Young Creek Fish Screen Project
Draft Environmental Assessment

MONTANA FISH, WILDLIFE & PARKS
FISHERIES DIVISION
490 N Meridian Road
Kalispell, MT 59901
(406) 752-5501

September 14, 2007

PART I: PROPOSED ACTION DESCRIPTION

Proposed Action Description

A. Type of Proposed Action: Montana Fish, Wildlife & Parks (FWP) seeks to reduce fish loss on the Young Creek irrigation diversion by installing an effective fish screen.

B. Estimated Commencement Date: The installation of the fish screen on the Young Creek irrigation diversion is scheduled to occur in October or early November 2007.

C. Name and Location of the Project: This project is referred to as the Young Creek Irrigation Diversion Fish Screen Project. The purpose of the project is to eliminate fish entrainment into the irrigation system. This project will be constructed on Young Creek, located approximately 11 miles northwest of the city of Eureka, Montana. Specifically, the project is located within Township 37 North, Range 28 West, Sections 14 and 15, Lincoln County, Montana (Figure 1). The project will occur entirely on privately owned land.

D. Project Size (acres affected):

Young Creek is a third order tributary to Koocanusa Reservoir, entering the reservoir at river mile 268.4. The current irrigation diversion contains a diversion structure (rock vane), headgate, open ditch, and pipe system. This project would install a turbulent fountain fish screen near the headgate and replace the 480-foot-long open ditch with buried pipe. The footprint of the fish screen would require ground disturbance of less than ¼ acre on agricultural land.

1. Developed/Residential – 0 acres
2. Industrial – 0 acres
3. Open space/Woodlands/Recreation – 0 acres
4. Wetlands/Riparian – The Young Creek Irrigation Diversion Fish Screen Project would be located within the present floodplain and riparian area of Young Creek. The total footprint of this project would be less than ¼ acre within pasture-type agricultural land.
5. Floodplain – 1/4 acre
6. Irrigated Cropland – 0 acres
7. Dry Cropland – 0 acres
8. Forestry – 0 acres
9. Rangeland – 0 acres

E. Narrative Summary of the Proposed Action and Purpose of the Proposed Action:

Background

Young Creek is a 17-km-long tributary to Koocanusa Reservoir, 5 km south of the Montana-British Columbia border that drains a 119-km^2 basin of the Purcell Mountains (Figure 1). Median annual low and high flows range from 5 to 100 cfs, respectively. Young Creek is one of the most important westslope cutthroat trout (*Oncorhynchus clarki lewisi*) spawning tributaries to Libby Reservoir (named Koocanusa) because it represents one of the last known genetically pure populations of westslope cutthroat trout in the US portion of the reservoir and is one of the most potentially productive tributary streams upstream of Libby Dam. Westslope cutthroat thrived in the reservoir from the early 1970s through the early 1980s, and adfluvial runs of cutthroat trout in Young Creek were also abundant during this period. However, since then, the abundance of adfluvial cutthroat trout in the reservoir and Young Creek has declined. Several factors are responsible for these declines, including land management practices within the Young Creek drainage and changes in the species composition and population dynamics within the reservoir. Brook trout (*Salvelinus fontinalis)* also reside in Young Creek and, although bull trout (*Salvelinus confluentus*) are not known to spawn in Young Creek, juvenile bull trout rearing in the reservoir occasionally enter lower Young Creek. The existing irrigation diversion on Young Creek was constructed in the 1970s and currently has a partially functioning fish screen located at the downstream end of the 480-foot-long open ditch. This diversion is the largest diversion on Young Creek and represents the largest single loss of fish due to entrainment within the drainage. The existing screen consists of approximately ¾-inch screen mesh and excludes only the largest fish from entrainment. The proposed fish screen system would improve the headgate, install a fish screen that would eliminate entrainment of all age classes, and replace the open ditch with buried pipe.

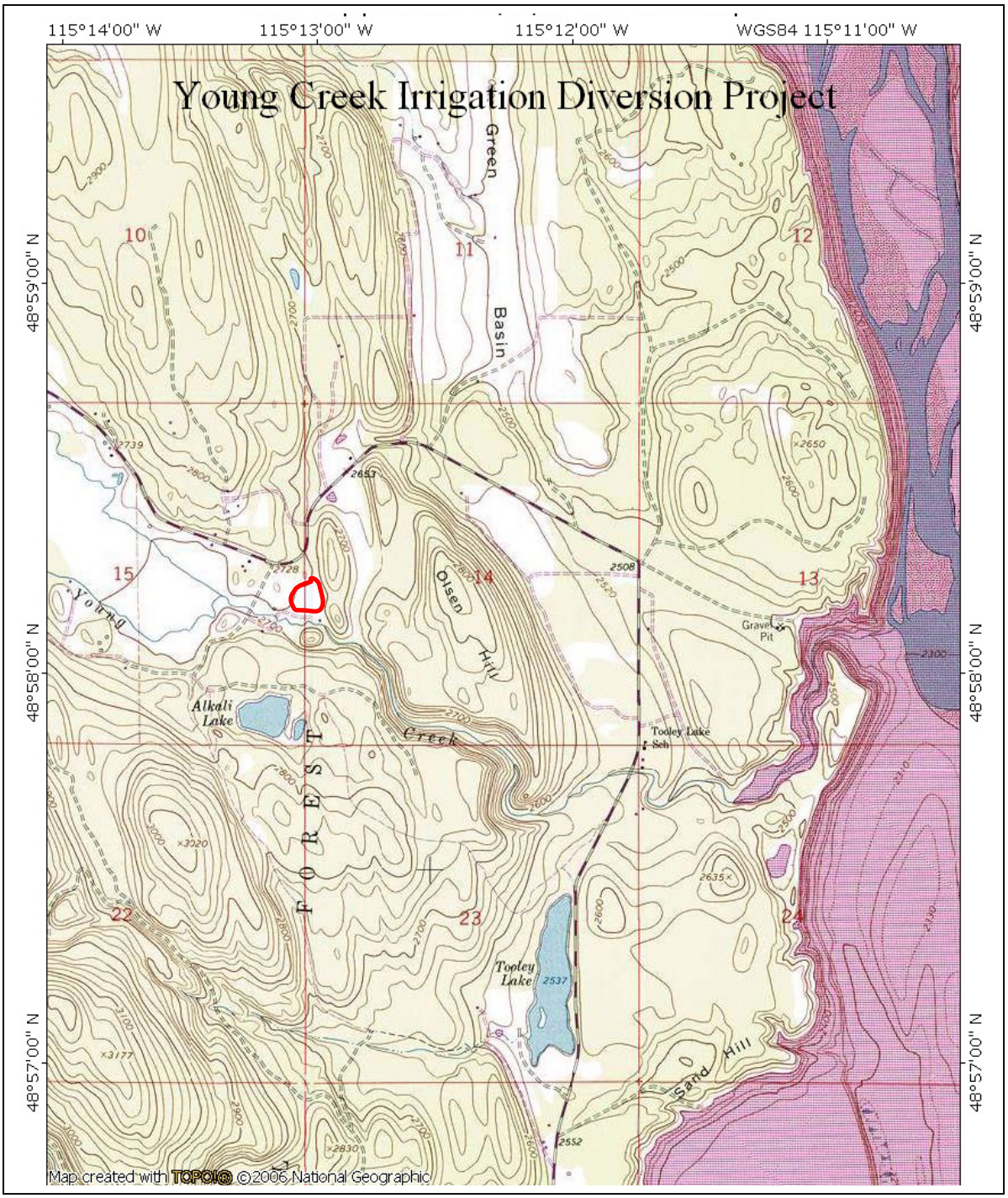
Purpose

The proposed project would utilize the existing diversion structure, install a turbulent fountain fish screen (Figure 2), and replace 480 feet of open ditch with buried pipe to prevent fish entrainment into the irrigation system. The upgrades to the irrigation diversion would improve the ease of operation of the irrigation diversion and also reduce the need for periodic maintenance to the existing partially functioning fish screen and open ditch.

Proposed Activities

This project would install a functional fish screen near the point of diversion on Young Creek capable of delivering the legal volume of water for the multiple water users on the existing irrigation system in order to prevent fish entrainment. The proposed project would require some ground disturbance during the installation of the fish screen and filling of the existing open ditch. The fish screen will be located within the floodplain of Young Creek and would have a footprint of less than ¼ acre. The turbulent fountain fish screen would be fabricated offsite and transported to the project area. The majority of the existing open ditch is not located within the floodplain of Young Creek and would therefore not represent wetland area. Water from the

existing point of diversion currently enters an open ditch and then enters two main delivery pipes, 10- and 12-inch pipes. Installation of the fish screen will require an excavator to accomplish the work, and the filling of the existing open ditch may require fill material from outside the project area that would be transported in by dump truck. This project would extend the two delivery pipes (10- and 12-inch) upstream to the fish screen and would include valves that would allow independent operation of each line. No riparian vegetation will be removed for this project, and all equipment would access the project area using existing roads. The project area is currently classified as agricultural/pasture land. The project would be completed after the irrigation season of 2007 (October or November).



INSTALL FISH SCREEN ON IRRIGATION DIVERSION
PROJECT #199500400
Young Creek - Sections 14 & 15, Township 37N, Range 28W
Rexford Quad

Figure 1. Location of the Young Creek Irrigation Fish Screen Diversion Project.

Figure 2. This photograph is a picture of a turbulent fountain fish screen that the Montana FWP installed on Libby Creek. The proposed fish screen for the Young Creek project would be similar.

PART II. ENVIRONMENTAL REVIEW

A. PHYSICAL ENVIRONMENT

1. LAND RESOURCES Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility?			X			1b.
c. Destruction, covering, or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition, or erosion patterns that may modify the channel of a river or stream, or the bed or shore of a lake?		X				
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				

Comment 1b. This project would replace the existing open ditch with buried pipe, which may increase the amount of land space available for pasture within the project area. However, the installation of the fish screen would also eliminate an area less than ¼ acre currently used as pasture. The installation of the fish screen should not change the depositional or erosional properties surrounding the existing diversion.

2. WATER Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Discharge into surface water or any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?		X				
b. Changes in drainage patterns or the rate amount of surface runoff?		X				
c. Alteration of the course or magnitude of floodwater or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water-related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?		X				
i. Effects on any existing water right or reservation?		X				2i.
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				2j.
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. Will the project affect a designated floodplain?		X				
m. Will the project result in any discharge that will affect federal or state water quality regulations? (Also see 2a)		X				

Comment 2i. This project would install a functional fish screen near the point of diversion on Young Creek capable of delivering the legal volume of water for the multiple water users on the existing irrigation system in order to prevent fish entrainment. Design specifications for the fish screen would ensure that the system could deliver the capacity of the existing system to ensure current water use is not limited by the delivery capabilities of the fish screen structure.

Comment 2j: The installation of the fish screen and replacement of the open ditch with buried pipe should reduce the debris entering the irrigation lines and thus reduce maintenance and related issues for the water users on this irrigation system.

3. AIR Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Emission of air pollutants or deterioration of ambient air quality? (Also see 13c.)		X				
b. Creation of objectionable odors?		X				
c. Alteration of air movement, moisture, or temperature patterns, or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
e. Will the project result in any discharge, which will conflict with federal or state air quality regulations?		X				

4. VEGETATION Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Changes in the diversity, productivity, or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?			X			4a.
b. Alteration of a plant community?			X			4a.
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?		X				
f. Will the project affect wetlands or prime and unique farmland?		X				

Comment 4a: This project would require relatively little ground disturbance (< ¼ acre) to install the fish screen, which would be sited near the existing point of diversion and headgate. The land surrounding this site is currently pasture-type land. This project would replace the existing open ditch with buried pipe, which may increase the amount of land space available for pasture within the project area. However, the installation of the fish screen would also eliminate a smaller area currently used as pasture, but the net amount of pasture would increase as a result of the elimination of the open ditch. The overall impact on the vegetative community at this site would be minor and not expected to have long-term impacts.

5. FISH/WILDLIFE Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?			X			5b.
c. Changes in the diversity or abundance of nongame species?			X			5b.
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?			X			5f.
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest, or other human activity)?		X				
h. Will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat?		X				5f.
i. Will the project introduce or export any species not presently or historically occurring in the receiving location?		X				

Comment 5b:

Fish: This project is designed to eliminate entrainment, and thus mortality, of fish into the existing irrigation system, including all fish species present in Young Creek. Several species of game fish reproduce and rear in Young Creek, including westslope cutthroat trout and brook trout, and although bull trout are not known to spawn in Young Creek, juvenile bull trout do occasionally enter Young Creek from the reservoir to rear for extended periods. Sculpin (*Cottus* spp.) and longnose dace (*Rhinichthys cataractae*) are classified as nongame fishes and are also present in Young Creek. The installation of this fish screen will benefit all fish species in Young Creek by reducing mortality related to entrainment.

Amphibians: Some amphibians, including spotted frogs (*Rana pretiosa*), western toads (*Bufo boreas*), long-toed salamanders (*Ambystoma macrodactylum*), and Pacific chorus frogs (*Pseudacris regilla*), may currently reside in or around the exiting open irrigation ditch, and the filling of this ditch may have a minor impact on these individuals. However, the impact to the populations of these amphibians within the local area should be short term and minor.

Comment 5f: Grizzly bears (*Ursus arctos horribilis)*, Canada lynx (*Lynx Canadensis)*, and grey wolves (*Canis lupus)* may also be present within the general vicinity of the project area, but no known birthing sites are known to occur in the immediate area. The effect of this project on these species is expected to be short term and minor or nonexistent, which would be similar to the effect on other birds and mammals within the area. MFWP based this assessment on the relatively small area of land disturbance, the type of land the project is occurring on (pasture land), and the relatively short period of time required to accomplish the project. This project is not likely to have secondary effects, such as displacement, on any of these species for these same reasons.

Bull trout are not known to spawn in Young Creek; however, juvenile bull trout do occasionally enter Young Creek from the reservoir to rear for extended periods. Overall this project would have beneficial effects on all fish species residing in Young Creek, including bull trout. The installation of the fish screen would have only minor or nonexistent impacts on bull trout and other fish species due to the fact that any instream work would be completed during the late fall when water levels are lowest and the irrigation season is over, which would reduce instream sedimentation, and almost all ground disturbance would occur in the dry. Therefore any impacts to juvenile bull trout rearing in Young Creek would be minor to nonexistent.

B. HUMAN ENVIRONMENT

6. NOISE/ELECTRICAL EFFECTS **Will the proposed action result in:**	**Impact Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Increases in existing noise levels?		X				
b. Exposure of people to severe or nuisance noise levels?		X				
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				

7. LAND USE **Will the proposed action result in:**	**Impact Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflict with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				

8. RISK/HEALTH HAZARDS **Will the proposed action result in:**	**Impact Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?		X				
b. Affect an existing emergency response or emergency evacuation plan or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				
d. Will any chemical toxicants be used?		X				

9. COMMUNITY IMPACT **Will the proposed action result in:**	**Impact Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?		X				
d. Changes in industrial or commercial activity?		X				
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?		X				

10. PUBLIC SERVICES/TAXES/UTILITIES Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:		X				
b. Will the proposed action have an effect upon the local or state tax base and revenues?		X				
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased used of any energy source?		X				
e. Define projected revenue sources?		X				10e.
f. Define projected maintenance costs?		X				10e.

Comment 10e: This project could cost up to $40,000 and would be paid for by Montana FWP with funding from Bonneville Power Administration through the Libby Mitigation Project. Montana FWP would be responsible for maintaining the fish screen structure for 2 years, and then maintenance thereafter would be the responsibility of the water users associated with this system. Maintenance costs are unknown, but are expected to total less than 10% of the total project cost over a 10-year period.

11. AESTHETICS/RECREATION **Will the proposed action result in:**	**Impact Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?		X				
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. Alteration of the quality or quantity of recreational/tourism opportunities and settings?		X				
d. Will any designated or proposed wild or scenic rivers, trails, or wilderness areas be impacted? (Also see 11a, 11c)		X				

12. CULTURAL/HISTORICAL RESOURCES **Will the proposed action result in:**	**Impact Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Destruction or alteration of any site, structure, or object of prehistoric, historic, or paleontological importance?		X				
b. Physical change that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				
d. Will the project affect historic or cultural resources?		X				

13. SUMMARY EVALUATION OF SIGNIFICANCE Will the proposed action, considered as a whole:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources that create a significant effect when considered together or in total.)		X				
b. Involve potential risks or adverse effects that are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard, or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. Is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e)	X					13f
g. List any federal or state permits required.						13g

Comments 13f: Issues associated with water use and water rights often generate controversy from some people. It is not known if this project would have organized opposition.

Comment 13g: The following permits would be required:

1. Montana Department of Enviroment and Water Quality, 318 Turbidity Exemption Permit
2. Lincoln County, County Floodplain Development Permit.
3. Montana Fish, Wildlife & Parks SPA 124 Permit

PART III. ALTERNATIVES

Alternative 1 – No Action

The no-action alternative would allow status quo operation of the irrigation diversion on Young Creek to continue, which allows fish entrainment into the irrigation system. Implementation of this alternative would do little to conserve westslope cutthroat trout in the Young Creek drainage.

Alternative 2 – Installation of a fish screen and replacement of the existing open ditch with buried pipe (Proposed Action)

Montana FWP is proposing to install a turbulent fish screen fountain on an existing irrigation diversion on Young Creek. The project would occur in October or November 2007 and would include the installation of the fish screen and replacement of the exiting 480-foot-long open ditch with two buried pipes. The existing diversion vane and headgate will be incorporated into the proposed project. Burying the pipe that conveys water through the currently open ditch system may require bringing in approximately 1,200 cubic yards of fill material to eliminate the present ditch. The project would benefit all fish species residing in Young Creek, including westslope cutthroat trout, brook trout, and bull trout.

Alternative 3 – Installation of a fish screen without replacement of the existing open ditch with buried pipe.

This alternative would involve installing the turbulent fountain fish screen and leaving the existing ditch as it currently functions. This alternative would prevent fish from entering the irrigation system. Maintenance requirements for the open ditch would remain as they currently exist, including periodic dredging of the ditch every several years and terrestrial debris that enters the open ditch and ultimately the two water delivery lines. It would also do little to conserve water loss that exists in the current open ditch due to infiltration and evaporation.

PART IV. EA CONCLUSION SECTION

1. **Based on the significance criteria evaluated in this EA, is an EIS required (YES/NO)? If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action.**

   MFWP concludes that an EIS is not required for the implementation of this project. MFWP further concludes from the information presented in this document that the proposed activities will have either no impact or a positive impact on the physical and human environment.

2. **Describe the level of public involvement for this project, if any, and given the complexity and the seriousness of the environmental issues associated with the**

proposed action, is the level of public involvement appropriate under the circumstances?

The draft environmental assessment (EA) is being distributed to all individuals and groups listed in the cover letter. The EA will be placed on the MFWP web site. A public scoping meeting was held at the West Kootenai Store on Wednesday April 11, 2007. Individuals that wish to provide comments to this document or obtain additional information can contact Jim Dunnigan at (406) 293-4161, ext. 100.

3. **Duration of comment period, if any:**

   There will be a 30-day public comment period for this environmental assessment. Comments will be accepted through Monday, October 15, 2007. Submit comments to: Montana Fish, Wildlife & Parks, Attention: Jim Dunnigan, 475 Fish Hatchery Road, Libby, MT 59923, or e-mail to jdunnigan@mt.gov.

4. **Name, title, address, and phone number of the person(s) responsible for preparing the EA:** Jim Dunnigan, Fisheries Biologist, MFWP, 475 Fish Hatchery Road, Libby, MT 59923, (406) 293-4161.