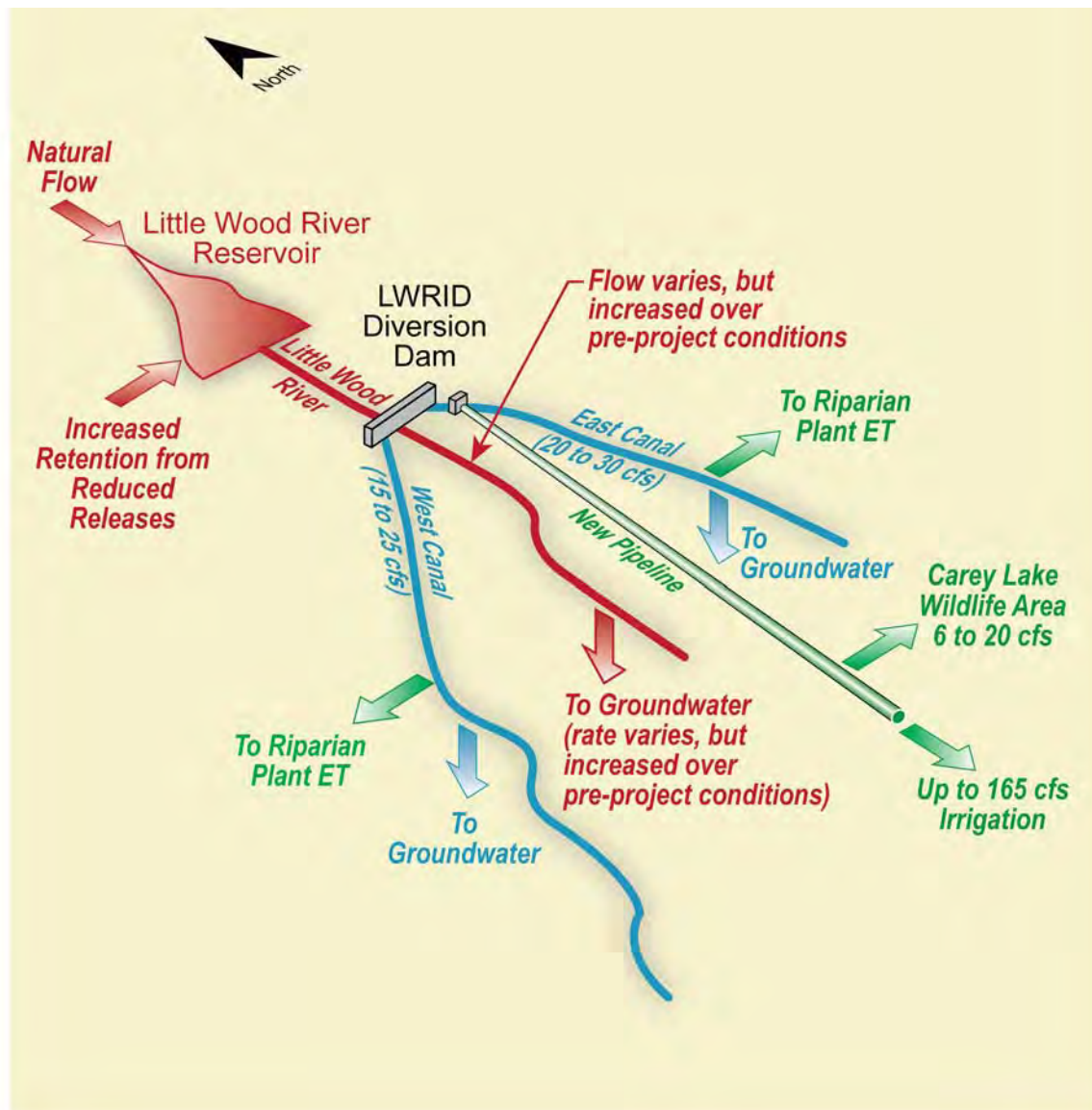
The Proposed Action is expected to decrease the amount of water that is diverted into the Little Wood Irrigation District conveyance system. The water that will remain in the Little Wood River is expected to primarily seep into the underlying alluvium and basalt materials. While this hyporheic seepage may provide riparian benefits, there will not be enough flow to support aquatic beneficial uses within the channel itself and no change to

the Integrated 303(d)/305(b) List is anticipated to be necessary.

With the Proposed Action eliminating planned flows in a majority of the existing canal network, delivery of sediments and nutrients, especially phosphorous, to the Little Wood River below the project area would be reduced since surface water runoff resulting from over-irrigation of fields would enter dry canals and infiltrate as opposed to being conveyed downstream. Potentially beneficial effects to surface water quality would likely occur over the long term.

##### **Surface Water Quantity**

As depicted in Figure 6, the new pipeline would carry approximately 165 cfs of water for irrigation, and 6 to 20 cfs to the Carey Lake Wildlife Area. This is in contrast with approximately 300 cfs historically diverted from the river into the East and West Canals, combined. The difference in the amount diverted is attributable to seepage, whereby the new system will not require additional diversions to yield sufficient water to farmers after seepage losses in the conveyance system. To address groundwater recharge and support riparian vegetation, 20 to 30 cfs would be sent to the East Canal and 15 to 25 cfs would be sent to the West Canal. As a result of the reduced flow requirements to the pipeline and East and West Canals, water may either be retained in the Little Wood River Reservoir or allowed to flow past the river diversion structure for a longer period of time. Flow in the Little Wood River would still be variable, but would be increased from pre-project conditions according to preliminary calculations. The water delivered to Carey Lake could be better managed to allow for delivery earlier or later in the season to enhance the Wildlife Management Plan.



**FIGURE 6**  
 Post-Project Water Budget

*Notes: Data provided by LWRID (Simpson, 2009). Water available to be released to Little Wood River past diversion structure dependent upon reservoir volume at the start of the irrigation season and daily reservoir inflow rates.*

Using historical water data to project the Proposed Action onto 3 previous years during the irrigation season of April through September, the increased amount of water that would be available to the river between the diversion dam and the confluence of Silver Creek can be quantified, as illustrated in Figure 7. The overall reduction in diversions from the river, because of the elimination of most

seepage losses in the conveyance system, permits more water to remain in the river channel under most circumstances. In 2006, had the Proposed Action been in place, more than 60 percent of the total flow from the reservoir would have been released to the river downstream of the diversion dam, a greater than 10 percent increase from the historical situation. In 2007, which was a low water year, the



Proposed Action would have increased the total flow to the river below the existing canal diversion by approximately 15 percent resulting in a slight increase to the overall percentage of water available to the river. The river's circumstances in 2008 would have been greatly modified if operating under the Proposed Action, with nearly 15 percent of the total flow going to the river downstream of the diversion structure as opposed to less than 10 percent flowing past the diversion under existing conditions. However, while flows to the Little Wood River below the diversion dam would most likely increase after the construction of the Proposed Action, providing potentially beneficial effects to surface water quantity, the gains in flow to the river will not be great enough to overcome the river channel's own seepage losses and change the river's status as an intermittent river.

### Groundwater Quantity

While the new pipeline itself will have no seepage losses, the overall management of water by the Little Wood River Irrigation District will include seepage as a component of water usage. This seepage would most likely occur at different times, locations, and intensity from the existing open channel irrigation delivery system, so there is a potential for localized changes in groundwater levels. However, the careful maintenance of adequate flows to the Little Wood River and the existing East and West Canals would be instituted to prevent significant changes to the groundwater levels around Carey. With less evaporation loss from the irrigation system, the irrigation district should have more water available for groundwater recharge even while maintaining adequate irrigation water supply, resulting in potentially beneficial effects.

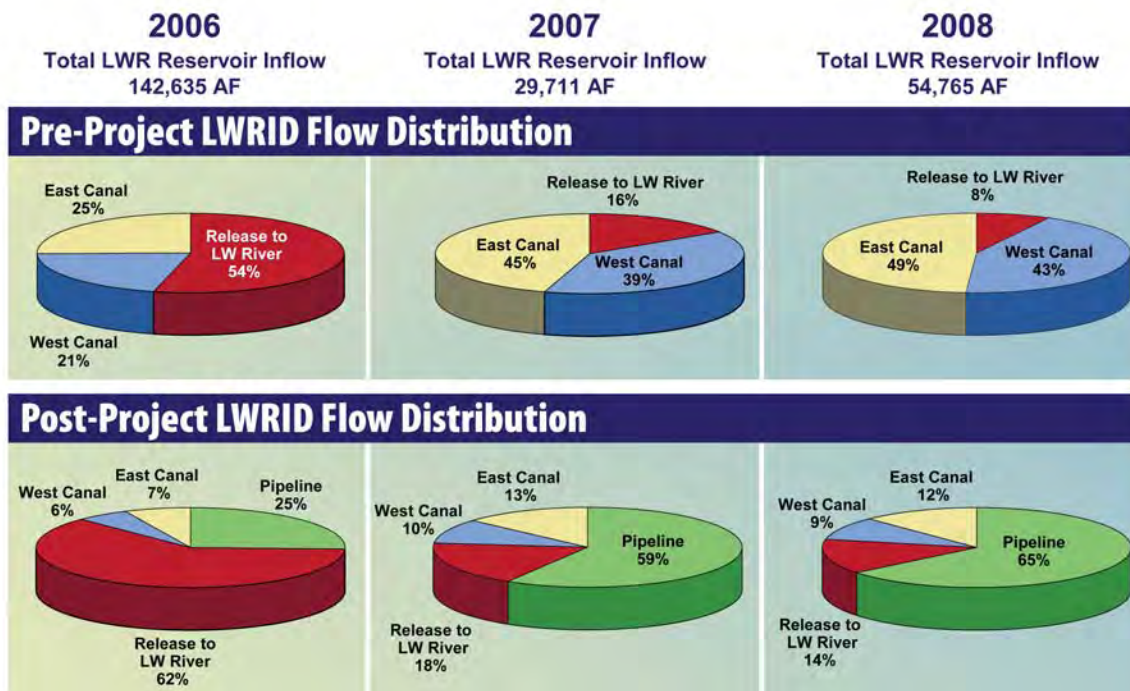


FIGURE 7  
 Pre- and Post-Project Flow Distribution

**Channel Instability, Erosion, and Sedimentation**

The Proposed Action's ability to bypass a portion of the Little Wood River near Carey during large flood events should decrease the amount of erosion in this section of channel along the river. A reduction in flow through the canals is anticipated to decrease the amount of sedimentation caused by the return of irrigation water to the river. While the Proposed Action will increase the flow sent through the river channel, this will be well within the traditional flow rates through the Little Wood River and is unlikely to cause noticeable change to the river bed.

Average river flows would increase under the Proposed Action. Flows would be higher all year than with present reservoir and river management. Most of the average monthly flows would remain at less than 50 cfs with no impacts on channel integrity. However April, May, and June flows would be higher with the Proposed Action. Projected flows for April, May, and June in the main channel below the diversion would average 245 cfs, 233 cfs, and 240 cfs respectively. These correspond to just less than a 5-year runoff event. These flows are not anticipated to result in any significant channel instability.

The proposed changes in flow would not be expected to result in direct, indirect or cumulative impacts.

### 3.4 Fisheries

Fisheries resources discussed in this EA include those found in the project area and surrounding areas that may be influenced by the proposed project.

#### 3.4.1 Affected Environment

Historically, the Little Wood River provided habitat for redband trout (*Oncorhynchus mykiss gairdnerii*), a subspecies of the rainbow trout (*Oncorhynchus mykiss*). Today, no evidence supports the presence of redband trout downstream of the Little Wood Reservoir and remaining populations or individuals above the Little Wood Reservoir are anecdotal (Megargly, 2009). Rainbow trout are native to the Upper Snake River Basin; however, the Little Wood River is separated from historic rainbow habitat in the Snake River by falls in the Little Malad River below Gooding, Idaho.

The Wood River sculpin (*Cottus leiopomus*) is endemic to the Wood River system. It was first collected in 1893 from the Little Wood River near Shoshone and has since been collected from the Little Wood River above the Little Wood Reservoir, the Big Wood River, and tributaries (Simpson and Wallace, 1978). Sculpin are often used as an indicator of high water quality (high oxygen, cool temperatures, and low levels of pollution) and in turn, land use strategies that degrade water quality in the system (for example, land development, water diversion and poor land management practices) pose an immediate threat to the species.

The U.S. Geological Survey sampled fish at 30 sites in the Upper Snake River Basin between 1993 and 1995 (Maret, 1997).

One site was the Little Wood River above High Five Creek (upstream of the Little Wood Reservoir). The following species were collected:

- Wood River sculpin *Cottus leiopomus* (Native)
- Speckled dace *Rhinichthys osculus* (Native)
- Brook trout *Salvelinus fontinalis* (Introduced)
- Mountain whitefish *Prosopium williamsoni* (Native)
- Rainbow trout *Oncorhynchus mykiss* (native in the Snake River downstream from Shoshone Falls)

Currently no permanent fishery exists in the project area—primarily because of loss of surface flow during all but wet years. From the point of irrigation diversion to the confluence with Silver Creek no permanent water exists (except during wet years) and, therefore, no permanent fish habitat. Water does back up in the Little Wood river channel at the confluence, providing some permanent habitat, but this is a function of the flow supplied from Silver Creek and not water flowing through the project area.

There are adjacent fisheries upstream and downstream of the project area, as well as at Carey Lake. The Idaho Fish and Game Department (IDFG) manages the river between Little Wood Dam and the irrigation diversion structure as a put-and-take fishery. Catchable size hatchery rainbow trout are planted in this section of the river annually for recreation purposes. Trout are also planted in the Little Wood River Reservoir. As planting takes place yearly, it is inferred that natural reproduction is insufficient to support a self-sustaining fishery (Megargly, 2009).



When water supplies are adequate, the reservoir also provides opportunities as a coldwater sport fishery; however, the reservoir is primarily managed to store and deliver irrigation water. Rainbow trout, cutthroat trout (*Oncorhynchus clarki*), brook trout, and kokanee salmon (*Oncorhynchus nerka*) are the most common catches (Public Lands Information Center, 2009).

The outlet from the reservoir is currently unscreened and fish are likely lost to the river downstream between the reservoir and the diversion dam. This section of the Little Wood River is approximately 3 miles long. Anglers are successful in this incidental and augmented fishery, but access is limited by private land. The size of this fishery is dependent on planting, the number of fish escaping the dam, and flows maintained in this section of the river. Fish in this section of the Little Wood River are also subject to loss by going over the Diversion's spillway or down the irrigation canals. Planting of hatchery fish by the IDFG in this section is augmented by additional stocking underwritten by the LWRID to mitigate potential losses resulting from the unscreened outlet.

Downstream of the project area (below the confluence of the Little Wood River with Silver Creek) a fishery consisting of hatchery rainbow and brown trout (*Salmo trutta*) has become naturalized. This fishery is self-sustaining with minimal stocking. IDFG monitors this fishery by electrofishing at Beartrack Williams public access site.

Carey Lake is currently managed as a multi-species warm water fishery by IDFG, including largemouth bass (*Micropterus salmoides*), bluegill (*Leponis macrochirus*), brown bullhead (*Ictalurus nebulosus*), and channel catfish (*Ictalurus*

*natalis*). Hot Springs east of the lake provide enough warm water during the winter to keep a portion of the lake ice free, promoting a self-sustaining fishery. When irrigation flows are released from Little Wood Reservoir, water is delivered from the East Canal to Carey Lake to manage the lake level for fish and wildlife.

### 3.4.2 Environmental Consequences

#### 3.4.2.1 Significance Criteria

Impacts on fisheries would be considered significant if project implementation would be expected to reduce overall reproductive fitness of established fisheries and other aquatic resources through such means as the following:

- Increased introduction of invasive species
- Reduced habitat availability and function for established fisheries and aquatic resource populations (including deleterious impacts on the riparian corridor, increased erosion, decreased bank stability and/or altered flows)
- Mortality to fish or other aquatic resources that would not occur under current conditions

#### 3.4.2.2 No Action Alternative

Under the No Action Alternative, conditions would remain the same as currently found in the project area. No changes in current operation of the reservoir and irrigation system would occur. Therefore, the No Action Alternative would have no direct, indirect, or cumulative impacts.

#### **3.4.2.3 Proposed Action—Optimized System Upgrade Alternative**

Average river flows would increase under the Proposed Action. Flows under the Proposed Action would be higher all year than those occurring under current reservoir and river management. Most of the average monthly flows would remain at less than 50 cfs with no impacts on channel integrity. However April, May, and June flows would be higher than 50 cfs under the Proposed Action. Projected flows for April, May, and June in the main channel below the diversion would average 245 cfs, 233 cfs, and 240 cfs respectively. These correspond to just less than a 5-year runoff event. These flows are not anticipated to result in any significant channel instability and may provide enough additional hydrology to improve habitat quality and availability to existing fisheries and aquatic resources in the area. The proposed changes in flow in the Little Wood River are anticipated to result in beneficial direct, indirect, and cumulative impacts for fisheries.

The proposed changes in flow would not be expected to result in deleterious direct, indirect or cumulative impacts. There may be insignificant indirect impacts on the incidental rainbow trout fishery between Little Wood Reservoir and the diversion structure that would occur under the Proposed Action. This would potentially occur through entrainment of fish from changes in the timing of releases from the reservoir. Such indirect impacts however are not anticipated because all intakes would be screened in accordance with IDFG standards.

Increased flows in the main channel of the Little Wood River have the potential to result in beneficial direct, indirect or cumulative impacts for fisheries and aquatic resources, both within the project

area and downstream. These may occur through increased habitat quality and quantity available throughout the year. Additional flows and increased high flow events that would occur under the Proposed Action would create scour, transport sediment downstream, and provide additional water for adjacent riparian vegetation. The fishery at Carey Lake would also likely benefit from added flows. Additional flows that would be released into Carey Lake would need to be coordinated with IDFG so that no potential harm to resident wildlife populations and/or interference with spawning times of established warm water fishery populations would occur. Additionally, the fishery downstream of the confluence with Silver Creek is expected to benefit from increased flows and decreased water temperatures during times of year that flow would extend downstream.

## 3.5 Vegetation

Vegetation resources include native, agricultural, and disturbed habitats. Native habitats include riparian and wetland areas and upland shrub plant communities. Agriculture includes crop and livestock operations. Disturbed habitats include urban, farmstead, and roaded areas.

### 3.5.1 Affected Environment

General vegetation mapping was completed in April 2009. Resulting acres calculated from mapped boundaries are provided in Table 4. This table combines both native habitat and vegetation associated with various land use categories. Figures 8 and 9 provide map results for the project analysis area. Constructed structures and the vegetation associated with them (farm/urban dwellings) and roadways make up approximately 139 acres. These categories will not be discussed further. Although vegetation categories associated with wetland habitats, including cottonwood, reed canarygrass, and willow are described here, wetlands and their vegetation are described in detail in Section 3.8. The wetland associated habitats discussed in this section are not related to jurisdictional wetlands as defined under the Clean Water Act.

#### 3.5.1.1 Agricultural Land

The majority of land in the project area has been converted from sagebrush steppe for agriculture use. Agricultural land varies and includes unimproved rangeland, dryland farmland, and irrigated tilled farmland. Approximately 506 acres of agricultural lands exist within the project analysis area. The short growing season in this area of Idaho limits primary

agriculture crops to alfalfa, grains, and pasture land for a few dairy and beef cattle. Alfalfa hay is the predominant irrigated crop within the project area comprising more than half of the acres cropped (Stene, 1996). In a typical year, barley, oats, wheat, other hays, irrigated pasture, silage and ensilage, seed potatoes, and early potatoes make up remaining crop production on agriculture lands.

TABLE 4

Total Acres by Vegetation Cover Category or Land Use Classes for Proposed Project Area

| Land Use/Habitat Category | Number of Mapped Units | Total Acres |
|---------------------------|------------------------|-------------|
| Agriculture               | 68                     | 505.7       |
| Cottonwood                | 34                     | 33.9        |
| Sagebrush                 | 27                     | 71.1        |
| Reed canarygrass          | 9                      | 17.7        |
| Willow                    | 11                     | 7.5         |
| Road area                 | 23                     | 69.1        |
| Farm or urban             | 40                     | 69.9        |

#### 3.5.1.2 Upland Vegetation

Sagebrush (*Artemisia tridentata*), sometimes with a component of bitterbrush (*Purshia tridentata*), is the most common upland vegetation type in the project area, and the only one with extensive enough acres to map and quantify. Approximately 71 acres of sagebrush habitat exist in the project area. Big sagebrush is the predominant overstory shrub in this vegetation type with an understory of forbs and grasses. Bluebunch wheatgrass (*Pseudoroegneria spicata*) and Idaho fescue (*Festuca idahoensis*) are the common grass species with a large forb component, including arrowleaf balsamroot (*Balsamorhiza*

*sagittata*), Munro's globemallow (*Sphaeralcea munroana*), phlox, penstemon, and tapertip onion (*Allium acuminatum*).

### **3.5.1.3 Riparian and Riverine Cottonwood and Willow Vegetation**

Diversion of the Little Wood River for irrigation has reduced riparian woodland vegetation in the river channel and extended it in areas along main canals. The resulting riparian and riverine vegetation along the Little Wood River channel and irrigation canals currently is dominated by approximately 34 acres of black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), 8 acres of willows (*Salix lasiandra*, *Salix lemmonii*, *Salix exigua* and *Salix lutea*), and 18 acres of reed canarygrass (*Phalaris arundinacea*) habitat.

Black cottonwood in the upper regions of the system are dependant on water spilled over the diversion dam into the river channel and water seepage from the east and west canals. At the lowermost part of the irrigation system enough water is present to support willows on canal and riverbanks. Excess water collects as a result of problems with irrigation scheduling and system maintenance, as well as some tailwater from surface irrigated fields. This water runs through the canal system and into the old river channels.

Cottonwood and willow scrub-shrub habitat must be supported by adequate hydrology to both survive and to reproduce. These habitats have survived near the dam and along the historic Little Wood River channel because enough water is available to support them early in the spring before irrigation demands are at their peak. They also occur as very linear habitat along irrigation channels in other

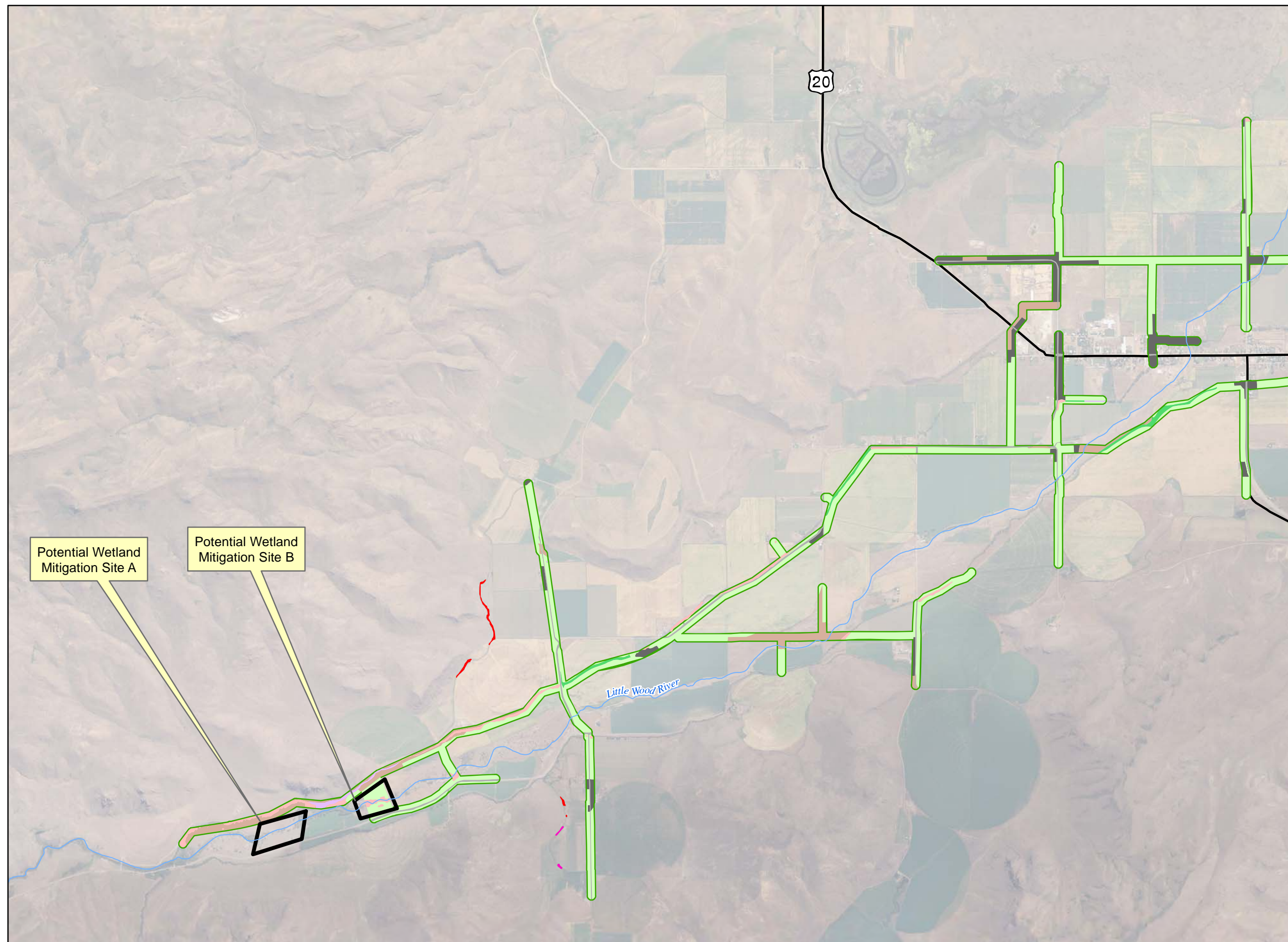
areas. Loss of in-channel flows diverted for agriculture, as well as the naturally occurring porous soils that facilitate rapid transfer of surface flows subsurface, are the primary reasons these habitats are limited in their extent.

Other vegetation found in willow- and cottonwood-dominated riparian areas include red-osier dogwood (*Cornus sericea*), gray alder (*Alnus incana*), golden currant (*Ribes aureum*), chokecherry (*Prunus virginiana*), serviceberry (*Amelanchier alnifolia*), and silver sage (*Artemisia cana*).

Reed canarygrass is the dominant vegetation along the lower reaches of the canal system and along the lower river reach where irrigation tailwater accumulates. This is an invasive wetland grass that tends to form monocultures. It is not considered to be native to this part of Idaho.

### **3.5.1.4 Noxious Weeds**

Noxious weeds are not a major concern within the project area. Canada thistle (*Cirsium arvense*), a common weed that has been designated as legally noxious in Idaho, was found throughout the area, but occurrences are primarily restricted to canal and ditch banks and to intensively used pasture. Other weeds, such as rough cocklebur (*Xanthium strumarium*), were also found in a few areas.



- Little Wood River
- ▭ Proposed Pipeline Area
- Highways
- ▭ Wetland Mitigation Area
- ▭ Agriculture
- ▭ Cottonwood
- ▭ Cottonwood to be lost
- ▭ Farm Urban Area
- ▭ Reed Canarygrass
- ▭ Road Area
- ▭ Sagebrush
- ▭ Willow
- ▭ Willow to be Lost



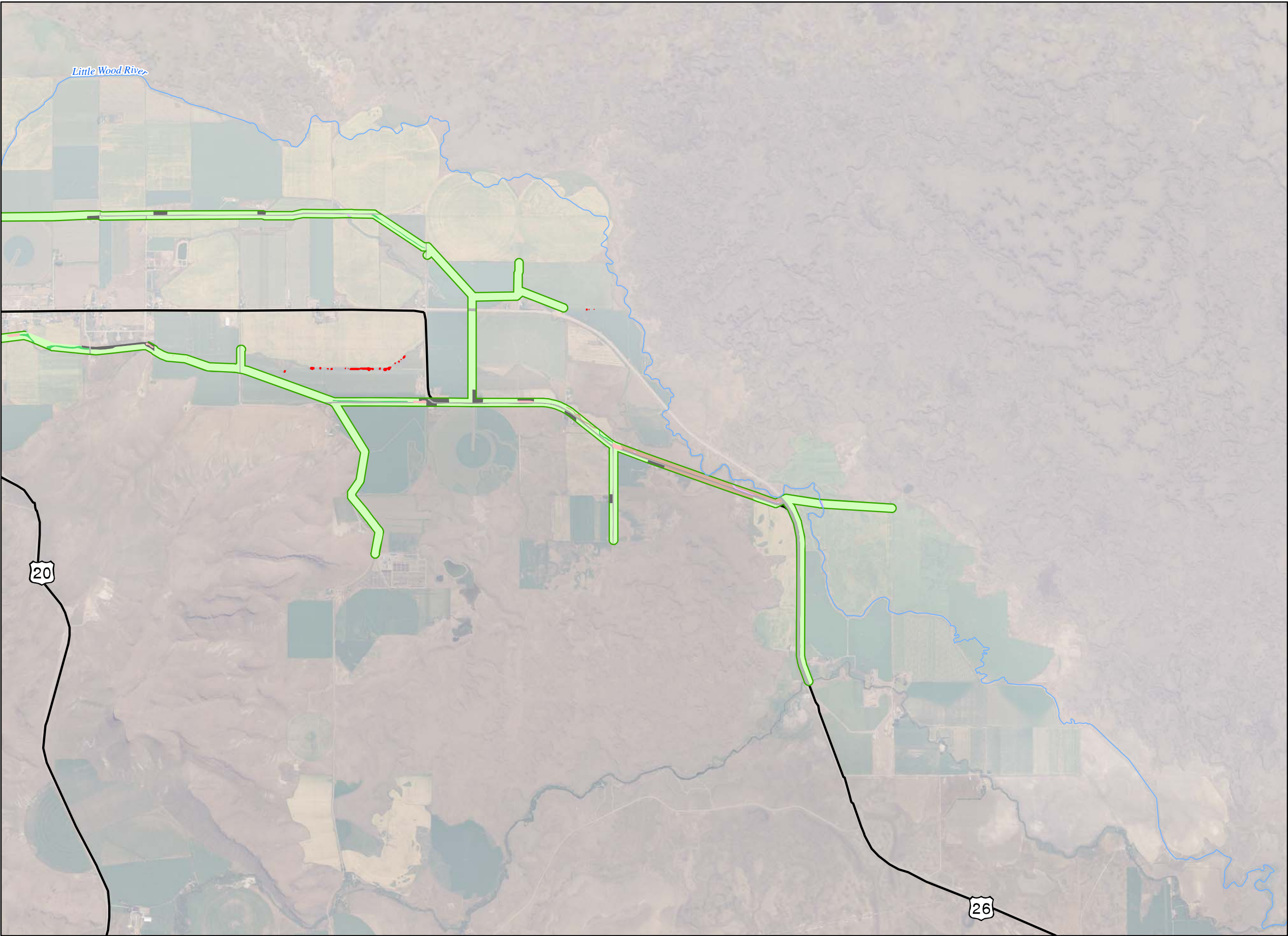
0 0.25 0.5 1 Miles

Source: ESRI base data,  
INSIDE Idaho, NRCS, LWRID

**Figure 8**  
**Vegetation, North**  
 Little Wood River Irrigation District  
 Pressurized Pipeline Irrigation  
 Delivery System







- Little Wood River
- ▭ Proposed Pipeline Area
- Highways
- Agriculture
- Cottonwood
- Cottonwood to be lost
- Farm Urban Area
- Reed Canarygrass
- Road Area
- Sagebrush
- Willow
- Willow to be Lost



0 0.25 0.5 1 Miles

Source: ESRI base data,  
INSIDE Idaho, NRCS, LWRID

**Figure 9**  
**Vegetation, South**  
*Little Wood River Irrigation District  
Pressurized Pipeline Irrigation  
Delivery System*





### **3.5.2 Environmental Consequences**

#### **3.5.2.1 Significance Criteria**

Impacts on vegetation resources would be considered significant if project implementation would be expected to reduce overall native vegetation resources through such means as the following:

- Increased introduction of invasive species, particularly of legally noxious weeds and/or cheatgrass
- Reduced habitat availability and function for wildlife habitat, especially breeding bird habitat, from reduction in riparian forested and/or shrub habitat from altered flows
- Mortality to native cottonwood and shrub-scrub that would result in a net long-term decrease in acres of these habitats compared to current conditions

#### **3.5.2.2 No Action Alternative**

Under the No Action Alternative, conditions would remain the same as currently found in the project area. No changes in current operation of the reservoir and irrigation system would occur. Therefore, the No Action Alternative would have no direct, indirect, or cumulative impacts.

#### **3.5.2.3 Proposed Action—Optimized System Upgrade Alternative**

Average river flows would increase under the Proposed Action. Flows under the Proposed Action would be higher all year, than those occurring under current reservoir and river management. Most of the average monthly flows would remain at less than 50 cfs with no impacts on channel integrity. However April, May, and June flows would be higher than

50 cfs under the Proposed Action.

Projected flows for April, May, and June would average 245 cfs, 233 cfs, and 240 cfs, respectively. These correspond to just less than a 5-year runoff event. These flows may provide some additional hydrology to cottonwood and willow habitat quality along the Little Wood Channel.

Increased flows in the main channel of the Little Wood River have the potential to result in beneficial direct, indirect, or cumulative impacts for vegetation resources, both within the project area and downstream. Increased flows may allow natural revegetation to extend some degree downstream along the currently dry main channel of the Little Wood River. Additional flows and increased high flow events that would occur under the Proposed Action would create scour, transport sediment and cottonwood, willow, alder, and dogwood seeds downstream and provide additional water for adjacent riparian vegetation.

The proposed changes in flow are expected to reduce hydrology to approximately 5.7 acres of cottonwood along canals. This reduction in hydrology is expected to have an indirect but potentially lethal effect to linear cottonwood corridors that line the lower canals. In the same regard, approximately 0.6 acres of linear willow habitat are expected to die along lower canals. The loss of cottonwood and willow riparian habitat along canals would be compensated by planting an equal amount of habitat (5.7 acres of cottonwood and 0.6 acre of willow) along the Little Wood River and upper East and West Canals where water flows are expected to remain after project implementation. Plantings will be concentrated as inter-plantings along the upper river and canal channels

where woody vegetation is lacking, but where hydrology will be present. Cottonwood and willows will also be planted just downstream of the lowest present extent of similar vegetation along the river channel (see Figures 8 and 9).

Overall, only minimal impacts on vegetation resources would occur over the short term. Implementation of compensation measures would result in no direct, indirect, or cumulative impacts on vegetation resources over the long term.

## 3.6 Wildlife

This section describes the affected environment and potential impacts on wildlife and wildlife habitat from construction of the proposed pipeline and the potential dewatering of aboveground irrigation canals.

### 3.6.1 Affected Environment

The proposed project area primarily consists of three native vegetation cover types: riparian areas dominated by cottonwood; riparian scrub-scrub zones dominated by willows and alder with chokecherry and serviceberry; and sagebrush. These vegetation cover types will be analyzed based upon their potential habitat value to wildlife. Agriculture lands and disturbed lands may provide some useful habitat for some species. For example gray partridge (*Perdix perdix*) and coyote (*Canis latrans*) may use such areas. However, the majority of high quality wildlife habitats are associated with native vegetation communities. Weed infested lands have virtually no value as wildlife habitat and will not be discussed further in this section. Descriptions of mapped vegetation types, habitat each provide, and wildlife species noted in each are described below by vegetation type. Because of the linear nature of most habitats within the project area, especially riparian and wetland habitat, primary potential impacts are expected to affect bird species.

#### 3.6.1.1 Cottonwood-Dominated Forested Riparian Corridors

Black cottonwood stands are found along many areas of the Little Wood River and current irrigation canals. Sometimes they are mixed with yellow willow (*Salix lutea*),

which is a tree willow. Cottonwood is present along some canals in a fringe of almost pure cottonwood. They are also present in many areas dominated by shrub willows and alder. Many of these will not be dewatered or will receive high flows every 3 to 4 years, which will allow some regeneration and continuation. Cottonwood stands are high value wildlife habitats that are essential for reproduction for many species and used for hiding cover for others.

Wildlife species documented to occur within the project area in this habitat include northern flicker (*Colaptes auratus*), Bullock's oriole (*Icterus bullockii*), mourning dove (*Zenaida macroura*), American robin (*Turdus migratorius*), western wood pewee (*Contopus sordidulus*), mountain chickadee (*Poecile gambeli*), house finch (*Carpodacus mexicanus*), and American goldfinch (*Carduelis tristis*). Raptors, such as American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), mule deer (*Odocoileus hemionus*), and Swainson's hawk (*Buteo swainsoni*) were all observed in this habitat. These raptors also likely use cottonwood stands for nesting substrate. Even relatively narrow cottonwood riparian corridors along irrigation canals had large numbers of birds, particularly orioles, mourning doves, western wood pewees, and robins.

#### 3.6.1.2 Willow-Dominated Shrub-Scrub Habitats

Willow-dominated riparian and shrub-scrub wetlands are some of the most productive bird nesting habitat within the project area. This habitat typically included a variety of other shrubs and a few large cottonwoods, which combine to make it particularly high value bird habitat. A large variety of migratory songbirds were found in this habitat. The following species were all observed in

willow-dominated habitat: song sparrow (*Melospiza melodia*), warbling vireo (*Vireo gilvus*), common yellowthroat (*Geothlypis trichas*), fox sparrow (*Passerella iliaca*), yellow warbler (*Dendroica petechia*), cedar waxwing (*Bombycilla cedrorum*), black-throated gray warbler (*Dendroica nigrescens*), Lincoln sparrow (*Melospiza lincolni*), American robin, dark-eyed junco (*Junco hyemalis*), gray catbird (*Dumetella carolinensis*), and rufous-sided towhee (*Pipilo erythrophthalmus*).

### **3.6.1.3 Sagebrush-Dominated Upland Habitats**

In Idaho, sagebrush is primary habitat for a number of high priority or target bird species: sage grouse (*Centrocercus urophasianus*), ferruginous hawk (*Buteo regalis*), long-billed curlew (*Numenius americanus*), Brewer's sparrow (*Spizella breweri*), sage sparrow (*Amphispiza belli*), Swainson's hawk (*Buteo swainsoni*), sharp-tailed grouse (*Tympanuchus phasianellus columbianus*), burrowing owl (*Athene cunicularia*), sage thrasher (*Oreoscoptes montanus*), loggerhead shrike (*Lanius ludovicianus*), prairie falcon (*Falco mexicanus*), and western meadowlark (*Sturnella neglecta*) (Ritter, 2000). In the project area, one long-billed curlew was observed flying across sagebrush habitat in April.

Bitterbrush, which is present in some areas in association with sagebrush, is important winter browse for wild ungulates, particularly mule deer (Griffith and Peek, 1989). Loggerhead shrikes, a priority species in Idaho, nest primarily in sagebrush (60 percent) but bitterbrush is chosen as nesting substrate 20 percent of the time (Woods and Cade, 1996). Bitterbrush is an important food source for microtines, which eat the large seeds. Deer mice (*Peromyscus maniculatus*) harvest

and store the large seeds for later consumption (Clements and Young, 1996).

Species observed using this habitat in the project area include western meadowlark (*Sturnella neglecta*), turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), short-eared owl (*Asio flammeus*), western kingbird (*Tyrannus verticalis*), common raven (*Corvus corax*) and black-billed magpie (*Pica pica*).

## **3.6.2 Environmental Consequences**

### **3.6.2.1 Significance Criteria**

Impacts on wildlife resources would be considered significant if project implementation would be expected to reduce overall wildlife resources through such means as the following:

- Reduced habitat availability and function for wildlife habitat, especially breeding bird habitat, from reduction in riparian forested and/or shrub habitat from altered flows
- Mortality to wildlife species

### **3.6.2.2 No Action Alternative**

Under the No Action Alternative, conditions would remain the same as currently found in the project area. No changes in current operation of the reservoir and irrigation system would occur. Therefore, the No Action Alternative would have no direct, indirect, or cumulative impacts on wildlife resources compared to current conditions.

### **3.6.2.3 Proposed Action—Optimized System Upgrade Alternative**

Average river flows would increase under the Proposed Action. Flows under the Proposed Action would be higher all year, than those occurring under current

reservoir and river management. Most of the average monthly flows would remain at less than 50 cfs with no impacts on channel integrity. However April, May, and June flows would be higher than 50 cfs under the Proposed Action. Projected flows for April, May and June average 245 cfs, 233 cfs, and 240 cfs, respectively. These correspond to just less than a 5-year runoff event. These flows may provide some additional hydrology to cottonwood and willow habitat quality along the Little Wood Channel.

Increased flows in the main channel of the Little Wood River have the potential to result in beneficial direct, indirect or cumulative impacts for vegetation resources in the historic channel and its floodplain, both within the project area and downstream. Increased flows may allow natural revegetation to extend some degree downstream along the currently dry main channel of the Little Wood River. Additional flows and increased high flow events that would occur under the Proposed Action would create scour, transport sediment and cottonwood, willow, alder, and dogwood seeds downstream and across the historic floodplain and provide additional water for adjacent riparian vegetation and potentially significant improvement to wildlife habitat. These changes would be expected to increase breeding bird habitat to some degree. They would also be expected to increase amphibian habitat if they allow standing water areas to remain longer and thus provide additional time for tadpoles and young salamanders to mature. They may provide additional habitat for shorebird nesting (for example, killdeer, avocet, and stilts).

As discussed under vegetation resources, there are expected losses of linear woody vegetation along some canals. These

cottonwood galleries are known to support nesting Bullock's orioles, American robins, western wood pewees and nesting raptors. This reduction in hydrology is expected to have an indirect but potentially lethal effect to linear cottonwood and willow corridors that line the lower canal. This would result in indirect affects to breeding birds. However, the impacts would occur over time and would not be responsible for direct mortality to migratory bird species. The indirect impacts from the loss of linear habitats may be offset, in time, with an increase in riparian habitat along the historic Little Wood channel, as well as by planting of cottonwood and willow as compensation measures for vegetation loss (see Section 3.5.2.3). Although over the short term minimal impacts on wildlife resources may occur, no direct and/or cumulative impacts are anticipated over the long term with the implementation of proposed mitigation measures.

## 3.7 Federally Protected Species

The Endangered Species Act protects species that are listed as endangered or threatened, or proposed for listing, from activities that may harm or harass them. Pursuant to the Endangered Species Act, a federal agency must consult with the U.S. Fish and Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration (as appropriate) to ensure that its actions would not jeopardize the continued existence of the listed species.

Hawks, eagles, and owls are federally protected by the Bald and Golden Eagle Protection Act. All migratory birds are also protected from “take,” which includes destruction of nests, eggs, and young by the Migratory Bird Treaty Act. All native bird species found to occur along the proposed right-of-way are protected from “take” by these two federal acts.

### 3.7.1 Affected Environment

No Endangered Species Act-listed wildlife or plant species are known to occur near the proposed project footprint. One federal Endangered Species Act candidate species, the yellow-billed cuckoo (*Coccyzus americanus occidentalis*), has been found in riparian shrub cottonwood areas in Blaine County (Reynolds and Hinckley 2005). Habitat for this species occurs in or near the project analysis area.

#### 3.7.1.1 Yellow-Billed Cuckoo

The USFWS received a petition to list the yellow-billed cuckoo as an Endangered species in 1998. The petitioners stated that “habitat loss, overgrazing, tamarisk invasion of riparian areas, river management, logging, and pesticides have caused declines in yellow-billed cuckoo.”

In 2000, the USFWS found that the petition presented substantial scientific and commercial information to indicate that the listing of the yellow-billed cuckoo may be warranted. In that finding, the USFWS indicated that the factors noted by the petitioners may have caused loss, degradation, and fragmentation of riparian habitat in the West, and that loss of wintering habitat may be adversely affecting the cuckoo. In 2001, the USFWS determined that listing the yellow-billed cuckoo was warranted but precluded by higher priority species (66 FR 38611). The Western Distinct Population Segment (DPS) of the yellow-billed cuckoo was thereby given status as a Candidate species by the USFWS.

#### 3.7.1.2 Life History and Habitat Requirements

Yellow-billed cuckoos may go unnoticed because they are slow-moving and prefer dense vegetation. In the West, yellow-billed cuckoos prefer sites with a dense understory of willow combined with mature cottonwoods and generally within 100 meters of slow or standing water (Gaines and Laymon, 1984). The yellow-billed cuckoo is also known to use non-riparian, dense vegetation such as wooded parks, cemeteries, farmsteads, tree islands, Great Basin shrub-steppe, and high-elevation willow thickets (DeGraff et al., 1991). They feed on insects (mostly caterpillars), but also beetles, fall webworms, cicadas, fruit, and, especially, berries. Breeding often coincides with the appearance of massive numbers of cicadas, caterpillars, or other large insects (Ehrlich et al., 1988).

#### 3.7.1.3 Status of the Yellow-Billed Cuckoo in the Project Analysis Area

Recent surveys were completed across Idaho for all areas with historic records of

yellow-billed cuckoos. Although yellow-billed cuckoos in Idaho are mainly associated with cottonwood galleries along the Snake River in southeast Idaho, the species was also found during both years of surveys on the Big Wood River near Bellevue and near SH-20 in Blaine County (Reynolds and Hinckley, 2005).

For this reason, call-back surveys for yellow-billed cuckoos were completed along riparian habitats with willow and cottonwood in the project area on June 5, 2009. Five callback points were established along the project pipeline analysis area. One potential response was heard at the far north end of the project alignment. The response was at a distance and appeared to come from a wide riparian habitat outside the project area boundary on a site that will not be disturbed by the project. An additional survey point (Figure 10, ybcu-5) was established outside the analysis area in this riparian zone in order to determine if the call was the yellow-billed cuckoo. The response was not repeated and the bird did not come any closer so that it could be definitely identified. It is possible that yellow-billed cuckoos use the propose project area incidentally. They do not appear to use it for nesting.

### **3.7.2 Environmental Consequences**

#### **3.7.2.1 Significance Criteria**

Impacts on federally protected species would be considered significant if project implementation would be expected to reduce overall federally protected species resources through the following means:

- Reduced habitat availability and function of yellow-billed cuckoo habitat, especially breeding habitat, from a reduction in riparian forested and/or shrub habitat from altered flows

- Mortality to yellow-billed cuckoos

#### **3.7.2.2 No Action Alternative**

Under the No Action Alternative, conditions would remain the same as currently found in the project area. No changes in current operation of the reservoir and irrigation system would occur. Therefore, the No Action Alternative would have no direct, indirect, or cumulative impacts on yellow-billed cuckoos compared to current conditions.

#### **3.7.2.3 Proposed Action—Optimized System Upgrade Alternative**

Yellow-billed cuckoos require large expanses of cottonwood and willow scrub-shrub habitats for breeding. These habitats are more diverse in areas along the historic Little Wood River channel that receive enough water to support a variety of tree and shrub species along both the historic canal and along the historic floodplains. These wider areas of high quality habitat are the best potential habitat for yellow-billed cuckoos, and these areas will either not be impacted or will improve slightly.

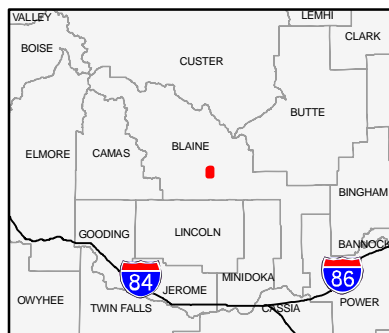
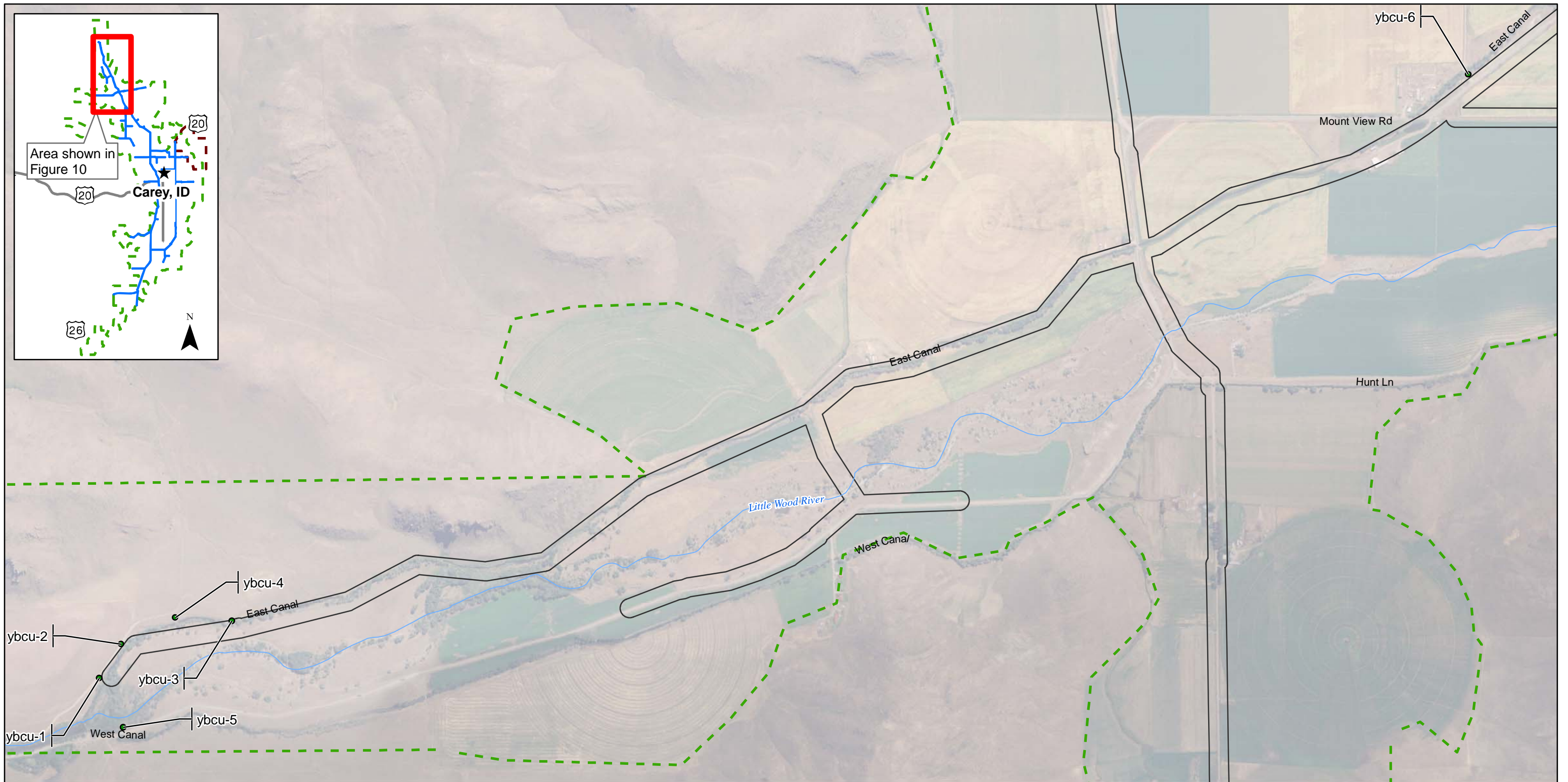
Irrigation has produced areas of very linear habitat along irrigation channels in other areas that produce no suitable nesting habitat for yellow-billed cuckoos. Loss of in-channel flows diverted for agriculture, as well as the naturally occurring porous soils that facilitate rapid transfer of surface flows subsurface, are the primary reasons these habitats are limited in their extent. Loss of these linear habitats is not expected to impact this species.

Average river flows would increase under the Proposed Action as described in Section 3.3.2.3. These flows may provide some additional hydrology to cottonwood



and willow habitat quality along the Little Wood channel.

No yellow-billed cuckoos were found during callback inventories within the proposed project analysis area. Nesting habitat within the project analysis area would provide extremely marginal canopy cover and is very linear in nature. Neither of these characteristics is considered as nesting habitat for this species. Higher quality larger extents of riparian habitat do occur in the vicinity. If nesting occurs, it would be expected to occur in these areas. No direct and/or cumulative impacts on this species are expected to occur from implementation of the Proposed Action. Indirect affects from loss of potential corridors for movement are expected to be minimal.



- ybcu - yellow-billed cuckoo survey point
- Little Wood River
- Irrigation District Boundary
- Carey Lake WMA
- ▭ Study Area

Source: NRCS, LWRID, 2004 NAIP, ESRI Base data.

0 0.125 0.25 Miles



**Figure 10**  
**Yellow-Billed Cuckoo Survey**  
**June, 2009**  
 Little Wood River Irrigation District  
 Pressurized Pipeline Irrigation  
 Delivery System



## 3.8 Wetlands

Wetlands and Waters of the U.S. were identified using methods described in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (USACE, 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE, 2008). The current functional condition of existing wetlands in the project area were based on the *Montana Department of Transportation Wetland Assessment Method* (Berglund, 1999). National Wetlands Inventory data (USFWS, 2009) and Blaine County soil survey information (USDA-NRCS, 2009a and 2009b) were reviewed prior to the field investigation to identify areas of potential wetlands within the study area. All field verified wetlands were classified using the Cowardin classification system (Cowardin et al. 1979). A preliminary assessment of jurisdictional status of all delineated wetlands and Waters of the U.S. for USACE's final determination, as described in the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (USACE and EPA, 2007), was prepared. *The Little Wood River Irrigation District Pressurized Irrigation Project Wetland Delineation and Request for Jurisdictional Determination* (CH2M HILL, 2009) was submitted to USACE in August 2009. A preliminary assessment of jurisdictional status for delineated wetlands and Waters of the U.S. for the LWRID project was included in this document. The report also provides a description of wetlands and Waters of the U.S. in the project area with maps and functional assessments for each. USACE's jurisdictional determination is

included in Appendix B, *Agency Correspondence*.

### 3.8.1 Affected Environment

A total of 0.21 acre of jurisdictional palustrine wetlands and 1,391,959 linear feet of riverine wetlands (Waters of the U.S.) have been identified within the wetland study area. Palustrine wetland areas include Wetland Complex A (0.02 acre of fringe Palustrine Emergent [PEM] and 0.18 acre of fringe Palustrine Scrub-shrub [PSS]) and Wetland B (0.01 acre of PEM fringe wetland) located on the banks of the East Canal. All wetlands in the project area are influenced by irrigation water flows in canals.

Riverine wetlands and preliminary Waters of the U.S. identified within the wetland study area include the Little Wood River (43,425 linear feet), Little Wood River overflow channel (270 linear feet), East Canal (667,757 linear feet), West Canal (599,408 linear feet), and the Carey Lake Wildlife Management Area feeder canal (81,099 linear feet). The preliminary Waters of the U.S. jurisdictional determination for riverine wetlands includes the Little Wood River (Traditional Navigable Water [TNW]), Little Wood River overflow channel (non-navigable Relatively Permanent Water [RPW]), East Canal (non-navigable RPW), West Canal (non-navigable RPW), and the Carey Lake Wildlife Management Area feeder canal (non-navigable RPW). Waters of the U.S. are federally regulated and require permitting under Section 404 of the Clean Water Act for fill or excavation between their ordinary high water marks. In general, mitigation for riverine wetland types is not typically required by the USACE. Table 5 summarizes wetland resources identified within the project study area.

TABLE 5  
Wetlands and Waters of the U.S. Identified within the LWRID Study Area

| Wetland or Waters of the U.S.                              | Cowardin Classification <sup>a</sup><br>Jurisdictional Determination | Area or Length                                 | Category <sup>b</sup> |
|--|--|--|-----------------------|
| Wetland Complex A  | PEM/Jurisdictional   | 0.02 acre                                      | III                   |
|  | PSS/Jurisdictional   | 0.18 acre                                      | III                   |
| Wetland B  | PEM/Jurisdictional   | < 0.01 acre (0.004)                            | III                   |
|  | PSS/Jurisdictional   | 0.01 acre                                      |                       |
| Little Wood River  | Riverine <sup>c</sup> /Jurisdictional                                | 1.00 acre<br>(43,425 linear feet)              | -                     |
| Little Wood River, overflow channel                        | Riverine <sup>c</sup> /Jurisdictional                                | 0.11 acre<br>(270 linear feet)                 | -                     |
| East Canal   | Riverine <sup>c</sup> /Jurisdictional                                | 15.33 acres<br>(667,757 linear feet)           | -                     |
| West Canal   | Riverine <sup>c</sup> /Jurisdictional                                | 13.76 acres<br>(599,408 linear feet)           | -                     |
| Carey Lake Wildlife Management feeder canal                | Riverine <sup>c</sup> /Jurisdictional                                | 1.86 acres<br>(81,099 linear feet)             | -                     |
| <b>Total Palustrine Wetland by Cowardin Classification</b> |  |  |                       |
|  | PEM  | 0.02 acre                                      |                       |
|  | PSS  | 0.19 acre                                      |                       |
|  | <b>Total</b>   | <b>0.21 acre</b>                               |                       |
| <b>Total Riverine/Waters of the U.S.</b>                   |  | <b>32.06 acres<br/>(1,391,959 linear feet)</b> |                       |

<sup>a</sup> Cowardin et al., 1979

<sup>b</sup> Berglund, 1999

<sup>c</sup> Acres/linear feet included under Total Riverine/Waters of the U.S.

PEM = Palustrine Emergent

PSS = Palustrine Scrub-shrub

Wetland Complex A and Wetland B are Category III PEM or PSS fringe wetlands associated with the East Canal. Dominant species within wetland communities include red osier dogwood in the shrub layer and reed canarygrass in the emergent layer. These wetlands provide moderate to low functional potential for wildlife habitat, shoreline stabilization, and biochemical functions. Wetland Complex A and Wetland B are likely subject to federal regulation because they directly abut the East Canal (non-navigable RPW) with direct connection to a TNW (Little Wood River). Palustrine wetlands are federally regulated under the

Clean Water Act therefore any dredge or fill activities within their boundaries require permitting under Section 404. Mitigation for impacts on palustrine wetland types are typically required by the USACE in proportion to their functional potential.

In general, mitigation for riverine wetland types are not typically required by the USACE as they occur below the ordinary high water mark. Waters of the U.S./riverine wetlands identified within the wetland study area include the Little Wood River, Little Wood River overflow channel, and irrigation features (East

Canal, West Canal, and the Carey Lake Wildlife Management Area feeder canal).

### **3.8.2 Environmental Consequences**

#### **3.8.2.1 Significance Criteria**

Impacts on wetlands or Waters of the U.S. would be considered significant if either of the following would occur:

- Impacts on wetland resources would be considered significant if project implementation would result in a net loss of jurisdictional wetlands after implementation of mitigation.
- Impacts on Waters of the U.S. would be considered significant if project implementation resulted in a loss of linear feet of Waters of the U.S. following construction regrading.

#### **3.8.2.2 No Action Alternative**

Under the No Action Alternative, conditions would remain the same as currently found in the project area. No changes in current operation of the reservoir and irrigation system would occur. Therefore, the No Action Alternative would have no direct, indirect, or cumulative impacts.

#### **3.8.2.3 Proposed Action—Optimized System Upgrade Alternative Direct Impacts**

Under the Proposed Action flows in the East Canal would be reduced to 20 to 30 cfs. Flows in the West Canal would be reduced to 15 to 25 cfs. Flows are expected to completely infiltrate upstream of the City of Carey under normal circumstances. Direct impacts on Waters of the U.S. include 7,416 linear feet of existing canals to be regraded into farmable floodways to mitigate for the potential impacts of flooding. Direct

temporary impacts on Waters of the U.S. include 686 linear feet of canal features that will be regraded to original contour and revegetated with a native seed mix.

Direct impacts on Waters of the U.S. (East and West Canals—7,416 linear feet) are expected to occur in three locations that would be regraded and converted into farmable floodways to mitigate for the potential impacts of flooding. These floodways would be wide at the bottom with gently sloping sides as required to allow for cultivation. Flows within the farmable floodways are anticipated during high precipitation and following snow melt events (potential flood conditions). Farmable floodway include 2,233 linear feet on the East Canal south of Little Wood Reservoir Road and approximately 0.3 mile east of Hunt Lane; 2,392 linear feet, constructed along the East Canal south of the Little Wood Reservoir Road crossing located approximately 0.8 mile north of Dry Creek Road; and 2,791 linear feet would be constructed along the Dry Creek/West Canal just west and south of the terminus of North Griffin Loop. Mitigation is not typically required for impacts on Waters of the U.S.

Temporary impacts on Waters of the U.S. resources (686 linear feet) are expected to result from construction activities in locations where pipe installation crosses the east and west canals. Installing the distribution pipe would require a temporary construction zone that would be a maximum of approximately 100 feet wide along the pipeline. This temporary construction work space could shift horizontally in relation to the pipe centerline to avoid existing roadways or environmentally sensitive areas (the Little Wood River overflow channel). The actual trench width would vary between 3 and 15 feet depending on the pipe diameter

and depth of installation. The remainder of the temporary work space would be needed for material staging, soil excavation stockpiles, and construction equipment. The temporary construction work space including the pipe trench will be regarded to original contour and revegetated with a native seed mix. Overall, impacts on Waters of the U.S. would be minimal.

No direct impacts on wetlands would occur.

### **Indirect Impacts**

As a result of the reduced flows an indirect loss of 0.21 acre of PEM (0.02 acre)/PSS (0.19 acre) fringe wetland along the east and west canals is expected.

Indirect impacts on fringe wetlands located on low terraces of the East and West Canals (0.21 acre) are expected as a result of reduced flows associated with the Proposed Action. Current flow rates within the canal system ranges from 200 to 250 cfs. Reduced flow rates are not anticipated to provide wetland hydrology requirements that support wetland vegetation and hydric soil conditions.

Mitigation for wetland losses are proposed along the East and West canals along the Proposed Action ordinary high water mark. Mitigation will include installation of native wetland shrub communities along the east and west canals to replace lost ecological function associated with the Proposed Action. The mitigation wetlands would be located at a lower terrace elevation and would be supported hydrologically by the anticipated reduced flows in the canals. Mitigation ratios will be determined by the USACE in conjunction with the LWRID.

Indirect impacts of the Proposed Action may provide a net benefit to wetland resources adjacent to and within the Carey

Lake Wildlife Management Area. Under the Proposed Action, 6 to 20 cfs of flow could be delivered to Carey Lake Wildlife Management. The water delivered to Carey Lake could be better managed to allow for delivery earlier or later in the season and are anticipated to support and stabilize wetland hydrology yielding a net benefit to wetlands resources in this area. In addition, flow in the Little Wood River although still variable, would be increased from pre-project conditions according to preliminary calculations. The anticipated flow increases in the Little Wood River may promote wetland habitat establishment adjacent to the Little Wood River and above its confluence with Silver Creek. Overall, impacts on wetland resources over the short term would be minimal. Over the long term, with the implementation of mitigation measures and increased flow available in the Little Wood River, indirect impacts on canals would be offset. In turn, no indirect impacts are anticipated.

No indirect impacts on Waters of the U.S. are anticipated.

### **Cumulative Impacts**

No cumulative impacts on wetland or Waters of the U.S. are anticipated as a result of the Proposed Action.



### 3.9 Recreation

Recreation facilities can be private, city, county, state, federal (U.S. Forest Service [USFS], National Park Service, and U.S. Bureau of Land Management [BLM]), or Tribal owned/operated. Recreation facilities include developed facilities such as campgrounds, swimming pools and parks, and dispersed recreation opportunities include camping (at undeveloped sites), fishing, hiking, hunting, and wildlife viewing.

#### 3.9.1 Affected Environment

A wide range of recreation facilities and opportunities is available in Blaine County. USFS lands total 488,538 acres in the county. Recreation facilities include six small campgrounds, one picnic area, and approximately 300 miles of trails. Recreation activities include hiking, jogging, mountain biking, motor biking, horseback riding, fishing, sightseeing, skiing, snowmobiling, hunting, camping, and picnicking.

A portion of the Sawtooth National Recreation Area is located in Blaine County. Recreation facilities include six developed campgrounds, seven picnic sites, and approximately 143 miles of trails. Use is primarily sightseeing, hiking, backpacking, camping, picnicking, horseback riding, fishing, and mountain biking.

Recreation opportunities exist on 790,000 acres of BLM lands throughout the county. Activities include boating, picnicking, hiking, camping, hunting, fishing, and sightseeing.

Craters of the Moon National Monument, administered by the National Park Service,

is also located in Blaine County and offers a campground, trails, and a visitor center.

Other recreation areas in the county include the Silver Creek Preserve; Reinheimer Ranch; Idaho Foundation for Parks and Lands nature preserve; and various waterways, geothermal sites, and natural springs. In addition, local city parks and recreation facilities are located in the various cities and towns.

Sun Valley Resort, including Bald Mountain, is mostly located on USFS and BLM land. Skiing is the primary recreation activity at this privately-owned resort. Other private industry-owned/maintained recreational facilities in the county include swimming pools, golf courses, tennis courts, gun clubs, polo grounds, and cross country ski centers (Blaine County, 1994).

Little Wood Reservoir, located 10 miles northwest of the City of Carey, Idaho, has a picnic area and campground. Fishing opportunities are also available at the reservoir, Carey Lake, and the Carey Lake Wildlife Management Area. Additional recreation activities in the surround area include ice fishing, hunting, snowmobiling, and hiking (USDA NRCS and LWRID, 2003).

Blaine County, in Title 8, Section 14 Recreation (Blaine County, 1994), has expressed its goals to:

- Protect the health and lifestyles of Blaine County's residents and visitors.
- Preserve and enhance the recreational opportunities available for residents and visitors of Blaine County.
- Cooperate with the Blaine County Recreation District and other local, state, and federal agencies to ensure recreation, parks, and open space needs of residents are met.

- Support a recreation, parks, and open space master plan for Blaine County, and when completed, integrate it into the Comprehensive Plan.
- Encourage all developed recreation facilities to provide for public use.

Recreation plays an important role in the lives of the residents of Carey. Within the City, recreation facilities are provided at the school, City Park, and Rodeo and County Fairgrounds. By facility, they include the following improvements:

- School—playground, two tennis courts, two indoor gymnasiums, track and football field, and a baseball field
- City Park—water facility, playground with swings, picnic tables, barbecue area, volleyball court, and one basketball hoop
- Rodeo and County Fairgrounds—rodeo arena, parking, fenced and grassed picnic area, unimproved community building, and fair buildings (City of Carey, 1997)

Average standards for public park lands in the Pacific Northwest and elsewhere in the United States vary from as little as 8 acres per 1,000 residents in Gresham, Oregon, to 36 acres of park land for every 1,000 persons in Kansas City, Missouri. Currently, in Blaine County, the ratio is slightly over 32 acres per 1,000 residents for neighborhood, community, regional and linear parks. In the Carey, the ratio is 28 acres per 1,000 residents (City of Carey, 1997).

The recreation section of the Carey Comprehensive Plan (City of Carey, 1997) includes the following goals and objectives regarding recreation:

- Protect the health and lifestyles of Carey's residents and visitors.

- Preserve and enhance the recreational opportunities available for residents and visitors of Carey.
- Work in conjunction with the Blaine County Recreation District, School District, other agencies and private industry to ensure recreation, parks, and open space needs of residents are met.
- Encourage all developed recreational facilities to provide for public use, and encourage all new subdivisions to dedicate park land and facility improvements for residents and the public.
- Study and adopt standards and fees for subdivisions and developments to provide recreation facilities for the needs of the public.

A children's camp has historically been held at the Jevne Ranch, and the children at the camp occasionally swam and floated in inner tubes in the irrigation canals. Such recreational use of the irrigation canals has ceased. Such use is estimated at fewer than 5 days in the past 15 years and has not occurred in the past 5 years (Simpson, pers. comm., 2009).

### **3.9.2 Environmental Consequences**

#### **3.9.2.1 Significance Criteria**

The project would have a significant impact on recreation if any of the following would occur:

- The removal, degradation, or rendering useless of existing recreation facilities.
- The need for recreation facilities would increase as a result of the Proposed Action.
- Existing recreation opportunities were eliminated or adversely affected.

### **3.9.2.2 No Action Alternative**

Implementation of the No Action Alternative would not result in a change in current conditions; therefore, no impacts on recreation resources or opportunities would occur.

### **3.9.2.3 Proposed Action**

Although construction of the Proposed Action would take approximately 2 years to complete, Proposed Action construction crossings along the county road to Little Wood Reservoir would cause only short-term delays for local and regional traffic traveling to Little Wood Reservoir because construction activities would occur for only a short time in any given location. In addition, increased heavy equipment traffic may discourage recreation use of the area. These are considered short-term indirect impacts on recreationists.

The Proposed Action would result in a change in irrigation from canals to pipelines serving the local agricultural fields, but would not affect any existing recreation facilities. Project implementation would result in a more efficient water delivery system (lower water losses [seepage] in the canals). This means that there would be less water demand downstream of the LWRID diversion dam. With implementation of the Proposed Action, water would be released to the proposed new pipeline, releases would be made to the East Canal and the West Canal, and releases to the Little Wood River in all water year types (dry, normal, wet) would be increased when compared to pre-project conditions.

In addition, water levels would be maintained in the Little Wood Reservoir for longer periods of time. The Little Wood Reservoir has a 30,000 acre-feet storage capacity, and is at capacity

typically March through June, depending on water year type, the amount of snowpack at higher elevations, and the previous year's flow. Because system losses would decline with the Proposed Action, its implementation would result in more water being retained in the reservoir. Both the increased flows in the river, and the higher water surface elevations in the reservoir, would be sustained for more days, weeks, or months each year than is currently the case, depending on the water year type and the water levels at the beginning of the water year.

Providing more water in the river, and higher water surface levels in the reservoir for a longer period of time, is likely to result in indirect beneficial impacts. These would translate to increased and improved water-dependent and water-enhanced recreation opportunities, such as fishing, hiking, camping, swimming, and boating.

Recreationists engaged in viewing wildlife and the associated vegetation and change in vegetation colors during the different seasons may not enjoy the viewing experience as much as before the project was implemented due to the removal of trees and shrubs from project construction along the canals and rivers. In turn, a potential long-term indirect impact to wildlife viewing is anticipated and would be minimal.

No impact on recreation use associated with the Jevne Ranch (children's camp) is expected from implementation of the Proposed Action because recreational use of the irrigation canals by children at the camp has ceased.

### 3.10 Land Use

Land use classifications characterize the natural and/or human activities that occur at, or are planned for, a given location. Natural land uses include open grassland, open space, forest, open water, and other undeveloped uses. Developed land uses are generally classified as residential, commercial, industrial, airfield, and other types of human-made development. Comprehensive plans, policies, and zoning regulate the type and extent of land uses allowable in specific areas, and often protect environmentally sensitive resources. Land use impacts typically result from actions that negatively affect or displace an existing use, or the suitability of an area for its current, designated, or formally planned use.

#### 3.10.1 Affected Environment

The Proposed Action is comprised of lands within the city of Carey and in unincorporated Blaine County adjacent to, and near, the city. Land uses within the project area are primarily agricultural—mostly Agricultural-40, some Agricultural-20, with Residential-10, Rural Remote RR-40, and incorporated city land within the city’s boundaries (Blaine County, no date—map).

Carey is a rural agriculturally based residential community with a population of 730 located in southeastern Blaine County. The land around the City is irrigated agricultural land fed by the Little Wood River, Fish Creek Reservoir and Little Wood Reservoir. The major land use in the area is agriculture, with active farming, ranching and production uses. The majority of uses in the City are commercial (gas station, maintenance shops, bar, cafes, grocery store, and post

office) located along main street (U.S. 93). Extensive commercial business development is not present in Carey because many residents are employed in other cities in Blaine County that provide these conveniences. The residential area is concentrated around Main Street (City of Carey, 1995).

The basic objective of the Land Use section of the City of Carey Comprehensive Plan is to plan patterns of future land use that will preserve and enhance the rural atmosphere and character of agricultural, residential, open space, and recreational uses balanced by a respect for private property rights in regulating development and growth (City of Carey, 1995).

The City of Carey’s Comprehensive Plan’s goals and objectives include the following:

- Arrange future land uses so they are orderly, convenient, and compatible with each other and their natural settings. For example, whenever possible, like uses in land should face like uses across streets, and dissimilar uses should back up to each other across alleys.
- Anticipate and provide for a variety of land uses that meet the needs of the community. This should be done in a manner that keeps complementary uses in contiguous areas, provides for smooth transitions among land uses, and is done in an aesthetic manner that enhances the safety and welfare of the citizens while protecting and enhancing property values.

In agricultural/residential low density areas, the following recommendation is applicable:

- Viable agricultural lands within the City should be reasonably protected from conflicts with inappropriate uses, residential and otherwise (City of Carey, 1995).

The basic objective of the Blaine County land use code is to plan patterns of future land use that will preserve and enhance the rural atmosphere and character of agricultural, open space, and recreational uses balanced by a respect for private property rights in regulating development and growth (Blaine County, 1995).

In determining future land uses in the Carey area, the County should consider the following goals:

- Preserve productive agricultural areas and soils.
- Plan for reasonable commercial and industrial growth with industrial growth preferred in the southeastern corner of the community.
- Encourage residential development to occur adjacent to existing infrastructure and out of productive agricultural areas (Blaine County, 1995).

There are 10,800 acres of irrigated cropland in the project area, 780 acres of which are surface irrigated, and 10,020 acres of which are sprinkler irrigated. Nearly all of the irrigated cropland is designated Prime Farmland or Statewide Important Farmland (USDA NRCS and LWRID, 2003). Alfalfa is raised for 5 years, and is then rotated to small grains typically consisting of malting barley and feed grains. Yields are 127 bushels barley with sprinkler

irrigation and 90 bushels with surface (furrow) irrigation. Hay yields are typically 5.5 tons per acre with sprinkler irrigation, and 4.5 tons per acre with surface irrigation. One producer raises approximately 750 acres per year of seed potatoes (USDA NRCS and LWRID, 2003).

Seventeen livestock feeding operations exist in the project area. They are grouped in two size ranges: 100 to 350 cow/calf pairs with calves that average 500 pounds, and small operations that have 10 to 50 head (two operations are horses). Two small dairy operations, one swine operation, and two sheep operations of approximately 6,000 head each are also present. In addition, there are numerous small, 5- to 10-acre pasture units scattered throughout the project area. Most are odd areas with marginal soils that could not be farmed or are small units adjacent to the farmstead (USDA NRCS and LWRID, 2003).

### **3.10.2 Environmental Consequences**

#### **3.10.2.1 Significance Criteria**

The project would have a significant impact on land use if any of the following would occur:

- A change to the existing land use that would be incompatible with adjacent or surrounding land uses
- A proposed land use that would be inconsistent with the zoning of the land
- A proposed land use that would be inconsistent with the goals, objectives, or policies of a comprehensive plan that is applicable to the project area

### **3.10.2.2 No Action Alternative**

The No Action Alternative would not result in impacts on land use because there would be no change in land use within the project area.

### **3.10.2.3 Proposed Action—Optimized System Upgrade Alternative**

During construction of the Proposed Action, yield losses on farmland that is along the pipeline alignment are expected. This is considered a direct short-term impact to agricultural production. Yields would be expected to return to pre-project levels during the next growing season.

The land within the project area that is outside of the city limits is zoned mostly agricultural. Residential and City land uses are also designated within the project area. The Proposed Action would result in land use that would be consistent with the current zoning. Direct affects are anticipated to occur with the proposed conversion of some land in three areas along the canals from currently undeveloped open space to agricultural land (farmed floodways). This conversion would increase the crop production in the area. One farmable floodway totaling 2,233 linear feet would be constructed in the East Canal south of Little Wood Reservoir Road and approximately 0.3 mile east of Hunt Lane. A second floodway that would total 2,392 linear feet would be constructed along the East Canal south of the Little Wood Reservoir Road crossing located approximately 0.8 mile north of Dry Creek Road. A third farmable floodway that would total 2,791 linear feet would be constructed along the Dry Creek/West Canal west and south of the terminus of North Griffin Loop.

Depending on personal values relative to open space and agricultural lands, long-

term impacts on land use would vary from minimal to potentially beneficial effects.

No indirect and/or cumulative impacts are anticipated to occur as a result of the Proposed Action.

In addition to providing increased crop production in the area once the proposed pipeline is installed, the Proposed Action would potentially increase the yield on the irrigated acres because of the decrease in irrigation supply inefficiencies that are expected with Proposed Action implementation.

With implementation of the Proposed Action, several or most of the animal feeding operations that currently use canal water for their livestock will need to install new or modified livestock watering facilities.

No significant management changes are expected on the 10,800 acres of irrigated cropland (Prime Farmland or Statewide Important Farmland).

### 3.11 Visual Resources

Visual resources refer to the natural and constructed features that give a particular environment its aesthetic qualities. In undeveloped areas, landforms, water surfaces, and vegetation are the primary components that characterize the landscape. Constructed elements such as buildings, fences, and streets also may be visible. These may dominate the landscape or be relatively unnoticeable. Attributes used to describe the visual resource value of an area include any significant views or vistas, landscape character, perceived aesthetic value, and uniqueness.

#### 3.11.1 Existing Environment

The project area is within the Wood River Valley in Blaine County. The project area is primarily an agricultural area with a few rural residences outside of the city limits of Carey. The agricultural landscape contributes to the open space and rural character of the area. Cottonwoods exist along the river channel and canal. The trees provide a visual transition from irrigated cropland to the Little Wood River and Little Wood Reservoir upstream from the project.

Blaine County is an area of historic mining and sheep ranching, and is currently known for summer and winter recreation and tourism because of the Sun Valley Resort.

Carey is a rural community with a population of 730 (City of Carey, 2009) with farm animals and easy access to open spaces and fields. As a working farm community, typical landscaping features are hedge rows along fields, native grasses along fence lines, native riparian plants along waterways, and shade and fruit trees around home sites. The neighborhoods of

Carey are mostly single-family dwellings. In downtown Carey, there are few sidewalks, and landscaping and the planning of public spaces have only been addressed in an ad hoc fashion. Carey has not developed design standards for the community (City of Carey, 1997).

The City of Carey's Comprehensive Plan desirable goals and objectives include the following:

- The City should encourage the development of an aesthetically pleasing community.
- Enhance the image of Carey as a good place to live, work, and visit (City of Carey, 1997).

Blaine County addresses aesthetics in its Comprehensive Plan Title 8, Chapter 1, Section 6. Preservation of visual scenic quality, clean air, high water quality, absence of noise pollution and other aspects of the natural environment are important to the residents of the County as well as to the recreational economy. Primary areas of consideration are as follows:

- Rivers and streams are a recreational focal point in Blaine County. An unobstructed visual corridor along streams and rivers shall be maintained without the intrusion of structures that prevent natural views of such streams and rivers.
- Hillside areas provide the back drop for most of the scenic vistas, and have a high degree of visibility. The scars created by roads, vegetation clearing, and building construction can have a major impact on scenic quality.
- Roads provide access to a changing series of visual experiences and are a significant element in the landscape.



The visual experience afforded the local resident and tourist traveling on U.S. 93, 75, and 20 determines the primary way that the Wood River Valley is perceived. Roadside development denies visual access to the landscape. The containment of development in the cities, along with limited access and collector road systems, encourage alternate rural development patterns.

- Consideration should be given to setting a reasonable limitation on the duration of construction time for commercial, industrial, and residential building sites beyond normal building completion.
- Due to the shrinking availability of land in the Wood River Valley and the high demand for residential construction, it is declared public policy to preserve as much open space and recreational space as possible.
- It is the County's policy to have all commercial and industrial structures and improvements, as well as all residential properties seeking a variance or conditional use permit, to be subject to design review by the Planning and Zoning Commission.
- U.S. 93, 75, and 20 are designated as Scenic Corridors. Development in areas of high visibility shall be restricted based on objective visual analysis criteria.
- The location and alignment of roadways can preserve or enhance specific scenic qualities, which should be considered in future alignment planning. Location of necessary, but often unsightly, public utilities should be placed out of the view corridors

whenever possible (Blaine County, 1994).

Blaine County's Comprehensive Plan Title 8, Section 15 indicates the County's desire to preserve the scenic characteristics of the County (Blaine County, no date).

### **3.11.2 Environmental Consequences**

#### **3.11.2.1 Significance Criteria**

The project would have a significant impact on visual resources if either of the following would occur:

- Negative impact on landscape scenic quality
- Negative impact on views of residents, recreationists, and motorists on U.S. 93, U.S. 20, U.S. 26, and local roadways

#### **3.11.2.2 No Action Alternative**

No new construction, development activities or changes in operation are proposed if the No Action Alternative is implemented; therefore, no impacts on visual resources would occur.

#### **3.11.2.3 Proposed Action—Optimized System Upgrade Alternative**

Implementation of the Proposed Action would result in impacts on the landscape along the pipeline alignment. Although impacts on the landscape would be inevitable as a consequence of implementing the pipeline improvements, the landscape changes would not adversely impact the overall scenic quality of the project area. Development of the Proposed Action would result in direct affects through the reduction of trees and shrubs along certain canals, in the construction work areas, and in the three

canal areas that would be converted to farmable floodways. Project development would also reduce the visual transition from cropland to the Little Wood River corridor. These changes may affect the views from the roadways where the pipeline improvements are proposed; however, because the pipeline would be installed underground, few aboveground project facilities would be visible once the project is constructed and the disturbed areas are revegetated. In addition, because there would be less demand for water downstream of the LWRID diversion dam if the Proposed Action is implemented, and because of a more efficient water delivery system, water may stay in the Little Wood Reservoir and Little Wood River for longer periods of time. Increased water levels may be sustained for more days, weeks, or months each year than is currently the case, depending on the water year type and the water levels at the beginning of the water year. These changes in water levels may be perceptible to the frequent visitor to the area, or someone who is very familiar with the historical water situation of the area, but may not be perceptible to the casual or infrequent visitor to the area.

The visual impacts from constructing the pipeline improvements would depend on the degree of change to the visual resource and the viewers' response to that change. Potential impacts on visual resources during construction would be direct and short-term in any given location (1 to 3 days), and would include dust and the presence of the construction equipment, personnel, and activities. Dust would be emitted from vegetation removal, earthmoving, construction vehicles and equipment, construction worker vehicles, materials delivery vehicles, from areas within the construction zone that have been disturbed. Fugitive dust would be

controlled through application of water to bare areas during construction, and would therefore not impair or degrade existing views, resulting in no adverse impacts on visual resources.

Depending on their values, interests, and preconceived notions and expectations, some people viewing the area may see the presence of the construction equipment, personnel, and the associated activities as detracting from the views currently experienced. For other people, the presence of these activities would be interesting and would add visual variety to the landscape. For those people whose views would be adversely affected, a temporary adverse impact would occur; for those who would find the construction to be visually interesting, no impacts would occur.

employment distribution, personal income, and business growth.

## 3.12 Socioeconomics

Socioeconomic resources are defined as the basic attributes associated with the human environment, particularly population and economic activity. Population is described as the magnitude, characteristics, and distribution of people. Economic activity is described in terms of

### 3.12.1 Affected Environment

Table 6 displays the population demographics for the City of Carey, Blaine County, and the state of Idaho.

Table 7 presents employment and income characteristics for the City of Carey, Blaine County, and the state of Idaho.

TABLE 6  
Population Demographics from the 2000 US Census

| Geographic Area | Total Population | Population Age 3 and Older in School | Population Age 25 and Older | Education (High School Graduate or Higher) | Place of Birth |              | Language Spoken |       |         |
|-----------------|------------------|--------------------------------------|-----------------------------|--|----------------|--------------|-----------------|-------|---------|
|                 |                  |                                      |                             |  | In U.S.        | Outside U.S. | English         | Other | Veteran |
| Carey           | 513              | 35%                                  | 59%                         | 82.7%                                      | 96.9%          | 3.1%         | 95.3%           | 4.7%  | 16.3%   |
| Blaine County   | 18,991           | 23%                                  | 68%                         | 90.2%                                      | 88.2%          | 11.8%        | 87.5%           | 12.5% | 11.5%   |
| Idaho           | 1,293,953        | 28%                                  | 61%                         | 84.7%                                      | 94.2%          | 5.8%         | 90.7%           | 9.3%  | 14.8%   |

Source: U.S. Census Bureau, 2000

TABLE 7  
Employment and Income Data from the US Census

| Parameter                                       | City of Carey |      | Blaine County |      | State of Idaho |      |
|---|---------------|------|---------------|------|----------------|------|
|   | Number        | %    | Number        | %    | Number         | %    |
| Total population                                | 513           |      | 18,991        |      | 1,293,953      |      |
| Population 16 and older                         | 390           | 100  | 15,000        | 100  | 969,872        | 100  |
| In labor force                                  | 272           | 69.7 | 11,316        | 75.4 | 641,068        | 66.1 |
| Employed  | 263           | 67.4 | 10,846        | 72.3 | 599,453        | 61.8 |
| Unemployed                                      | 9             | 2.3  | 470           | 3.1  | 36,784         | 3.8  |
| Median household income                         | \$39,861      |      | \$50,496      |      | \$37,572       |      |
| Per capita income                               | \$14,027      |      | \$31,346      |      | \$17,841       |      |
| <b>Occupation</b>                               |               |      |               |      |                |      |
| Management, professional, and related           | 67            | 25.5 | 3,857         | 35.6 | 188,094        | 31.4 |
| Service   | 34            | 12.9 | 1,939         | 17.9 | 93,467         | 15.6 |
| Sales and office                                | 69            | 26.2 | 2,709         | 25.0 | 151,835        | 25.3 |
| Farming, fishing, and forestry                  | 10            | 3.8  | 216           | 2.0  | 16,249         | 2.7  |
| Construction, extraction, and maintenance       | 48            | 18.3 | 1,481         | 13.7 | 64,747         | 10.8 |
| Production, transportation, and material moving | 35            | 13.3 | 644           | 5.9  | 85,061         | 14.2 |

**TABLE 7**  
Employment and Income Data from the US Census

| Parameter  | City of Carey |      | Blaine County |      | State of Idaho |      |
|--|---------------|------|---------------|------|----------------|------|
|  | Number        | %    | Number        | %    | Number         | %    |
| <b>Industry</b>  |               |      |               |      |                |      |
| Agriculture, forestry, fishing and hunting, and mining                     | 29            | 11   | 430           | 4.0  | 34,503         | 5.8  |
| Construction   | 37            | 14.1 | 1,524         | 14.1 | 48,388         | 8.1  |
| Manufacturing  | 21            | 8.0  | 468           | 4.3  | 78,625         | 13.1 |
| Wholesale trade  | 8             | 3.0  | 255           | 2.4  | 21,495         | 3.6  |
| Retail trade   | 46            | 17.5 | 1,305         | 12.0 | 75,477         | 12.6 |
| Transportation and warehousing, and utilities                              | 18            | 6.8  | 333           | 3.1  | 27,891         | 4.7  |
| Information  | 2             | 0.8  | 282           | 2.6  | 13,779         | 2.3  |
| Finance, insurance, real estate, and rental and leasing                    | 7             | 2.7  | 792           | 7.3  | 30,618         | 5.1  |
| Professional, scientific, management, administrative, and waste management | 14            | 5.3  | 1,593         | 14.7 | 47,744         | 8.0  |
| Educational, health, and social services                                   | 40            | 15.2 | 1,418         | 13.1 | 115,154        | 19.2 |
| Arts, entertainment, recreation, accommodation, and food services          | 22            | 8.4  | 1,648         | 15.2 | 47,902         | 8.0  |
| Public administration  | 8             | 4.2  | 286           | 2.6  | 30,649         | 4.5  |
| Other (except public administration)                                       | 11            | 3.0  | 512           | 4.7  | 27,228         | 5.1  |

Source: U.S. Census Bureau, 2000

As Table 7 shows, the City of Carey and Blaine County have a diversified economic base. The Sun Valley Resort draws visitors from around the world to enjoy skiing, scenic beauty, and recreation of the surrounding area—including Silver Creek, a world class trout stream. Hailey and Bellevue are supported in large part by traffic through them on the way to Sun Valley. Carey is a small agricultural-based community in Blaine County. From 1990 through 2000, Blaine County's population increased by 46 percent, and Carey's population increased by 20 percent (USDA NRCS and LWRID, 2003).

Farming and ranching have been a tradition in Carey for over 100 years, but

agriculture is changing. Farms in Carey have expanded for efficiency, with a consequent decrease in mid-size farms. Many people with off-farm income are moving to the rural areas to raise horses, other livestock, and hay, resulting in an increase in 5- to 40-acre farms. In addition, Carey's proximity to Craters of the Moon National Monument has a positive economic impact on the community because travelers to the area make purchases at local gas stations, convenience stores, and restaurants (USDA NRCS and LWRID, 2003).

A total of 148 water users in the LWRID project area produce crops and raise livestock. The local climate is ideal for

raising high quality barley. Major breweries have had contracts with local farms for approximately 25 years for the production of malt barley. These contracts bring profit and stability to the local agricultural community. Other crops grown in the area include alfalfa hay, wheat, potatoes, and oats, all of which are possible because of the existing irrigation system (USDA NRCS and LWRID, 2003).

### **3.12.2 Environmental Consequences**

#### **3.12.2.1 Significance Criteria**

The project would have a significant impact on socioeconomics if any of the following would occur:

- Job losses
- A need for trades that is strong enough to induce a sufficient number of people to move to the area and result in a housing shortage or an impact on existing public services and/or utilities
- Displacing people from their current home

#### **3.12.2.2 No Action Alternative**

No new construction or development activities are proposed if the No Action Alternative is implemented; therefore, no impacts or benefits to socioeconomic resources would occur.

#### **3.12.2.3 Proposed Action**

The Proposed Action would not result in adverse direct, indirect, or cumulative impacts on socioeconomic resources. In fact, implementation of the Proposed Action would result in temporary indirect beneficial impacts on the local economy from construction activities associated with the Proposed Action. It should be noted that construction of the Proposed

Action would create a minor number of temporary jobs, which would not result in a large influx of workers and their families moving to the area. The operation of the Proposed Action would create a minor long-term indirect beneficial economic impact from the creation of operation and maintenance jobs for the new facilities, in addition to the minor amount of operation and maintenance that is anticipated to already be occurring at the existing facilities. No people would be displaced from their homes as a result of implementation of the Proposed Action. Although the impacts that would occur from implementing the Proposed Action would be beneficial, these impacts would be localized and are not anticipated to significantly change the economics of the region.

In addition to the benefits that would occur from the installation and presence of the proposed facilities, a long-term increase in stability to the local economy is expected because of increased crop production resulting from provision of a more reliable water supply (the Proposed Action would reduce water losses and increase the efficiency of the water delivery system). Converting a portion of the existing open canal in three locations to farmable floodways would also increase crop production in the area.

### 3.13 Transportation and Traffic

Transportation and traffic resources generally include the roadway and street systems surrounding the affected environment. This section also considers the movement of vehicles, pedestrian and bicycle traffic, and mass transit.

#### 3.13.1 Affected Environment

Three U.S. Highways pass through the project area: U.S. 93, U.S. 20, and U.S. 26, but they represent only two highways. U.S. 20/26 comes into Carey from the west and U.S. 93 comes in from the south. Both highways merge at the south end of Carey to form U.S. 20/26/93. There are also several miles of rural county roads (USDA NRCS and LWRID, 2003). All of these roads serve the Carey area. An average of 2,100 cars and trucks per day pass through Carey. Carey has approximately 5 miles of streets, most of which are paved. Streets and bridges are in fair to good condition. Currently no alternate transportation opportunities, such as bike paths or walking trails, are available. No commercial bus service is available to or from Carey (City of Carey, 1997).

Blaine County's Comprehensive Plan (no date) indicates the County's desire to provide safe and efficient circulation systems in the County. U.S. 93 is a part of the highway system that connects Mexico and Canada; traffic through the project area is usually light. In the county, U.S. 93 connects Carey with Challis, Shoshone, and Twin Falls. It is in good condition. U.S. 20 is the major east-west arterial through the center of the county; it connects Carey with Fairfield and Mountain Home to the west, and Arco and

Idaho Falls to the east. The highway structure is in good condition (Blaine County, no date).

#### 3.13.2 Environmental Consequences

##### 3.13.2.1 Significance Criteria

The project would have a significant impact on traffic if any of the following would occur:

- An increase in vehicle trips that would disrupt or alter local circulation patterns
- Lane closures or other impediments to traffic
- Activities that would create potential traffic safety hazards
- Increase conflict with pedestrian and bicycle routes or fixed-route transit
- Parking demand that exceeds the supply

##### 3.13.2.2 No Action Alternative

Implementation of the No Action Alternative would not result in a change in current conditions; therefore, no impacts on transportation or traffic would occur.

##### 3.13.2.3 Proposed Action

The Proposed Action would result in minor indirect impacts on traffic during its construction because the number of construction vehicles and equipment accessing the proposed pipeline routes is expected to be relatively minor, and traffic in the project area is relatively low. The proposed pipeline would cross the U.S. highways and local roads, which would require the slowing and detouring of local and regional traffic around the road crossings while the pipeline is either

installed in the trench or is bored under the road. Construction would involve traffic delays for 2 to 3 days at each highway crossing and 1 to 2 days at each roadway crossing.

To minimize the impact on traffic in the project area, LWRID shall implement the measures described in the following text.

Coordinate with the City of Carey and Blaine County regarding proposed construction activities, duration, and timing to obtain any necessary permits and implement a Transportation Management Plan. The plan would address, but not be limited to the following:

- Road detours and closures.
- Minimizing conflicts with existing traffic (such as avoiding or minimizing construction-related travel during peak hour traffic periods, periods of heavy traffic to/from Little Wood Reservoir, periods when agriculture commodities that are produced in the area are being trucked to market, periods of processions and the moving of cattle in the City, and roads that are used by pedestrians and bicyclists).

- Providing ample parking for construction workers and materials and equipment delivery at each work site to avoid vehicles and equipment being parked in the roadway.

No long term indirect, direct or cumulative affects are anticipated as a result of the Proposed Action.

### 3.14 Energy

Energy resources related to the Proposed Action include generation of electricity at the Little Wood Reservoir Dam by water released for irrigation and energy required to operate pumps that pressurize irrigation water for sprinkler application.

#### 3.14.1 Affected Environment

The project area has approximately 10,020 acres of sprinkler-irrigated agricultural lands. The annual electrical energy consumption for pumping on those lands is approximately 10,340,000 kilowatt-hours (kWh), based on a 135-day irrigation season. The annual cost for this electrical energy consumption is approximately \$486,000 (Simpson, 2009). In addition, another 315 horsepower of diesel engine-driven pumping facilities are operated during the irrigation season.

In 1984, Bonneville Pacific Corporation (BPC) constructed a 3-megawatt hydroelectric plant in conjunction with the outlet works of Little Wood River Reservoir. BPC operated the hydroelectric plant for 2 years. The plant had several owners until 1994 when LWRID took over operation of the 300-cfs-capacity plant. The operation of the plant is in conjunction with the releases of water for irrigation and flood control of the Little Wood River Reservoir. The normal timing of these flows is between February and October. Flows higher than 300 cfs are released from the reservoir and bypassed around the hydroelectric plant (USDA NRCS and LWRID, 2003).

LWRID sells energy generated at the hydropower plant to Idaho Power Company under a long-term contract. Annual energy production depends on the

availability of water and the timing of irrigation flows released during the year. Since 1986, annual energy production has ranged from approximately 2,500,000 to 12,000,000 kWh (USDA NRCS and LWRID, 2003 and Simpson, 2009). Average annual production is approximately 5,600,000 kWh (Simpson, 2009).

#### 3.14.2 Environmental Consequences

##### 3.14.2.1 Significance Criteria

The project would have a significant energy impact if either of the following would occur:

- An increase in energy consumption to operate the project
- A reduction of annual energy production

##### 3.14.2.2 No Action Alternative

Implementation of the No Action Alternative would not result in any change to current conditions; therefore, no impacts on energy consumption or generation would occur.

##### 3.14.2.3 Proposed Action

The annual irrigation pumping energy consumption for the Proposed Action is estimated to be approximately 2,430,000 kWh, based on a 135-day irrigation season. This electricity would cost approximately \$114,000 per year (Simpson, 2009). The Proposed Action would conserve approximately 7,910,000 kWh of electricity per year, and would, therefore, result in an annual energy cost savings of approximately \$372,000. In addition, engine-driven pumping and the associated fuel



consumption would be reduced in a similar proportion.

During most water years, the magnitude and duration of water releases from the Little Wood Reservoir Dam are governed primarily by rule curves specified by the USACE and Reclamation. As a result, annual energy production under the Proposed Action would likely change very little during most years. During low water years, energy production may increase slightly because of higher reservoir storage levels and an extended release season (Simpson, 2009).

In summary, the Proposed Action would have a direct beneficial impact on energy resources in the project area by reducing loads and energy consumption, reducing annual energy expenditures, and increasing available capacity in the local power grid. Changes in hydropower generation under the Proposed Action would likely be minor, but some improvement in generation in low-water years is expected. No indirect impacts on energy resources in association with the Proposed Action would be anticipated.

The Proposed Action, if implemented, would have no cumulative impacts.

Although there would be a reduction in energy consumption in the project area with implementation, the reduction would not affect energy usage by others outside or within the project area.

### 3.15 Cultural Resources

Cultural resources include historic and prehistoric sites of interest and may include structures, archaeological sites, or religious sites of importance to Native American cultures. Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended (16 U.S.C. 40 et seq.), requires federal agencies to take into account the effects of their actions on properties listed or eligible for listing on the National Register of Historic Places (NRHP).

The process of evaluating impacts on cultural resources begins with the identification and evaluation of cultural resources for NRHP eligibility. The evaluation is followed by an assessment of effect on those eligible resources, and the analysis concludes after a consultation process with the State Historic Preservation Office (SHPO). A cultural resource considered eligible for listing on the NRHP is referred to as a historic property. When referring to impacts, the terms are applied relative to their meaning under NEPA.

Regulations implementing Section 106 of NHPA, 36 CFR Part 800.8, encourage the coordination of two processes: (1) the review of possible impacts on the environment under NEPA, and (2) the assessment of effects of undertakings required under NHPA. The lead federal agency will provide opportunities to comment on the impacts the project may have on cultural resources to the Idaho SHPO, Native American tribes, and other interested parties.

Reclamation, as the lead agency responsible for compliance with Section 106 of the NHPA, is responsible for

ensuring that the appropriate cultural resource studies have been conducted, including Class I literature reviews and Class III pedestrian inventories. These literature reviews and pedestrian inventories have been completed, sites have been recorded, and draft reports have been submitted to Reclamation. These surveys provided the location of cultural resource sites within the project area.

Avoidance of cultural resources through project design remains the preferred method for mitigating impacts on cultural resources. Cultural resource impacts would be avoided, and best management practices would be implemented, including completion of Section 106 consultation, continuation of Native American consultation, and development of an avoidance strategy.

#### 3.15.1 Affected Environment

##### ***3.15.1.1 Prehistoric and Historic Context***

A comprehensive history and prehistoric and historic context of the project area is included in NRCS (2004). A brief summary is provided in the following text.

The archaeological record extends back nearly 12,000 years in Idaho. The first occupants were big game hunters associated with the Clovis cultures during the late Pleistocene and early Holocene during the Paleo-Indian period. During the middle Holocene the big game animals became extinct, and the subsistence strategy shifted to a focus on smaller game animals with smaller atlatls and darts instead of the spears of the earlier periods. Increasing evidence of plant processing materials indicate a greater variety in the diets of Archaic peoples. The Archaic period lasted until the introduction of the bow and arrow and the increase reliance on

even smaller game and plants in the diet. In many ways the prehistoric subsistence strategy remained largely unchanged for the last several thousand years with significant changes in technology with the atlatl and the bow and arrow demonstrating the greatest changes in the archaeological record.

The Lewis and Clark expedition first encountered local Shoshoni Bannock Indians in 1805 while crossing Lemhi Valley. Shortly after this initial contact, visits and contacts by fur traders and explorers became increasingly common. The Oregon Trail crossed southern Idaho following the Snake River taking emigrants to Oregon and California during the 1840s and 1850s. The Goodale's Cutoff, a route that crosses from Fort Hall through the Camas prairie to the Boise River, was heavily promoted between 1852 and 1854, but the route was most heavily used during the 1860s with new discoveries of gold. The Goodale's Cutoff became a stage and freight route before finally becoming part of the modern highway system of Idaho.

Mining became an important force for the settlement of the Wood River region with discoveries of lead and silver in the 1860s. The first claims were filed in 1879 and a lead silver rush was on in 1880. The settlement of Carey was established in 1880. The Oregon Short Line reached Hailey in 1883, aiding in the mining efforts and bringing more settlers to the region.

Irrigation became an important factor in bringing settlers to the Little Wood River Valley. In 1893 the Little Wood River Canal Company was created and began work on a diversion structure on the Little Wood River and two canals along the east and west sides of the valley. In order to control flooding and provide predictable

sources of water, in 1936 the Little Wood River Irrigation District began construction on a dam 3 miles up the river from Carey. A flood in 1938 destroyed the West Canal diversion structure and damaged the diversion structure for the East Canal, prompting a creation of a single diversion structure in 1939.

### ***3.15.1.2 Cultural Resources Within the Project Area***

Intensive pedestrian surveys of the LWRID proposed pipeline system were conducted in 2003 (Burnham, 2003) and 2009 (Fergusson, 2009). The 2009 surveys addressed those areas not covered in the 2003 surveys. These surveys covered a 300-foot-wide corridor centered on the proposed pipeline centerline. All surveys were conducted utilizing parallel transects spaced no more than 30 meters apart, which is considered 100 percent survey coverage.

The cultural resource surveys documented three new cultural resource sites within the LWRID proposed project area. The sites include two historic canals, the East Canal and the West Canal (IHSI 13-016192 and 13-016193) and the diversion structure (IHSI 13-16191). The canals are active canals and part of the LWRID system. Construction began on the canals in 1893 and they are still in use today. The diversion structure was constructed in 1939. The canals and diversion structure are considered eligible for listing on the NRHP.

The Goodale's Cutoff of the Oregon Trail is shown on maps as passing through the project area from east to west, but it is no longer visible in the project area. A modern gravel road follows the route of what is likely the Goodale's Cutoff.

No prehistoric sites or resources are known within the LWRID proposed project area.

### **3.15.2 Environmental Consequences**

#### **3.15.2.1 Significance Criteria**

If the Proposed Action changes in any way the characteristics that qualify the cultural or historic resource for inclusion on the NRHP, it is considered to have a significant impact.

#### **3.15.2.2 No Action Alternative**

Under the No Action Alternative, there would be no change in existing conditions. Therefore there would be no direct, indirect, or cumulative impacts on cultural or historic resources.

#### **3.15.2.3 Proposed Action—Optimized System Upgrade Alternative**

The Proposed Action will directly affect historic properties located in the project area. All known historic properties in the area are directly associated with the existing LWRID system, including the east and west canals and the diversion structure, all of which are considered eligible for listing on the NRHP. Both canals and the diversion structure are still in use to deliver water throughout the valley and will remain in use during construction of the pressurized pipeline delivery system.

The effect to the historic properties will come from the conversion of some sections of the canals to floodways. These floodways will remove sections of the canal in order to allow water to enter the canal at the same grade as the surrounding fields. While the floodways will affect the integrity of the canals, the overall canal system will remain intact and retain its eligibility to the NRHP. The location, setting, design, construction, and other important elements of integrity will remain intact during construction and operation of the pressurized pipeline system. Therefore no significant impacts would occur with implementation of the Proposed Action.

### 3.16 Environmental Justice

Environmental justice is defined by the EPA Office of Environmental Justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. Meaningful involvement means that: (1) people have an opportunity to participate in decisions about activities that may affect their environment and/or health; (2) the public’s contribution can influence the regulatory agency’s decision; (3) their concerns will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected (EPA, 2008).

Executive Order (E.O.) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 Federal Register [FR] No. 32), was signed on February 11, 1994, by President Clinton. E.O. 12898 requires that each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations (Federal Register, 1994). In his memorandum transmitting E.O. 12898 to federal agencies, President Clinton further specified that, “each federal agency shall analyze the environmental effects, including human health, economic and social effects, of federal

actions, including impacts on minority communities and low-income communities, when such analysis is required by the National Environmental Policy Act of 1969.”(Noise Pollution Clearinghouse, 1994).

Title VI of the Civil Rights Act of 1964 (Title VI) states that “No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance” (U.S. Department of Justice, 2000).

The intent is that no person in the United States shall, on the basis of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. Where possible, measures should be taken to avoid negative impacts on these communities or mitigate the adverse impacts. Both E.O. 12898 and Title VI address persons belonging to minority and low income populations.

The U. S. Census Bureau indicates that a “minority population” includes persons who identify themselves as African American, Asian or Pacific Islander, American Indian or Alaskan Native, or Hispanic (U.S. Census Bureau, 2008a). Race refers to census respondents’ self-identification of racial background. Hispanic origin refers to ethnicity and language, not race, and may include persons whose heritage is Mexican, Puerto Rican, Cuban, Central and South American, and other Spanish cultures (Office of Management and Budget, 1997).

According to USEPA guidelines, similar to the CEQ, a minority population refers to a minority group that has a population of greater than 50 percent of the affected area’s general population or the minority

population percentage of the affected area must be meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (EPA, 1998).

The U. S. Census Bureau does not provide a specific definition for “low income.” Rather, the term “poverty” is used, and poverty thresholds are established each year for statistical purposes (U.S. Census Bureau, 2008b). The U.S. Department of Health and Human Services issues poverty guidelines each year that are a simplification of the U.S. Census Bureau’s poverty thresholds. The guidelines are another version of the federal poverty measure; they are used for administrative purposes (for example, determining financial eligibility for certain federal programs) (Institute for Research on Poverty, 2008).

### 3.16.1 Existing Environment

Table 8 displays the race breakdown of the population for the City of Carey, Blaine County, and the state of Idaho.

The data in Table 8 indicate that neither the City of Carey, nor Blaine County, is considered to have a minority population because the minority percentage of the total population in those areas does not exceed 50 percent. In addition, the minority population percentage in the City of Carey and Blaine County is not meaningfully greater than the minority percentage in the state of Idaho.

Table 9 presents population, income, and percent of the population living below the poverty level in the City of Carey, Blaine County, and the state of Idaho.

TABLE 8  
Minority and Low-Income Population Information in 2000 (% of total)

| Geographic Area | White | Black or African American | American Indian and Alaska Native | Asian | Native Hawaiian and Other Pacific Islander | Some Other Race | Two or More Races | Hispanic or Latino |
|-----------------|-------|---------------------------|-----------------------------------|-------|--|-----------------|-------------------|--------------------|
| Carey           | 92.8  | 0.2                       | 1.0                               | 0.0   | 0.0  | 4.7             | 1.4               | 10.1               |
| Blaine County   | 90.7  | 0.1                       | 0.3                               | 0.7   | 0.1  | 6.4             | 1.6               | 10.7               |
| Idaho           | 91.0  | 0.4                       | 1.4                               | 0.9   | 0.1  | 4.2             | 2.0               | 7.9                |

Source: U.S. Census Bureau, 2000

TABLE 9  
Employment and Income Characteristics from the 2000 US Census

| Area           | Population from 2000 US Census | Median Household Income <sup>a</sup> | Percent of Population Below Poverty Level <sup>b</sup> |
|----------------|--------------------------------|--------------------------------------|--|
| City of Carey  | 513                            | \$39,861                             | 1.7  |
| Blaine County  | 18,991                         | \$50,946                             | 7.8  |
| State of Idaho | 1,293,953                      | \$37,572                             | 11.8   |

Source: U.S. Census Bureau, 2000

<sup>a</sup> In 1999 US Dollars

<sup>b</sup> Based on 1999 US Dollars

The data in Table 9 indicate that both the City of Carey and Blaine County have a lower percentage of low-income populations than the state of Idaho, and also a higher median household income than that of the state.

### **3.16.2 Environmental Consequences**

#### **3.16.2.1 No Action Alternative**

No new construction or development activities are proposed if the No Action Alternative is implemented; therefore, no disproportionate impacts on environmental justice populations would occur.

#### **3.16.2.2 Proposed Action—Optimized System Upgrade Alternative**

The Proposed Action (its construction or operation) would not result in indirect, direct, or cumulative adverse and disproportionate impacts on environmental justice populations because the Proposed Action is located in an area that does not contain a disproportionately high concentration of minority or low-income populations.



## 4.0 Consultation and Coordination

The NEPA process is designed to involve the public in federal action decision making. Public involvement and intergovernmental coordination and consultation are recognized as essential elements in developing a NEPA document. Formal notification and opportunities for public participation, as well as informal coordination with government agencies and planners have occurred and will continue to occur throughout the EA process.

All agencies, organizations, and members of the public having a potential interest in the Proposed Action are urged to participate in the decision making process. Agency consultation documentation was submitted to SHPO, USFWS, and USACE relative to the Proposed Action (Appendix B, *Agency Correspondence*). SHPO was consulted to request information regarding cultural resources. The USFWS was consulted relative to the Endangered Species Act. The USACE was consulted relative to wetlands in the proposed project area.

An initial public meeting was held on April 29, 2009, from 7:00 p.m. to 9:00 p.m. at Carey School. Representatives from the LWRID, Reclamation, and CH2M HILL were present to provide information to the public regarding the Proposed Action, status of the project, NEPA process, description of the EA, and potential path forward. Approximately 37 people attended. A copy of the meeting notice, attendance sheet, and meeting summary is included in Appendix C, *Public*

*Involvement*, as is the one comment received at the meeting.

This Draft EA and draft Finding of No Significant Impact (FONSI) will be available to the public for comment for a period of 30 days. At the end of the 30-day period, Reclamation will consider all comments submitted by individuals, agencies, and organizations. If it is determined that implementing the Proposed Action would result in potential significant impacts, Reclamation will publish an NOI in the Federal Register to prepare an EIS or not to proceed with the Proposed Action. If significant impacts would not occur with implementation of the Proposed Action, a Final EA and FONSI will be prepared based on public comment and distributed for public review.



## 5.0 References

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## 6.0 Preparers

Table 10 lists the preparers of this EA.

TABLE 10

Preparers

| Name                                   | Title   | Primary Responsibility  |
|--|---|---|
| <b>U.S. Bureau of Reclamation</b>      |   |   |
| Robert L. "Hap" Boyer                  | Resource Manager                                    | Technical Review/Reclamation  |
| Ray Leicht                             | Archaeologist                                       | Cultural Resources Assistance   |
| <b>Little Wood Irrigation District</b> |   |   |
| Bob Simpson                            | Watermaster   | Water Resources<br>Technical Review/LWRID   |
| <b>CH2M HILL</b>                       |   |   |
| Denny Mengel                           | Senior Habitat Management and Planning Technologist | EA Document Lead<br>Chapter 1, Chapter 2, Soils, Air Quality, Noise   |
| Ron Fehringer                          | Water Resources Engineer                            | Project Manager and Senior Review   |
| Perrin Robinson                        | Water Resources Engineer                            | Chapter 2, Water Resources  |
| David Fornander                        | Aquatic Ecologist/Fisheries Biologist               | Fisheries   |
| Judy Ferguson                          | Biologist   | Wildlife Resources, Vegetation Resources, Federally Protected Species   |
| Gretchen Herron                        | Wetland Ecologist                                   | Wetlands and Waters of the U.S.   |
| Wendy Haydon                           | Planner   | Recreation, Transportation and Traffic, Wild and Scenic Rivers, Energy, Environmental Justice, Socioeconomics, Land Use, Visual Resources |
| Aaron Fergusson                        | Environmental Planner                               | Cultural Resources  |
| Jason Carr                             | GIS Analyst   | GIS and graphics  |
| Jody Fagan                             | Graphic Designer                                    | Graphics  |
| Larry Little                           | Reprographics Technician                            | Reprographics   |
| Katie Miller                           | Document Production Specialist                      | Document processing   |
| Eric Oden                              | Technical Publications Specialist                   | Editing   |





Appendix A

## **Environmental Commitments**

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# Environmental Commitments

## A.1 Overview

The following text discusses environmental commitments made by the U.S. Bureau of Reclamation and the Little Wood Irrigation District to compensate for potential impacts from implementation of the proposed project. These environmental commitments will be implemented concurrently with construction of the project. Environmental commitments are being proposed to compensate for potential impacts on soils, water resources and fisheries, vegetation, wildlife and federally protected species, wetlands, recreation, and transportation. Environmental commitments are not necessarily resource specific and certain measures cover multiple resource areas. In addition to these commitments, various best management practices (BMPs) as discussed in individual resource sections (Chapter 3) will also be implemented. BMPs that will be implemented are as follows:

- Keeping bare ground wetted to protect air quality from dust
- Constructing during daylight, working hours to avoid noise impacts
- Implementing erosion control measures to protect water and soil resources from erosion

## A.2 Soils

In order to protect soil productivity, the top 12 inches of topsoil will be removed from the pipeline construction trench and stockpiled. As the overburden is placed into the trench over the pipeline, the reserved topsoil will be placed as the top layer. The backfill will be lightly compacted and reseeded with the appropriate seed mix that matches the surrounding vegetation.

Erosion control (for example, mulch, silt fencing, and coir logs) will be used where needed to protect soil from eroding until vegetation has become established on disturbed construction areas.

If soil becomes compacted from heavy equipment use, it will be ripped to remove compaction prior to seeding.

In addition to the environmental commitments stated above that will be implemented to reduce impacts on soil resources, the following mitigation measures are proposed:

- Prepare and implement a Storm Water Pollution Prevention Plan.
- Cover exposed piles of soil (or use other erosion control measures) if there is a threat of rain, to reduce erosion potential.
- Limit grubbing to the area around construction sites to lessen the impact on the roots of low-growing vegetation, so they may resprout.
- Minimize vegetation clearing at sides of pipeline and access roads to 2 feet or less, where appropriate, to minimize impacts on adjacent areas of native vegetation.

- Install sediment barriers and other suitable erosion and runoff control devices prior to ground-disturbing activities at construction sites to minimize offsite sediment movement.
- Leave erosion and sediment control devices in place and monitor their effectiveness until all disturbed sites are revegetated and erosion potential has returned to pre-project conditions.
- Retain existing low-growing vegetation where possible to prevent sediment movement offsite.
- Design access roads to control runoff and prevent erosion by using low grades, out sloping, intercepting dips, water bars, and ditch-outs as needed to minimize erosion.
- Revegetate or seed all disturbed areas with a native grass and forb seed mix suited to the site, to promote revegetation that will hold soil in place.
- Break up compacted soils where necessary by tilling or scarifying before reseeding.
- Monitor erosion control BMPs during construction to ensure proper function and nominal erosion levels.
- Monitor reseeding efforts for adequate growth. Implement contingency measures as necessary.

### **A.3 Water Resources and Fisheries**

Water resource environmental commitments involve releasing a guaranteed flow into the East and West Canals and to Carey Lake Wildlife Management Area. Between 6 and 20 cubic feet per second (cfs) will be released to the Carey Lake Wildlife Management Area during the irrigation season to ensure a reliable flow of water to support wetlands, wildlife habitat, and fisheries in the Carey Wildlife Management Area. Between 20 and 30 cfs will be released into the East Canal, and between 15 and 25 cfs will be released into the West Canal, depending on the water year. Flow in the Little Wood River will still be variable, but will be increased from pre-project conditions according to preliminary calculations, as more water will be available to keep in the river.

The guaranteed flows and increased river releases, plus additional water stored in Little Wood Reservoir and Carey Lake, will provide water to recharge groundwater aquifers and continue a supply of water to the wells in the project area, including the city of Carey.

In addition, the following mitigation measures will further reduce or avoid potential impacts on water resources and fish habitat and species:

- Screen all new intakes constructed under the proposed project as appropriate and in accordance with Idaho Department of Fish and Game standards.
- Install sediment barriers and other suitable erosion and runoff control devices prior to ground-disturbing activities at construction sites to minimize off-site sediment movement.

- Rock new and existing access roads where needed to prevent erosion and rutting.
- Minimize grading, clearing or other construction work in wetlands or riparian corridors. Do not permit use of these areas for construction staging, equipment or materials storage, fueling of vehicles, or related activities.
- Develop and implement a Spill Prevention, Control, and Countermeasure Plan to minimize the potential for spills of fuels, oils, or other potentially hazardous materials to reach the seasonal perched water table or surface water bodies.
- Keep vehicles and equipment in good working order to prevent oil and fuel leaks.

## A.4 Vegetation

The primary impact to vegetation is the loss of cottonwood and willow along some canals that will no longer convey water. Approximately 5.7 acres of linear cottonwood habitat and 0.6 acre of linear willow habitat may be lost along canals.

Woody vegetation removal along the pipeline construction alignment will be completed in the non-breeding season from fall to early winter. If this is not done, the construction schedule will be delayed until late August to avoid potential “take” of eggs or young of yellow-billed cuckoos and other migratory bird species.

The loss of cottonwood and willow riparian habitat along canals will be compensated by planting an equal amount of habitat (5.7 acres of cottonwood and 0.6 acres of willow) along the Little Wood River and upper East and West Canals where water flows are expected to remain after project implementation. Plantings will be concentrated as inter-plantings along the upper river and canal channels where woody vegetation is lacking, but where hydrology will be present. Cottonwood and willows will be planted just downstream of the lowest present extent of similar vegetation along the river channel as part of the compensation (see Figures 8 and A-1). Water will also be released into the West Canal during high water years below the point where it will return to the Little Wood River channel in normal operating years. This will serve to give the cottonwoods downstream of that location on the West Canal a periodic supply of water to ensure their long-term survival.

In addition, the following mitigation measures will further reduce or avoid identified potential adverse vegetation impacts:

- Clearing and site preparation
  - Limit grubbing to the area around tower sites to lessen the impact on the roots of low-growing vegetation, increasing the chances of plant survival and re-sprout.
  - Limit the amount of new roads constructed and re-grading of existing roads to the extent possible.
  - Minimize vegetation clearing at sides of access roads to 2 feet or less, where possible, to minimize impacts on adjacent forested areas.

- Disallow grading, clearing, or other construction work in wetlands or riparian corridors.
- Save topsoil removed for towers and new access roads (spur road) construction and use onsite for restoration activities, to promote re-growth from the native seed bank in the topsoil.
- Revegetation
  - Reseed disturbed sites as soon as possible. This will promote revegetation which will hold the soil in place and minimize erosion and dust. Vegetation type should be matched to existing vegetation on private lands.
  - Break up compacted soils where necessary by ripping, tilling, or scarifying before reseeding.
  - Monitor revegetation and site restoration work for adequate growth. Implement contingency measures as necessary.
- Weed control
  - Coordinate weed control activities with the Blaine County weed supervisor in order to reduce the threats of noxious and invasive weeds on the native plant community.
  - Plant tree seedlings in danger tree clearing areas to help control the spread of noxious weeds and restore native plant communities.
  - Monitor for weed populations, revegetation, and restoration success.

## **A.5 Wildlife and Federally Protected Species**

In order to avoid impacts on the yellow-billed cuckoo and other migratory birds in the project area, the following mitigation measures will be initiated:

- Woody vegetation removal along the pipeline construction alignment will be completed in the non-breeding season from fall to early winter. If this is not done, the construction schedule will be delayed until late August to avoid potential “take” of eggs or young of yellow-billed cuckoos and other migratory bird species.
- Mitigation plantings to enhance or restore riparian vegetation along the historic Little Wood channel will include willow and shrub species favored by yellow-billed cuckoos and other migratory bird species.
- To reduce and/or avoid impacts on amphibians in the area, impacts on wetlands will be avoided to the extent possible. Buffer zones and construction fencing will be installed prior to construction so that construction vehicles do not drive across, push dirt into, or otherwise impact wetland areas.
- To reduce and/or avoid impacts on woodpeckers, snags with diameter at breast height greater than 12 inches or the largest diameter for the stand for all habitat types should be retained in clusters, where possible. If an active snag cannot be avoided, it will not be



removed until late summer or fall and until all eggs and nestlings are known to have hatched and fledged.

## **A.6 Wetlands**

Mitigation for wetland losses are proposed along the East and West canals along the Proposed Action ordinary high water mark. Mitigation will include installation of native wetland shrub communities along the east and west canals to replace lost ecological function associated with the Proposed Action. The mitigation wetlands will be located at a lower terrace elevation and will be supported hydrologically by the anticipated reduced flows in the canals. Mitigation ratios will be determined by the USACE in conjunction with the Little Wood River Irrigation District.

In addition to the above environmental commitments, the following mitigation measures will further reduce or avoid potential impacts on wetlands:

- Install sediment barriers and other suitable erosion and runoff control devices prior to ground-disturbing activities at construction sites to minimize off-site sediment movement.
- Rock new and existing access roads where needed to prevent erosion and rutting.
- Minimize grading, clearing or other construction work in wetlands or riparian corridors. Do not permit use of these areas for construction staging, equipment or materials storage, fueling of vehicles, or related activities.
- Develop and implement a Spill Prevention, Control, and Countermeasure Plan to minimize the potential for spills of fuels, oils, or other potentially hazardous materials to reach the seasonal perched water table or surface water bodies.
- Keep vehicles and equipment in good working order to prevent oil and fuel leaks.

## **A.7 Recreation**

A loss of fall color will be associated with the loss of vegetation along some canals, affecting the recreational experience of visitors traveling through the area to view fall colors. Replacement of cottonwoods and willows as discussed above under Vegetation Resources will eventually replace the lost foliage colors.

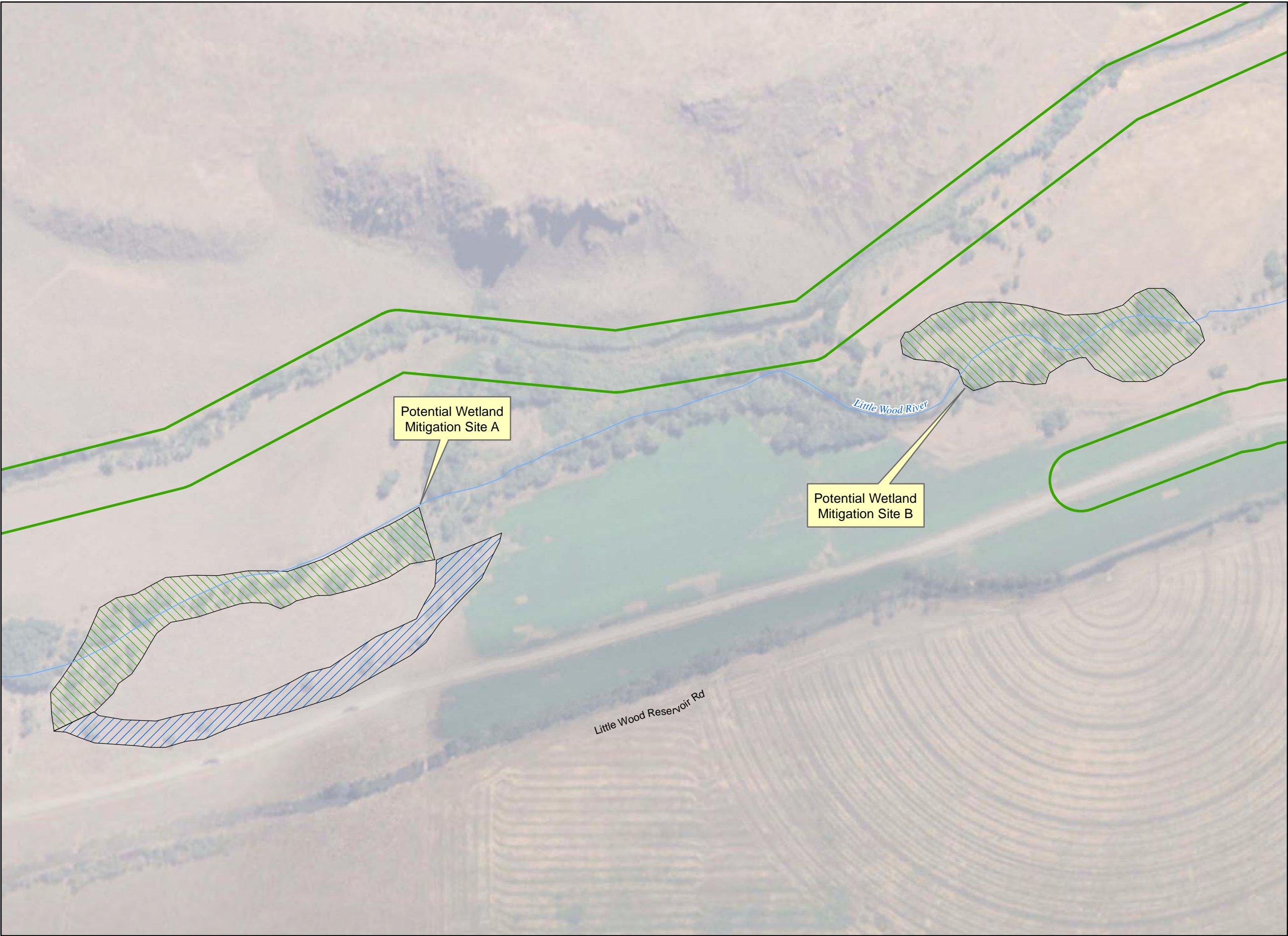
The following mitigation measures will be implemented to avoid or minimize the potential for project-related impacts on recreation activities:

- Send an information letter to the project mail list regarding the upcoming construction activities and schedule.

## **A.8 Transportation**

Several measures will be developed to minimize the impacts of the project on transportation. These will be contained in the Transportation Management Plan, developed specifically for the project. The plan will address, but not be limited to the following:

- Road detours and closures.
- Minimizing conflicts with existing traffic (such as avoiding or minimizing construction-related travel during peak hour traffic periods, periods of heavy traffic to/from Little Wood Reservoir, periods when agriculture commodities that are produced in the area are being trucked to market, periods of processions and the moving of cattle in the City, and roads that are used by pedestrians and bicyclists).
- Provide ample parking for construction workers and materials and equipment delivery at each work site to avoid vehicles and equipment being parked in the roadway.



- Little Wood River
- ▭ Proposed Pipeline Area
- Highways
- Wetland Mitigation Area**
  - ▨ Enhancement
  - ▨ Restoration



0 100 200 400 Feet

Source: ESRI base data,  
INSIDE Idaho, NRCS, LWRID

**Figure A-1**  
**Potential Mitigation Sites**  
*Little Wood River Irrigation District  
Pressurized Pipeline Irrigation  
Delivery System*



Appendix B

## **Agency Correspondence**

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REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**WALLA WALLA DISTRICT, CORPS OF ENGINEERS**  
**BOISE REGULATORY OFFICE**  
**10095 WEST EMERALD STREET**  
**BOISE, IDAHO 83704-9754**

November 13, 2009

Regulatory Division

SUBJECT: NWW-2009-689-B01

Mr. Perrin A. Robinson  
CH2MHILL  
322 East Front Street, Suite 200  
Boise, Idaho 83702

Dear Mr. Robinson:

This is in response to your September 29, 2009 transmittal letter requesting that we review the August 2009 Draft EA Little Wood River Irrigation District Pressurized Pipeline Irrigation Delivery System and the July 2009 Little Wood River Irrigation District Pressurized Pipeline Delivery System Wetland Delineation and provide comment as to whether a Department of the Army permit would be required to implement the proposed project.

Section 404 of the Clean Water Act (33 U.S.C. 1344) requires a Department of the Army permit be obtained for the discharge of dredged or fill material into waters of the United States. This includes most perennial and intermittent rivers and streams, natural and man-made lakes and ponds, and wetlands, as well as irrigation and drainage canals and ditches that are tributaries to other waters. Other activities regulated under Section 404 include excavation and mechanized land clearing activities which result in the discharge of dredged material and destroy or degrade waters of the United States.


We have reviewed the draft EA which addressed two alternatives, the No Action Alternative and the preferred alternative which includes constructing a new diversion in the East Canal, two pumping stations, 18 booster pumps and 32 miles of new pressurized pipeline. The preferred alternative would also include modifying portions of the East and West Canals into farmable floodways. Based on the information provided, it appears that if the preferred alternative moves forward that much of it would fall under an irrigation exemption and thus not require Department of the Army approval. However, the farmable floodways that are proposed in both the East and West Canals do not appear to fall under the irrigation exemption and likely would need a permit. As you move forward to final design with this proposed project, please provide us with any new information and drawings as it becomes available so we can further evaluate the need for permits for all aspects of the proposed project especially the farmed floodway features.



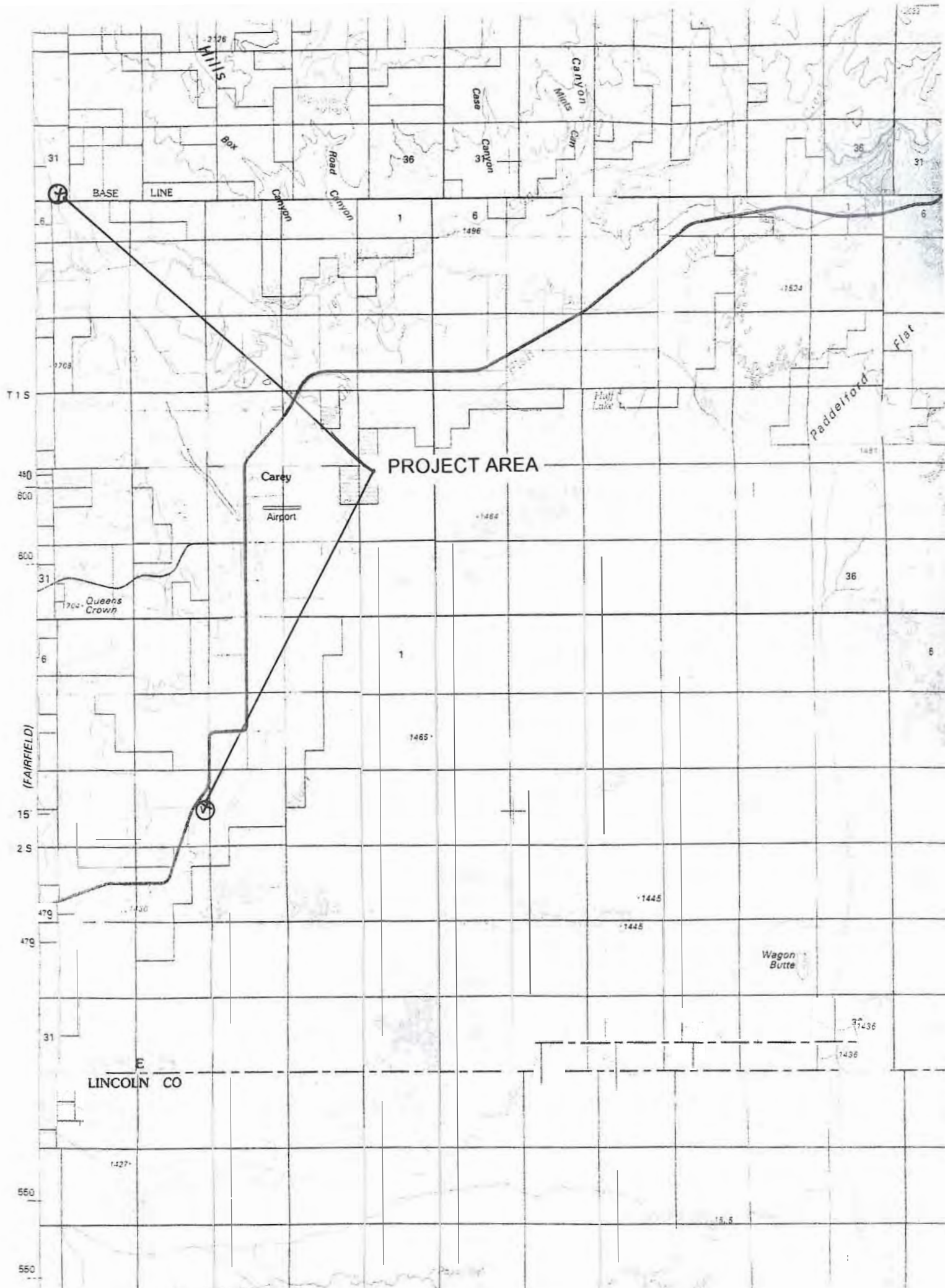
We have also reviewed the July 2009 wetland delineation report prepared for the proposed project. As we discussed during the September 15, 2009 meeting, we can provide comments on the delineation report in several ways. The first being to provide you a preliminary jurisdictional letter which states we believe that the Little Wood River, the Little Wood River over flow channel, the East and West Canals, the Carey Lake Wildlife Management Area Feeder Canal and wetlands adjacent to the above waterways are waters of the United States and subject to regulation under Section 404 of the Clean Water Act. This process is simple and easy to do. The second option is for us to prepare an approved jurisdictional determination. This is more time consuming. Please let us know whether you want an approved jurisdictional determination (JD) or whether the preliminary jurisdictional determination (PJD) is adequate for your proposed project. If you decide at a later date that a PJD is not adequate we can at that time provide an approved JD.

We look forward to working you and the Little Wood River Irrigation District on this project. If you have any questions concerning these regulatory matters, please contact me at 208-345-2154. We are providing a copy of this letter to: Bob Simpson, Little Wood River Irrigation District, PO Box 355, Carey, Idaho 83320; and Megan Stelma, Blaine County Planning and Zoning Department, 219 1<sup>st</sup> Avenue South, Suite 208, Hailey, Idaho 83333.

Sincerely,

  
Gregory I. Martinez  
Regulatory Project Manager









United States Department of the Interior  
IDAHO FISH AND WILDLIFE OFFICE

1387 S. Vinnell Way, Room 368  
Boise, Idaho 83709  
Telephone (208) 378-5243  
<http://www.fws.gov/idaho>



NOV 18 2009

Judy L. Ferguson  
CH2MHILL  
322 E. Front Street, Suite 200  
Boise, Idaho 83702

Subject: Little Wood River Irrigation District Proposed Pressurized Pipeline  
Irrigation Delivery System—Blaine County, Idaho—Technical Assistance  
970.0700 14420-2010-TA-0060



Dear Ms. Ferguson:

The Fish and Wildlife Service (Service) has received your request dated October 17, 2009, for a review and concurrence on CH2MHILL's determination of "no effect" to listed, proposed, or candidate species or designated critical habitat under section 7 of the Endangered Species Act of 1973 (Act), as amended, for the Little Wood River Irrigation District (LWRID) Proposed Pressurized Pipeline Irrigation Delivery System project in Blaine County, Idaho. In your letter, you indicate that you have been designated as a non-federal representative of the Bureau of Land Management and LWRID to conduct informal section 7 consultation with the Service. We provide the following comments regarding your request.

The Service does not typically provide concurrence for proposed actions with "no effect" determinations. However, we do acknowledge your "no effect" determinations for the yellow-billed cuckoo (*Coccyzus americanus*).

If you have any questions about your responsibilities under section 7 of the Act, or require further information, please contact Bob Kibler at the Idaho Fish and Wildlife Office at (208) 378-5255. Thank you for your continued interest in endangered species conservation.

Sincerely,

Jeffery L. Foss, State Supervisor  
Idaho Fish and Wildlife Office



Appendix C

## **Public Involvement**

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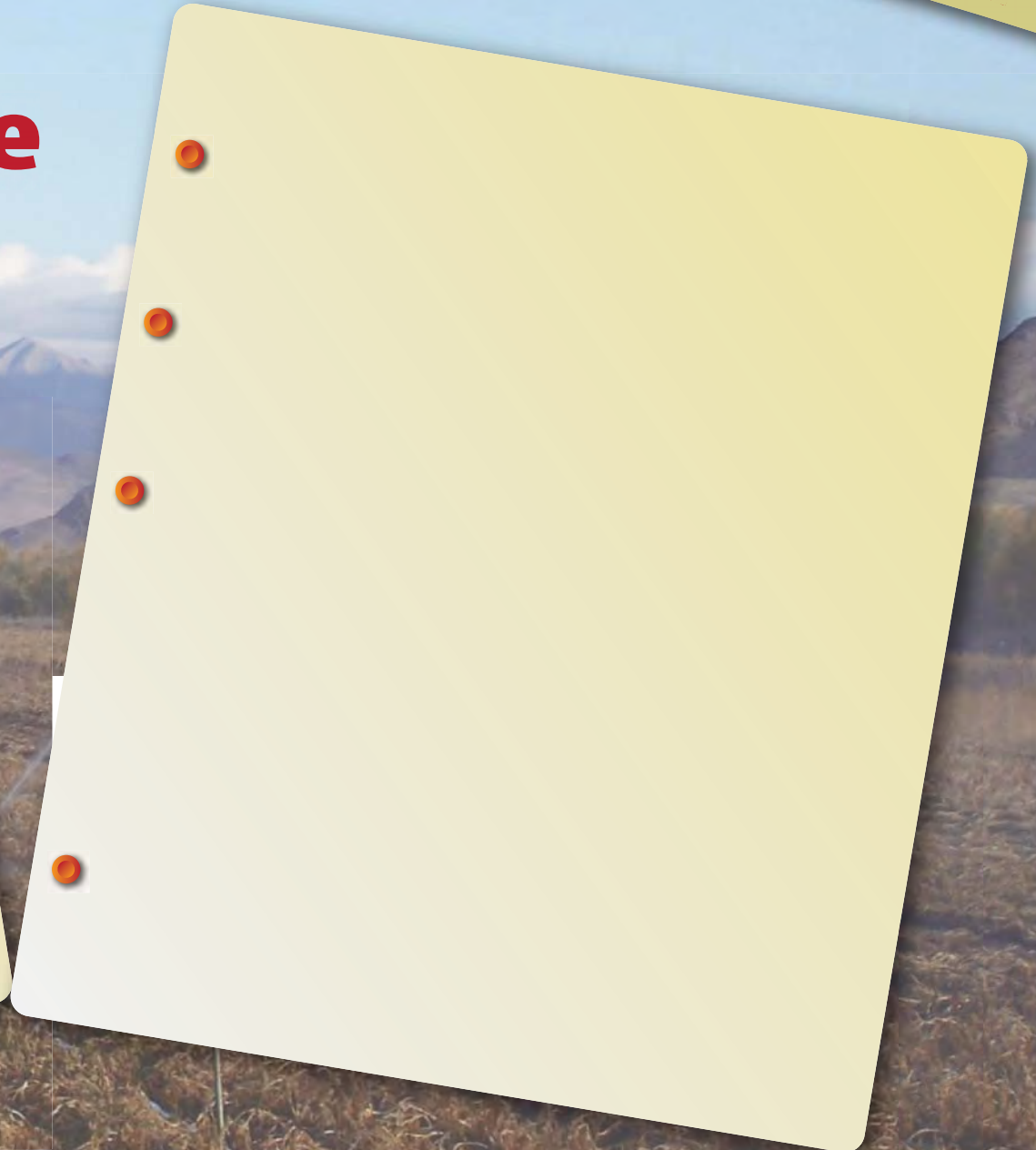


Pressurized Pipeline Irrigation Delivery System

Environmental Assessment

# Welcome to the Open House

Please sign in







## Public Open House Attendance Record

### Pressurized Pipeline Irrigation Delivery System Environmental Assessment

Carey, Idaho  
April 29, 2009  
Carey School  
7 p.m. to 9 p.m.

| Name                  | Organization or Affiliation        | Mailing Address                             |
|-----------------------|------------------------------------|---|
| Allen Sackett         | Jerome Ranch —                     | 707 Nottingham Cir #2<br>Billings, MT 59105 |
| Sara Meehan           | City of Carey                      |   |
| Cody Meehan           |                                    |   |
| Rick + Barbara<br>Lee | Carey                              |   |
| Brant + Judy Styer    | Carey                              | 20534 N Main                                |
| Mike<br>McDonald      | IDFG                               | 319 S 417 E<br>Jerome 83338                 |
| M. Ke<br>Kelsey       | Carey                              | Box 291 Carey                               |
| ISIDRO                |                                    |   |
| ORVELAS               | CAREY                              | P.O. Box 95 CAREY                           |
| Michael Oken          | Carey                              | P.O. Box 45                                 |
| Robert J. Boyer       | Bureau of Reclamation<br>Burley ID | 1359 Hanse Ave<br>Burley ID 83318           |
| Dennis Patterson      | Carey                              | 7 Riverlane<br>Carey, Id 83320              |
|                       |                                    |   |

## Public Open House Attendance Record

### Pressurized Pipeline Irrigation Delivery System Environmental Assessment

Carey, Idaho  
April 29, 2009  
Carey School  
7 p.m. to 9 p.m.

| Name                  | Organization or Affiliation | Mailing Address                      |
|-----------------------|-----------------------------|--------------------------------------|
| Leta Hansen           | farmer                      | Box 44<br>Carey, ID. 83320           |
| Craig Hansen          | farmer                      | Box 44<br>Carey, ID. 83320           |
| Richard Kimball       | City Bellor                 | Box 423<br>Carey Id 83320            |
| Doreen Marks          | Business                    | Box 111<br>Carey Id 83320            |
| HAZEL THORNE          | water user                  | NO BOX 717<br>PILAGO, ID, 83348      |
| Lane & Nancy Dutschik | city dweller.               | 005 Mountain View<br>Carey, ID 83320 |
| Cindy & GREG<br>PLANN | WATER USER                  | P.O. Box 96<br>Carey, ID 83320       |
| Paul Allen            |                             | Box 185<br>Carey Id 83320            |
| Rose Young            | H <sub>2</sub> O user       | Box 241<br>Carey, Id.                |
| R. Spence Ellsworth   | Water user                  | P.O. Box 152<br>Carey, Id            |
| Wet Allen             | User                        | 40m View                             |
| Jack H. Taylor        | Water user                  | P.O. Box 272                         |



## Public Open House Attendance Record

### Pressurized Pipeline Irrigation Delivery System Environmental Assessment

Carey, Idaho  
April 29, 2009  
Carey School  
7 p.m. to 9 p.m.

| Name         | Organization or Affiliation | Mailing Address                      |
|--------------|-----------------------------|--------------------------------------|
| Jamie Holman | None                        | Holman, r PO Box 2384<br>Ketchum, ID |
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Pressurized Pipeline Irrigation Delivery System Environmental Assessment

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April 29, 2009  
Carey School  
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| Name            | Organization or Affiliation | Mailing Address  |
|-----------------|-----------------------------|--|
| Larula Hansen   |                             | Box 145  |
| T. Verd MURdock |                             | 20447 N. MAIN  |
| Dick Sain       |                             | P.O. Box 3187<br>SV 83353<br>20458 main st.<br>Carey ID, 83320 |
| Brad Mecham     |                             | Box 74<br>Carey<br>20415 S. Main St.<br>Carey, ID              |
| Nancy McAfee    |                             | Box 388<br>Carey ID  |
| Jake Cutler     |                             | Box 93<br>Carey, ID  |
| Joe D. Iwoorth  |                             | P.O. Box 277<br>Carey ID<br>48 Dog Creek Rd<br>Carey ID.       |
| Ken Mecham      |                             | Box 4<br>Carey ID<br>120 Scott Rd<br>Carey                     |
| Doug Limmon     |                             |  |
| Tom Petrus      |                             |  |
| Blaise Tingey   |                             |  |
| Rex Agnew       |                             |  |

## **Little Wood River Irrigation District Pressurized Pipeline Irrigation Delivery System Project Public Information Meeting**

ATTENDEES: Bob Simpson, LWRID  
Hap Boyer, USBR  
Public (37, see sign-in sheet)

Ron Fehringer, CH2M HILL  
Denny Mengel, CH2M HILL  
Perrin Robinson, CH2M HILL

FROM: CH2M HILL  
Boise, Idaho  
Water Business Group

DATE: May 8, 2009

PROJECT NUMBER: 375033

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|               |  |
|---------------|--|
| Meeting Date: | April 29, 2009                               |
| Meeting Time: | 7:00 PM to 9:00 PM                           |
| Location:     | Carey High School Auditorium<br>Carey, Idaho |

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### **Project Presentation:**

- 1) Public attendance sign-in sheets, comment forms, and project contact information provided at entrance table.
- 2) 10 display boards providing project information located along front of auditorium.
- 3) PowerPoint presentation of project background, objectives, benefits, and status by Bob Simpson.
- 4) Explanation of NEPA process, Environmental Assessment, and schedule of path forward presented by Denny Mengel.

### **Question / Answer Session:**

- 1) How is a Significant Impact determined?  
A: Resource-dependent; threshold guidance material established as part of NEPA.
- 2) How will in-town irrigation be connected?

A: Turnouts for all water rights holders and meters; all turnouts, both farm and town, will be metered.

3) Will all pipes be buried?

A: Yes, 3-ft depth in non-farm areas and 4-ft depth in farm areas is typical.

4) What is total cost of project?

A: Described basis of previous estimate and recent changes in construction costs in current economy.

5) Is there a plan as to where maintenance dollars come from? What impact does this project have on future consumptive and non-consumptive uses?

A: All the water in the pipeline will be consumptive water except for the wildlife or mitigation water delivered in the lower part of the system. Non-consumptive water will remain in the river system and the upper canal system. The current plan is to have revenue from the hydroelectric facility cover maintenance costs.

6) How do you know that the amount of water released into East and West Canals will be enough to keep existing vegetation alive?

A: About 30 cfs has been released for the past month and it is flowing through the vegetated area and into town. This should be sufficient to allow the woody vegetation to survive.

7) Will wetland/riparian mitigation be done in same location as impact?

A: Yes, where possible. At a minimum, wetland mitigation must be handled in the same drainage area as the impact occurs.

8) How will the Public know if there is enough money to adequately cover mitigation?

A: Line item included in budget to cover planting is based on estimated mitigation requirement and recent historical cost data.

9) What is the prospect of getting federal stimulus money for project?

A: Unlikely at least from money flowing down to the State of Idaho, which has not allocated much money to water resource projects. Probably some chance of money coming down through Federal programs, but no real sense of how likely that is for this project.

10) If project goes through, does budget include line item covering risk that system will work and not leave the District with a project that doesn't perform?

A: CH2M HILL will be involved throughout construction and start-up and will provide inspection, services-during-construction, etc. with the intent of ensuring that the project is built as designed, and CH2M HILL stands behind its designs. System testing will be performed after construction is complete and prior to acceptance by the District. Extra capacity was factored into the pipeline design.

11) What is the project operating expense to service the project (O&M)?

A: It is expected that much of the historic effort to maintain ditches will shift over into the effort to service pump stations at the upper end of the project. District crews will take over operation of pumps in the locations where they are still needed. It is not known whether this will amount to somewhat more or somewhat less labor than historic levels. However, as noted previously, revenue from hydroelectric facility is expected to cover maintenance costs. The cost of an additional operator will be offset by the amount that is presently spent by hiring a contractor to keep unwanted trees and trash out of the present canal system.

12) Who do the farmers call when there is a problem and what will be the response time?

A: LWRID will be responsible for maintaining the system up to the turnouts and farmers will be responsible for individual systems after the turnouts. District is looking into placing backup pumps at pump stations. All the pump stations will be monitored by a SCADA alarm system similar to what is at the Hydro Plant that will sense a malfunction and keep calling until it is acknowledged by the on-duty operator or Watermaster.

13) As funding approaches, how will detailed aspects be worked out?

A: Technical documents are in place from the design effort in 2004-2005. These are 99% complete, but lack a little detail that can't be added until funding agency and funding mechanism is confirmed. Once that happens, final details and documents will be addressed prior to construction.

14) Concern expressed about signing easements at this time without all of the final documents in place.

A: 99% design documents that have been prepared show locations of pump stations, pipeline and appurtenances. Remaining details are mostly procedural or administrative and do not affect locations. Easements (or rights-of-way) are needed to tie down locations and prevent development in those locations. These locations are also critical to completing the environmental process and permitting, so they must be finalized as early as possible.

15) How will roads that get affected by construction be handled?

A: Contractor will be responsible for restoring roads to level equal to or better than conditions prior to the start of construction.

16) Will system allow for expansion?

A: Current state law does not allow for expansion of irrigation district service area.

17) Will look of the valley be preserved? Will there be any negative changes to the valley as a whole?

A: Won't see any major changes in vegetation in the valley.

18) If funding does not come through, will any portion of the project be constructed?

A: District will have to look at various programs; District would possibly pipe some of the laterals and look to improve canals, but pressurization and any major energy conservation may not be possible unless or until the whole system is constructed.

- 19) Will there be any mitigation to the private ditch going through the Mann's property that currently flows to adjoining property? Who cleans up the trees that may die along this ditch?

A: Mitigation will be provided for project related impacts, including loss of cottonwoods. If this major project is not completed there is a water conservation proposal submitted to NRCS to have the lateral north of Mann's property piped and with this upgrade the cottonwoods will likely disappear over time.

- 20) Are existing canal right-of-ways wide enough to place pipe in existing canal?

A: There is not enough right-of-way width to construct the pipeline completely outside the canal, and to keep costs down and limit the duration of construction; pipeline cannot be placed in existing canals. Must be able to keep the water flowing during growing seasons while construction is underway, and for cost purposes also must allow construction to occur during the summer when construction conditions are more favorable.

## **Meeting Adjourned**



# Provide Your Comments

We would like you to provide comments on the proposed Pressurized Pipeline Irrigation Delivery System project. Please use this form to express your opinions, concerns, and comments. You may complete and return this form before leaving the meeting, or you may complete the form later and mail it to:

BOB SIMPSON  
LITTLE WOOD RIVER IRRIGATION DISTRICT  
P.O. Box 355  
CAREY, ID 83320

You may also e-mail comments to Watermaster37N@aol.com.

The comment period ends May 27, 2009. Thank you for your participation.

## PLEASE PRINT

Name:

Dennis A. Patterson

Address:

7 River Lane Carey Id

My comments are as follows (if needed, attach additional pages):

Put a bike path on the  
finished right of way

208-420-2474