

Appendix R

Traffic and Transportation Management Plan

Prepared for:
Bison Pipeline LLC

Traffic and Transportation Management Plan

AECOM, Inc.
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Traffic and Transportation Management Plan

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LIST OF ACRONYMS

| | |
|---------|--------------------------------|
| ADT | Average Daily Traffic |
| Bison | Bison Pipeline LLC |
| BLM | Bureau of Land Management |
| DOT | Department of Transportation |
| EIS | Environmental Impact Statement |
| EWS | Extra Work Space |
| LOS | Level of Service |
| Project | Bison Pipeline Project |
| ROW | Right-of-Way |

Traffic and Transportation Management Plan

Significant changes from Bison’s Traffic and Transportation Management Plan submitted in October 2009, and used for the Final Environmental Impact Statement (EIS) analysis, are identified in the Table Below. These changes are highlighted with **bolded text** in the body of this report.

| Significant Revisions to Bison’s Traffic and Transportation Management Plan since October 2009 | |
|--|--|
| Section | Description of Modifications |
| 1.1 | Clarified that Bison will obtain necessary permissions/permits before completing any required improvements to roads |
| 1.1 | Clarified that use of wet and poorly drained roads will be suspended when the onset of deep rutting occurs |
| 1.2 | Clarified that roads will only be widened with the approval of a Bison representative |
| 1.2 | Clarified that Bison will perform cultural and biological studies on all proposed non-public access roads in Montana and North Dakota and unmaintained public access roads in North Dakota |
| 1.2 | Clarified that additional width required to remove the berms and restore access roads will be reseeded to enhance restoration |
| 1.2 | Added statement that the character of two-track roads on BLM lands in Wyoming will not be modified during the Project, meaning that they will neither be improved nor bladed during the Project. |
| 1.2 | Removed language regarding barricading of roads |
| 1.2 | Clarified that Bison leave some road improvements in place, at the request of the landowner, or may remove existing roads at the landowner’s request |
| 1.2 | Removed references to “off-road access routes” |
| 1.4 | Updated Average Daily Traffic count numbers in Table 1.4-1 |
| 1.4 | Stated that Bison may use the referenced bridge during construction, if it is repaired prior to construction |
| 1.4 | Clarified that Bison will encourage heavy equipment travel at off peak hours. |
| 1.4 | Added a bullet to define that parking will only be allowed in authorized areas and not along public roads. |
| 1.5 | Clarified Bison’s procedure for removing mud soil and debris from paved roads |
| 1.6 | Clarified that all mechanical means of transport will be restricted to approved access roads, including public roads |
| 1.6 | Clarified that culverts will be cleaned as needed to prevent flow obstruction |
| 1.6 | Clarified that existing cattle guards will be cleaned of all material to a depth of 2 feet below the grids and maintained so they remain effective during and immediately following construction |

1.0 Introduction

The purpose of this Traffic and Transportation Management Plan (Traffic Plan) is to mitigate, supplement, and further outline measures required of Bison Pipeline LLC (Bison) for equipment access to and from the Construction right-of-way (ROW) during the construction of the Bison Pipeline Project (Project) facilities across all affected lands. This plan will address traffic concerns that may affect local communities and their associated roads and highways. Additionally, this plan is intended to provide limited guidance on dust control measures and information on how Bison will maintain roads during and after construction.

1.1 General Requirements

On all affected lands, the design for pipeline construction and for upgrades to existing access roads required for the Project will include implementing proper drainage measures, minimizing soil erosion, and preserving topsoil. A full list of access roads and improvements is provided in Table 8.1 of the Plan of Development. The Project does not anticipate constructing new access roads and no new road routes have been identified at this time. Bison anticipates that many Project-related dirt or gravel access roads may initially, or at some time during the Project, require improvements from their present condition, **and will obtain necessary permissions/permits before completing any required improvements**. Permits required to install the pipeline beneath existing public roads and to transport equipment on those roads will be obtained prior to construction. **Use of wet and poorly drained roads will be suspended when the onset of deep rutting occurs**, unless necessary improvements or usage is approved by the Bureau of Land Management (BLM) Authorized Officer's Representative when on federal land, or the landowner when on private land.

1.2 Temporary Access Roads

The Project intends to use access roads on a temporary basis to transport personnel, equipment (including high clearance vehicles and heavy trucks), and materials to the Project work areas. Several access roads will experience incremental increases in traffic during the course of construction, depending upon the time of day and location of active construction spreads. These access roads include federal and state highways, county roads, private roads, and roads on BLM-managed lands.

Access on federal land will be used only where approved by the BLM and access on private land will be used only where permission has been granted by the landowner. Travel outside the designated Construction ROW, extra temporary workspaces (EWS), pipe yards, rail yards, or contractor yards, will be prohibited.

Access roads will be maintained in good condition in cooperation with the property owner. On all existing access roads, Bison will attempt to limit grading to the original disturbed area where there is evidence that the roads have been previously graded. However, to accommodate passing of equipment and the large turning radius of stringing trucks, some access roads may need to be widened up to 20 feet (in total width) in isolated locations **with the approval of a Bison**

Representative. Bison will perform cultural and biological studies on all non-public **access roads in North Dakota and Montana, and the unmaintained public access roads in North Dakota to be used for the Project** to accommodate road grading and maintenance and to account for other impacts. Stringing trucks and other heavy trucks may track outside of the existing footprint on two-track roads. Grading of two-track roads, if necessary, will be limited to one 16-foot dozer blade-width, plus the associated berms. Additional width will be required to remove the berms and restore the road. **The additional-width areas will be reseeded to enhance restoration.** Two-track roads will be restored to their original footprint at the time of clean-up (unless otherwise requested by the landowner). **The character of two-track roads on BLM lands in Wyoming will not be modified during the Project, meaning that they will neither be improved nor bladed during the Project.** It is assumed that some road maintenance will be required to maintain the majority of the dirt roads, especially in the event that rain occurs and travel over the roads deteriorates their conditions. Bison will obtain necessary permissions/permits before completing any required improvements.

Once construction is complete and the access road is no longer required for construction purposes, Bison will restore the road as closely as practicable to its original condition, including restoration of contours and reseeded of the area of disturbance outside of the original road, **or leave any improvements in place, at the request of the landowner. In some cases, Bison may remove the road at the landowner's request.** Borrow material needed to improve access roads on federal land will be obtained only from areas approved by the BLM. Borrow materials sourced from within an authorized road may be used elsewhere within that same road. Erosion control, revegetation, and restoration measures outlined in Bison's Plan will be applied to disturbed areas associated with improvements to existing access roads.

Access roads will be marked with staking, flagging, and/or signs placed at the road entrances. For all access roads, Bison plans to use the full existing road right-of-way, including both the road center for passage and the road shoulders for temporary pull-off and passing. Environmental surveys will be completed for the full road right-of-way to accommodate this planned use.

1.3 Permanent Access Roads

No new permanent access roads are being proposed for the Project. The Project will obtain approval from the appropriate agencies and landowners if any new permanent access roads are needed. The locations of such roads, if needed, will be contingent on demonstration that no sensitive biological or cultural resources will be affected.

1.4 Public Road Use

Contractor yards and pipe yards will be used on a temporary basis to support construction activities. Contractor yards and pipe yards will be used to stage construction, store materials, park equipment, and set up temporary construction offices. In most cases, with the appropriate approvals from the state Department of Transportation (DOT), BLM, and/or county highway departments, existing public highways will be used to transport construction equipment to the contractor yards and pipe yards. These roads also will be used by construction workers to access the job sites. Construction personnel will consist of Bison employees, contractor employees,

construction inspection staff, and environmental inspection staff. The majority of these workers will commute to the Construction ROW and/or appropriate yards early in the morning and return in the evening during non-peak traffic hours.

Major highways that will be traveled to reach the proposed access roads and various contractor yards and pipe yards are described below:

Wyoming

- Interstate 90 (I-90) will experience greater traffic flow as equipment and construction personnel travel to and from Gillette;
- US Highway 14/16, northbound, will experience an increase in equipment and construction personnel traveling from Gillette; and
- State Route 59 will experience an increase in equipment and construction personnel traveling to and from Gillette.

Montana

- US Highway 212 will experience increased traffic as equipment and construction personnel travel to and from the I-90 corridor; and
- Interstate 94 (I-94) will experience increased traffic flow as personnel travel to and from Terry; and
- State Routes 7, 59, 277, and 323 will experience increased traffic in both equipment and construction personnel traveling to and from Miles City and Terry.

North Dakota

- US Highway 12 will experience an increase in traffic as personnel travel to and from Miles City, Terry and Bowman;
- US Highway 85 will experience increased traffic to and from Bowman, as well as to and from the Interstate 94 corridor;
- State Route 49 will have significant increases in traffic levels as personnel and construction equipment travel south from I-94; and
- Interstate 94 (I-94) likely will experience an increase in eastbound and westbound traffic related to both construction equipment and personnel even though it is not intersected by the Project.

Impacted roads range from graveled, county-maintained rural roads to four-lane, divided interstate highways. **Table 1.4-1** shows the Average Daily Traffic (ADT) count, as well as the corresponding Level of Service (LOS), where available, for a portion of the impacted transportation infrastructure. Calls placed to the Wyoming, Montana, and North Dakota Departments of Transportation confirmed that, with the exception of I-94, LOS classifications are not available for the impacted US highways and state routes.

County roads departments were contacted in an attempt to obtain ADT counts and LOS classifications for rural county roads that would be impacted by the Project. With the exception of two county roads in Campbell County, Wyoming, and two county roads in Bowman and Morton

Counties in North Dakota, firm data were not available for the county roads that could be impacted. Per conversations with the county road departments, many of the county roads were assumed to have ADT counts near 50, with the majority of that being comprised of light local traffic. In some cases, ADT rises to approximately 75-100 during the spring and fall harvest season. ADT counts for affected US highways range from 600 to 3,935. Affected state routes exhibited a significant range in ADT counts, from 52 to 725. All state and county departments that were contacted indicated that, due to the rural nature of the impacted highways and the low ADT counts, LOS classifications of “A” would be appropriate, indicating a free flow of traffic.

| Table 1.4-1 - Current Conditions of Transportation Infrastructure | | |
|---|---|-------------------------------------|
| State | Average Daily Traffic Count^{a, b} | Level of Service^c |
| Wyoming | | |
| Interstate 90 | 2500 | LOS A |
| Middle Prong Rd (County Road 75) | 45 | LOS A |
| US Highway 14 | 780 | LOS A |
| Greenough Rd (County Road 39) | 53 | LOS A |
| State Road 59 | 480 | LOS A |
| Montana | | |
| Interstate 94 | 3935 | LOS A |
| US Highway 212 | 2245 | LOS A |
| State Road 277 | 52 | LOS A |
| State Road 7 | 725 | LOS A |
| State Road 323 | 305 | LOS A |
| North Dakota | | |
| 158 th AV SW | 500 | LOS A |
| US Highway 12 | 600 | LOS A |
| US Highway 85 | 1750 | LOS A |
| State Road 67 | 110 | LOS A |
| State Road 22 | 575 | LOS A |
| State Road 8 | 500 | LOS A |
| County Road 138 | 36 | LOS A |
| State Road 49 | 114 | LOS A |
| Sources: ^a Based on correspondence with state Departments of Transportation and County Roads Departments. ^b MT Department of Transportation 2009; ND Department of Transportation 2009. ^c There are no official LOS classifications for any of the impacted highways, with the exception of I-94; however, counties and state departments of transportation assumed all the affected highways would be a LOS A based upon ADT counts and the rural nature of the roads. | | |

Experienced construction personnel contacted responsible road authorities and local landowners in order to choose potential access roads that were capable of handling the predicted Project traffic loads. There is a considerable amount of oilfield development in the Project area which indicates that many of the roads are capable of handling similar loads. Furthermore, North Dakota has designated farm roads on a grid system which are designed to handle farm traffic with similar load requirements to that expected from pipeline construction. Bison anticipates that some existing minor private roads may not be capable of handling heavy loads. Bison has planned for the majority of the larger loads to avoid these roads. Additionally, Bison construction representatives

have conducted a specific bridge review, determining that most are capable of handling 40 ton loads. To date only one bridge has been found to have a load limit which is lower than that required by the Project. This bridge has been washed out and is currently under construction. Subsequently, the stringing plan was modified to prevent loaded pipe trucks from using the bridge. **If this bridge is repaired prior to construction, and approved for use, the stringing plan will be modified to use this structure.** The pipeline construction contractor will be required to make any necessary upgrades to bridges such as redecking, cribbing, temporary covering with steel plates or spanning with an additional structure, to permit access without damaging existing structures.

Cities likely to experience an increase in traffic from both personnel and equipment transportation are Buffalo and Gillette, WY, Terry, Miles City, Broadus and Baker, MT, and Bowman and Dickinson, ND. Additional centers likely to be affected by the Project are presented within Bison's Housing Plan.

In order to reduce traffic congestion, as well as roadside parking hazards, which could result from construction activities, Bison will implement the following measures:

- Encourage travel **of heavy equipment** to and from the construction site during off-peak traffic hours (peak traffic hours on main highways will be between 5:30 and 7:30 a.m. and between 5:00 and 6:30 p.m.);
- Require or provide driver training for all Project personnel;
- Provide incentives for Project personnel to exercise safe driving habits when commuting to and from the construction area to minimize the potential for accidents;
- Provide incentives for Project personnel to obey all traffic laws and rules;
- Provide primary parking areas at contractor yards for employee personal vehicles; and
- Provide buses for transporting workers to the work site from the contractor yard.
- **Require that "general" parking along roads and highways in the proximity of any pipeline road crossing will be discouraged and prohibited where appropriate.**

Construction employees working on Spread 1-2 likely will be housed in Gillette, Wyoming, and bussed to the job site and back (120 miles round trip). Construction employees working on Spread 3 will likely be housed in Gillette, Wyoming (120 miles round trip), Miles City, Montana (170 miles round trip) and Terry, Montana (200 miles round trip). Construction workers working on Spread 4 likely will work out of Dickinson, North Dakota and be bussed 150 miles round trip. It is anticipated that each spread will utilize at least three 30-passenger busses during peak labor months to transport employees from the city to each construction spread. Assuming an average miles per gallon of 7 for a diesel bus, it is estimated that for a five month period the Project will consume approximately 24,000 gallons of diesel fuel per week bussing construction personnel to the Construction ROW (two trips daily, seven days a week). Overall Project spending on fuel, based on an average diesel cost of \$3 per gallon) will be approximately \$1,277,599.

Overall, the number and frequency of construction vehicle trips on major highways will be low on any particular roadway at any one time, because construction will move sequentially along the Construction ROW and will be in any given area for only a short time. Trips by vehicles that will

visit the Construction ROW on a regular basis (e.g., pickup trucks, crew bus) will be distributed along the length of the pipeline route as the pipe string is installed and construction activity progresses to different parts of the Construction ROW. Bison will work with local law enforcement, fire departments, and emergency medical services to coordinate access for effective emergency response.

Minimal traffic on existing roads is anticipated to be associated with the operation and maintenance of the new pipeline. Bison currently estimates that only three permanent employees will be moved to the Project area for operation and maintenance of the pipeline. Because so few personnel will be brought into the area for this purpose, normal monitoring and other activities would not increase local traffic above normal levels. Larger maintenance activities, involving bringing contract workers into a specific area for some limited period of time, could affect local traffic for a short period of time, but such impacts would be temporary.

1.5 Road Crossings

Major paved roads generally will be crossed by boring or drilling underneath the road, where feasible, in accordance with requirements of the local transportation authority. Little or no disruption of traffic will result at road crossings that will be bored or drilled. The open-cut construction method will be used across minor or rarely traveled paved or graveled roads and unimproved rural dirt roads. Bison will attempt to maintain at least one lane of traffic open for detours around construction or will use plating over the open portion of the trench or use other suitable methods to allow traffic to cross the ditch when open-cutting a road. However, in a worst-case scenario, this construction method may require the road to be closed for up to 24 hours. In these instances, Bison will develop an alternative means of allowing traffic to continue (e.g., detour).

Where appropriate or required by local requirements, Bison will require the construction contractor(s) to post caution signs on roads, to alert motorists of pipeline construction and warn them of potential traffic controls. Traffic control measures, such as flaggers, warning signs, lights, and barriers, will be used during construction to ensure worker and public safety and to minimize traffic congestion. The construction contractor will use flagmen on paved roads during equipment crossings to ensure safe passage. When necessary, law enforcement will assist in escorting significant construction vehicles to and from the worksite.

Tracked heavy equipment will cross paved roads on used tires or other materials to prevent damage to the road's surface. **If soil is transported onto a public road surface or other paved area, including parking lots, by construction equipment and vehicles, it will be removed as soon as practical from the road by shoveling or sweeping, and will be transported back to a designated sediment control disposal area within the Construction ROW. Road washing, if necessary, will only be allowed after the soil has been scraped from the paved road surface. Abatement measures for fugitive dust on access roads will be completed in accordance with Bison's Fugitive Dust Control Plan.**

1.6 Special Roadway Requirements

Right-of-Way

All mechanical means of transport will be restricted to public roads, approved access roads, the Construction ROW and EWS. Cross-country vehicular travel by construction and maintenance crews will be prohibited.

Waterways

Where culverts are required to improve an access road at a stream crossing, such culverts will be of adequate size to accommodate storm runoff, as required by federal, state, or county road permits, and of sufficient strength to support construction and maintenance equipment.

Ditches

Occasionally, improvements will include the construction of ditches adjacent to the access roads. Where ditches are installed, provisions will be made to manage the accumulated water by using one of the following methods:

- Water will be directed under or across the roadway by means of culverts. Such structures will be designed and installed so that erosion will not occur on the outlet slope; and
- If any spring is encountered during improvements, the water will be directed outside of the road ROW. Culverts and ditches associated with access roads will be maintained as follows:
 - The upper and lower ends, as well as the inside of the pipe, will be cleaned as needed to provide an unobstructed flow through the pipe;
 - Any loose material on the backslope adjacent to the entrance of culverts will be removed;
 - All roadway ditches, lead-offs from culverts or out sections, and lead-in ditches will be cleaned of any material that could obstruct the flow; and
 - The work will be accomplished so that reasonable conformance to previous line, grade, and cross-section will be achieved.

Cattle Guards and Gates

As needed in rangeland, permanent cattle guards or steel gates may be installed across access roads to:

- Avoid safety hazards;
- Replace a permanent existing cattle guard when it is damaged or destroyed by construction activities with a guard of equal or better quality;
- Fulfill the BLM Authorized Officer's requirements; and
- Allow access by heavy equipment where needed.

Bison's construction contractor will determine if existing cattle guards can support trucks and other equipment prior to crossing the guards. The construction contractor will be responsible for either

strengthening the cattle guard or using another access route. Existing cattle guards will be cleaned **of all material to a depth of 2 feet below the grids** and maintained so they remain effective during and **immediately** following construction. The use of temporary cattle guards, if required, will be coordinated with the appropriate BLM office or landowner.

Residential Areas

No residences are located near the Construction ROW (within 100 feet of the centerline). However, should the pipeline be rerouted near a residential area, Bison will take special care to minimize traffic disruption and to control noise and dust generation to the extent practicable. The following measures will be implemented to minimize construction impacts where residents are located near the Construction ROW:

- Bison will notify landowners prior to the start of construction adjacent to a residence;
- In areas where the Construction ROW is within 100 feet of a residence, Bison will install exclusion fencing at the construction work area boundaries to keep construction equipment, materials, and spoil in the Construction ROW and minimize the potential for unauthorized access;
- Where necessary, Bison will maintain traffic flow and emergency vehicle access on roadways with traffic control personnel or detour signs;
- Bison will backfill and restore residential area roads as soon as possible and at the end of the construction day will plate sections of trench left open across roads near residences for temporary access to/from the residence; and
- Bison will inspect road surfaces periodically near residences and, if necessary, clean street surfaces and wet exposed soil to prevent generation of fugitive dust.

Dust Control

Dust control measures will be applied as frequently as is necessary in response to landowner requests and/or construction requirements. The most effective means of dust control is the frequent use of water from watering trucks to moisten exposed soils along the Construction ROW. Additionally, wind fences, berms, or other covering material, such as gravel or geotextile fabric, will be used to cover areas of disturbance. More on information on dust control can be found in Bison's Fugitive Dust Control Plan.

1.7 Removal of Obstructions

Obstructions affecting access roads will be cleared, as follows:

- Removal of trees, limbs, brush, and other obstructions will be limited to those obstructing the driver's sight distance or to those lower than 14 feet of vertical clearance above the roadway; and
- Limbing will be accomplished by use of pruning saws, power saws, nippers, bow saws, or crosscuts. Limbs will be pruned flush with the trunk of the tree, except for portions of overhanging limbs. Use of axes for limbing will be prohibited. Material removed will be deposited in an approved location.

1.8 References

Montana Department of Transportation. 2007. Rural Traffic Flow Map.
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