What Comes Next?

Submit written comments on the Draft EIS on or before July 28, 2016

The U.S. Army Corps of Engineers (Corps) and the Bureau of Reclamation, as joint lead agencies, have made available for public review and comment the Lower Yellowstone Intake Diversion Dam Fish Passage Project Draft Environmental Impact Statement (Draft EIS). The Draft EIS analyzes and discloses potential effects associated with the proposed Federal Action to improve passage for endangered pallid sturgeon and other native fish at Intake Diversion Dam in the lower Yellowstone River, continue the effective and viable operation of the Lower Yellowstone Project, and contribute to ecosystem restoration.

NEPA Process	
Notice of Intent	
Public Scoping Meetings and 45-Day Comment Period	
Scoping Report	
Evaluation and Analysis of Issues and Alternatives	
Draft EIS *(Note Amendment to the DEIS released 6/14/2016)*	
Public Meetings and 45-Day Comment Period	**We are here**
Final EIS	
30-Day Notice of Availability	
Record of Decision	

How to Submit Comments

1. Written or Spoken Comments at tonight's meeting
2. Email : cenwo-planning@usace.army.mil
3. Mail: U.S. Army Corps of Engineers
   Omaha District
   ATTN: CENWO-PM-AA
   1616 Capitol Avenue
   Omaha, NE 68102

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Lower Yellowstone
Intake Diversion Dam Fish Passage Project

US Army Corps
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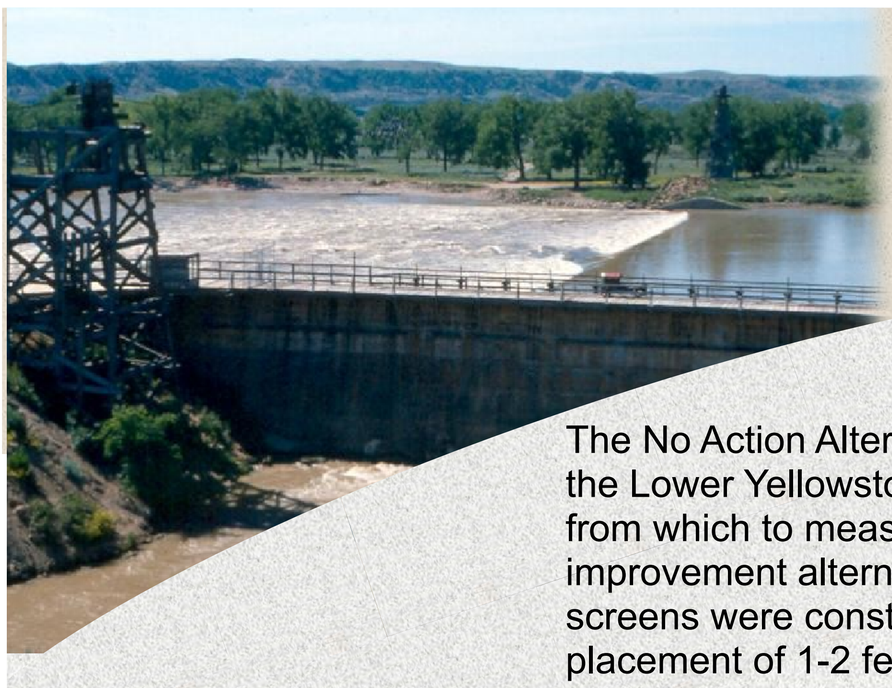
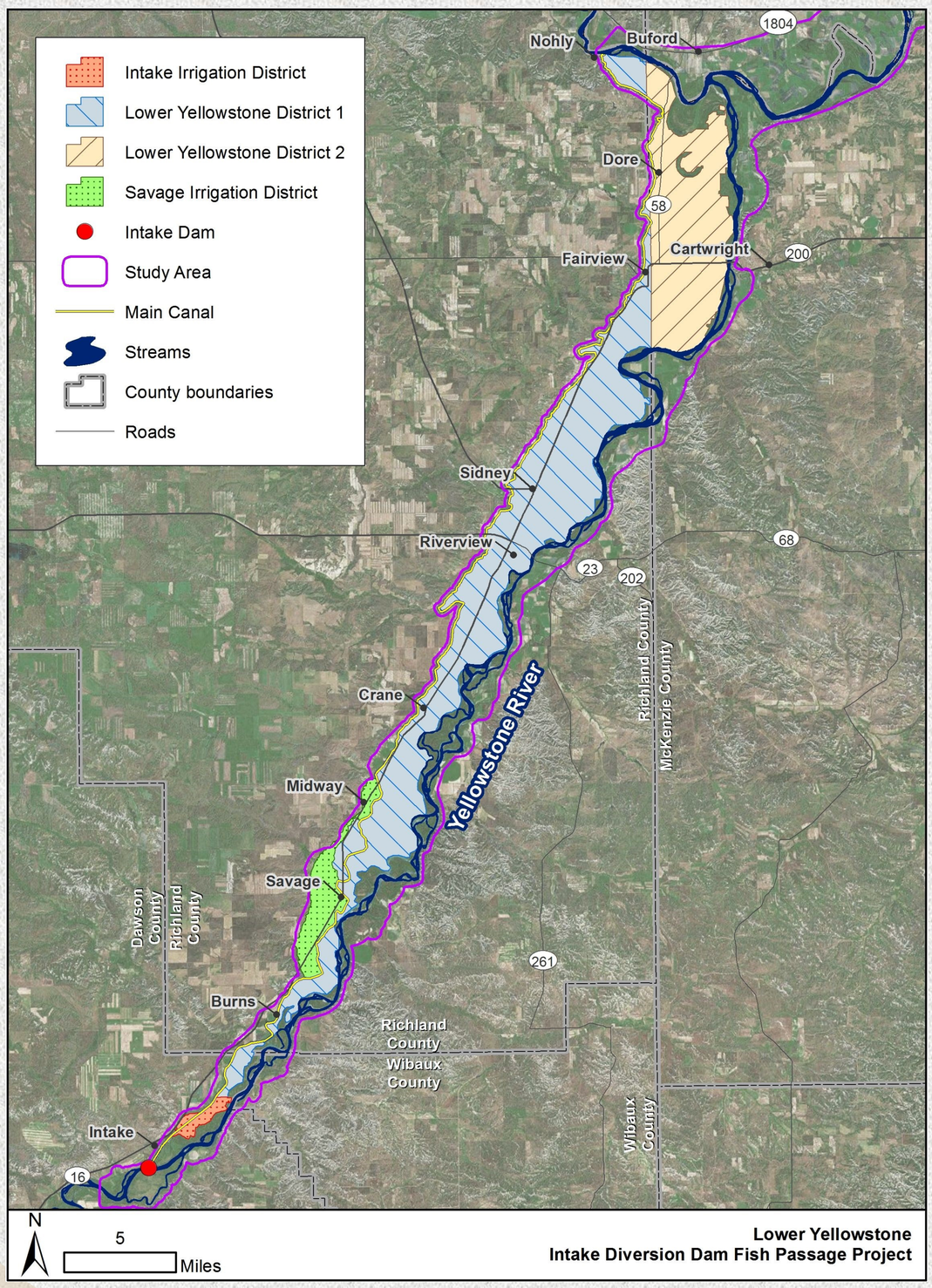


No Action Alternative

The No Action Alternative is continued operation, maintenance, and rehabilitation of the Lower Yellowstone Project as authorized. This alternative provides a baseline from which to measure benefits and impacts of implementing fish passage improvement alternatives considered in this document. A new headworks and fish screens were constructed in 2012. Dam maintenance requires the periodic placement of 1-2 feet of rock on the crest of the dam, using the existing cableway, to replace rock moved by ice and high-flow events.

The estimated annual OM&R of the No Action Alternative is $2,643,000 and includes ongoing operation of the main canal and laterals as well as screened headworks, diversion dam, and associated costs.



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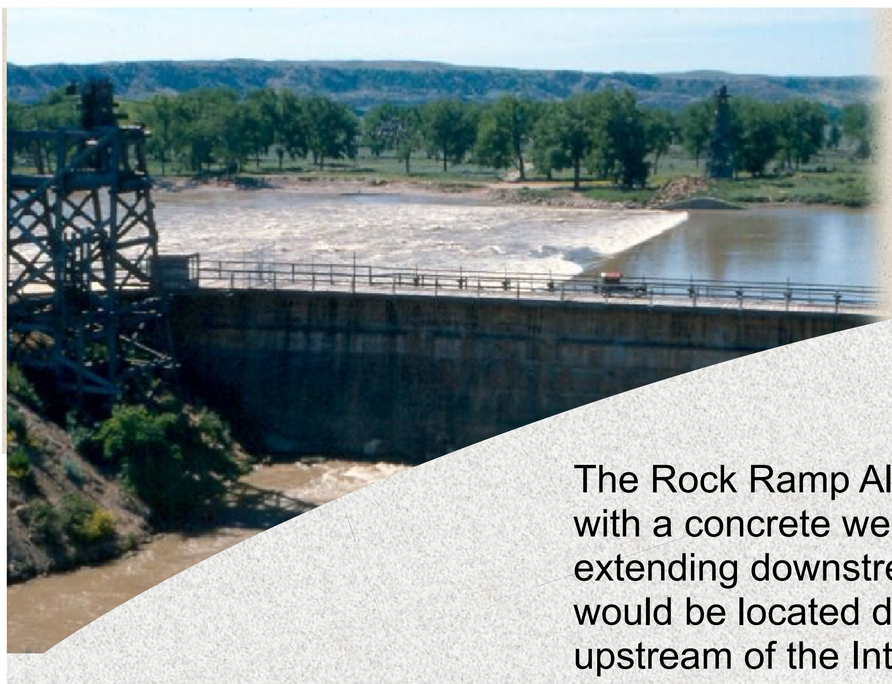
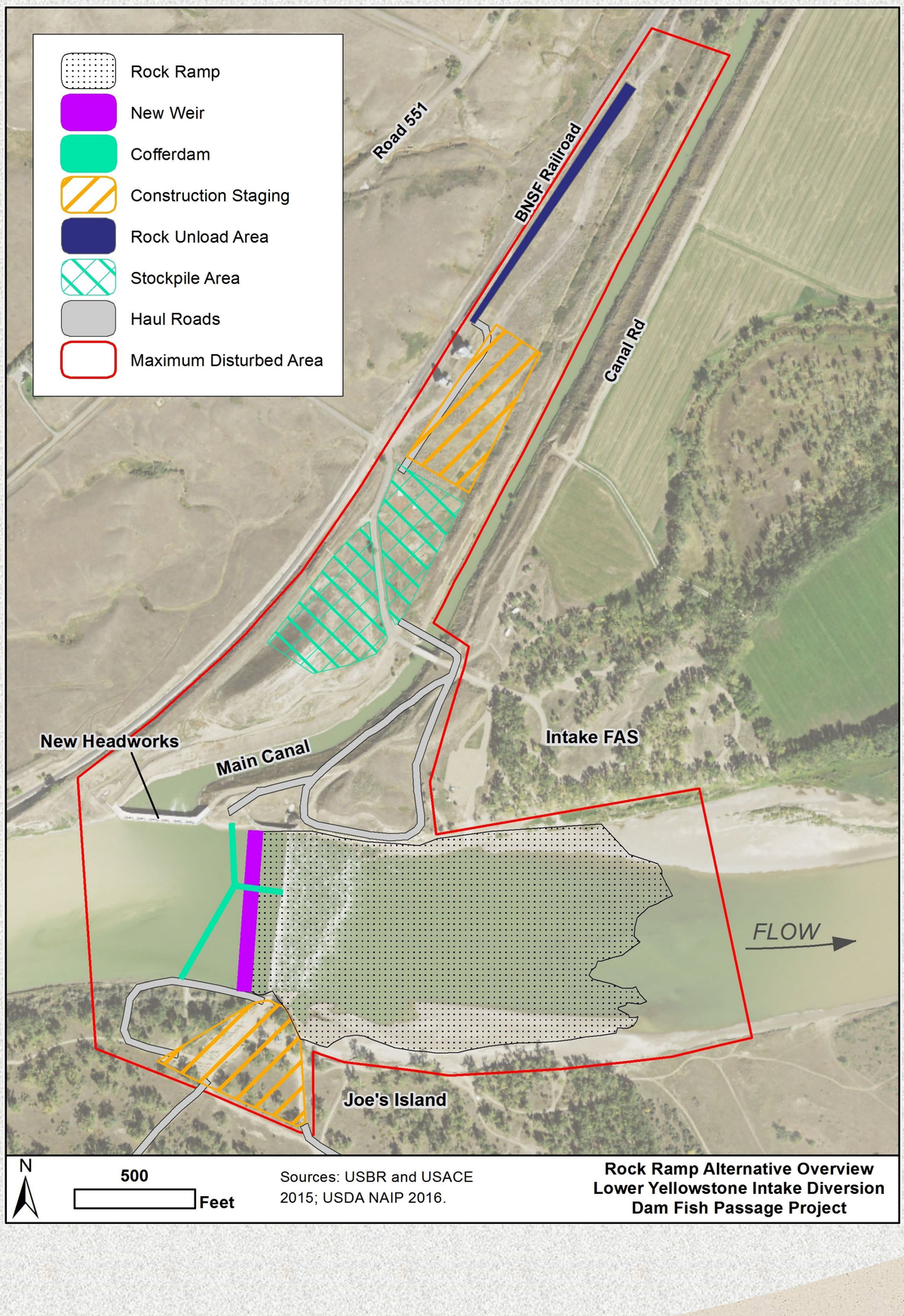


Rock Ramp Alternative

The Rock Ramp Alternative would replace the existing rock-and-timber dam structure with a concrete weir and a shallow-sloped, un-grouted boulder and cobble rock ramp extending downstream well beyond the existing boulder field. The replacement weir would be located downstream of the screened headworks and approximately 40 feet upstream of the Intake Diversion Dam. It would create sufficient water height to divert the full water right of 1,374 cfs into the Main Canal. Estimated construction cost of this alternative is $90,454,000, and annual OM&R is $2,840,000.



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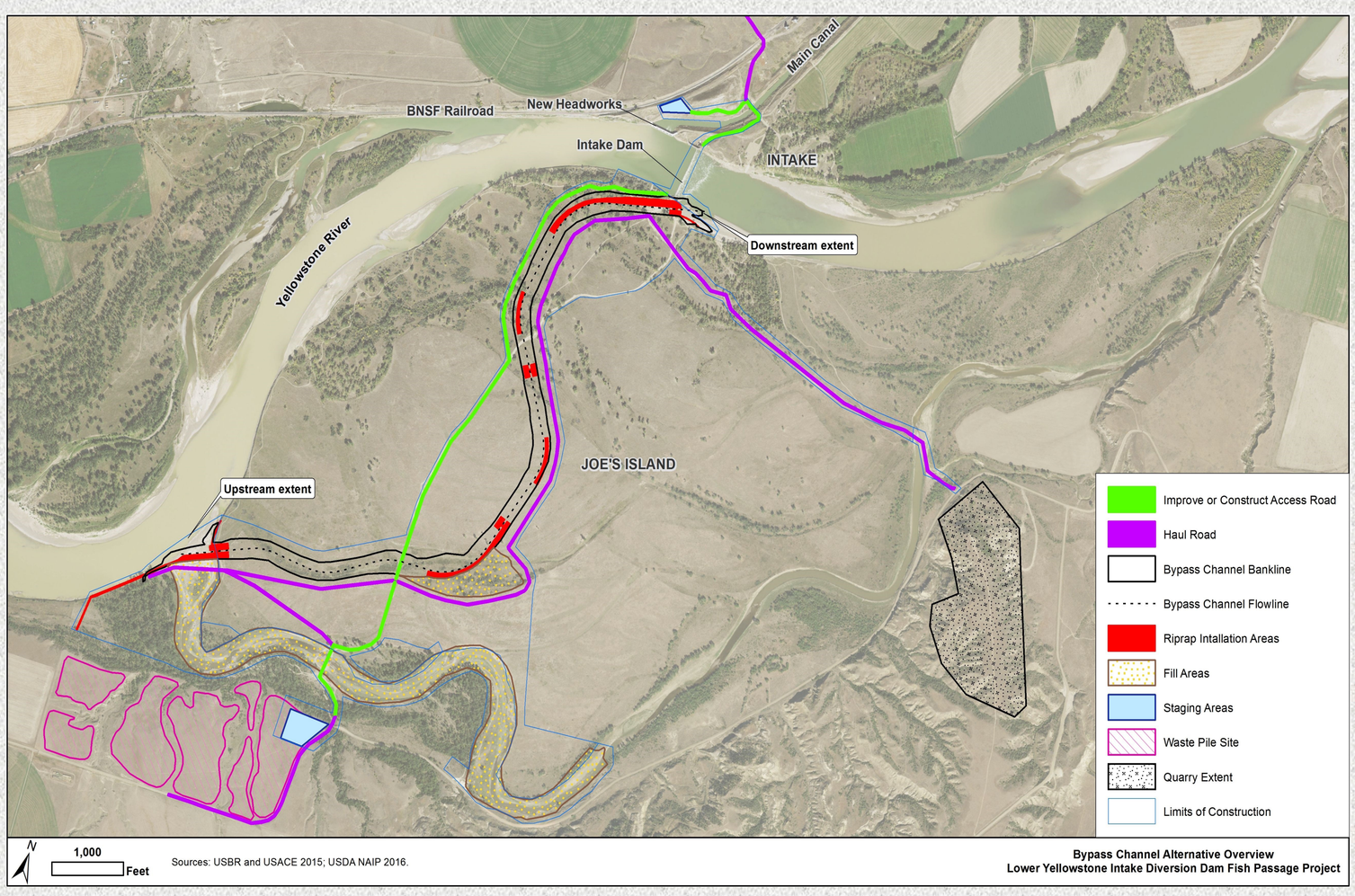
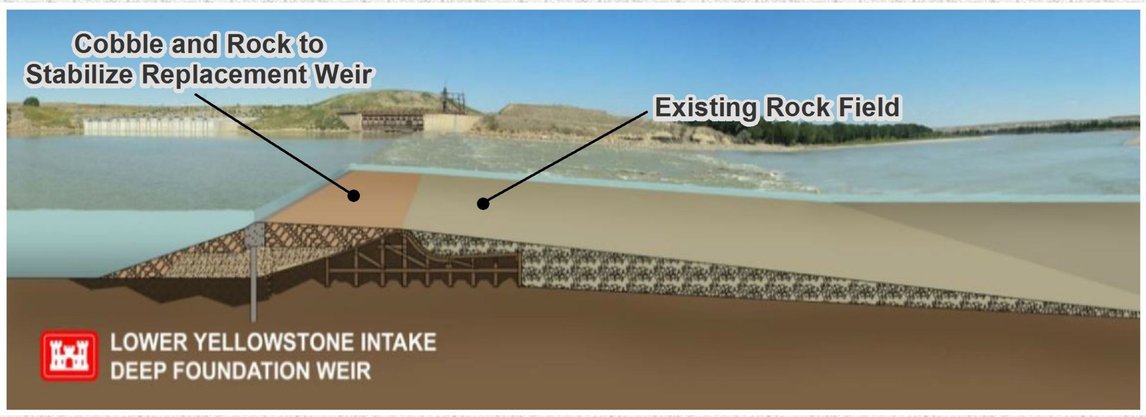
Bypass Channel Alternative

The alternative includes constructing a bypass channel on Joe's Island from the inlet of the existing side channel to just downstream of the existing Intake Diversion Dam and boulder field. A new concrete weir would also be constructed approximately 40 feet upstream from the existing Intake Diversion Dam. Construction work and the primary elements of this alternative would be located mainly on Joe's Island. This land was acquired by Reclamation during construction of the original Intake project. All construction, staging and disposal would occur on Reclamation-owned lands. Estimated construction cost of this alternative is $57,044,000, and annual OM&R is $2,799,000.





Rendering of the Replacement Weir

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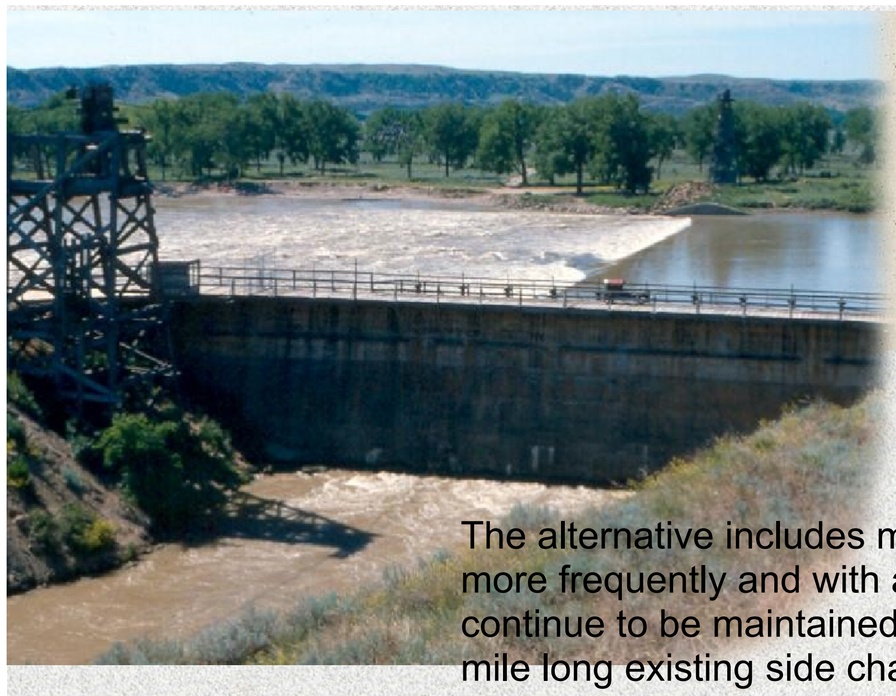
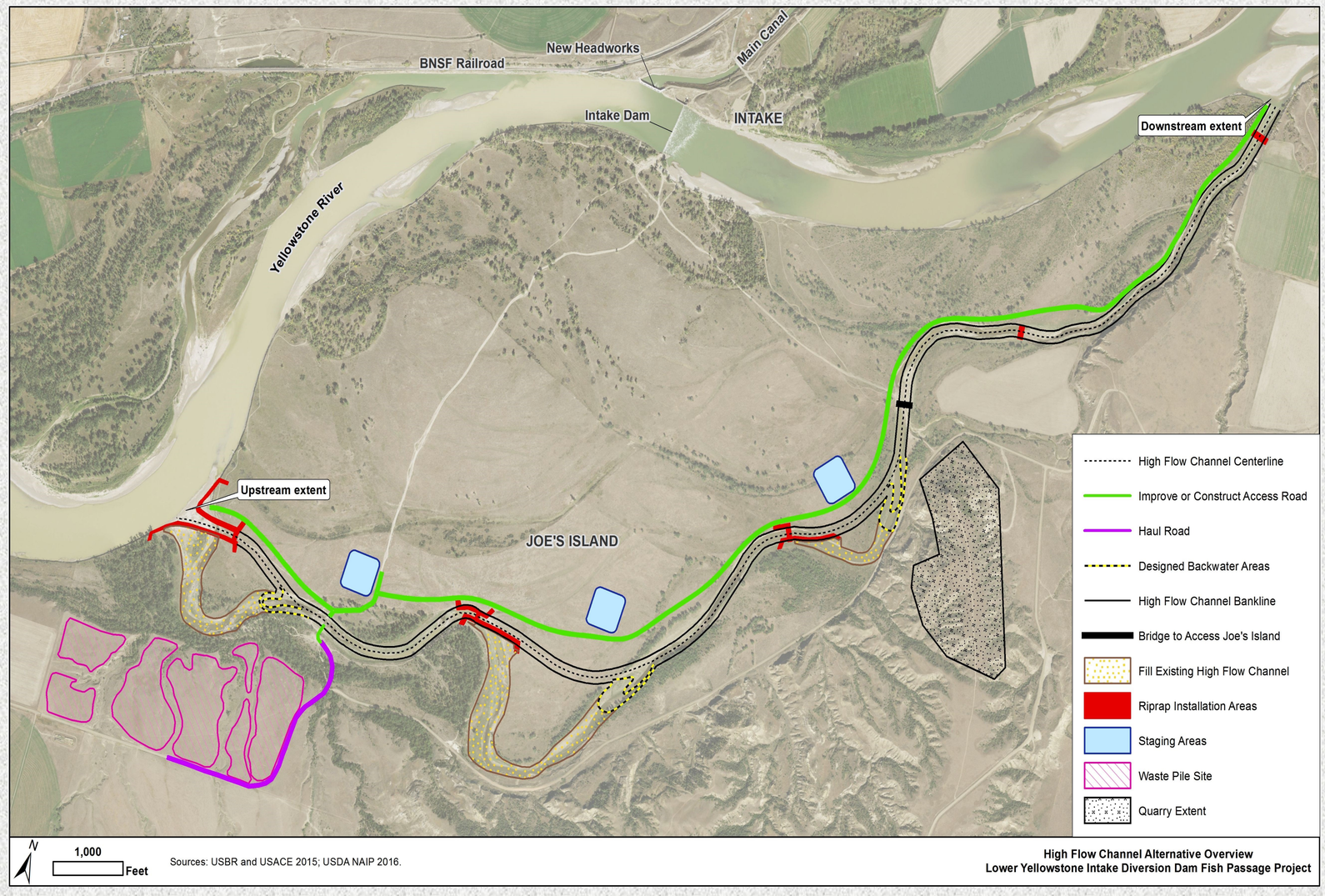


Modified Side Channel Alternative

The alternative includes modification of the existing side channel around Joe's Island to flow more frequently and with a larger flow volume. The existing Intake Diversion Dam would continue to be maintained by replacement of rock. The modification of the approximate 4.5 mile long existing side channel includes three bend cutoffs, channel modifications, grade control structures and bank protection, and cobble substrate. Estimated construction cost of this alternative is $54,441,000, and annual OM&R is $2,907,000.



High Flow Channel Alternative Overview
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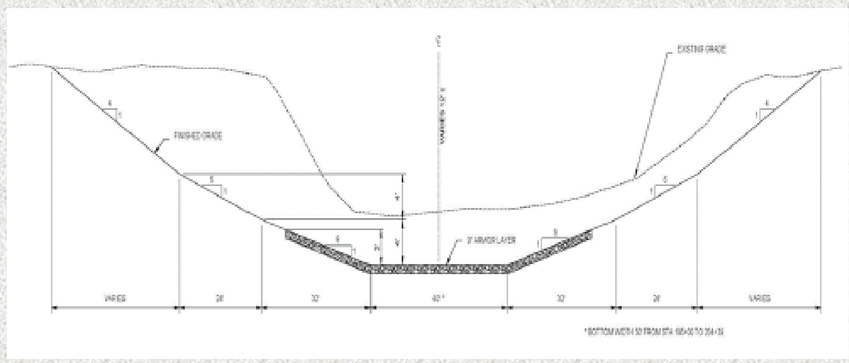

Typical channel Cross Section

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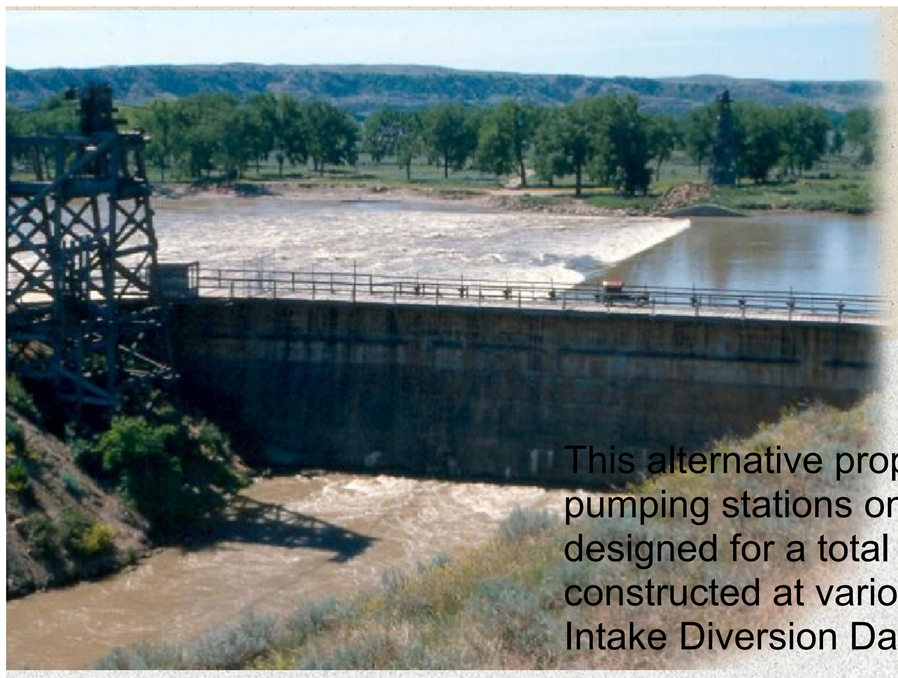
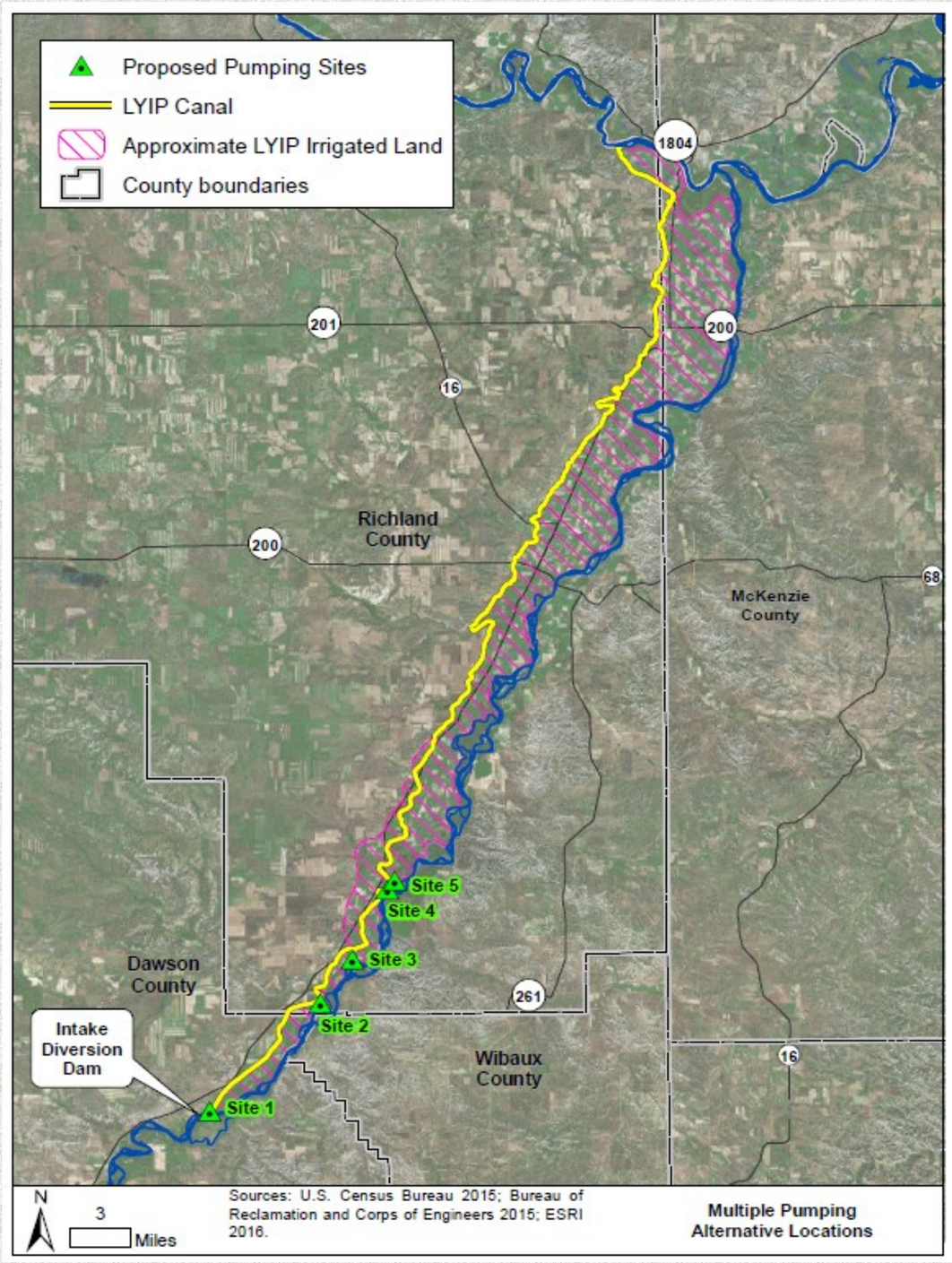
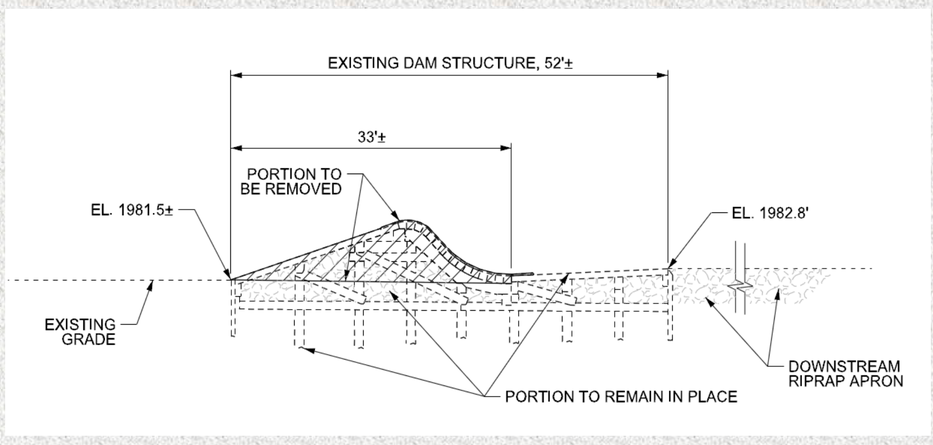


Multiple Pumping Stations Alternative

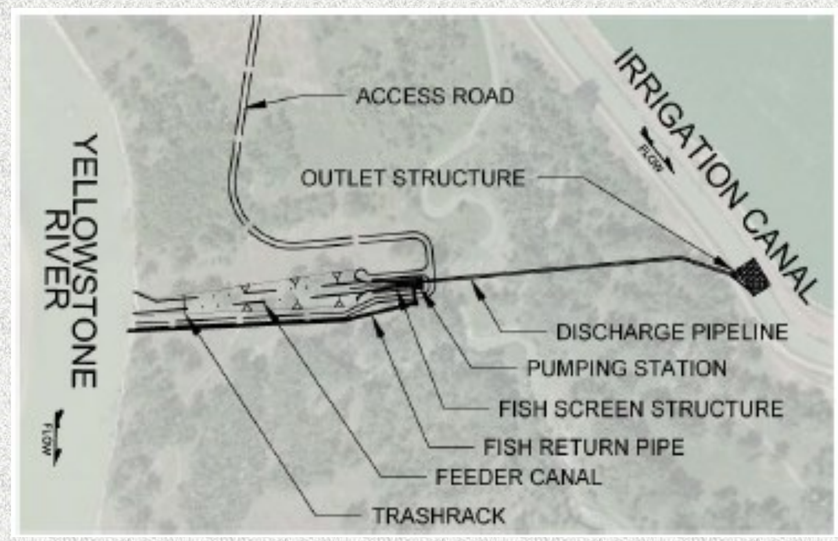
This alternative proposes removing the Intake Diversion Dam and constructing five pumping stations on the Yellowstone River. The pumping stations would be designed for a total diversion capacity of 1,374 cfs. The pumping stations would be constructed at various locations along the Lower Yellowstone Project between the Intake Diversion Dam and Savage, MT.

Estimated construction cost of this alternative is $132,028,000, and annual OM&R is $5,034,000.





Dam Removal (cross section)



Example Pump Station Features

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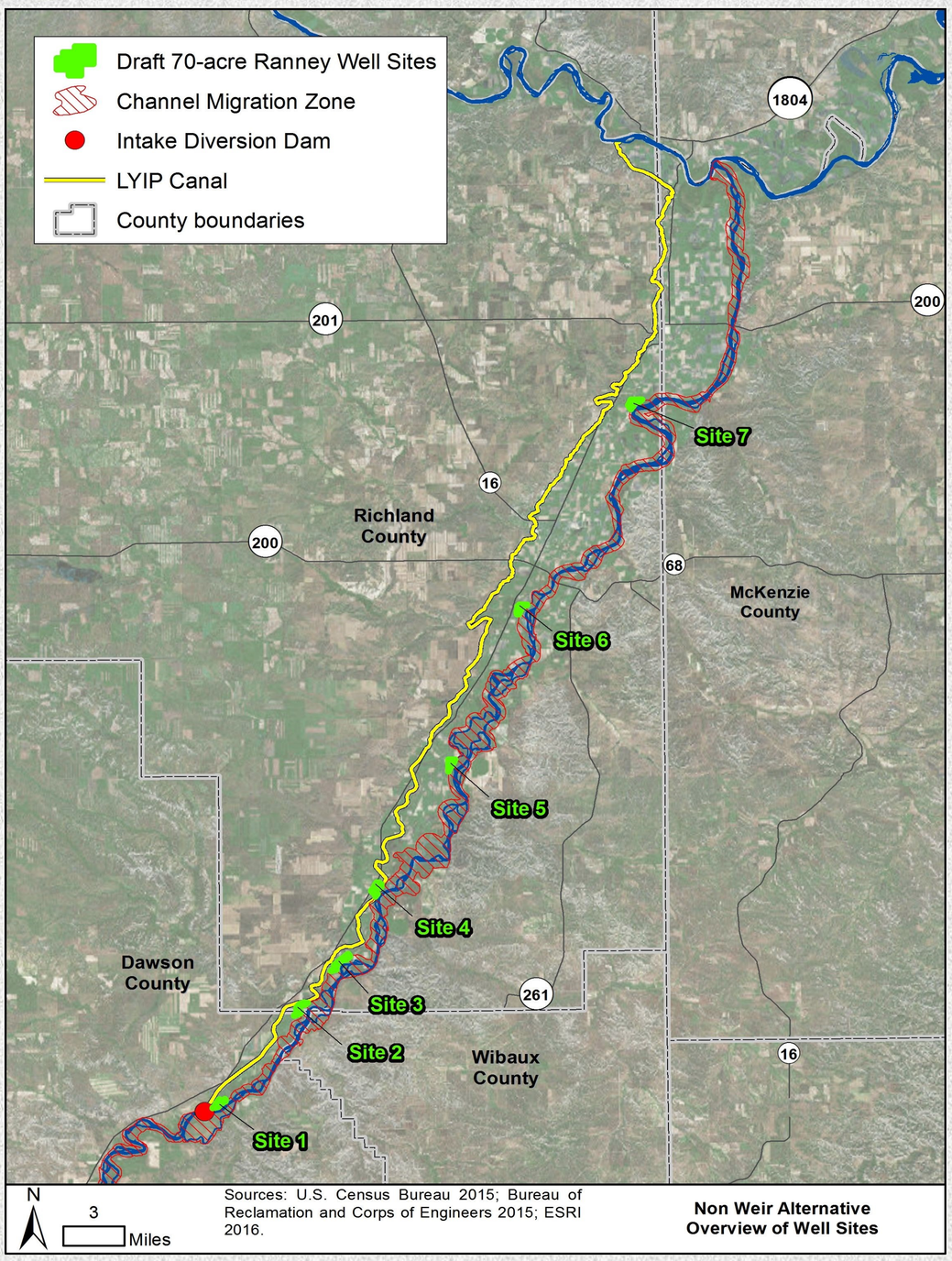
Multiple Pumping with Conservation Measures Alternative

This alternative includes removal of Intake Diversion Dam, installation of water conservation measures, use of pumping (Ranney wells), and wind power. The alternative assumes the construction of 7 pump sites with 6 Ranney wells at each site to replace the need for the Intake Diversion Dam. Water conservation measures would be implemented and diversions would be reduced to 608 cfs. Wind power would be utilized to reduce pump energy costs.

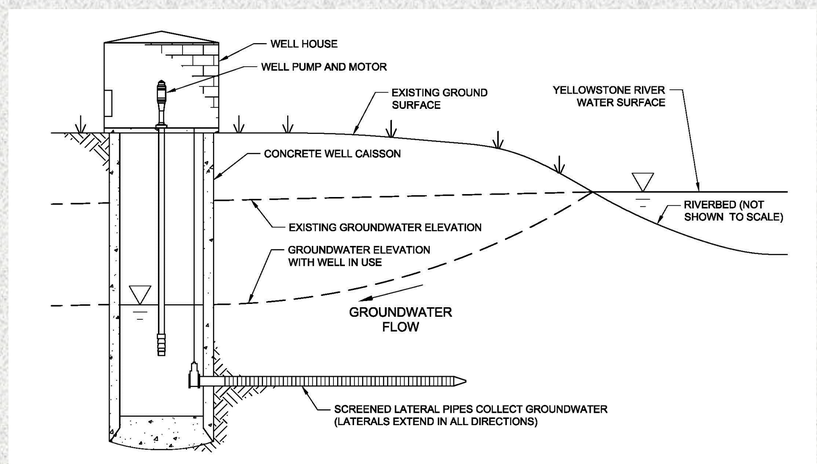
Estimated construction cost of this alternative is $477,925,000, and annual OM&R is $4,386,000.



Conceptual Ranney Well Locations

This alternative would not meet the project purpose and need, however a detailed analysis is provided for comparative purposes and better inform further public comment and agency decision-making.

Conservation Measures	
Component	**Description**
Check Structures	Installation of check structures in the canal for water control
Flow measuring devices	Measuring devices installed on the canals
Laterals to pipe	Convert laterals to pipe
Sprinklers	Install center pivot sprinklers
Lining Main Canal/laterals	Line Main Canal and laterals with concrete
Control over checking	Operational change to water levels in the canals
Groundwater pumping	Install groundwater pumps



Conceptual Ranney Well (Section View)

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Intake Diversion Dam Fish Passage Project

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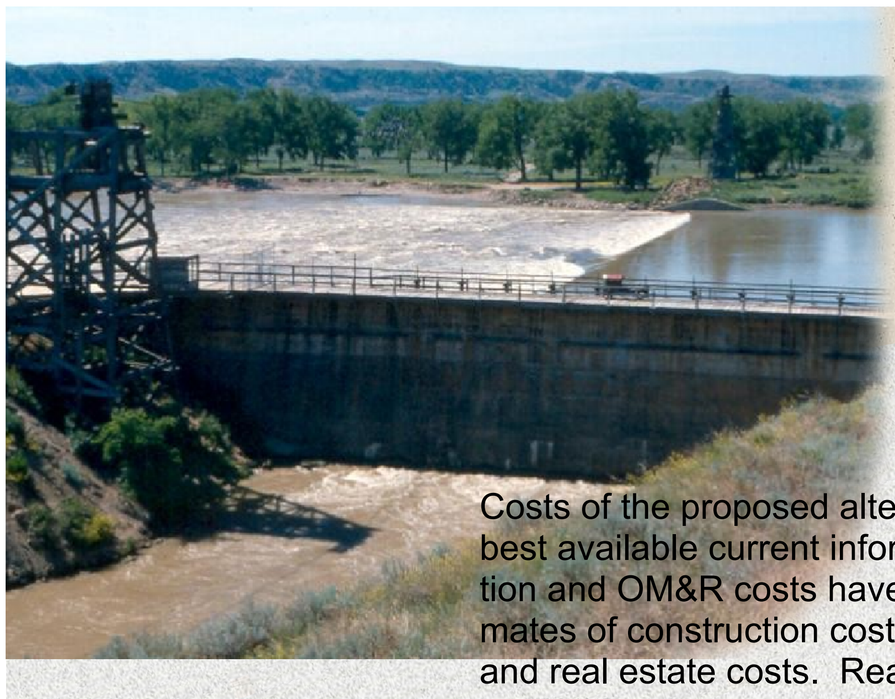

Alternative Cost Estimates

Costs of the proposed alternatives are displayed in the tables below, they are based on the best available current information for the purpose of analysis and comparison. Both construction and OM&R costs have been estimated for all alternatives. The first table includes estimates of construction costs, these include construction, design, construction management, and real estate costs. Real estate costs were estimated for the alternatives that may require acquisition or easements on private land.

Estimated Alternative Construction Costs

	No Action	Rock Ramp	Bypass Channel	Modified Side Channel	Multiple Pump	Multiple Pumping with Conservation Measures
Construction Cost		$79,592,000	$53,784,000	$47,557,000	$115,314,000	$414,415,000
Design [a]		$6,480,000	$0	$3,944,000	$9,697,000	$36,006,000
Construction Management		$4,382,000	$3,260,000	$2,665,000	$6,463,000	$24,004,000
Real Estate		$0	$0	$275,000	$554,000	$3,500,000
Total First Cost		**$90,454,000**	**$57,044,000**	**$54,441,000**	**$132,028,000**	**$477,925,000**

a—Design for the Bypass Channel has been completed and is therefore considered a sunk cost.

Estimated Annualized Operation, Maintenance and Repair (OM&R) Cost

	No Action	Rock Ramp	Bypass Channel	Modified Side Channel	Multiple Pump	Multiple Pumping with Conservation Measures
Annualized OM&R [a, b] (% change from No Action)	$2,643,000 (0%)	$2,840,000 (7.5%)	$2,799,000 (5.9%)	$2,907,000 (10.0%)	$5,034,000 (90.5%)	$4,386,000 (65.9%)

a —Reclamation is committed to monitoring the effectiveness of the project, consistent with the outcome of Endangered Species Act consultation. Funding sources for these monitoring activities will be determined based on Reclamation Law, Policy, and availability of funding
b — OM&R costs are borne by the Lower Yellowstone Project irrigators

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