

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Phillips 66 Glacier Pipeline HDD Easement
Proposed Implementation Date:	January/February 2013
Proponent:	Phillips 66 Pipeline LLC
Location:	Section 34, Township 1North, Range 26 East (Yellowstone River – Public Land Trust)
County:	Yellowstone County

I. TYPE AND PURPOSE OF ACTION

Phillips 66 Pipeline LLC (Phillips 66) is proposing to install a new segment of the Glacier Pipeline which consists of a 10-inch diameter petroleum pipeline located underneath the navigable riverbed of the Yellowstone River in Section 34-T1N-R26E in Yellowstone County in a new 50' wide by 830' long easement encompassing ±0.95 acres. The new section of pipeline will be installed by Horizontal Directional Drilling (HDD) and be located approximately 40' below the thalweg and replace an existing pipeline that is located approximately 15' downstream of the new pipeline. Based on a river cross-section showing the most recent surveyed depth of the pipeline there is between 1.65-6.56 feet of cover on the current facility. The shallowest portion is towards the east side of the channel, close to the Lockwood Irrigation District diversion dike. Phillips 66 has taken a proactive approach for this crossing by proposing a new, deeper pipeline crossing that will place the new facility in bedrock to protect it from river scour. The existing pipeline does not have an easement from the State to cross the Yellowstone River.

Additional alternatives to the installation of a new pipeline via HDD were: rerouting the pipeline (this option would still require a river crossing at some location); new open cut trench crossing; temporary stabilization; or no action. All of these alternatives were considered and ultimately removed from consideration by Phillips 66 and a new crossing utilizing HDD was selected as the preferred alternative. Regardless of the alternative selected, Phillips 66 needs to obtain an easement from the state for this river crossing.

The applicant has proposed that the old pipeline be allowed to be abandoned in place. The pipe section would be *"...purged and swabbed then the line grouted with a weak one-sack flowable sand/cement mixture and the ends capped."* It is also noted by the applicant that *"... over time without cathodic protection the pipe will eventually degrade and the flowable fill become part of the valley fill that the pipe is buried in."* The applicants' materials note that removal of the pipeline would cause disturbance to the river bed and increase downstream sedimentation with potential impacts to the Lockwood Water and Sewer District raw water intake that is located downstream of the pipeline. If the pipe were abandoned in place, Phillips would continue to monitor *"...for potential exposure. If exposure of the abandoned section occurs in the future, alternatives will be assessed at that time."*

This portion of the Yellowstone River is constrained by riprap on the west bank along Coulson Park which continues under the Interstate 90 bridge, while the east bank is constrained by sandstone cliffs. The Lockwood Irrigation District diversion dike and intake canal is located along the far east side of the river channel. Concern from agencies reviewing the request is that during high water events, the river cannot move laterally and will therefore move down and further expose the pipeline which could result in it becoming exposed and ultimately suspended. If this happens it is possible that debris or some other object could snag the old pipeline which would require the river to be closed while the old pipeline removed. Phillips 66 has stated that if the pipeline were to become exposed in the future *"...alternatives will be assessed."*

The Southern Land Office (SLO) is recommending that the Land Board require the old pipeline be removed between March-May 2013 or October-December 2013. The SLO is also recommending that the section of pipeline under the Lockwood Irrigation District diversion dike and canal may be left in place, based on a final recommendation of the District. Based on initial conversations with the District Manager it is expected that the District will request that the portion under the canal removed. The two time periods are during low flow of the river and also when the river has the least amount of traffic as there are Fishing Access Sites at Coulson Park and downstream near the Lockwood water intake. Being proactive in removal of the line would allow the State to be in control of when it is removed and not wait on nature.

The SLO consulted with FWP and DEQ and both agencies recommended removing all or a portion of the abandoned pipeline. Additionally, the SLO contacted the Managers of the Lockwood Irrigation District and Lockwood Water & Sewer District and both were supportive of requiring removal in 2013 during a low water period. The removal of the old pipeline would require a separate Land Use License and an additional environmental review document. If the Land Board does not desire to require removal of the abandoned section of pipeline, then the SLO recommends that a more detailed plan of action be submitted to and approved by the DNRC prior to the final issuance of the easement. This plan would describe certain trigger points and the specific actions that would be performed by Phillips 66 if those trigger points were met. The current proposal by Phillips 66 to assess alternatives once the pipeline becomes exposed is too vague.

The Horizontal Directional Drilling (HDD) will utilize an entry point on the west side of the Yellowstone River in Coulson Park where Phillips 66 already has an easement. The new pipeline will exit on the east side on the river on land owned by the BLM. The HDD technique will allow the new pipeline to be located at an increased depth and decrease surface disturbance. Additionally, it will minimize areas of open-cut trenching to areas above the high water mark that connect the new pipeline segment to the existing facility.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

The DNRC did not perform any formal public scoping for this project. However, the SLO did contact Montana Fish, Wildlife and Parks, Department of Environmental Quality and the US Army Corps of Engineers to get their opinion on whether the old pipeline should be abandoned in place or removed. Additionally, the SLO spoke with Carl Peters, Manager of the Lockwood Irrigation District, and Woody Woods, Manager of the Lockwood Water & Sewer District, regarding the project and potential extrication of the pipeline.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Yellowstone Conservation District: 310 Permit (Pending)
US Army Corps of Engineers: Section 404 Permit (Pending)
Yellowstone County Floodplain Permit (Pending)

3. ALTERNATIVES CONSIDERED:

No Action Alternative: Deny the request to issue an easement to permit the installation of a new segment of the Glacier pipeline under the bed of the Yellowstone River.

Proposed Alternative: Approve the request to issue an easement to permit the installation of a new 10-inch pipeline under the bed of the Yellowstone River through the use of Horizontal Directional Drilling (HDD). Utilization of the HDD method would permit the pipeline to be installed approximately 40' beneath the riverbed. Additionally, the old pipe would be required to be removed from the river bed in early spring or late fall 2013.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" if no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

The proposed alternative would permit the use of Horizontal Directional Drilling (HDD) to install a new segment of pipeline approximately 40' below the bed of the Yellowstone River. The project would have an entry point in Coulson Park, which is owned by the city of Billings and exit on BLM land on the east side of the river. Any impacts to state-owned land would be from the boring of the new pipeline route under the riverbed. No significant adverse impacts are expected to geology and soil quality by implementing the proposed alternative.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

The proposed alternative would allow for the new pipeline segment to be installed via Horizontal Directional Drilling (HDD). The use of HDD would limit the adverse impacts to water quality and quantity by allowing for the facility to be located approximately 40 feet below the bed of the Yellowstone River in a layer of shale bedrock which would provide additional protection for the pipeline from scouring of the river bottom.

Short term impacts from the construction/drilling operation are not expected to have significant adverse impacts. Phillips 66 will be required to follow Montana Best Management Practices (BMP) for stormwater runoff, as well as permitting requirements from the Montana Department of Environmental Quality. This would include installing erosion control and sediment control devices to prevent topsoil from reaching the river.

The Southern Land Office is recommending that the existing pipe be removed from under the river bed rather than abandoned in place. If the Land Board concurs and requires its removal, a separate Land Use License will be required as well as a separate environmental review.

6. AIR QUALITY:

What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

The proposed alternative would require the operation of construction machinery including but not limited to a HDD drill rig, trackhoe and miscellaneous support trucks, including a water truck. Not all machinery would be operating at the same time. The entire project is expected to last approximately 4-6 weeks, with the actual HDD process taking about 2-4 weeks of that timeframe. The proposed alternative would be of a relatively short duration and is not expected to have significant long term adverse impacts to air quality.

7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

The proposed alternative would result in a new pipeline segment being bored 40' under the existing riverbed and would not result in any vegetation disturbance on state-owned land. However, if the Land Board requires removal of the existing pipe that is under the river bed, there will be disturbance to state land and it would be analyzed under a separate environmental review. No significant impacts to vegetation cover, quantity or quality are expected by implementing the proposed alternative.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

A variety of big game, small mammals, raptors and songbirds may traverse this area. The noise from the drill rig could disperse or cause wildlife to temporarily avoid the area. The implementation of the project is proposed for January/February 2012 and this time of year will not cause disturbance to nesting activities, especially Bald

Eagles. No significant impacts to terrestrial, avian and aquatic life and habitats are expected to occur as a result of implementing the proposed alternative.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

A proposed project area search of the Montana Natural Heritage Program database identified fifteen animals listed as a species of concern or threatened species: Great Blue Heron, Bald Eagle, Peregrine Falcon, Pinyon Jay, Veery, Loggerhead Shrike, Brewer's Sparrow, Yellowstone Cutthroat Trout, Sauger, Spotted Bat, Spiny Softshell, Greater Short-horned Lizard, Common Sagebrush Lizard, Western Hog-nosed Snake and Milksnake.

The proposed action would result in a new pipeline being bored under the state-owned riverbed and would not result in any surface disturbance on state-owned land. The entry point for the directional drilling will be on the west bank in Coulson Park, which is bounded by Interstate 90 on the west and the Yellowstone River on the east. The temporary addition of the HDD drill rig and other equipment will not be a significant change from the uses that are around the Park, especially to the west and south. The Phillips 66 refinery is located approximately 0.75 miles southwest of the HDD entry point, while the PPL Corette Power Plant is about one mile to the south and the BNSF railroad is less than ¼-mile away. Due to the relatively short duration of the project and based on the proximity of I-90, the BNSF railroad tracks and the other heavy industrial uses to the project area, the proposed action is not expected to have any significant adverse impact on the species listed above.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine effects to historical, archaeological or paleontological resources.

The portion of the pipeline that is under state ownership will be approximately 40' below the river bed of the Yellowstone River. No significant adverse impact to historic and archaeological sites on state-owned land is expected as a result of implementing the proposed alternative.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

The pipeline crosses the Yellowstone River at Coulson Park, just upstream of the Interstate 90 bridge and is located immediately east of the Billings city limits. The HDD entry point will be in Coulson Park on the west side of the Yellowstone River and will exit on the east side on land owned by the BLM. The proposed activities will be very visible to users of both Coulson Park and the BLM Four Dances Natural Area. The HDD entry point will also be visible to motorists traveling on I-90.

Based on previous HDD requests, it is estimated that noise levels from the proposed action will be between 65-70 dBA. This level is loud enough that it could impact speech for park and recreation users. However the HDD entry site will be a couple hundred feet from I-90 which averages over 24,000 vehicles per day pass at this location, as well as nearby BNSF railroad tracks and other heavy industrial uses on the west side of I-90. There are not any nearby residences that would be impacted by the request.

Implementation of the Proposed Alternative would cause minor temporary short term impacts to aesthetics during the pipeline construction due to visual impacts and noise from the HDD drill rig and other heavy equipment. The actual HDD process is expected to take approximately 2-4 weeks and the entire project about 4-6 weeks. The proposed action would add to the existing noise levels, but this temporary addition is not expected to cause a significant adverse impact.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

Implementation of the Proposed Alternative is not expected to have a significant adverse impact on environmental resources of land, water or energy.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

Other permits that are required by other local, state or federal agencies or departments for the proposed project are listed above in Section 2 of this EA.

There are no other definite known future government actions planned for this reach of Public Land Trust property. However, the Southern Land Office is recommending to the Land Board that the existing pipe be removed from the bed of the Yellowstone River as it is nearly exposed. If this action is required, it would need to go through the Joint Application process (310 permit) and each agency would perform their required review prior to the issuance of any permits.

IV. IMPACTS ON THE HUMAN POPULATION
<ul style="list-style-type: none">• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i>• <i>Enter "NONE" if no impacts are identified or the resource is not present.</i>

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

Implementation of the Proposed Alternative would provide for increased health and safety by taking a pipeline that is currently nearly exposed out of service before there is an incident that would cause an oil spill in the Yellowstone River, upstream from the raw water intake for the Lockwood Water & Sewer District.

The Southern Land Office is also recommending that the existing pipe be required to be removed sometime between March-May 2013 or October-December 2013. This would allow Phillips 66 time to plan the pipeline extrication. Additionally, it would be timing it during low flow of the Yellowstone River, as well as, when there are the fewest users on the river that would be impacted by a closure. If the old pipeline is allowed to be abandoned in place, there is a potential that it will become more exposed and potentially suspended. This would make it more probable that the pipe could catch a piece of debris. The Yellowstone River is laterally confined at this location due to armoring of the west riverbank along Coulson Park and the sandstone bluffs on the east side. Due to this confinement it is likely that during high water years the river will further scour the bottom since the energy from the River cannot move outward, it will move down.

This section of the river receives regular use from the spring through fall due to two nearby fishing access sites and requiring the removal of the pipeline in either early or late 2013 would allow the DNRC and Land Board to determine when the extrication happens and not wait for an incident at some point in the future that could close the river during a busy time of year while the old pipe is assessed and potentially is removed.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

Implementation of the Proposed Alternative would allow the Glacier pipeline to remain fully operational once the HDD is complete and the new segment is connected to the existing system. If a new segment is not installed and the pipeline becomes more exposed, the US DOT PHMSA could require that it be shut down during high water events so that there is not a release of petroleum into the Yellowstone River if the facility were to rupture.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

Implementation of the Proposed Alternative would not have a significant impact to quantity and distribution of employment.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

Implementation of the Proposed Alternative is not expected to have a significant impact on local and state taxes since it would only replace an existing segment of the Glacier Pipeline.

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

Implementation of the Proposed Alternative is not expected to have a significant adverse impact on the demand for government services.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

Implementation of the Proposed Alternative will not conflict with any locally adopted plans.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

This section of the Yellowstone River is actively used and there is a fishing access site at Coulson Park, a few hundred feet upstream of the pipeline crossing and another one downstream approximately one-half mile on the east shoreline at the Lockwood water treatment plant site, just downstream of the Highway 87 Bridge. The project would likely close this portion of the River at least during the 2-4 week HDD process and may also result in a partial closure of Coulson Park around the area where the drill rig and other equipment would be located. This would also likely result in the closure of the bike-pedestrian trail that parallels the river through Coulson Park.

The applicant has proposed that the old pipeline be allowed to be abandoned in place. The pipe section would be "...purged and swabbed then the line grouted with a weak one-sack flowable sand/cement mixture and the ends capped." It is also noted by the applicant that "... over time without cathodic protection the pipe will eventually degrade and the flowable fill become part of the valley fill that the pipe is buried in." The applicants' materials note that removal of the pipeline would cause disturbance to the river bed and increase downstream sedimentation with potential impacts to the Lockwood Water and Sewer District raw water intake that is located downstream of the pipeline. If the pipe were abandoned in place, Phillips would continue to monitor "...for potential exposure. If exposure of the abandoned section occurs in the future, alternatives will be assessed at that time."

However, the risk of abandoning in place is that the pipeline could become further exposed and ultimately suspended. If this happens it is possible that debris or some other object could snag the abandoned pipeline which could require the river to be closed while the old pipeline removed. If the river had to be closed during a heavy use period, it would have an adverse economic impact on businesses that rely on the fisherman and other river users. The Southern Land Office (SLO) is recommending that the Land Board require the old pipeline be removed between March-May 2013 or October-December 2013. This is during low flow of the river and also when the river has the least amount of traffic. Being proactive in removal of the line would allow the State to be in control of when it is removed and not wait on nature.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

Implementation of the Proposed Alternative is not expected to have a significant adverse impact to density and distribution of population and housing.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

Implementation of the Proposed Alternative is not expected to have a significant adverse impact on social structures and mores.

23. CULTURAL UNIQUENESS AND DIVERSITY:

How would the action affect any unique quality of the area?

Implementation of the Proposed Alternative is not expected to have a significant adverse impact on cultural uniqueness or diversity.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

The State will benefit by getting an initial fee of \$2,515 (\$50/rod x 50.3 rods) plus an additional \$1,606 for the remainder of the 30 year term of the easement, based on current Land Board practice. Phillips 66 Pipeline also paid a \$50 application fee. The Public Lands Trust is the beneficiary of this payment since it involves a navigable river.

EA Checklist Prepared By:	Name: Jeff Bollman, AICP	Date: 2 January 2013
	Title: Area Planner, Southern Land Office	

V. FINDING

25. ALTERNATIVE SELECTED:

The Proposed Alternative has been selected and it is recommended that a 30-year term easement be granted to Phillips 66 for the purpose of installing a 10-inch diameter petroleum pipeline underneath the navigable riverbed of the Yellowstone River to replace a portion of the Glacier Pipeline. This new pipeline segment will be installed by Horizontal Directional Drilling (HDD) and be located approximately 40' below the river bed and approximately 15' upstream of the old pipeline.

Additionally, it is recommended that the Land Board require Phillips 66 to remove the old pipeline. The applicant has proposed that the old pipeline be allowed to be abandoned in place. The pipe section would be "...purged and swabbed then the line grouted with a weak one-sack flowable sand/cement mixture and the ends capped." It is also noted by the applicant that "... over time without cathodic protection the pipe will eventually degrade and the flowable fill become part of the valley fill that the pipe is buried in." The applicants' materials note that removal of the pipeline would cause disturbance to the river bed and increase downstream sedimentation with potential impacts to the Lockwood Water and Sewer District raw water intake that is located downstream of the pipeline. If the pipe were abandoned in place, Phillips would continue to monitor "...for potential exposure. If exposure of the abandoned section occurs in the future, alternatives will be assessed at that time."

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However, the risk of abandoning in place is that the pipeline could become further exposed and ultimately suspended. If this happens it is possible that debris or some other object could snag the abandoned pipeline which could require the river to be closed while the old pipeline removed. If the river had to be closed during a heavy use period, it would have an adverse economic impact on businesses that rely on the fisherman and other river users. The Southern Land Office (SLO) is recommending that the Land Board require the old pipeline be removed between March-May 2013 or October-December 2013. This is during low flow of the river and also when the river has the least amount of traffic. Being proactive in removal of the line would allow the State to be in control of when it is removed and not wait on nature.

The SLO consulted with FWP and DEQ and both agencies recommended removing all or a portion of the abandoned pipeline. Additionally, the SLO contacted the Managers of the Lockwood Irrigation District and Lockwood Water & Sewer District and both were supportive of requiring removal in 2013 during a low water period. If the Land Board does not desire to require removal of the abandoned section of pipeline, then the SLO recommends that a more detailed plan of action be submitted to and approved by the DNRC prior to the final issuance of the easement. This plan would describe certain trigger points and the specific actions that would be performed by Phillips 66 if those trigger points were met. The current proposal by Phillips 66 to assess alternatives once the pipeline becomes exposed is too vague.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

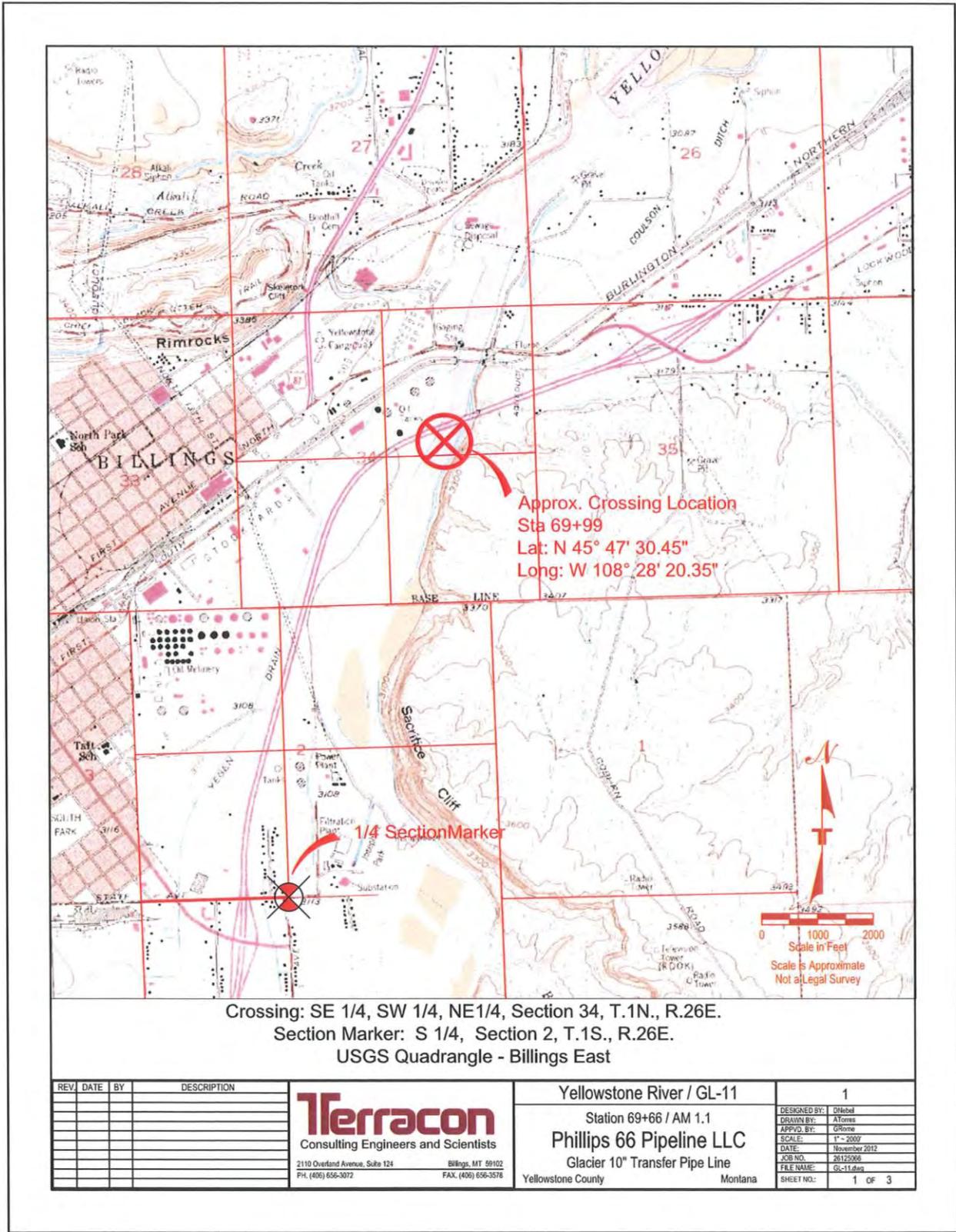
The potential for significant adverse impacts to Public Trust Lands (the navigable riverbed) are reduced by the nature of the Horizontal Directional Drilling technique that will be utilized and the depth (40') beneath the existing riverbed that will be achieved. Many potential impacts listed above are short term and correspond with the construction project. There are no natural features or nearby species of concern noted that are expected to produce long term adverse impacts from the proposed alternative.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

EIS
 More Detailed EA
 No Further Analysis

EA Checklist Approved By:	Name: Gary Brandenburg
	Title: Land Use Specialist, Southern Land Office
Signature: /s/ Gary Brandenburg	Date: 1-3-13

Attachment A – Location Map of Proposed Glacier Pipeline Replacement Project



Crossing: SE 1/4, SW 1/4, NE1/4, Section 34, T.1N., R.26E.
 Section Marker: S 1/4, Section 2, T.1S., R.26E.
 USGS Quadrangle - Billings East

REV.	DATE	BY	DESCRIPTION

Terracon
 Consulting Engineers and Scientists
 2110 Overland Avenue, Suite 124 Billings, MT 59102
 PH. (406) 656-3072 FAX. (406) 656-3576

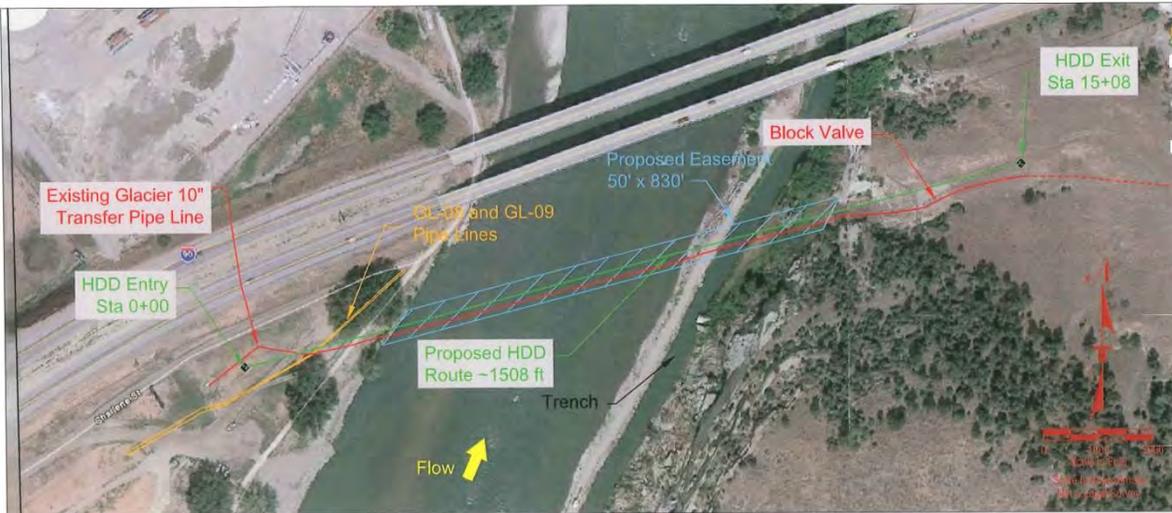
Yellowstone River / GL-11
 Station 69+66 / AM 1.1
Phillips 66 Pipeline LLC
 Glacier 10" Transfer Pipe Line
 Yellowstone County Montana

DESIGNED BY:	DHedell
DRAWN BY:	ATorris
APPROV. BY:	Chlorne
SCALE:	1" = 2000'
DATE:	November 2012
JOB NO.:	26125066
FILE NAME:	GL-11.dwg
SHEET NO.:	1 OF 3

Attachment B –View from west bank across Yellowstone River at Pipeline Crossing Location



Attachment C – Site Detail and Cross Section of Proposed Horizontal Directional Drilling

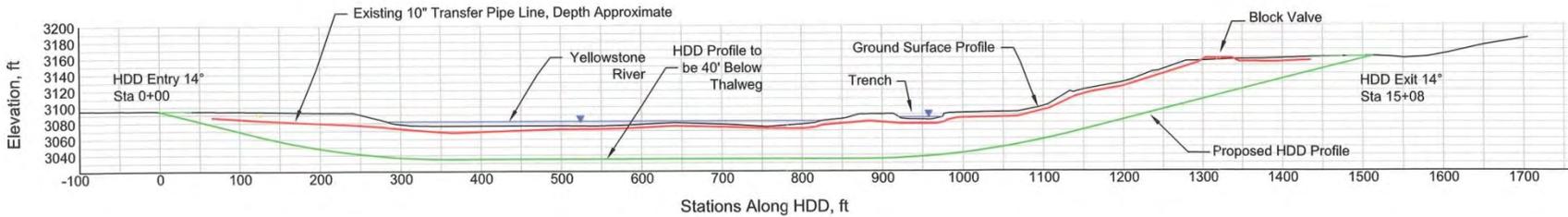


Aerial Photo Dated August 2011; Taken from Google Earth



View of the Crossing From the East Side of the Yellowstone River Looking West

The proposed easement is 50 feet wide, with a 25-foot offset on either side of the centerline stretching 830 feet resulting in a total area of approximately 0.95 acres.



Sectional View Looking Downstream at Crossing With Potential HDD Profile

REV.	DATE	BY	DESCRIPTION

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Yellowstone County

Yellowstone River GL-11- Site Detail
 Station 62+66 / AM 1.1
Phillips 66 Pipeline LLC
 Glacier 10" Transfer Pipe Line
 Montana

DESIGNED BY:	Dinebel
DRAWN BY:	A Torres
APPVD. BY:	GRome
SCALE:	As Shown
DATE:	November 2012
JOB NO.:	26125066
FILE NAME:	GL-11.dwg
SHEET NO.:	3 OF 3

Attachment D – Glacier Pipeline Site Detail

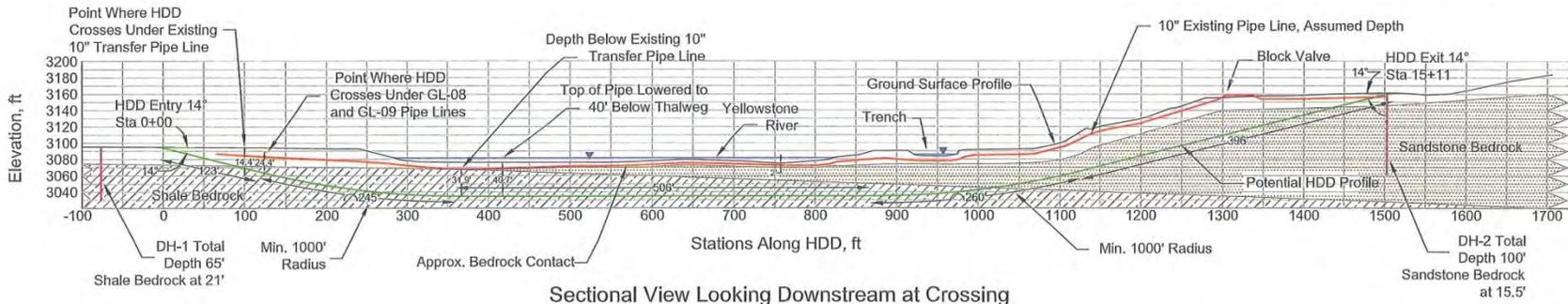


Approximate Pipe Line Route
Aerial Dated August 2011; Taken From Google Earth



View from East Looking
West Across Yellowstone River

HDD Data - Yellowstone River		
Description	Length	Elevation
Entry at 14°	123'	3098'
Point 1 (1000' R)	245'	3065'
Point 2	506'	3035'
Point 3 (1000' R)	260'	3035'
Point 4	396'	3065'
Exit at 14°	-	3161'
Horizontal Distance = 1511'		
HDD Pipe Length = 1530'		



Sectional View Looking Downstream at Crossing
Total HDD Horizontal Length = 1511 feet
Total HDD Pipe Length = 1530 feet

REV	DATE	BY	DESCRIPTION
1	11/19	AJT	Updated HDD Data Table; Replaced Stations with Lengths

Terracon
Consulting Engineers and Scientists

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Yellowstone River GL-11 Potential HDD - Site Detail

Station 62+66 / AM 1.1
Phillips 66 Pipeline LLC
Glacier 10" Transfer Pipe Line

Yellowstone County Montana

DESIGNED BY:	DHabel
DRAWN BY:	ATones
APPROV. BY:	GRoma
SCALE:	As Shown
DATE:	November 2012
JOB NO.:	28125068
FILE NAME:	GL-11.dwg
SHEET NO.:	2 OF 6