

Appendix E - FRA Record of Decision
DM&E Powder River Basin Expansion Project STB EIS Impacts Summary

Table 1
Summary of the Environmental Impacts of the Proposed Project
New Rail Line Construction

Alternative	Alternative C		Phiney Flats		WG Divide	
Length	263.8 miles of new construction.		10.3 miles of new construction		14.7 miles or new construction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
GEOLOGY						
Unique Geological Formations	Lance Formation in project area.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Geological Hazards	Potential for slumping and landsliding in susceptible areas. Cheyenne River slope reshaping and river bank stabilization.	Potential for landslides confined to steep slopes of Pierre Shale and Fort Union formations adjacent to the Cheyenne River, approximately 2,390.3 acres.	Approximately 1.7 miles of Pierre Shale and Fort Union formations crossed. Approximately 82 acres of soil with high slump/ landslide potential converted to rail line right-of-way.	Landslide and slump susceptibility would be high in areas containing steep slopes and along the Cheyenne River.	Approximately 1.2 miles of Pierre Shale and Fort Union formations crossed. Approximately 58.2 acres of soil with high slump/ landslide potential converted to rail line right-of-way.	Landslide and slump susceptibility would be high in areas containing steep slopes and along the Cheyenne River.
Soil Impacts	Approximately 12,790.3 acres of soil converted to rail line right-of-way due to new build and approximately 194 acres parallel to an existing rail line. Disturbance could result in erosion, soil compaction, and soil	Contamination from fuel and lubricants in the unlikely event of an accidental spill or derailment.	Disturbance of 499.4 acres of soil. Loss of topsoil, sedimentation, and erosion. Accidental spills could cause contamination of soils. Approximately 174.5 acres of prime farmland lost.	Contamination could occur in the unlikely event of an accidental spill or derailment.	Disturbance of 714.4 acres of soil. Approximately 218.2 acres of prime farmland lost. Potential contamination in the event of an accidental spill.	Potential contamination in the event of an accidental spill or derailment.

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	loss. Conversion of approximately 1,071.5 acres of prime farmland to rail line right-of-way.					
Paleontological Resources	Approximately 1,837.6 acres of PFYC rating 5 formations, including 116.4 acres of Thunder Basin SIA, and approximately 10,176.9 acres of PFYC rating 3 formations included in right-of-way. Resources and scientific information may be acquired due to project construction activity. Possible loss of resources on private lands and inadvertent destruction of resources project wide.	No impacts expected.	Approximately 247 acres of PFYC rating 5 formations would be crossed and converted to rail line right-of-way. Any resources located within the proposed right-of-way may be recovered and scientific information acquired. Possible loss of resources due to inadvertent discovery.	No impacts expected.	Approximately 703.0 acres of PFYC rating 5 formations crossed. Resources and scientific information may be acquired during project construction activity. Possible loss of resources due to inadvertent discovery.	No impacts expected.
LAND USE						

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Agriculture	Approximately 207.0 miles, 9,568.9 acres, of rangeland converted to railroad right-of-way. 56 Forest Service and 10 BLM allotments affected. Approximately 2,520.0 acres would be disturbed, resulting in the loss of 491.2 AUMs. Loss of 1,323.6 acres of cropland. Isolation of water sources, disruption of operations, reduced access to pastures. Livestock displacement, damage to improvements such as ditches, fences, and water lines which cross or are adjacent to the proposed rail line. Livestock mortality due	Reduced access and inconvenience to farmers and ranchers. Livestock mortality or injury. Potential loss of vegetation due to fire.	Approximately 223.0 acres of rangeland lost. 276 acres of cropland lost. Loss of forage, fragmentation of allotments, isolation of water resources, and disruption of operations.	No grazing allotment would be affected. Reduced access, loss of forage, and decreased range use.	Approximately 436.4 acres of rangeland and 305.5 acres of cropland converted to rail line right-of-way. Loss of forage, fragmentation of pastures, isolation of water resources, and disruption of operations.	No allotments affected by this alternative. Reduced access, loss of forage, and decreased range use.

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	to collision with vehicles.					
Residential	Approximately 14.5 acres of residential land would be converted to rail line right-of-way. Eight residences located within 500 feet of the proposed rail line may require relocation. Increased noise, dust, traffic congestion, and reduced safety. Inconvenience due to ground disturbance. Vehicle delays.	Noise disturbance due to rail traffic. Vehicle delays. Adjacent properties may be affected by vibrations.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Business and Industrial	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Minerals and Mining	Market for local materials. No land crossed.	Additional rail access to PRB mines.	May increase demand for suitable materials.	Facilitate project providing additional access to PRB coal.	No impacts expected.	No impacts expected.
FEDERAL LANDS						

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Forest Service Lands	38.9 miles of USFS land crossed. Approximately 1,886.1 acres converted to rail line right-of-way. Semi-primitive motorized ROS designated lands would be crossed in the Spring Creek drainage. Noise and visual disturbance would degrade recreational experience in proximity to the proposed rail line.	Noise impacts would degrade the wilderness qualities of the Red Shirt RARE II area and exclude it from consideration from inclusion in the National Wilderness System.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Bureau of Land Management	4.9 miles of land crossed. Approximately 237.5 acres of BLM land converted to rail line right-of-way. Fragmentation of pastures, isolation of water sources and supplies, disruption of	Disruption of livestock movement and the spread of noxious weeds. Livestock mortality or injury due to collision.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.

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	operations, and reduced access. Displacement of livestock, disruption of livestock movement, and the spread of noxious weeds. Mortality or injury due to collision.					
Bureau of Reclamation	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	The Angostura Unit: 14 farm units crossed, 233 acres converted to rail line right-of-way. Potential reduction or loss of irrigation waters to some areas.	Reduced farmability of some lands due to reduction in irrigation water supply.
Fish and Wildlife Service Lands	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Reservation and Treaty Lands	No impacts expected	No impacts expected	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
WATER RESOURCES						
Surface Water	14 perennial streams and 520 intermittent	Contamination due to accidental spill or	One perennial stream and 13 intermittent	Potential contamination in the	2 perennial streams and 19 intermittent streams	Changed hydrology and reduced water quality,

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	streams crossed. 20.8 miles within 500 feet of the Cheyenne River. Stream bank modification and channelization, changing hydrology. Vegetation removal, erosion, increased sedimentation and degraded water quality. Potential loss of habitat for some species.	derailment.	streams crossed. Stream bank modifications, channelization, potential stream flow increases, and decreased water quality. Sedimentation, increased erosion, TSS increase, and loss of habitat and food resources. Changes in drainage patterns and water availability.	event of an accidental spill or derailment.	crossed. Stream bank modification and channelization. Erosion, sedimentation, changes in water quality.	changed drainage patterns, and changed water availability.
Wetlands	Loss of approximately 62.2 acres of wetlands: approximately 39.2 acres of emergent; 18.9 acres of aquatic bed; 2.9 acres of unconsolidated bottom; 1.2 acres of scrub/shrub and forested. Adjacent wetlands may	Permanent loss of adjacent wetlands could result due to changes in hydrology. Possible reestablishment of wetlands in some areas.	Approximately 1.0 acres of emergent wetland would be converted to rail line right-of-way. Sedimentation and changes in hydrology could affect adjacent wetland areas.	Reestablishment of wetlands could occur in some areas along the proposed rail line right-of-way. Changes in hydrology could affect adjacent wetland areas.	Approximately 3.0 acres of emergent and 0.2 acres of shrub/scrub wetlands converted to rail line right-of-way. Adjacent wetlands may experience sedimentation, changes in hydrology, and may be disturbed during	Reestablishment of wetlands in some areas. Permanent loss of adjacent wetlands due to changes in hydrology.

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	experience sedimentation, changes in hydrology, disturbance by construction equipment and vehicles.				construction activities.	
Groundwater	Potential contamination in the unlikely event of an accidental spill.	Potential contamination in the unlikely event of an accidental spill or derailment.	Potential contamination could occur in the unlikely event of an accidental spill.		Impacts would be similar to those presented for Hay Canyon.	Impacts would be similar to those presented for Hay Canyon.
AIR QUALITY						
Air Quality	Temporary increase of fugitive dust, and emissions from construction equipment and delayed vehicles.	Emissions levels of NO _x would exceed thresholds in 4 counties at 20 MNT; NO _x in all counties and CO in one county at 50 MNT; and NO _x in all counties, CO in 4 counties, and SO ₂ in 2 counties at 100 MNT. 0 visual impairment	Temporary reduction in local air quality due to construction equipment and traffic delays.	Emissions levels for NO _x would exceed thresholds at 50 MNT and 100 MNT operation levels.	Temporary increase of fugitive dust, and emissions from construction equipment and delayed vehicles.	Emissions levels for NO _x would exceed thresholds at 50 MNT and 100 MNT.

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		days would occur for >5% and >10% at 20MNT, 4 days at >5% and 0 days at >10% at 50 MNT, and 31 days at >5% and 4 days at >10% at 100 MNT.				
NOISE AND VIBRATION						
Noise	Increased noise from construction activities.	Noise receptors at 65 dBA: 20 MNT Wayside - 1 Wayside/Horn - 2 Horn - 9 50 MNT Wayside - 2 Wayside/Horn - 4 Horn - 15 100 MNT Wayside - 7 Wayside/Horn - 7 Horn - 16 70 dBA:	Temporary increase in local noise levels.	Sensitive noise receptors at 65 dBA: 1 at 20 MNT; 1 at 50 MNT; and 3 at 100 MNT. 70 dBA would have 1 at 100 MNT.	Increased noise from construction activities.	Sensitive noise receptors at 65 dBA: 3 at 20 MNT; 4 at 50 MNT; and 4 at 100 MNT. At 70 dBA: 1 at 20 MNT; 3 at 50 MNT; and 3 at 100 MNT.

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		20 MNT Wayside - 0 Wayside/Horn - 0 Horn - 7 50 MNT Wayside - 1 Wayside/Horn - 3 Horn - 8 100 MNT Wayside - 1 Wayside/Horn - 4 Horn - 13				
Vibration	Minor vibrations may be experienced during construction activities.	Damage to 2 houses located between 0-100 feet of the proposed rail line, potential damage to 2 houses between 101-200 feet, and inconvenience to 3 houses between 201-400 feet.	No impacts expected.	No impacts expected.	Minor vibrations may be experienced during construction activities.	Potential damage to one residence located between 0-100 feet; Inconvenience to one residence between 201-400 feet.
BIOLOGICAL RESOURCES						
Vegetation	Loss of approximately:	Noxious weeds may	Approximately 223	Potential damage to	Loss of approximately	Noxious weeds may

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	10,521.2 acres of grasslands, 1,318.8 acres of cropland or pasture, 33.9 acres of deciduous woodlands, 145.4 acres of coniferous woodlands, 547.9 acres of big sagebrush shrublands, and 62.2 acres of wetlands. Possible minimal vegetation disturbance in adjacent areas.	become established in disturbed areas. Use of herbicides could damage adjacent vegetation. Mowing and trimming may be required to control ground cover. Potential loss due to fire.	acres of grassland, 276 acres of cropland, and 1.0 acres of emergent wetland vegetation lost. Potential damage to vegetation in adjacent areas.	adjacent vegetation in the event of an accidental spill or derailment. Introduction of noxious weeds in disturbed areas.	412.1 acres of grasslands, 305.5 acres of cropland, and 3.2 acres of wetland vegetation. Possible disturbance in adjacent areas.	become established in disturbed areas. Use of herbicides could damage adjacent vegetation. Potential loss due to fire.
WILDLIFE						
Big Game	Approximately 293.7 miles of yearlong range, 14,240.0 acres, would be crossed. Approximately 81.9 miles, 3,970.9 acres, of winter range converted to rail line right-of-way. Mortality and injury	Fencing may impede seasonal migration and reduce access to water. Noise disturbance during high-stress periods. Mortality from collisions with trains.	Disturbance from noise and human activity along approximately 10.3 miles of yearlong range and 1.6 miles of winter range for big game habitat. Loss of habitat, forage, and	Fencing may disrupt migration patterns and seasonal use of winter ranges and territories. Reduced water access. Mortality and injury due to collision with trains. Noise disturbance during	Disturbance from noise and human activity along approximately 14.0 miles of yearlong range and 2.0 miles of winter range. Loss of habitat, forage, and cover areas. Mortality and injury due to	Fencing may disrupt migration patterns and seasonal use of winter ranges and territories. Reduced access to water sources. Mortality and injury due to collision with trains. Noise

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	may increase due to hunting, poaching, and collisions with vehicles.		cover areas. Mortality and injury due to hunting, poaching, and collision with vehicles.	high-stress periods.	hunting, poaching pressures, and collision between big game and vehicles.	disturbance during high-stress periods.
Upland Birds	16 grouse leks and 12 unidentified leks within 1.0 mile. Loss of 547.9 acres of sagebrush habitat and 213.3 acres of woodlands. Noise disturbance and habitat fragmentation and loss. Nest loss and adult mortality due construction activities.	Noise disturbance to grouse may interfere with courtship rituals and cause habitat abandonment. Mortality due to train/bird collisions.	3 grouse leks within 1.0 mile. Noise disturbance and habitat fragmentation. Loss of habitat. Loss of vegetation. Increased nest predation. Mortality due to collision or crushing by vehicles and machinery.	Noise disturbance and habitat abandonment. Mortality due to train/bird collisions.	2 grouse leks within 2.0 miles. 717.6 acres of habitat lost. Noise disturbance and habitat fragmentation. Sage grouse habitat could be lost. Loss of vegetation and increased nest predation. Mortality due to collision or crushing by vehicles and machinery.	Noise disturbance and habitat abandonment. Mortality due to train/bird collisions.
Waterfowl and Shorebirds	11,840 acres of potential nesting habitat and 62.2 acres of wetland habitat lost. Disturbance from noise and human activity during nesting. Habitat loss, wetland loss, and	Noise disturbance and habitat abandonment. Mortality due to train/bird collisions.	499.4 acres of potential nesting habitat lost. Disturbance from noise and human activity, especially during nesting. Accidental spills may	Disturbance from noise and human activity, especially during nesting. Accidental spills may adversely affect waterfowl. Mortality due to train/bird	Loss of 717.6 acres of grassland and 3.2 acres of wetland habitat. Disturbance from noise and human activity during nesting. Habitat loss, wetland loss, and nest loss. Habitat	Noise disturbance and habitat abandonment. Mortality due to train/bird collision.

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	nest loss. Habitat degradation from accidental spills.		adversely affect waterfowl. Potential nest loss. Mortality due to collision with vehicles and machinery.	collision.	degradation from accidental spills.	
Small Game and Furbearers	Habitat disruption, disturbance from noise and human activity. Loss of food resources in the event of an accidental spill. Mortality and injury due to vehicle movements or accidental release of petroleum products.	Mortality from collision with trains. Reduced access to habitat.	Mortality and injury due to hunting, poaching, and vehicle movements. Aquatic species at risk in the event of accidental release of petroleum products.	Mortality or injury due to animal/trains collision. Railroad grade may impede movements of some species. Aquatic species at risk in the event of accidental release of petroleum products.	Habitat disruption. Disturbance from noise and human activity. Loss of habitat. Contamination of food resources in the event of an accidental spill. Mortality and injury due to vehicle movements or in the event of an accidental release of petroleum products.	Mortality or injury due to collision between animals and trains. Reduced access to habitat. Mortality in the event of accidental release of petroleum products. Contamination of food resources in the event of an accidental spill.
Non-Game Species						
Amphibians and Reptiles	Loss of habitat, displacement from proposed right-of-way,	Mortality from train operations. Some individuals would	Loss of habitat, displacement, and mortality.	Mortality due to animal/train collisions. Potential habitat	Loss of habitat, displacement, and mortality.	Mortality due to collision with trains. Some individuals would

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	and mortality. 20.8 miles within 500 feet of a perennial stream.	return to right-of-way during operation.		contamination in the event of an accidental spill or derailment.		return to right-of-way during operation.
Songbirds	Loss of 11.9 acres of woodlands, 547.9 acres of shrubland, and 5.8 acres of shrub/scrub and forested wetlands. Potential disturbance to adjacent habitat. Loss of nests.	Revegetation would provide habitat for some species. Noise disturbance. Mortality due to collision with trains.	No wooded habitat lost. Displacement of ground nesting species. Habitat abandonment and fragmentation. Noise disturbance. Nest loss. Mortality due to collision with vehicles and nest disturbance.	Revegetation would provide cover and habitat for some species. Potential loss due to collision with trains. Nest disturbance during tree trimming and right-of-way maintenance.	Habitat destruction and abandonment. Fragmentation of habitats would occur. Noise disturbance.	Revegetation would provide cover and habitat. Noise disturbance. Mortality due to collision with trains.
Small Mammals	No impacts expected	No impacts expected	No impacts expected	No impacts expected	Disturbance from noise and human activity. Loss of habitat. Mortality due to collision with machinery and vehicles.	Noise disturbance. Habitat provided in revegetated areas. Mortality due to animal/train collision.
Raptors	Loss of 48.4 acres of woodlands. 79 nests and 58.5 miles of potential nesting habitat	Disturbance during nesting periods due to noise impacts and human activities.	No impacts expected.	No impacts expected.	Disturbance from noise and human activity may lead to nest abandonment. Habitat	Disturbance from noise and human activity may cause nest abandonment. Mortality

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	within 0.5 miles. Potential nest abandonment due to noise and human disturbance. Loss of habitat.	Mortality due to collision with trains.			loss.	from Raptor/train collisions.
AQUATIC AND FISHERIES						
Aquatic and Fisheries	206 sites within 500 feet of perennial waterways. 14 perennial and 520 intermittent streams crossed. Sedimentation, erosion, and accidental release of toxic substances could cause loss of habitat and degrade water quality.	Potential contamination due to the accidental release of toxic substances or derailment.	No impacts expected	No impacts expected	2 perennial and 19 intermittent stream crossings. Reduced habitat and food resource availability. Water quality degradation. Increased sediment and erosion. Contamination in the event of an accidental discharge of toxic compounds in close proximity to waterways.	Contamination of waterways could occur in the unlikely event of an accidental spill or derailment in close proximity to streams and waterways.
Sensitive, Threatened and Endangered Species						
			No impacts expected	No impacts expected	No impacts expected	No impacts expected

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Black-footed Ferret	No impacts expected.	No impacts expected.				
Piping Plover and Interior Least Tern	81.0 miles within 1.0 mile of a perennial stream. 14 perennial and 520 intermittent streams crossed. Displacement of nesting plovers and terns and nest abandonment due to noise disturbance and increased human activity. Accidental spills could cause contamination of waters and loss of food resources.	Potential nest abandonment by due to noise disturbance and human activity. Accidental spills could cause contamination of waters and loss of food resources	Disturbance from noise and increased human activity. Loss of food resources from sedimentation. Contamination due to accidental spills. Nest predation. Nest abandonment and failure.	Disturbance from noise and human activity. Nest abandonment. Contamination from accidental spills could cause loss of food resources.	No impacts expected	No impacts expected
American Burying Beetle	1,663.0 acres of potential habitat converted to rail line right-of-way. Habitat may be disturbed or lost. Mortality during construction may occur. Artificial construction	Lighting of permanent facilities may attract beetles resulting in disorientation and mortality.	Approximately 174.5 acres of suitable soil removed or compacted. Habitat disturbed or lost. Artificial lights may attract beetles resulting in disorientation and	Lights may attract beetles resulting in mortality.	Loss of approximately 218.2 acres of potential habitat. Artificial construction lights may attract beetles resulting in disorientation and mortality.	Potential loss of suitable habitat.

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	lights may attract beetles resulting in disorientation and mortality.		mortality.			
Ute Ladies'-tresses Orchid	Loss of approximately 39.2 acres of potential habitat.	Introduction of noxious weeds and herbicide use may eliminate or reduce existing populations.	No impacts expected	No impacts expected	Potential habitat damaged or destroyed.	Loss of populations due to introduction of noxious weeds.
Bald Eagle	57.4 miles within 0.5 miles of winter habitat. Human activity, operation of machinery, and noise disturbance may cause habitat abandonment. Removal of trees could cause loss of roosting areas.	Noise and human activity may cause disturbance. Mortality may occur due to eagle/train collisions.	No nests exist along this alternative. No potential habitat crossed.	Suitability of area decreased due to increased human activity and noise disturbance.	Disturbance from noise and human activity would reduce suitability of approximately 5.8 miles of potential habitat within 1.0 mile of proposed project area.	Decreased potential for use of suitable habitat due to noise disturbance and human activity.
Mountain Plover	5,173.3 acres of grasslands and 53.3 acres of prairie dog colonies converted to right-of-way. Potential	Noise disturbance and human activities may limit use of available habitat.	Approximately 223 acres of potential nesting habitat converted to rail line right-of-way. Noise	Noise disturbance and human activity may limit use of available habitat.	Loss of approximately 412.1 acres of potential nesting habitat. Loss of 24.2 acres of prairie dog colonies. Noise	Noise disturbance and human activity may limit use of available habitat.

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	mortality due to vehicle operation. Noise disturbance may cause habitat abandonment. Nests may be lost during construction activities.		disturbance. Habitat abandonment. Nest loss. Mortality due to vehicle operation, especially in undeveloped areas.		disturbance may cause habitat abandonment. Mortality due to collision with vehicles. Nest lost.	
Swift Fox	16.9 miles of prairie dog colonies crossed. Mortality due to collision with vehicles. Clearing may reduce available food resources.	Mortality due to collision with trains.	Approximately 14 acres of prairie dog colonies converted to rail line right-of-way. Noise disturbance and habitat loss. Mortality due to collision with vehicles. Reduced food resources.	Mortality due to collision with trains.	Loss of approximately 24.2 acres of prairie dog colonies. Noise disturbance and habitat loss. Mortality due to collision with vehicles. Reduced food resources.	Mortality due to collision with trains.
Sturgeon Chub	Three crossings of the Cheyenne River causing increased sedimentation during stream bank stabilization. Accidental spills may	Accidental spills or derailment could cause contamination of waterways.	Increased sedimentation and stream modifications could affect downstream habitat. Potential contamination of	Potential contamination of waterways in the event of an accidental spill or derailment.	Increased sedimentation and stream modifications could affect downstream habitat. Contamination in the event of an accidental spill.	Potential contamination in the event of an accidental spills or derailment.

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Action	Construction	Operation	Construction	Operation	Construction	Operation
	cause contamination of waterways.		waterways in the event of an accidental spill.			
Black-tailed Prairie Dog	819.4 acres of habitat crossed. Fragmentation of prairie dog towns would prevent use as reintroduction area, mortality due to construction activities, recreational shooting, and collision with vehicles.	Potential mortality due to collisions with trains. Increased predation and disease due to increased predator presence.	Approximately 14 acres of habitat crossed. Loss of habitat. Fragmentation of habitat. Mortality due to recreational shooting and collision with vehicles.	Mortality due to collision with trains. Increased predation and disease due to increased predator presence.	Loss of approximately 24.2 acres of habitat. Fragmentation of habitat, mortality due to recreational shooting and collision with vehicles, increased predation and disease occurrence.	Mortality from collision with trains. Increased predation and disease due to predator presence.
TRANSPORTATION						
Transportation	45 new grade crossings. Increased traffic, reduced access, and congestion on roadways. Accelerated wear and tear on local roadways.	No roadways with ADTs greater than 5000. Potential delay of emergency vehicles. Vehicle delays at grade crossings. Provide shorter routing for train transport of PRB coal.	Increased traffic, reduced access, and congestion on local roadways. Accelerated wear and tear on local roadways.	Traffic delays would be minimal due to the limited number of vehicles at grade crossings.	15 new grade crossings. Increased traffic, reduced access, and congestion on local roadways. Accelerated wear and tear on local roadways.	Vehicle delays at grade crossings. Provide shorter routing for PRB coal.

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Table 1
Summary of the Environmental Impacts of the Proposed Project
New Rail Line Construction

Alternative	Alternative C		Phiney Flats		WG Divide	
Length	263.8 miles of new construction.		10.3 miles of new construction		14.7 miles or new construction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
SAFETY						
Safety	Traffic delays and congestion may cause increased safety concerns.	3 crossings would be Category A. All other crossings would be Category B. Significantly impacted crossings: US HWY 85 (Niobrara County) at 50 and 100 MNT; Bishop Road (Campbell County) at 50 and 100 MNT; WT 450 (Campbell County) at 100 MNT.	Six Category B grade crossings constructed with crossbucks used for a warning devices. Vehicle delays, traffic congestion, and increased risk of accident.	Vehicle delays, increased potential for vehicle/train collisions.	Construction of fourteen Category B grade crossings. Increased potential for accidents.	Traffic delays and the presence of rail traffic would increase the potential for vehicle/train collisions.
HAZARDOUS MATERIALS						
Transportation of Hazardous Materials	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Hazardous Waste Sites	Disturbance of sites may cause exposure to contamination.	Potential contamination in the event of a spill, derailment, or as a	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.

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New Rail Line Construction

Alternative	Alternative C		Phiney Flats		WG Divide	
Length	263.8 miles of new construction.		10.3 miles of new construction		14.7 miles or new construction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
		result of improper handling and storage of hazardous materials.				
ENERGY RESOURCES						
Transportation of Energy Resources	Length of alternative would be 263.8 miles. No impacts expected.	Transportation of PRB coal would be more economical, reliable, and efficient.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Utilization of Energy Resources	Fuel consumption could be increased due to use by construction equipment, transportation of materials, and delayed or rerouted rail and road traffic.	Fuel savings and improved utilization of coal resources. Three locomotives per train. Several hundred mile reduction to target markets.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Recyclable Commodities	Use of used rail, ties, and ballast materials during construction.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
CULTURAL RESOURCES						

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Length	263.8 miles of new construction.		10.3 miles of new construction		14.7 miles or new construction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
Cultural Resources	96 sites located within one mile of the proposed right-of-way in South Dakota; 52 sites within the proposed right-of-way. 312 sites are located within 1.0 mile of the proposed right-of-way in Wyoming; 25 sites are within the proposed right-of-way, three of which are National Register sites. Possible loss of resources due to inadvertent discovery.	Noise and visual presence of rail line may alter setting and character of traditional cultural properties.	Resources within right-of-way could be recovered and scientific information acquired. Possible loss of resources due to inadvertent discovery.	Noise and visual presence of rail line may alter setting and character of traditional cultural properties.	High potential for discovery along 3.7 miles. Resources within right-of-way could be recovered and scientific information acquired. Possible loss of resources due to inadvertent discovery.	Noise and visual presence of rail line may alter setting and character of traditional cultural properties.
SOCIOECONOMICS						
Population and Demographics	Short-term increases.	Small number of relocations due to employment opportunities.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Employment and Income	Over 900 construction jobs. Approximately	Over 100 high paying railroad jobs. Local	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.

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Alternative	Alternative C		Phiney Flats		WG Divide	
Length	263.8 miles of new construction.		10.3 miles of new construction		14.7 miles or new construction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	384 indirect jobs. Estimated construction earnings of \$125.4 million.	unemployment decrease.				
Public Service and Fiscal Condition	Increased tax revenue. Sales and use taxes from worker salaries and spending increase of approximately \$14.9 million	Property taxes could total an estimated \$9.4 million. Public services could be improved.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
RECREATION						
Recreation	38.9 miles of USFS, 4.9 miles of BLM, and 11.7 miles of State lands crossed. Negative impacts due to noise, construction activity, dust, and increased traffic. Enjoyment of the recreational experience and overall solitude in wilderness areas reduced. Safety	Increased noise and haze in scenic areas. Reduced revenue at parks and local communities could result from decreased recreational use.	No public land crossed. Potential impacts due to noise and reduced enjoyment of recreational experience in adjacent areas.	Recreational opportunities would be eliminated along the proposed rail line.	Disturbance of participants of recreational activities and wildlife due to noise and human presence. Reduced attractiveness of the area due to alteration of visual setting.	Noise disturbance. Reduced usage of areas in proximity to rail line.

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Alternative	Alternative C		Phiney Flats		WG Divide	
Length	263.8 miles of new construction.		10.3 miles of new construction		14.7 miles or new construction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	in proximity to the rail line reduced.					
AESTHETICS						
Viewsheds/ Scenic Values	Significant impact to VQO designated areas due to ground disturbance, clearing of vegetation, and the presence of large machinery.	5.2 miles of VQO of modification and 0.7 VQO of partial retention in the BGNG, 28.4 miles of VQO of modification and 4.4 miles of VQO of partial retention in the TBNG crossed. Reduced visibility due to air pollution.	No public land crossed. Flat terrain, linear transportation facilities, and agricultural land use would cause rail line to present less of an intursion to the landscape.	Visibility may be decreased under certain conditions. Undisturbed vastness disrupted by presence of rail line	Disruption due to ground disturbance, clearing of vegetation, and the presence of large machinery. Flatter open terrain would provide less view, and linear corridor would be compatible with visual character of the area.	Potential reduction in visibility due to emissions. New rail structures would be highly visible due to numerous high vantage points and lack of weathering and vegetation.
Nightlights	Potential reduction of the perception of solitude and vastness along entire route due to nightlights.	Reduction of perception of solitude and vastness along entire route due to permanent facility lighting and locomotive headlights.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.

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Table 2
Summary of the Environmental Impacts of the Proposed Project
New Rail Line Construction - Mine Loops

Alternative	Black Thunder North		North Antelope East	
Length	4.5 miles of new construction.		1.5 miles of new construction.	
Action	Construction	Operation	Construction	Operation
GEOLOGY				
Unique Geological Formations	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Geological Hazards	Approximately 3.6 miles Fort Union Lebo Formations and 0.9 Wasatch Formations crossed. Approximately 218.2 acres of soil with high slump/ landslide potential converted to rail line right-of-way.	Landslide and slump susceptibility high along 4.5 miles, 218.2 acres, containing steep slopes.	Approximately 1.5 miles of Fort Union Lebo Formations crossed. Approximately 72.7 acres of soil with high slump/ landslide potential converted to rail line right-of-way.	Landslide and slump susceptibility high in areas containing steep slopes, however, not common.
Soil Impacts	Disturbance of 218.2 acres of Group 7 soil. Loss of topsoil, sedimentation, and erosion. Accidental spills could cause contamination of soils. No prime farmland lost.	Contamination in the unlikely event of an accidental spill or derailment.	Disturbance of 72.7 acres of Group 4 soil. Loss of topsoil, sedimentation, and erosion. Accidental spills could cause contamination of soils. No prime farmland lost.	Contamination could occur in the unlikely event of an accidental spill or derailment.
Paleontological Resources	Approximately 43.6 acres of PFYC rating 5 formations and approximately 174.5 acres of PFYC rating 3 formations converted to rail line right-of-way. Any resources located within the proposed right-	No impacts expected.	Approximately 72.7 acres of PFYC rating 3 formations converted to rail line right-of-way. Any resources located within the proposed right-of-way may be recovered and scientific information acquired. Possible loss of resources due to	No impacts expected.

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New Rail Line Construction - Mine Loops

Alternative	Black Thunder North		North Antelope East	
Length	4.5 miles of new construction.		1.5 miles of new construction.	
Action	Construction	Operation	Construction	Operation
	of-way may be recovered and scientific information acquired. Possible loss of resources due to inadvertent discovery.		inadvertent discovery and private land ownership.	
LAND USE				
Agriculture	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Rangeland/ Grazing	Approximately 184.2 acres of rangeland lost. 5 pastures in 3 allotments crossed. Loss of forage, fragmentation of allotments, isolation of water resources and disruption of operations.	Allotment disturbance resulting in the loss of 2 AUMs. Reduced access, loss of forage, and decreased range use.	Approximately 14.5 acres of cropland and pasture lost. Loss of forage, fragmentation of allotments, isolation of water resources and disruption of operations.	4 pastures crossed resulting in the loss of 6.7 AUMs. Reduced access, loss of forage, and decreased range use.
Residential	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Business and Industrial	Approximately 4.8 acres converted to rail line right-of-way. Inconvenience and reduced access.	Improved rail service. Additional noise. Reduced access to patrons and employees crossing rail line.	No impacts expected.	No impacts expected.
Minerals and Mining	29.1 acres converted to rail line right-of-way. May increase demand for suitable materials.	Facilitate project providing additional access to PRB coal.	May increase demand for suitable materials.	Facilitate project providing additional access to PRB coal.

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New Rail Line Construction - Mine Loops

Alternative	Black Thunder North		North Antelope East	
Length	4.5 miles of new construction.		1.5 miles of new construction.	
Action	Construction	Operation	Construction	Operation
Public Facilities	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
FEDERAL LANDS				
Federal Lands	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Public Parks	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Forest Service Lands	29.1 acres of TBNG converted to rail line right-of-way. Noise, ground disturbance, reduced access.	Increased noise, visual intrusion of rail line, and reduction in use of area in proximity of rail line.	No impacts expected.	No impacts expected.
Bureau of Land Management	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Bureau of Reclamation	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Fish and Wildlife Service Lands	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Reservation and Treaty Lands	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
STATE LANDS				
State Lands	130.9 acres of State of Wyoming	Loss of use, reduced access, increased	No impacts expected.	No impacts expected.

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Alternative	Black Thunder North		North Antelope East	
Length	4.5 miles of new construction.		1.5 miles of new construction.	
Action	Construction	Operation	Construction	Operation
	land converted to rail line right-of-way. Ground disturbance, reduced access, noise.	noise, reduction of use to areas adjacent to rail line.		
WATER RESOURCES				
Surface Water	9 intermittent streams crossed. Stream bank modifications, channelization, potential stream flow increases, and decreased water quality. Sedimentation, increased erosion, TSS increase, and loss of habitat and food resources. Changes in drainage patterns and water availability.	Potential contamination in the event of an accidental spill or derailment.	2 intermittent streams crossed. Stream bank modifications, channelization, potential stream flow increases, and decreased water quality. Sedimentation, increased erosion, TSS increase, and loss of habitat and food resources. Changes in drainage patterns and water availability.	Potential contamination in the event of an accidental spill or derailment.
Wetlands	No wetlands crossed. Sedimentation may cause damage or loss of adjacent wetland areas.	Changes in hydrology could affect adjacent wetland areas.	Conversion of approximately 0.06 miles of aquatic bed to rail line right-of-way. Sedimentation and changes in hydrology could affect adjacent wetland areas.	Establishment of wetlands in some areas along the proposed rail line right-of-way. Changes in hydrology could affect adjacent wetland areas.
Groundwater	Potential contamination in the unlikely event of an accidental spill.	Potential contamination in the unlikely event of an accidental spill or derailment.	Potential contamination in the unlikely event of an accidental spill.	Potential contamination in the unlikely event of an accidental spill or derailment.

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Length	4.5 miles of new construction.		1.5 miles of new construction.	
Action	Construction	Operation	Construction	Operation
AIR QUALITY				
Air Quality	Temporary reduction in local air quality due to emission from construction equipment and traffic delays.	Impacts due to mine use undetermined due to lack of information available.	Temporary reduction in local air due to emission from construction equipment and vehicle delays.	Impacts due to mine use undetermined due to lack of information available.
NOISE AND VIBRATION				
Noise	Temporary increase in local noise levels.	No receptors present. Disturbance to wildlife likely.	Temporary increased in local noise levels.	No receptors present. Disturbance to wildlife likely.
BIOLOGICAL RESOURCES				
Vegetation	Approximately 218.2 acres of grassland vegetation lost. Potential damage to vegetation in adjacent areas.	Potential damage to adjacent vegetation in the event of an accidental spill or derailment. Introduction of noxious weeds in disturbed areas.	Approximately 14.5 acres of cropland, and 53.3 acres of pasture, and 2.9 acres of wetland vegetation lost. Potential damage to vegetation in adjacent areas.	Potential damage to adjacent vegetation in the event of an accidental spill or derailment. Introduction of noxious weeds in disturbed areas.
WILDLIFE				
Big Game	Disturbance from noise and human activity along approximately 2.5 miles of yearlong range and 4.5 miles of winter range for big game habitat Loss of habitat, forage, and cover areas. Mortality and injury	Fencing may disrupt migration patterns and seasonal use of winter ranges and territories. Reduced water access. Mortality and injury due to collision with trains. Noise disturbance during	Disturbance from noise and human activity along approximately 1.5 miles of yearlong range. Loss of habitat, forage, and cover areas. Mortality and injury due to hunting, poaching, and collision with	Fencing may disrupt migration patterns and seasonal use of winter ranges and territories. Reduced water access. Mortality and injury due to collision with trains. Noise disturbance during high-stress

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Alternative	Black Thunder North		North Antelope East	
Length	4.5 miles of new construction.		1.5 miles of new construction.	
Action	Construction	Operation	Construction	Operation
	due to hunting, poaching, and collision with vehicles.	high-stress periods.	vehicles.	periods.
Upland Birds	1 sage grouse leks within 4.4 miles. Noise disturbance and habitat fragmentation. Sage grouse habitat lost. Loss of vegetation. Increased nest predation. Mortality due to collision or crushing by vehicles and machinery.	Noise disturbance and habitat abandonment. Mortality due to train/bird collisions.	3 sage grouse leks between 4.4 and 6.1 miles. Noise disturbance and habitat fragmentation. Sage grouse habitat lost. Loss of vegetation. Increased nest predation. Mortality due to collision or crushing by vehicles and machinery.	Noise disturbance and habitat abandonment. Mortality due to train/bird collisions.
Waterfowl and Shorebirds	184.2 acres of potential nesting habitat lost. Disturbance from noise and human activity, especially during nesting. Accidental spills may adversely affect waterfowl. Potential nest loss. Mortality due to collision with vehicles and machinery.	Disturbance from noise and human activity, especially during nesting. Accidental spills may adversely affect waterfowl. Mortality due to train/bird collision.	67.8 acres of potential nesting habitat lost. Disturbance from noise and human activity, especially during nesting. Accidental spills may adversely affect waterfowl. Potential nest loss. Mortality due to collision with vehicles and machinery.	Disturbance from noise and human activity, especially during nesting. Accidental spills may adversely affect waterfowl. Mortality due to train/bird collision.
Small Game and Furbearers	Mortality and injury due to hunting, poaching, and vehicle movements. Aquatic species at risk in the event of accidental release of petroleum products.	Mortality or injury due to animal/trains collision. Railroad grade may impede movements of some species. Aquatic species at risk in the event of accidental release of petroleum products	Mortality and injury due to hunting, poaching, and vehicle movements. Aquatic species at risk in the event of accidental release of petroleum products.	Mortality or injury due to animal/trains collision. Railroad grade may impede movements of some species. Aquatic species at risk in the event of accidental release of petroleum products

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Alternative	Black Thunder North		North Antelope East	
Length	4.5 miles of new construction.		1.5 miles of new construction.	
Action	Construction	Operation	Construction	Operation
Non-Game Species				
Amphibians and Reptiles	Loss of habitat, displacement, and mortality.	Mortality due to animal/train collisions. Potential habitat contamination in the event of and accidental spill or derailment.	Loss of habitat, displacement, and mortality.	Mortality due to animal/train collisions. Potential habitat contamination in the event of an accidental spill or derailment.
Songbirds	Loss of 218.2 acres of grassland habitat. Habitat abandonment and fragmentation. Noise disturbance. Nest loss. Mortality due to collision with vehicles and nest disturbance.	Revegetation would provide cover and habitat for some species. Potential loss due to collision with trains. Nest disturbance during right-of-way maintenance.	Loss of 72.7 acres of cropland and pasture habitat. Habitat abandonment and fragmentation. Noise disturbance. Nest loss. Mortality due to collision with vehicles and nest disturbance.	Revegetation would provide cover and habitat for some species. Potential loss due to collision with trains. Nest disturbance during tree trimming.
Raptors	19 nesting sites within 1.0 mile. Noise disturbance, nest abandonment, mortality.	Noise disturbance. Increased mortality due to collision with trains.	3 nesting sites within 1.0 mile. Noise disturbance, nest abandonment, mortality.	Noise disturbance. Increased mortality due to collision with trains.
AQUATIC AND FISHERIES				
Aquatic and Fisheries	9 intermittent streams crossed. Potential of increased sediment and reduced water quality downstream from construction sites.	Potential contamination in the event of an accidental spill.	2 intermittent streams crossed. Increased sediment and reduced water quality.	Potential contamination in the event of an accidental spill.
SENSITIVE, THREATENED, AND ENDANGERED SPECIES				

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Alternative	Black Thunder North		North Antelope East	
Length	4.5 miles of new construction.		1.5 miles of new construction.	
Action	Construction	Operation	Construction	Operation
Bald Eagle	No habitat or nests exists along this alternative. Potential disturbance along 0.9 miles of habitat located within 0.5 mile of Little Thunder Creek.	Potential disturbance along habitat located within 0.5 mile of Little Thunder Creek. Suitability of area decreased due to increased human activity and noise disturbance.	No habitat or nests exists along this alternative. Potential habitat within 1.0 mile of Antelope Creek lost.	Suitability of area decreased due to increased human activity and noise disturbance.
Mountain Plover	Approximately 218.2 acres of potential nesting habitat converted to rail line right-of-way. Noise disturbance. Habitat abandonment. Nest loss. Mortality due to vehicle operation, especially in undeveloped areas.	Noise disturbance and human activity may limit use of available habitat.	Approximately 67.8 acres of potential nesting habitat converted to rail line right-of-way. Noise disturbance. Habitat abandonment. Nest loss. Mortality due to vehicle operation, especially in undeveloped areas.	Noise disturbance and human activity may limit use of available habitat.
Swift Fox	Potential loss of habitat throughout project area. Noise disturbance and habitat loss. Mortality due to collision with vehicles. Reduced food resources.	Mortality due to collision with trains.	Approximately 67.8 acres of potential habitat converted to rail line right-of-way. Noise disturbance and habitat loss. Mortality due to collision with vehicles. Reduced food resources.	Mortality due to collision with trains.
Black-tailed Prairie Dog	Potential loss of habitat. Mortality due to recreational shooting and collision with vehicles.	Mortality due to collision with trains. Increased predation and disease due to increased predator presence.	Potential loss of habitat. Mortality due to recreational shooting and collision with vehicles,	Mortality due to collision with trains. Increased predation and disease due to increased predator presence.
TRANSPORTATION				

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Alternative	Black Thunder North		North Antelope East	
Length	4.5 miles of new construction.		1.5 miles of new construction.	
Action	Construction	Operation	Construction	Operation
Transportation	No grade crossings. Increased traffic, reduced access, and congestion on local roadways. Accelerated wear and tear on local roadways.	No impacts expected.	Increased traffic, reduced access, and congestion on local roadways. Accelerated wear and tear on local roadways.	No impacts expected.
SAFETY				
Safety	No new crossings. Vehicle delays, congestion, and increased risk of accident on local roadways.	No impacts expected.	No new crossings. No impacts expected.	No impacts expected.
CULTURAL RESOURCES				
Cultural Resources	Resources within right-of-way could be recovered and scientific information acquired. Possible loss of resources due to inadvertent discovery.	Noise and visual presence of rail line may alter setting and character of traditional cultural properties.	Resources within right-of-way could be recovered and scientific information acquired. Possible loss of resources due to inadvertent discovery and private land ownership.	Noise and visual presence of rail line may alter setting and character of traditional cultural properties.
RECREATION				
Recreation	Approximately 0.6 miles of TBNG and 2.7 miles of Wyoming state land crossed. Negative impacts due to noise, construction activity, dust, and increased traffic. Enjoyment of	Recreational opportunities eliminated along the proposed rail line. Reduced access to areas across rail line.	No public lands crossed. Negative impacts due to noise, construction activity, dust, and increased traffic. Enjoyment of recreational experience and overall solitude in wilderness areas	Recreational opportunities eliminated along the proposed rail line. Reduced access to areas across rail line.

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New Rail Line Construction - Mine Loops

Alternative	Black Thunder North		North Antelope East	
Length	4.5 miles of new construction.		1.5 miles of new construction.	
Action	Construction	Operation	Construction	Operation
	recreational experience and overall solitude in wilderness areas reduced. Safety in proximity to rail line reduced.		reduced. Safety in proximity to rail line reduced.	
AESTHETICS				
Viewsheds/ Scenic Values	Approximately 0.6 miles of TBNG with VQO of modification and <0.1 mile of VQO of partial retention crossed. Ground disturbance, clearing of vegetation and the presence of large machinery would disrupt scenic view.	Visibility decreased under certain conditions. Undisturbed vastness disrupted by presence of rail line	No NFS land crossed. Ground disturbance, clearing of vegetation and the presence of large machinery would disrupt scenic view.	Visibility may be decreased under certain conditions. Undisturbed vastness disrupted by presence of rail line

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Table 3
Summary of the Environmental Impacts of the Proposed Project
Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota

Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
GEOLOGY				
Unique Geological Formations	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Geological Hazards	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Soil Impacts	Approximately 5,309.1 acres of soil would be disturbed. Temporary soil disturbance and erosion. Soils compacted during construction.	Potential contamination in the event of an accidental spill or derailment. Risk of derailment decreased by improved rail conditions.	Approximately 7,684.8 acres of soil would be disturbed. Compaction of soils, increased erosion. Approximately 207.1 miles of prime farmland adjacent to the rail line.	Potential contamination in the event of an accidental spill or derailment. Risk of derailment decreased by improved rail conditions.
Paleontological Resources	Paleontological resources likely in lake and river sediments. However, no impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
LAND USE				
Agriculture	Adjacent to approximately 50.9 miles of pasture or grassland, 156.3 miles of cropland, and 79.6 miles of wooded lots and fence rows. Crop and fence damage, soil compaction, and erosion may occur in areas	Crop damage and soil contamination in the event of an accidental spill or derailment.	Approximately 469.7 miles adjacent to the rail line. Loss of approximately 176.7 miles of pasture or grassland, and 293.0 miles of cropland. Soil and crop disturbance where crops have encroached on existing right-of-way. Fence damage.	Minimal impact to crops due to prohibited use and fencing of right-of-way. Soil contamination or crop damage could occur in the event of an accidental spill or derailment.

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Table 3
Summary of the Environmental Impacts of the Proposed Project
Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota

Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
	within and adjacent to the right-of-way. Approximately 238.0 miles of prime farmland adjacent to the existing rail line.			
Residential	Adjacent to 10.8 miles of residential land. Increased noise and dust, and reduced safety.	Increased noise, safety, dust, and traffic congestion. Lower real estate values.	Adjacent to approximately 1.0 miles of residential land. Ground disturbance, increased noise, dust, and reduced safety.	Increased noise, dust, and traffic congestion. Reduced safety. Lower real estate values.
Business and Industrial	Adjacent to 39.6 miles of business and industrial land. Inconvenience to employees and customers, reduced access, increased noise and dust, reduced safety for workers and patrons, and traffic congestion.	Long term impacts would include increased noise, traffic delays, and reduced access to businesses. improved rail service and increased industrial growth in area.	Adjacent to approximately 33.1 miles of business and industrial land. Inconvenience to patrons and employees, reduced access, increased noise, dust, and vehicle delays.	Increased noise, vehicle delays, reduced access, and potential reduction in patronage. Improved rail service and potential for industrial growth.
Minerals and Mining	Increased demand for materials used in rail line construction.	Operation and maintenance could provide continued market for minerals and mined materials.	Increased demand for materials used in rail line construction.	Operation and maintenance could provide continued market for minerals and mined materials.
Public Facilities	Increased noise, dust, and reduced access. Vehicle delays and reduced use by local patrons. Use of facilities by construction workers.	Increased noise and traffic delays, reduced access, and reduced safety.	Increased noise, dust, and reduced access. Vehicle delays and reduced use by local patrons. Use of facilities by construction workers.	Reduced access, increased noise, traffic congestion, and reduced safety.
FEDERAL LANDS				

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Table 3
Summary of the Environmental Impacts of the Proposed Project
Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota

Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
Forest Service Lands	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Bureau of Land Management	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Bureau of Reclamation	No impacts expected.	No impacts expected.	Potential ground and vegetation disturbance within a 200-foot section of BOR land, located north of Canning.	No impacts expected.
Fish and Wildlife Service Lands	Potential erosion and sedimentation into habitat easement north of Eagle Lake.	Potential for contamination from accidental spills and herbicides.	Disturbance from increased noise and human presence. Mortality of wildlife. Sedimentation of wetlands. 12 Federal Waterfowl Production Areas adjacent to the rail line.	Disturbance due to increased noise and human activity. Mortality of wildlife.
Reservation and Treaty Lands	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
STATE LANDS				
State Wildlife Area and Wildlife Refuges	Increased noise and human activity at nine Wildlife Management Areas.	Noise and human activity could cause disturbance to wildlife.	No impacts expected.	No impacts expected.
State Parks	Approximately 2.7 miles of existing rail line adjacent to the Minneopa	Increased noise, safety concerns, air	Increased noise and dust. Vehicle delays,	Increased noise, dust, potential wildfire hazard, and potential haze

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Table 3
Summary of the Environmental Impacts of the Proposed Project
Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota

Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
	State Park. Increased noise and traffic congestion. Reduced access and safety.	emissions, and reduced access.	reduced safety in proximity to rail line.	from emissions.
State Scientific and Natural Areas	Minimal noise disturbance increases.	Minimal noise disturbance increases.	No impacts expected.	No impacts expected.
State Game Production Areas	No impacts expected.	No impacts expected.	Noise, wildlife disturbance, and decreased public use. Sedimentation could cause loss or damage of adjacent wetlands.	Disturbance of wildlife and natural setting. Decreased use in proximity to rail line.
State Forest	14.0 miles of Richard Dorer Memorial Forest crossed. Noise disturbance, possible clearing or trimming of vegetation adjacent to right-of-way.	Noise disturbance. Trimming or clearing of vegetation adjacent to right-of-way.	No impacts expected.	No impacts expected.
Utility Corridors	Potential damage to utilities could result in loss of product or service.	No impacts expected.	Potential damage to utilities could result in loss of product or service.	No impacts expected.
WATER RESOURCES				
Surface Water	19 perennial streams (including 5 trout streams), 14 rivers, 3 lakes and 15 irrigation ditches crossed. Increase TSS and sedimentation. Accidental spill could cause	Potential for contamination from accidental spills and herbicides.	7 rivers, 230 intermittent streams, and 16 perennial streams crossed. Increased TSS and sedimentation. Accidental spills could cause contamination and decreased water quality. Potential channelization or	Potential for contamination from accidental spills and herbicide use.

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Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota

Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
	contamination and decreased water quality. Potential channelization or relocation of drainages.		relocation of drainages.	
Wetlands	Loss of 187.8 acres of wetlands within DM&E right-of-way: 150.2 emergent 7.2 scrub/shrub 19.4 forested 11.0 other. Increased sediment and changes in drainage could affect wetlands outside the DM&E right-of-way.	Contamination of adjacent wetlands in the unlikely event of an accidental spill.	Loss of approximately 132.9 acres of wetlands: approximately 80.7 acres of emergent; 2.3 acres of scrub/shrub; 40.8 acres of forested; and 9.1 acres of other wetland types. Damage to vegetation, mixing and compaction of wetland soils, alteration of site hydrology, increased sedimentation, and installation of drainage structures could result in loss or damage of adjacent wetlands.	Potential contamination in the event an accidental spill or derailment may cause damage or loss of adjacent wetlands.
Groundwater	Potential contamination in the unlikely event of an accidental spill.	Potential contamination in the unlikely event of an accidental spill or derailment.	Potential contamination in the event of an accidental spill.	Potential contamination in the event of an accidental spill or derailment.
AIR QUALITY				
Air Quality	Temporary increase of fugitive dust and emissions from construction equipment and delayed vehicles.	Emissions levels for NO _x would be exceeded in 8 counties at 20 MNT; NO _x in all counties at 50 MNT; NO _x in all counties, CO in 5 counties, and	Temporary increase in emissions from construction equipment and fugitive dust.	Criteria threshold exceeded at 20 MNT for NO _x in 7 counties; at 50 MNT for NO _x in all the counties; and at 100 MNT for NO _x in all counties,

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Table 3 Summary of the Environmental Impacts of the Proposed Project Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota				
Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
		SO ₂ in one county at 100 MNT.		CO in 7 counties, and SO ₂ in two counties. Reduced vehicle emissions due to a reduction of queue time and number of vehicles queued at grade-crossings.
NOISE AND VIBRATION				
Noise	Increased noise during construction activities.	Total noise sensitive receptor increase at 65 dBA: 11 trains Wayside only - 53 Wayside/Horn - 268 Horn only - 637 21 trains Wayside only - 121 Wayside/Horn - 767 Horn only - 2,651 37 trains Wayside only - 225 Wayside/Horn - 1,795 Horn only - 4,490 70 dBA: 11 trains Wayside only - 8 Wayside/Horn - 12 Horn only - 317 21 trains Wayside only - 16 Wayside/Horn - 140	Increased noise levels would occur during construction activities.	Total noise sensitive receptors increase at 65 dBA: 11 trains Wayside - 26 Wayside/Horn - 230 Horn - 1,274 21 trains Wayside - 41 Wayside/Horn - 613 Horn - 3,954 37 trains Wayside - 89 Wayside/Horn - 1,188 Horn - 5,863 70 dBA: 11 trains Wayside - 0 Wayside/Horn - 34 Horn - 707 21 trains Wayside - 6 Wayside/Horn - 189

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Table 3
Summary of the Environmental Impacts of the Proposed Project
Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota

Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
		Horn only - 1,724 37 trains Wayside only - 34 Wayside/Horn - 446 Horn only - 3,545		Horn - 2,051 37 trains Wayside - 20 Wayside/Horn - 332 Horn - 4,256
Vibration	Minor vibrations may be experienced during construction activities.	Potential damage to 244 structures within 100 feet. Inconvenience to 906 structures within 200 feet, and 2,209 within 400 feet. No hospitals within 400 feet of existing rail line.	Minor vibrations may be experienced during construction activities.	Potential damage to 15 structures within 100 feet of the rail line. Inconvenience to 135 structures between 101-200 feet and 529 between 201-400 feet. No hospitals within 400 feet of existing rail line.
BIOLOGICAL RESOURCES				
Vegetation	Approximately 528.5 acres of native prairie lost. Adjacent to approximately 50.9 miles of pasture or grassland, 156.3 miles of cropland, and 79.6 miles of wooded lots and fence rows. Loss of approximately 187.8 acres of wetland vegetation within existing right-of-way: 150.2 acres of emergent, 7.2 acres of scrub/shrub, 19.4 acres of	Adjacent vegetation could be disturbed during maintenance activities. Accidental spills and use of herbicides could damage adjacent vegetation. Noxious weeds may become established in disturbed areas.	Loss of approximately 132.9 acres of wetlands. Approximately 46.3 miles of wooded fence rows and woodlots, 168.5 miles of pasture and grassland, and 303.4 miles of cropland adjacent to the existing rail line may be disturbed.	The establishment of noxious weeds could occur due to the loss of cover vegetation and soil disturbance. Potential damage of adjacent vegetation in the event of an accidental spill, derailment, or misuse of herbicides and vegetation control measures.

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Summary of the Environmental Impacts of the Proposed Project
Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota

Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
	forested, and 11.0 acres of other wetland types.			
WILDLIFE				
Big Game	Disturbance from noise and human activity. Displacement of local populations during construction activities. Mortality and injury may increase due to hunting, poaching and collisions with vehicles.	Noise disturbance and increased deer/train collisions.	Disturbance from noise and human activity. Temporary displacement, increased hunting and poaching pressure, and mortality related to increased traffic in the area.	Increased noise disturbance. Mortality and injury due to train/big game collisions.
Upland Birds	Noise disturbance. Displacement. Increased pressure from hunting and poaching. Nest loss and adult mortality due to construction activities.	Disturbance from noise. Nesting failure. Mortality due to disturbance and collision with passing trains.	Displacement, noise disturbance, loss of habitat along 317.0 miles of rail right-of-way. Loss of nests and nesting females. Hunting and poaching pressures, and mortality related to increased traffic in the area.	Disturbance from noise. Nest failure. Mortality due to collision with trains and excessive disturbance.
Waterfowl and Shorebirds	Habitat loss, nest loss, and disturbance from noise and human activity. Nesting failure. Habitat degradation from accidental spills.	Noise disturbance. Abandonment of nesting habitat in proximity to rail line. Mortality from collisions with trains. Contamination of habitat in the event of an accidental spill or derailment.	Displacement, disturbance due to noise and increased human activity, and loss of 132.9 acres of wetland habitat. Loss of nests and nesting hens. Potential habitat degradation in the event of an accidental spill.	Disturbance due to passing trains could lead to abandonment of habitat by hens, reducing potential risk to chicks. Individuals may be struck by passing trains. Contamination of habitat in the event of an accidental

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Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota

Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
				spill or derailment.
Small Game and Furbearers	Displacement, disturbance from noise and human activity, and loss of habitat. Mortality and injury due to construction activities.	Mortality from collisions with trains.	Displacement, disturbance from noise and human activity. Mortality due to hunting, poaching, or construction activity.	Mortality from collisions with trains.
Non-Game Species				
Amphibians and Reptiles	Loss of habitat, displacement from right-of-way, and mortality.	Mortality from passing trains. Some would return to right-of-way after completion.	Displacement from right-of-way, loss of 132.9 acres of wetland habitat, and increased mortality.	Accidental spills or derailments could cause contamination of wetland and riverine areas.
Songbirds	Displacement, loss of habitat. Disturbance from noise and human activity. Loss of nests.	Noise disturbance. Mortality due to collisions with trains. Revegetation would provide habitats for some species.	Temporary displacement, loss of habitat within 317.0 miles of rail right-of-way, and loss of nests. Noise disturbance.	Noise disturbance. Mortality due to collision with trains. Revegetation would provide habitat for some species.
Small Mammals	No impact expected	No impact expected	Noise disturbance and displacement. Increased mortality due to increased road traffic.	Mortality due to collision with trains.
Raptors	Disturbance from noise and human activity during nesting. Temporary reduction of prey species.	Increased mortality from collisions with trains. Nesting near tracks is not expected.	Displacement and habitat loss. Disturbance due to noise and human activity. Temporary reduction of prey species.	Nesting areas near or in the right-of-way may be abandoned. Mortality may occur due to collision with trains.

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Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
AQUATIC AND FISHERIES				
Fish and Mussels	Changes in water quality due to sediment. Potential contamination from accidental spills.	Herbicide use and accidental spills may affect aquatic organisms and reduce food resources.	Loss of habitat, increased TSS, and reduced water quality. Mortality due to construction activities along waterways. Potential contamination in the event on an accidental spill.	Accidental spills or derailment could cause contamination of waters.
Sensitive, Threatened and Endangered Species				
Topeka Shiner	Two potential Topeka Shiner streams crossed. Increased sediment and accidental spills may adversely affect fish populations.	Accidental releases of fuel or chemicals due to spills or derailment.	Accidental contamination and increased sedimentation could affect populations downstream along the 41 streams which potentially contain Topeka Shiners.	Contamination could occur in the unlikely event of a derailment or accidental spill.
Higgin's Eye Pearly Mussel	Increased sediment and accidental spills of petroleum products would adversely affect species.	Accidental spills of petroleum products would adversely affect species.	No impacts expected.	No impacts expected.
Prairie Bush-Clover	Destruction of local populations within the right-of-way.	Competition with introduced species during revegetation.	No impacts expected.	No impacts expected.
Western Prairie Fringed Orchid	Surface disturbance and destruction of local populations within the right-of-way.	Competition with introduced species during revegetation.	No impacts expected.	No impacts expected.
Bald Eagle	Disturbance from noise and human	Noise disturbance, failure of nests,	Human activity, operation of machinery,	Disturbance from noise and human

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Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
	activity. Habitat abandonment. Potential nest failure.	and abandonment of use areas. Mortality from eagle/train collisions.	and noise disturbance may cause habitat abandonment. Removal of trees could cause loss of roosting areas.	activity. Mortality due to raptor/train collisions.
Piping Plover	No impacts expected.	No impacts expected.	Noise disturbance. Nest loss. Increased sedimentation and accidental spills may reduce food resources. Human activity could cause nest abandonment.	Noise disturbance and human activity may limit use of available habitat. Accidental spills could reduce food resources.
American Burying Beetle	No impacts expected.	No impacts expected.	Habitat may be disturbed or lost. Artificial construction lights may attract beetles resulting in disorientation and mortality.	Lights may attract beetles resulting in disorientation and mortality.
Interior Least Tern	No impacts expected.	No impacts expected.	Noise disturbance. Nest loss. Increased sedimentation and accidental spills may reduce food resources. Human activity could cause nest abandonment.	Accidental spills could reduce food resources.
Pallid Sturgeon	No impacts expected.	No impacts expected.	Accidental spills could affect water quality reduce food resources. Increased sedimentation could degrade habitat during construction activities involving the Missouri River bridge.	Accidental spills or derailment could cause contamination of waterways.
TRANSPORTATION				

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Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
Transportation	Accelerated wear and tear on local roadways. Grade crossing closures, detours. Inconvenience, vehicle delays, and reduced access. Minor delays to rail traffic.	Six grade crossings with ADT over 5,000 would experience a decrease in delay per stopped vehicle. Blocked crossing time would range from 2.1 minutes for 115-car train to 2.4 minutes for 135-car trains. A reduction in vehicle delay to an estimated 0.3-0.5 minutes per vehicle. Total blocked crossing time per day would average 23.1 minutes at 20 MNT; 44.1 at 50 MNT; and 77.7 at 100 MNT. No crossings would experience a level of service below B for 6,400 foot trains or C for 7,400 trains.	Accelerated wear and tear on local roadways. Road closures and detours. Inconvenience, vehicle delays, and reduced access. Emergency vehicles may need to modify current routes. Minor delays to rail traffic.	No grade crossings would experience a level of service below B. Crossings were estimated to be blocked 2.1 minutes for 115-car trains and 2.4 minutes for 135-car trains. Reduction in vehicle delays to 0.3-0.5 minutes per vehicle. Total blocked crossing time per day would average 23.1 minutes at 20 MNT; 44.1 at 50 MNT; and 77.7 at 100 MNT.
SAFETY				
Safety	Increase risk of accidents and injury. Traffic congestion, vehicle delays, and reduced safety at crossings. Construction equipment could pose a risk to children attracted to the area.	All crossings would experience an increase in accident frequency. Significant increases would occur at 3 crossings at 20 MNT, 6 crossings at 50 MNT, and 18 crossings at 100 MNT.	Increased risk of accident or injury. Traffic congestion, vehicle delays, and reduced safety at crossings. Construction equipment could pose a risk to children attracted to the area.	A significant increase in accident frequency was estimated at 8 crossings at 20 MNT levels, 10 crossings at 50 MNT levels, and 12 crossings at 100 MNT levels.
HAZARDOUS MATERIALS				

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Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
Transportation of Hazardous Materials	No impacts expected	Increased rail safety would reduce the likelihood of an accident.	No impacts expected.	Increased rail safety would reduce the likelihood of an accident.
Hazardous Waste Sites	Disturbance of sites may cause exposure to contamination.	Spills could occur in the event of an derailment or as a result of improper handling and storage of hazardous materials.	Disturbance of sites may cause exposure to contamination.	Spills could occur in the event of a derailment or as a result of improper handling and storage of hazardous materials.
ENERGY RESOURCES				
Transportation of Energy Resources	No impacts expected	Transportation of PRB Coal would be more economical, reliable, and efficient.	No impacts expected.	Transportation of PRB coal would be more economical, reliable, and efficient.
Utilization of Energy Resources	Fuel consumption could be increased due to use by construction equipment, transportation of materials, and delayed or rerouted rail and road traffic.	Fuel savings and improved utilization of coal resources.	Fuel consumption could be affected due to use by construction equipment, transportation of materials, and delayed or rerouted rail and road traffic.	Fuel savings and improved utilization of coal resources..
Recyclable Commodities	Reconstruction would generate large volumes of recyclable materials. Use of used rail, ties, and ballast materials during	More efficient transport provided for commodities currently transported.	Reconstruction would generate large quantities or recyclable materials. Use of used rail, ties, and ballast materials could occur during construction.	More efficient transport for commodities currently transported.

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Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota				
Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
	construction.			
CULTURAL RESOURCES				
Cultural Resources	14 archeological sites in or adjacent to existing rail line. Destruction and replacement of 142 bridges and 169 culverts along the existing rail line that are recommended eligible for the National Register. Five historic buildings, two of which are listed in the National Register, located along rail line. Construction activities could expose and damage unknown cultural resources.	No impacts expected	11 archaeological sites in or adjacent to existing rail line right-of-way. Destruction and replacement of 239 bridges and culverts. One bridge and two buildings listed with the national register and 191 bridges recommended eligible are to be replaced. Construction activities could expose and damage unknown cultural resources.	No impacts expected.
SOCIOECONOMICS				
Population and Demographics	Short term increases in population.	Increased local population due to increase in permanent employment in railroad industry.	Short-term increase.	Small number of relocations due to employment opportunities.
Employment and Income	500 construction jobs. Approximately 300 indirect jobs. Estimated construction earnings of \$84.3 million.	Increase in permanent employment of approximately 350 jobs in the railroad industry with potentially higher wages and better benefits. Decrease in local unemployment.	Approximately 1,246 construction jobs. Approximately 591 indirect jobs. Estimated construction earnings of approximately \$91.4 million.	Over 300 high-paying railroad jobs. Local unemployment decrease.

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Summary of the Environmental Impacts of the Proposed Project
Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota

Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
Public Service and Fiscal Condition	Increase in sales and use taxes of approximately \$18.4 million. Increase in income tax revenue due to increased employment.	Tax revenues of an estimated \$10.5 million paid by railroad. Public services could be improved.	Increased income tax revenue. Sales and use taxes increase of approximately \$11.2 million.	Property taxes could total an estimated \$10.3 million. Public services could be improved.
RECREATION				
Recreation	Negative impacts due to noise, construction activity, dust, and increased traffic. Enjoyment of the recreational experience and overall solitude could be reduced. Safety in proximity to the rail line reduced. Increased use by construction workers.	Activities such as hunting, fishing, camping, and biking could experience disturbance in close proximity to rail line. Reduced revenue to local communities could result from decreased recreational use.	Negative impacts due to noise, construction activity, dust, and increased traffic. Enjoyment of the recreational experience and overall solitude could be reduced. Safety in proximity to the rail line would be reduced. Increased use by construction workers.	Increased noise, crowding in areas more distant from rail line, and vehicle delays. Reduced revenue at parks and local communities could result from decreased recreational use.
AESTHETICS				
Viewsheds/ Scenic Values	Ground disturbance and the presence of construction machinery would disrupt scenic views.	New rail structures would be more noticeable due to lack of weathering and clearing of vegetation.	Ground disturbance, vegetation clearing, and the presence of heavy equipment would reduce visual character for an extended distance due to the flat topography. Impacts to visibility would be observed at grade crossings and in proximity to local roadways.	Newly reconstructed rail line and structures would be more visible due to lack of weathering and vegetation growth

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Rebuild of Existing DM&E Rail Line in Minnesota and South Dakota

Alternative	Minnesota Rebuild of the Existing DM&E Rail Line		South Dakota Rebuild of the Existing DM&E Rail Line	
Length	219.0 miles of reconstruction		317.0 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation
Wild and Scenic Rivers	No impact expected	No impact expected	No impacts expected.	No impacts expected.
Nightlights	Residents living near the rail line could experience temporary disturbance from nightlights.	Minor impacts from facility lighting and locomotive headlights to residents living near the rail line.	Residents living near the rail line could experience temporary disturbance from night lights.	Minor disturbance from locomotive headlights to residents living near the rail line.

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Table 4 Summary of the Environmental Impacts of the Proposed Project Mankato and Rochester, Minnesota						
Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
GEOLOGY						
Unique Geological Formations	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Geological Hazards	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Soil Impacts	Approximately 322.4 acres of soil disturbed. Erosion, compaction, and soil mixing. Loss of approximately 96.0 acres of prime farmland	Potential contamination in the event of an accidental spill or derailment. Disturbance during maintenance.	Approximately 44.9 acres of soil disturbed. Erosion, compaction, and soil mixing. No loss of prime farmland.	Potential contamination in the event of an accidental spill or derailment. Disturbance during maintenance.	Approximately 564.8 acres of soil disturbed. Erosion and soil compaction. No loss of prime farmland.	Potential contamination due to accidental spills.
Paleontological Resources	Cut activities near Blue Earth River could encounter such resources. However, unlikely.	No impacts expected.	No impacts expected.	No impacts expected.	Reconstruction near Blue Earth River could encounter resources. However, unlikely.	No impacts expected.
LAND USE						
Agriculture	Loss of approximately	Improved access to	Adjacent to	Improved rail service.	Adjacent to	Improved rail service.

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Table 4
Summary of the Environmental Impacts of the Proposed Project
Mankato and Rochester, Minnesota

Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	196.4 acres of agricultural land. Loss of crops in proposed right-of-way and potential damage to fencing. Inconvenience, reduced access and bisecting of fields. Increased safety concerns on roadways and rail crossings.	rail service. Reduced access to fields. Reduced income to farmers. Decreased safety on roadways and crossing rail line. Potential contamination in the unlikely event of a spill or derailment.	approximately 22.0 acres of agriculture land. Loss of crops if encroaching in right-of-way. Potential damage to crops and fencing. Reduced access to fields. Increased safety concerns on roadway and rail crossings.	Crop damage due to maintenance activities and use of herbicides. Potential contamination in the event of an accidental spill or derailment.	approximately 7.9 miles of agriculture land. Loss of crops encroaching in right-of-way. Potential damage to fencing. Reduced access to fields and increased safety concerns on roadways and rail crossings.	Crop damage due to maintenance activities and use of herbicides. Potential contamination in the event of an accidental spill or derailment.
Residential	Loss of approximately 24.2 acres of residential land. Eight houses may require removal. Increased noise, dust, and safety concerns.	Increase noise, traffic delays, safety concerns, and reduction in serenity of rural setting. 47 houses within 500 feet.	Adjacent to approximately 1.8 miles of residential land. Noise, dust, and safety concerns. 236 houses within 500 feet.	Increased noise, dust, safety concerns, and vehicle delays.	Adjacent to approximately 7.9 miles of agriculture land. Loss of crops encroaching in right-of-way. Potential damage to fencing. Reduced access to fields and increased safety concerns on roadways and rail crossings.	Improved rail service. Crop damage due to maintenance activities and use of herbicides. Potential contamination in the event of an accidental spill or derailment.
Business and	Loss of approximately	Safety concerns, noise,	Adjacent to	Increased noise and	Temporary	Provide shippers access

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Table 4
Summary of the Environmental Impacts of the Proposed Project
Mankato and Rochester, Minnesota

Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
Industrial	1.8 acres of business and industrial land. Removal of two businesses. Safety concerns, dust, noise, and vehicle delays. Inconvenience and reduced access to workers and patrons.	and vehicle delays. Improved rail service available.	approximately 6.5 miles of business and industrial land. Noise, dust, and vehicle delays. Inconvenience and reduced access to workers and patrons. Potential reduction in business.	vehicle delays. Improved rail service available. Safety concerns at grade crossings.	inconvenience to workers and patrons. 5.9 miles of commercial land adjacent to existing rail line.	to modern rail service. One business using sensitive equipment may experience disturbance.
Minerals and Mining	No impacts expected.	No impacts expected.	Possible use of materials from local sources.	No impacts expected.	No impacts expected.	No impacts expected.
Public Facilities	Reduced access, noise, dust, and vehicle delays. Rerouting required for closed crossings.	Vehicle delays at grade crossings. Increased safety concerns.	Increased noise, vehicle delays, reduced access, and safety concerns.	Emergency vehicles would need to establish new routes. Two new grade separations would provide increased emergency access.	Noise, dust , and traffic delays. Rerouting would be required for closed crossings. Impacts may affect Federal Bureau of Prisons facility, within 200 feet of the rail line, and Mayo Clinic, within 1,000 feet of the	Increased vibrations, noise, and traffic delays during train events.

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Table 4
Summary of the Environmental Impacts of the Proposed Project
Mankato and Rochester, Minnesota

Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
					rail line.	
PUBLIC LANDS						
Public Parks	Red Jacket Trail and the South Route multi use trail would be crossed. Temporary closures, noise disturbance, dust, delay, inconvenience, and increased safety concern in proximity to rail line.	Increased noise and safety concerns in proximity to rail line. Decreased perception of solitude.	Adjacent to Sibley Park, Minnesota River Trail, and Sakatah Singing Hills Trail. Increased noise, dust, and delays in proximity to the rail line.	Increased trains and speeds could cause safety hazards. Increased noise disturbance for park and trail users. Decreased perception of solitude.	No impacts expected.	No impacts expected.
Public Lands	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	Increased dust, noise, and disturbance to approximately 1.9 miles of the Gordon W. Yeager State Wildlife Management area, adjacent to rail line. Increased safety concerns.	Noise, dust, and safety concerns may affect wildlife and patrons of management area in proximity of the rail line.

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Summary of the Environmental Impacts of the Proposed Project
Mankato and Rochester, Minnesota

Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
WATER RESOURCES						
Surface Water	10 streams crossed, including Blue Earth River. Increased sediment, stream bank modifications, loss of aquatic habitat, degraded water quality. Potential contamination in the event of an accidental spill.	Potential contamination in the event of an accidental spill or derailment.	12 streams, including the Blue Earth River crossed. Temporary increased TSS. Potential stream modifications. Potential alterations of drainage patterns.	Potential contamination in the event of an accidental spill or derailment.	7 perennial, 8 intermittent streams crossed. Temporary increased TSS. Stream modification during culvert and bridge reconstruction. Loss of aquatic habitat. Potential contamination in the event of a spill.	Potential contamination from accidental spills or derailments.
Wetlands	Loss of approximately 24.0 acres of emergent wetlands. Change in hydrology.	Alteration of hydrology could cause damage or loss of adjacent wetlands. Degradation in the event of an accidental spill or derailment.	Loss of approximately 22.4 acres of emergent wetlands and 1.1 acres of forested wetlands.	Alteration of hydrology could cause damage or loss of adjacent wetlands. Degradation in the event of an accidental spill or derailment.	Loss 1.4 acres of riverine, 1.6 acres of palustrine-scrub/shrub, 22.5 acres of palustrine emergent wetlands.	Alterations to drainage patterns could change hydrology in adjacent wetlands. Degradation in the unlikely event of an accidental spill or derailment.
Groundwater	Potential contamination in the unlikely event of	Potential contamination in the unlikely event of an	Potential contamination in the unlikely event of an	Potential contamination in the unlikely event of an	Potential contamination in the unlikely event of	Potential contamination in the unlikely event of an accidental spill or

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Mankato and Rochester, Minnesota

Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	an accidental spill.	accidental spill.	accidental spill.	accidental spill.	an accidental spill.	derailment.
AIR QUALITY						
Air Quality	Temporary reduction in local air quality due to dust and emissions from construction activities.	Emissions level thresholds would be exceeded for NO _x at 50 and 100 MNT.	Temporary reduction in local air quality due to dust and emissions from construction activities.	Emissions level thresholds would be exceeded for NO _x at 50 and 100 MNT.	Temporary localized decrease in air quality due to emissions and dust from construction equipment.	Emissions level thresholds would be exceeded for NO _x at 20, 50, and 100 MNT.
NOISE AND VIBRATION						
Noise	Temporary increase in local noise levels from construction activities.	Total noise receptors 65 dBA: 11 trains Wayside only - 4 Wayside/Horn-29 Horn only -114 21 trains Wayside only - 6 Wayside/Horn-37 Horn only -232 37 trains Wayside only - 6 Wayside/Horn-44	Temporary increase in local noise levels from construction activities.	Total noise receptors 65 dBA: 18 trains Wayside only - 7 Wayside/Horn-101 Horn only -1,040 28 trains Wayside only - 7 Wayside/Horn-170 Horn only -1,584 44 trains Wayside only - 7 Wayside/Horn-265	Temporary increase in local noise levels from construction activities.	Total increase in noise receptors at 65 dBA: 11 trains Wayside 0 Wayside/horn 30 Horn 0 21 trains Wayside 17 Wayside/horn 184 Horn 487 37 trains Wayside 48 Wayside/horn 402 Horn 1,524

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Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
		Horn only -384 70 dBA: 11 trains Wayside only - 0 Wayside/Horn-13 Horn only -42 21 trains Wayside only - 0 Wayside/Horn-22 Horn only -81 37 trains Wayside only - 1 Wayside/Horn-30 Horn only -146		Horn only -2,235 70 dBA: 18 trains Wayside only - 1 Wayside/Horn-34 Horn only - 481 28 trains Wayside only - 5 Wayside/Horn- 46 Horn only - 589 44 trains Wayside only - 7 Wayside/Horn- 98 Horn only - 965		70 dBA: 11 trains Wayside 1 Wayside/horn 31 Horn 0 21 trains Wayside 8 Wayside/horn 63 Horn 365 37 trains Wayside 8 Wayside/horn 183 Horn 836
Vibration	Minor vibration may be experienced during construction.	Potential damage to 7 structures within 100 feet of proposed rail line. Inconvenience to 15 structures between 101-200 feet and 25 between 201-400 feet.	Minor vibration may be experienced during construction.	Potential damage to 14 structures within 100 feet of rail line. Inconvenience to 63 structures between 101-200 feet and 159 between 201-400 feet.	Minor vibration may be experienced during construction activities.	Potential damage to 32 structures within 100 feet. Inconvenience to 180 structures between 101-200 feet, and 364 between 201-400 feet. No vibration impact to Federal Medical Center's security fence

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Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
						approximately 200 feet from the rail line. Potential impact to sensitive equipment in Mayo Clinic building, 1,000 feet from rail line, and PEMSTAR manufacturing facility, 150 feet from the rail line.
BIOLOGICAL RESOURCES						
Vegetation	Loss of approximately 196.4 acres of agricultural land, 67.8 acres of woody vegetation, and 24.0 acres of emergent wetlands. Potential damage to vegetation in adjacent areas.	Potential damage to adjacent vegetation from accidental spills or derailment. Noxious weeds may become established in disturbed areas.	Loss of approximately 22.4 acres of wetlands within the right-of-way. Clearing of vegetation within the right-of-way. Potential damage to vegetation in adjacent areas.	Loss and damage to adjacent vegetation during maintenance of right-of-way.	Adjacent to approximately 4.7 miles of pasture, 20.8 miles of woody vegetation, and 4.9 miles of crop land. Loss of vegetation within right-of-way, including 25.5 acres of wetland vegetation. Potential damage or loss of woody	Disturbance of vegetation during maintenance activities. Potential damage or loss of vegetation in adjacent areas in the event of an accidental spill or derailment. Noxious weeds may become established in disturbed areas.

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Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
					vegetation and crops in adjacent areas.	
WILDLIFE						
Wildlife	Disturbance from noise and human activity. Habitat loss, displacement, and mortality due to hunting, poaching, and collision with vehicles.	Noise, disturbance, and mortality from wildlife/train collisions.	Disturbance from noise and human activity. Habitat loss, displacement, and mortality due to hunting, poaching, and collision with vehicles.	Noise, disturbance, and mortality from wildlife/train collisions.	Disturbance from noise and human activity. Habitat loss within right-of-way and adjacent areas. Temporary displacement of local populations. Mortality and injury due to hunting, poaching, and collisions with vehicles.	Noise disturbance, Mortality from collisions with trains.
AQUATIC AND FISHERIES						
Aquatic and Fisheries	Increased TSS in 10 streams, including the Blue Earth River. Alteration and loss of habitat. Changes in	Potential exposure of aquatic species to toxic substances in the event of an accidental	Increased TSS in 12 streams, including the Blue Earth River. Alteration and loss of habitat. Changes in	Potential exposure of aquatic species to toxic substances in the event of an accidental	Temporary increase in TSS in 7 perennial streams, including the Zumbro River, and 8 intermittent streams	Potential exposure of aquatic species to toxic substances in the event of an accidental spill or

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Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	hydrology and water quality. Potential contamination in the event of an accidental spill.	spill or derailment.	hydrology and water quality. Potential contamination in the event of an accidental spill.	spill or derailment.	crossed. Aquatic habitat at crossings and downstream could be altered or lost. Potential contamination in the event of an accidental spill.	derailment.
Sensitive, Threatened and Endangered Species						
Sensitive, Threatened and Endangered Species	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impact expected.	No impact expected.
TRANSPORTATION						
Transportation	Construction of 19 crossings: 3 state highways, 12 county and township roads, 3 city streets, and US 169. Vehicle delays, reduced access, and	Vehicle delays and reduced access. Two crossings with ADTs above 5000. No crossings would experience a level of service below B.	15 county roads and city streets crossed. Vehicle delays, reduced access, and inconvenience. Redesign of emergency routes.	Increased frequency of vehicle delays with shorter delay times. No crossings with ADTs above 5000.	Increased traffic, reduced access, and congestion on roadways. Accelerated wear and tear on local roadways.	Seven grade crossings with ADTs above 5,000 would experience a reduction in delay per stopped vehicle and queue length with an increase in frequency of

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Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	inconvenience. Redesign of emergency routes. Accelerated wear and tear on local roadways.		Accelerated wear and tear on local roadways.			delays at all proposed operating levels.
SAFETY						
Safety	Vehicle delays, detours, traffic congestion at grade crossings, and increased construction traffic may increase accidents. Construction of 19 grade crossings on local roadways.	Risks of accidents at new grade crossings. Potential delay of emergency vehicles. Proposed route would have 69 school bus crossings per day.	Vehicle delays, traffic congestion, and detours. Safety risks at rail crossings and in proximity to construction activity. Increased risk of accident. Increased annual accident frequency.	Increased frequency of vehicle delays. Existing rail line had 103 school bus crossings per day	Vehicle delays, traffic congestion at grade crossings, and increased construction traffic may increase accidents.	A significant increase in accident frequency is expected at one crossing for the 50 MNT and 100 MNT levels of operation. Existing rail line has 373 school bus crossings per day.

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Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
HAZARDOUS MATERIALS						
Transportation of Hazardous Materials	No impacts expected.	Use of new rail line would decrease the risk of derailment.	No impacts expected.	Improvements to existing rail would reduce the likelihood of an accidental spill or hazardous materials.	No impact expected.	Reconstruction of existing rail line would reduce the likelihood of an accidental spill of hazardous materials.
Hazardous Waste Sites	Disturbance of unknown sites may cause exposure to contamination.	Spills could occur in the event of a derailment or as a result of improper handling and storage of hazardous materials.	Disturbance of unknown sites may cause exposure to contamination.	Spills could occur in the event of a derailment or as a result of improper handling and storage of hazardous materials.	Disturbance of unknown sites in right-of-way may cause exposure to contamination.	Spills could occur in the event of a derailment or as a result of improper handling and storage of hazardous materials.
ENERGY RESOURCES						
Transportation of Energy Resources	No impacts expected.	Transportation of PRB coal would be more economical, reliable, and efficient.	No impacts expected.	Transportation of PRB coal would be more economical, reliable, and efficient.	No impacts expected.	Transportation of PRB coal would be more economical, reliable, and efficient.

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Mankato and Rochester, Minnesota

Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
Utilization of Energy Resources	Fuel consumption increased due to use by construction equipment, transportation of materials, and delayed or rerouted rail and road traffic.	Fuel savings and improved utilization of coal resources.	Fuel consumption increased due to use by construction equipment, transportation of materials, and delayed or rerouted rail and road traffic.	Fuel savings and improved utilization of coal resources.	Fuel consumption would be increased due to use by construction equipment, transportation of materials, and delayed or rerouted rail and road traffic.	Fuel savings and improved utilization of coal resources.
CULTURAL RESOURCES						
Cultural Resources	A total of 22 sites within a mile of proposed rail line. Five NRHP sites are located within a mile of proposed rail line. Two unevaluated sites are located within the proposed right-of-way. Resources located within the proposed right-of-way may be recovered and scientific	No impacts expected.	14 sites identified in or adjacent to the existing right-of-way. 11 historic structures, consisting of culverts and bridges within the DM&E rail line right-of-way, could be damaged or lost.	No impacts expected.	48 historic structures, such as bridges and culverts, and two archeological site within the existing right-of-way could be damaged or lost.	No impacts expected.

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Mankato and Rochester, Minnesota

Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	information acquired. Possible loss of resources due to inadvertent discovery.					
SOCIOECONOMICS						
Socioeconomics	85 construction jobs created. Increased use of local businesses. Increased tax revenue. Small number of relocations due to employment opportunities.	Increased tax revenues. High paying railroad jobs. Local unemployment decrease. Potential increase in local population. Public services could be improved.	Increased use of local businesses. Increased tax revenue. Small number of relocations due to employment opportunities.	Increased tax revenues. High paying railroad jobs. Local unemployment decrease. Potential increase in local population. Public services could be improved.	32 construction jobs created. Small number of relocations due to employment opportunities. Increased tax revenue. Increased use of local public facilities.	Increased tax revenues. High paying railroad jobs and decrease in local unemployment. Potential increase in local population. Public services could be improved.
RECREATION						
Recreation	Increased noise disturbance and safety concerns in proximity to the proposed rail line. Delays and detours on several bike	Bike trails would cross proposed route six times. Delays at crossings. Increased safety risks to trail users and visitors to	Alternative M-3 would cross bike trails 5 times. Increased noise disturbance at nearby parks. Vehicle delays, reduced access, and	Noise disturbance at nearby parks. Vehicle delays and safety concerns in proximity of rail line crossings. Alternative M-3 would	Increased noise disturbance and safety concerns in proximity of rail line to users of three multi-use trails in Rochester. Temporary	Increased safety concerns at crossings on multi-use trails. Increased noise and disturbance to trail

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Table 4
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Mankato and Rochester, Minnesota

Alternative	M-2		M-3		R-2	
Length	13.3 miles of new construction.		10.1 miles of reconstruction and 5.5 miles of new construction		23.3 miles of reconstruction.	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	trails which cross proposed route. Visual impacts due to the presence of construction machinery and ground disturbance.	Mt. Kato ski area. Potential decrease in overall quality of outdoor experience.	safety concerns. Potential decreased use of facilities near rail line. Visual impacts due to the presence of construction machinery and ground disturbance.	cross bike trails 5 times. Potential decrease in overall quality of outdoor experience.	detours and closures at crossings. Decreased use of facilities near rail line. Visual impacts due to presence of construction machinery and ground disturbance.	users.
AESTHETICS						
Wild and Scenic Rivers	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Viewsheds/ Scenic Values	Ground disturbance and the presence of construction machinery would disrupt scenic view. Breakup of natural setting.	Permanent change of rural landscape with addition of rail line and railroad facilities.	Ground disturbance and the presence of construction machinery would disrupt scenic view.	New rail structures would be more noticeable due to lack of weathering and clearing of vegetation; temporary effects.	Ground disturbance and the presence of construction machinery would disrupt scenic views.	New rail structures would be more noticeable due to lack of weathering and clearing of vegetation; temporary effects.

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Table 5 Summary of Environmental Impacts of Proposed Project: Owatonna, Minnesota and Brookings, South Dakota						
Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
GEOLOGY						
Unique Geological Formations	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Geological Hazards	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Soil Impacts	Soil disturbance and erosion of adjacent soil. Potential loss of productivity along the existing rail line. New construction would cause disturbance of 1.7 miles, approximately 41.2 acres, of soil. Loss of 41.2 acres of prime farmland. Drainage needed due to high water table. Soil compaction and mixing.	Potential contamination from accidental spills of hazardous materials.	Disturbance along 8.9 miles, approximately 216.9 acres, of existing right-of-way. Soil disturbance and erosion of adjacent soil. Potential loss of productivity.	Potential contamination from accidental spills of hazardous materials.	Disturbance of soil along 13.5 miles, approximately 327.3 acres, of existing rail line. Soil mixing, erosion, loss of productivity, and compaction. No loss of prime farmland.	Disturbance during maintenance. Potential contamination in the event of an accidental spill.
Paleontological	Impacts considered	No impact expected.	Impacts considered	No impact expected.	No impacts expected.	No impacts expected.

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Table 5
Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
Resources	unlikely.		unlikely.			
LAND USE						
Agriculture	Loss of crops that encroach on right-of-way. Reduced access, inconvenience along the existing rail line. Loss and damage of crops. New construction would cross approximately 1.7 miles of agricultural land. Approximately 41.2 acres of prime farmland would be lost. Reduced access and increased safety concerns.	Potential damage due to right-of-way maintenance activities. Reduced field access. Increased inconvenience to farmers along existing rail line. Reduced safety along roadways and unprotected crossings. Reduced access. Reduced farm income.	Adjacent to 6.1 miles of agriculture land. Loss of crops that encroach on right-of-way. Reduced access, inconvenience.	Potential damage due to right-of-way maintenance activities. Reduced field access. Increased inconvenience to farmers.	Adjacent to approximately 10.2 miles of cropland and 5.6 miles of pasture and grassland. Soil compaction and fence damage. Loss of crops if encroaching on railroad right-of-way. Reduced access, inconvenience, and vehicle delays. Increased safety concerns. Potential contamination or crop damage in the event of an accidental spill.	Potential contamination or crop damage in the event of an accidental spill or derailment.
Residential	Temporary increase in noise, dust, and vehicle delays along the existing rail line. No	Long term increase in noise and vehicle delays	Adjacent to approximately 1.5 miles of residential land. Temporary	Long term increase in noise and vehicle delays.	Adjacent to approximately 2.0 miles of residential land. Noise, dust,	Noise, dust, and safety concerns. More frequent vehicle delays.

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Table 5
Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	residences are located adjacent to the connection.		increase in noise, dust, and vehicle delays.		inconvenience, safety concerns, and vehicle delays.	
Business and Industrial	Adjacent to approximately 3.4 miles of business and industrial land. Temporary increase in dust, noise, and vehicle delays.	Connection could create a desirable location for industrial development.	Adjacent to approximately 3.4 miles of business and industrial land. Temporary increase in dust, noise, and vehicle delays.	Improved rail service to shippers. Other businesses may begin to use rail service. New business could move to area to gain access to rail service.	Adjacent to approximately 3.8 miles of commercial land. Reduced access, safety concerns, potential interruption of rail service. Noise, dust, and vehicle delays. Inconvenience to workers and patrons. Potential for temporary reduction in business.	Noise, dust, and vehicle delays. Provide shippers access to modern rail service.
Minerals and Mining	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Public Facilities	Temporary increase in noise, dust, and vehicle delays to a Church - 0.2 miles away, hospital - 0.9 miles away, and school - 0.2 miles	Increased noise, dust, and vehicle delays. Potential safety concerns for pedestrians.	Temporary increase in noise, dust, and vehicle delays to a Church - 0.2 miles away, hospital - 0.9 miles away, and	Increased noise, dust, and vehicle delays. Potential safety concerns for pedestrians.	Vehicle delays, increased road traffic, and safety concerns. Inconvenience and reduced access. Rerouting required for	Increased noise and traffic delays.

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Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	away.		school - 0.2 miles away.		closed crossings.	
FEDERAL LANDS						
Public Lands	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
WATER RESOURCES						
Surface Water	Temporary increase in TSS from erosion and instream work in two intermittent and one perennial stream. with the addition of crossings of two intermittent streams.	Potential contamination from accidental spill or use of herbicides.	Temporary increase in TSS from erosion and instream work in two intermittent and one perennial stream.	Potential contamination from accidental spill or use of herbicides.	10 intermittent streams, one perennial water body, and Big Sioux River crossed. Increased sediment, stream modification, and potential loss of aquatic habitat. Potential contamination in the event of an accidental spill.	Potential contamination in the event of an accidental spill or derailment.
Wetlands	Potential damage or loss of adjacent wetlands due to sedimentation along the existing rail line.	Impacts would be similar to those presented for Alternative O-2 along the existing rail line.	Loss of approximately 3.9 acres of emergent wetlands in right-of-way. Potential damage or loss of	Adjacent wetlands could be damaged in the event of an accidental spill.	Loss of approximately 28.1 acres of emergent wetlands, 0.7 acres of aquatic beds, 0.8 acres of unconsolidated	Alterations to drainage patterns could change hydrology and cause loss of adjacent wetlands. Degradation

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Table 5
Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	Sedimentation and changes in hydrology could affect adjacent wetlands.	Loss of wetlands adjacent to connection due to changes in hydrology.	adjacent wetlands due to sedimentation.		bottom, and 0.9 acres of riverine streambed. Sedimentation, disturbance, and accidental spills could cause damage or loss of adjacent wetlands.	in the unlikely event of an accidental spill or derailment.
Groundwater	Potential contamination in the event of an accidental spill.	Potential contamination in the event of a chemical spill.	Potential contamination in the event of an accidental spill.	Potential contamination in the event of a chemical spill.	Potential contamination in the event of an accidental spill.	Potential contamination in the event of an accidental spill or derailment.
AIR QUALITY						
Air Quality	Temporary increase of fugitive dust. Emissions from construction equipment and delayed vehicles.	Threshold emissions level exceeded for NO _x at 50 and 100 MNT.	Temporary increase of fugitive dust. Emissions from construction equipment and delayed vehicles.	Threshold emissions level exceeded for NO _x at 50 and 100 MNT.	Temporary localized decrease in air quality due to emissions and dust.	Emissions level thresholds would be exceeded for NO _x at 50 and 100 MNT operating levels.
NOISE AND VIBRATION						
Noise	Temporary increase in local noise levels due to	Total increase in noise receptors at 65 dBA:	Temporary increase in local noise levels due	Total increase in noise receptors at 65 dBA:	Temporary increased in local noise levels from	Increased noise receptors at

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Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	construction activities.	11 trains Wayside 0 Wayside/horn 3 Horn 1 21 trains Wayside 1 Wayside/horn 64 Horn 155 37 trains Wayside 16 Wayside/horn 139 Horn 430 70 dBA: 11 trains Wayside 0 Wayside/horn 3 Horn 3 21 trains Wayside 2 Wayside/horn 25 Horn 87 37 trains Wayside 9 Wayside/horn 64 Horn 263	to construction activities.	11 trains Wayside 0 Wayside/horn 3 Horn 1 21 trains Wayside 1 Wayside/horn 64 Horn 155 37 trains Wayside 16 Wayside/horn 139 Horn 430 70 dBA: 11 trains Wayside 0 Wayside/horn 3 Horn 3 21 trains Wayside 2 Wayside/horn 25 Horn 87 37 trains Wayside 9 Wayside/horn 64 Horn 263	construction activities.	65 dBA 11 trains Wayside 0 Wayside/horn 115 Horn 547 21 trains Wayside 0 Wayside/horn 248 Horn 923 37 trains Wayside 0 Wayside/horn 423 Horn 1,335 70 dBA 11 trains Wayside 0 Wayside/horn 25 Horn 140 21 trains Wayside 0 Wayside/horn 110 Horn 384 37 trains Wayside 0 Wayside/horn 148 Horn 819
Vibration	Minor vibrations may	27 structures within	Minor vibrations may	27 structures within	Minor vibration may be	Potential damage to 6

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Table 5
Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	be experienced during construction activities.	100 feet, 82 between 101-200 feet, and 268 between 201-400. No known structures with sensitive equipment.	be experienced during construction activities.	100 feet, 82 between 101-200 feet, and 268 between 201-400. No known structures with sensitive equipment.	experienced during construction activities.	structures located within 100 feet of the rail line. Inconvenience to 320 structures located between 101-400 feet.
BIOLOGICAL RESOURCES						
Vegetation	Adjacent to approximately 1.0 miles of pasture land, 3.3 miles of woodland, and 6.1 miles of cropland. Loss of or damage to vegetation in right-of-way with an additional 36.4 acres of cropland being converted to railroad right-of-way.	Potential damage to adjacent vegetation during maintenance activities adjacent to an additional 3.0 miles of cropland. Potential damage during maintenance of right-of-way.	Adjacent to approximately 1.0 miles of pasture land, 3.3 miles of woodland, and 6.1 miles of cropland. Loss of or damage to vegetation in right-of-way.	Potential damage to adjacent vegetation during maintenance activities.	Adjacent to approximately 5.6 miles of grassland, 1.3 miles of wooded fence rows, 1.3 miles of wetlands, and 10.2 miles of cropland. Clearing, damage by construction equipment and herbicide use, trimming and mowing, and ground disturbance. Potential loss or damage in the event of an accidental spill.	Disturbance during maintenance activities. Potential loss or damage of vegetation in adjacent areas and the right-of-way in the event of an accidental spill. Noxious weeds may become established in disturbed areas.
WILDLIFE						

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Table 5
Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
Wildlife	Temporary disturbance from noise and human activity. Loss of habitat with an additional 36.4 acres of cropland habitat lost.	High frequency of disturbance from increased train traffic. Mortality from wildlife/train collisions.	Temporary disturbance from noise and human activity. Loss of habitat.	High frequency of disturbance from increased train traffic. Mortality from wildlife/train collisions.	Disturbance from increased noise and human activity. Displacement, habitat loss, and increased mortality. Potential degradation of habitat in the event of an accidental spill.	Noise disturbance. Mortality from collisions with trains.
AQUATIC AND FISHERIES						
Aquatic and Fisheries	2 intermittent streams crossed. Temporary increase in TSS. Alteration or loss of aquatic habitat at crossings and downstream with 2 additional intermittent streams.	Potential contamination due to the accidental release of toxic substances or derailment.	2 perennial and 2 intermittent streams crossed. Temporary increase in TSS. Alteration or loss of aquatic habitat at crossings and downstream.	Potential contamination due to the accidental release of toxic substances or derailment.	Alteration or loss of available habitat. Increased sediment and reduced food resources. Changes in hydrology, changes of natural movements and migration patterns. Accidental spills could pose hazards to aquatic organisms.	Potential contamination in the event of an accidental spill or derailment.
Sensitive, Threatened and Endangered Species						

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Table 5
Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
Sensitive, Threatened and Endangered Species	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
TRANSPORTATION						
Transportation	Increased traffic, reduced access, and traffic congestion on local roadways. Accelerated wear and tear on local roadways with construction of two additional grade crossings.	Two public crossings with ADTs over 5,000 would experience a reduction in delay per stopped vehicle and maximum queue length with an increased frequency of delays.	Increased traffic, reduced access, and traffic congestion on local roadways. Accelerated wear and tear on local roadways.	Two public crossings with ADTs over 5,000 would experience a reduction in delay per stopped vehicle and maximum queue length with an increased frequency of delays.	Temporary closures at 18 grade crossings. Vehicle delays, reduced access, rerouting, and traffic congestion. Increased wear and tear on local roadways.	More frequent vehicle delays. Three grade crossings with ADTs above 5000 would experience a reduction in delay per stopped vehicle. No grade crossings would experience a level of service below C.
SAFETY						
Safety	Vehicle delays, traffic congestion, and increased construction related traffic may increase risk of	Accident frequency would decrease at 20 MNT and 50 MNT levels; increase at 100 MNT. Increase would	Vehicle delays, traffic congestion, and increased construction related traffic may increase risk of	Accident frequency would decrease at 20 MNT and 50 MNT levels; increase at 100 MNT. Increase would	Congestion and increased safety concerns. Routes for emergency vehicles redesigned to avoid	Increased train speed and frequency of rail traffic would increase incidence of safety hazards for motorists

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Table 5
Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	accidents.	be below the level of significance.	accidents.	be below the level of significance.	delays.	and pedestrians. Risk of derailment would decrease. Accident frequency rates would be below the criteria for significance. Existing rail line has 68 school bus crossings per day.
HAZARDOUS MATERIALS						
Transportation of Hazardous Materials	No impacts expected.	Reduced potential for accidents due to improved condition of existing rail line.	No impacts expected.	Reduced potential for accidents due to improved condition of existing rail line.	No impacts expected.	Reconstruction of existing rail line would reduce the likelihood of an accidental spill of hazardous materials.
Hazardous Waste Sites	Disturbance of unknown sites in right-of-way may cause exposure to contamination.	Spills could occur in the event of a derailment or result from improper handling and storage of hazardous materials.	Disturbance of unknown sites in right-of-way may cause exposure to contamination.	Spills could occur in the event of a derailment or result from improper handling and storage of hazardous materials.	Disturbance of unknown sites may cause exposure to contamination. Improper handling or storage of hazardous materials could result in contamination.	Spills could occur in the event of a derailment or as a result of improper handling and storage of hazardous materials.

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Table 5 Summary of Environmental Impacts of Proposed Project: Owatonna, Minnesota and Brookings, South Dakota						
Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
ENERGY RESOURCES						
Transportation of Energy Resources	No impacts expected.	Transportation of PRB coal would be more economical, reliable, and efficient.	No impacts expected.	Transportation of PRB coal would be more economical, reliable, and efficient.	No impacts expected.	Transportation of PRB coal would be more economical, reliable, and efficient.
Utilization of Energy Resources	Fuel consumption increased due to use by construction equipment, transportation of materials, and delayed or rerouted rail and road traffic.	Fuel savings and improved utilization of coal resources.	Fuel consumption increased due to use by construction equipment, transportation of materials, and delayed or rerouted rail and road traffic.	Fuel savings and improved utilization of coal resources.	Fuel consumption increased due to use by construction equipment, transportation of materials, and delayed or rerouted rail and road traffic.	Fuel savings and improved utilization of coal resources.
CULTURAL RESOURCES						
Cultural Resources	11 historic structures within the existing rail line right-of-way could be damaged or lost.	No impacts expected.	11 historic structures within the existing rail line right-of-way could be damaged or lost.	No impacts expected.	No impacts expected.	No impacts expected.
SOCIOECONOMICS						
Socioeconomics	49 construction jobs	Increased tax revenue.	49 construction jobs	Increased tax revenue.	Creation of 62	Increased tax revenue.

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Table 5
Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	created. Small number of relocations due to employment opportunities. Increased tax revenue. Increased use of local public facilities.	High paying railroad jobs and local unemployment decrease. Potential increase in population. Public services could be improved.	created. Small number of relocations due to employment opportunities. Increased tax revenue. Increased use of local public facilities.	High paying railroad jobs and local unemployment decrease. Potential increase in population. Public services could be improved.	construction jobs and an estimated 30 indirect jobs. Small number of relocations due to employment opportunities. An estimated \$9.2 million in construction earnings and approximately \$1.0 million in sales and use taxes in South Dakota. Increased use of public facilities.	High paying railroad jobs available. Decrease in local unemployment and increased demand for housing. Public services improved.
RECREATION						
Recreation	Negative impacts due to noise, dust, construction activity, and increased traffic. Reduced safety in proximity of the rail line. Crowding in areas further from construction areas.	Six parks and Straight River canoeing area located within 0.5 mile of existing rail line. Reduced safety near tracks due to more frequent and higher speed trains. Increased noise.	Negative impacts due to noise, dust, construction activity, and increased traffic. Reduced safety in proximity of the rail line. Crowding in areas further from construction areas.	Six parks and Straight River canoeing area located within 0.5 mile of existing rail line. Reduced safety near tracks due to more frequent and higher speed trains. Increased noise.	Increased noise, dust, vehicle delays, and safety concerns in proximity to the rail line. Temporary closure, detours, and decreased use of three trails which cross the rail line. Visual	Inconvenience, vehicle delays, and increased noise disturbance in proximity to the rail line. Increased safety concerns at crossings.

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Table 5
Summary of Environmental Impacts of Proposed Project:
Owatonna, Minnesota and Brookings, South Dakota

Alternative	Owatonna Alternative O-4		Owatonna Alternative O-5		Brookings Alternative B-2	
Length	9.5 miles of reconstruction and 1.7 miles of new construction.		9.5 miles of reconstruction with connection in right-of-way.		13.3 miles of reconstruction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	Reduced use of facilities.	Disturbance of activities such as picnicking, hiking, ball games, swimming, and canoeing. Decreased use of facilities near rail line.	Reduced use of facilities.	Disturbance of activities such as picnicking, hiking, ball games, swimming, and canoeing. Decreased use of facilities near rail line.	impacts due to the presence of machinery and ground disturbance.	
AESTHETICS						
Wild and Scenic Rivers	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Viewsheds/ Scenic Values	Temporary visual impacts due to construction activities.	New rail and structures would be more noticeable due to lack of weathering and cleared vegetation; temporary.	Temporary visual impacts due to construction activities.	New rail and structures would be more noticeable due to lack of weathering and cleared vegetation; temporary.	Ground disturbance and the presence of construction machinery would disrupt scenic views.	New structures would be more noticeable due to lack of weathering and vegetation.

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Table 6 Summary of Environmental Impacts of the Proposed Project Staging and Marshalling Yards – Minnesota, South Dakota and Wyoming						
Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
GEOLOGY						
Unique Geological Formations	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Geological Hazards	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Soil Impacts	Increased erosion and runoff. Approximately 358.7 of soil, including 292.4 acres of prime farmland, converted to a rail yard facility.	Potential contamination in the event of an accidental spill or improper handling of hazardous materials.	Approximately 606.1 acres of soil converted to railroad right-of-way. No prime farmland lost. Increased erosion and runoff.	Potential contamination in the event of an accidental spill or improper handling of hazardous materials.	Increased erosion and run-off. Approximately 1,048.7 acres of soil converted to rail yard facility. No prime farmland lost.	Potential contamination in the event of an accidental spill or improper handling of hazardous materials.
Paleontological Resources	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
LAND USE						
Agriculture	Approximately 342.4 acres of agriculture land lost. Approximately 12.8 acres of wooded fence rows and wood lots cleared.	No impacts expected.	Approximately 535.8 acres of agriculture land lost. Potential loss or damage of crops. Reduced access to fields, inconvenience.	No impacts expected.	Loss of approximately 1,048.7 acres of rangeland and cropland. Loss of grazing areas and forage acreage, relocation of livestock, reduced access, and	Reduced access and inconvenience.

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Table 6
Summary of Environmental Impacts of the Proposed Project
Staging and Marshalling Yards – Minnesota, South Dakota and Wyoming

Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
	Construction	Operation	Construction	Operation	Construction	Operation
					inconvenience to ranchers and farmers.	
Residential	Approximately 1.6 acres of residential land within proposed yard sites. 17 houses within 500 feet of proposed yards. Two houses within the proposed rail yard site removed or converted to railroad use.	Inconvenience due to road closures and increased noise.	No residential land within proposed yard sites. 21 houses within 500 feet. Noise, dust, reduced access.	Inconvenience due to road closures and increased noise.	No residences are located within 500 feet of the proposed yards. Seven residences are located within 500 feet of the proposed interchange in Edgemont. Increased noise, dust, traffic delays, inconvenience, and reduced access.	Increased noise and increased frequency of vehicle delays. Reduced access in proximity to proposed railroad facility.
Business and Industrial	Noise, dust, increased road traffic, vehicle delays, and road closures. Approximately 1.3 acres of business and industrial land within the proposed rail yard sites. One business within the right-of-way moved. Two businesses within 500 feet of the proposed yards.	Increased noise.	No business and industrial land within the proposed rail yards. 11 businesses within 500 feet, including the Omaha Boys Home. Increased noise, dust, reduced access.	Increased noise.	No impacts expected.	No impacts expected.

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Summary of Environmental Impacts of the Proposed Project
Staging and Marshalling Yards – Minnesota, South Dakota and Wyoming

Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
Minerals and Mining	May increase demand for suitable materials.	Facilitate project providing additional access to PRB coal.	May increase demand for suitable materials.	May increase demand for suitable materials.	May increase demand for suitable materials.	Facilitate project providing additional access to PRB coal.
Public Facilities	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
FEDERAL LANDS						
Federal Lands	No impacts expected.	No impacts expected.	Increased dust and sediment could affect Waterfowl Production area. Noise disturbance.	Presence of rail yard within 4,000 feet of a National Waterfowl Production Area could change hydrology and affect wetlands.	Inconvenience, reduced access, vehicle delays, loss of grazing areas, relocation of livestock. Loss of approximately 2.1 miles, 50.0 acres, of Wyoming State land.	Reduced access across rail line, inconvenience, loss of grazing acreage.
Public Parks	No impacts expected.	Increased noise, dust, and vehicle delays. Disturbance of park users in proximity to rail yards. Crowding in areas farther from rail yards. Possible decreased use and loss of revenue.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
WATER RESOURCES						
Surface Water	Channelization and stream bank	Scouring and erosion of streams. Potential	Potential contamination in the	Potential contamination due to	Channelization and stream bank	Scouring and erosion of streams. Potential

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Table 6
Summary of Environmental Impacts of the Proposed Project
Staging and Marshalling Yards – Minnesota, South Dakota and Wyoming

Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	modifications. Increased sediment. Potential contamination in the event of an accidental spill. 3 intermittent streams crossed. Cottonwood River crossed one time.	contamination due to run-off, accidental spills, or improper handling of hazardous materials.	event of an accidental spill	run-off, accidental spills, or improper handling of hazardous materials.	modifications. Increased sediment and erosion. Potential contamination in the event of an accidental spill. 7 intermittent streams crossed.	contamination due to run-off, accidental spills, or improper handling of hazardous materials.
Wetlands	Potential disturbance or damage of adjacent wetland areas. Approximately 5.2 acres of palustrine emergent wetland, and 9.0 acres of scrub/shrub wetland lost.	Adjacent wetlands altered or lost due to changes in hydrology, or potentially damaged in the event of an accidental discharge of hazardous materials from rail yards.	Approximately 65.7 acres of palustrine emergent wetlands lost. Potential damage or loss in the event of an accidental spill.	Changes in hydrology could affect adjacent wetlands. Potential damage or loss in the event of an accidental spill or improper handling of hazardous materials.	Approximately 0.6 acres of palustrine emergent wetland lost. Potential damage or loss of adjacent wetlands in the event of an accidental spill.	Adjacent wetlands lost or damaged by changes in hydrology or in the event of an accidental spill or improper handling of hazardous substances.
Groundwater	Potential contamination during construction in the event of an accidental spill or improper handling of hazardous materials.	Potential contamination during operation in the event of an accidental spill or improper handling of hazardous materials.	Potential contamination in the event of an accidental spill.	Potential contamination in the event of an accidental spill or improper handling of hazardous materials.	Possibility of contamination in the event of an accidental spill.	Possibility of contamination in the event of an accidental spill or improper handling of hazardous substances.
AIR QUALITY						
Air Quality	Temporary reduction in local air quality due to	Thresholds exceeded for CO at 100 MNT	Temporary reduction in local air quality due	Thresholds exceeded for CO and NO _x at all	Temporary reduction in local air quality due to	Threshold exceeded for NO _x at all operation

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Staging and Marshalling Yards – Minnesota, South Dakota and Wyoming

Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	construction activities, fugitive dust, and equipment emissions.	and NO _x at all operating levels in the East Yard and Waseca Yard; and NO _x at 50 and 100 MNT in the Middle East Yard.	to construction activities, fugitive dust, and equipment emissions.	operating levels for Central Yard	construction activities, fugitive dust, and equipment emissions.	levels; CO at 100 MNT for the West Yard. Threshold levels for NO _x exceeded at 50 and 100 MNT for the Middle West Yard.
NOISE AND VIBRATION						
Noise	Temporary increase in local noise levels.	Increased local noise from yard operations and idling locomotives. Minimal increase to noise receptors. 17 noise receptors within 500 feet.	Temporary increase in local noise levels.	Impacts would be similar to those presented for Alternative B. 21 noise receptors within 500 feet.	Temporary increase in local noise levels.	Increased noise from yard operations and idling locomotives. Minimal increase in noise receptors expected. 7 noise receptors within 500 feet.
Vibration	Minor increase in local vibration levels.	No known facilities likely to use sensitive equipment within 400 feet. Inconvenience to 17 structures within 500 feet.	Minor increase in local vibration levels.	Inconvenience to 21 structures located within 500 feet of the proposed rail facilities. No known hospitals or facilities likely to use sensitive equipment within 400 feet.	Minor vibrations may be experienced during construction activities.	Inconvenience to 7 structures located between 201-500 feet from proposed connection. No known facilities likely to use sensitive equipment within 400 feet.

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Summary of Environmental Impacts of the Proposed Project
Staging and Marshalling Yards – Minnesota, South Dakota and Wyoming

Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
BIOLOGICAL RESOURCES						
Vegetation	Potential disturbance to adjacent vegetation. Approximately 342.5 acres of cropland, 12.8 acres of woody vegetation, and 14.2 acres of wetland vegetation lost.	Mowing and trimming around yard perimeter. Potential damage due to leakage of accidental spills or herbicide use. Introduction of noxious weeds in disturbed areas.	Approximately 535.8 acres of cropland and 65.7 acres of wetland vegetation lost. Damage may occur to vegetation in adjacent areas.	Mowing and trimming around yard perimeter. Potential damage or disturbance of vegetation in adjacent areas during maintenance. Potential damage due to leakage of accidental spills or herbicide use. Introduction of noxious weeds in disturbed areas.	Approximately 1,048.7 acres of grassland vegetation and 0.6 acres of wetland vegetation lost. Damage may occur to vegetation in adjacent areas.	Mowing and trimming around yard perimeter. Potential damage due to leakage of accidental spills or herbicide use. Introduction of noxious weeds in disturbed areas.
WILDLIFE						
Wildlife	Loss of habitat, disturbance due to noise and human presence. Mortality due to hunting, poaching, and machinery and vehicle operation. Nest loss for ground and tree nesting birds.	Disturbance from noise and human activity. Mortality or injury within yard boundaries. Potential contamination in the event of leakage of accidental spills.	Loss of habitat, disturbance due to noise and human presence. Mortality due to hunting, poaching, and machinery and vehicle operation. Nest loss for ground and tree	Disturbance from noise and human activity. Mortality or injury within yard boundaries. Potential contamination in the event of leakage of accidental spill.	Loss of habitat, disturbance due to noise and human presence. Mortality due to hunting, poaching, and machinery and vehicle operation. Nest loss for ground nesting birds.	Disturbance from noise and human activity. Mortality or injury within yard boundaries. Potential contamination in the event of leakage or accidental spill

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Table 6 Summary of Environmental Impacts of the Proposed Project Staging and Marshalling Yards – Minnesota, South Dakota and Wyoming						
Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
			nesting birds.			
AQUATIC AND FISHERIES						
Aquatic and Fisheries	Temporary increase in TSS. Loss of habitat.	Potential change in hydrology. Potential contamination from surface water runoff.	Temporary increase in TSS. 3 intermittent streams and 3 stock ponds within yard boundaries. Loss of habitat.	Potential change in hydrology. Potential contamination from surface water run-off.	Temporary increase in TSS. Loss of habitat.	Potential change in hydrology. Potential contamination from surface run-off.
Sensitive, Threatened and Endangered Species						
Sensitive, Threatened and Endangered Species	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	Swift fox and mountain plovers may be affected by habitat loss and displacement. Disturbance due to noise and human activity. Mortality due to collision with vehicles.	Disturbance due to noise and human activity. Mortality due to collision with trains.
TRANSPORTATION						
Transportation	Vehicle delays, inconvenience, rerouted traffic. Reduced access. Increased wear	Vehicle delays, congestion, and increased safety concern on local	7 public roadways with low ADTs re-routed or terminated. Vehicle delays,	Vehicle delays, inconvenience, rerouted traffic.	2 public roadways with low ADTs re-routed or terminated. Vehicle delays, congestion,	Inconvenience and increased safety concerns. Permanent detour of road traffic to

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Staging and Marshalling Yards – Minnesota, South Dakota and Wyoming

Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	and tear on local roads. 3 public roadways with low ADTs re-routed or terminated.	roadways. Permanent detour of traffic to new routes.	inconvenience, rerouted traffic.		inconvenience, and increased safety concerns.	new routes.
SAFETY						
Safety	Increased risk of accident due to rerouted traffic and the presence of construction vehicles on local roadways. Reduced access of emergency vehicles.	Increase in traffic levels may increase risk of accidents on local roadways. Reduced access of emergency vehicles.	Increased risk of accident due to re-routed traffic and the presence of construction vehicles on local roadways. Reduce access of emergency vehicles.	Increase in traffic levels may increase risk of accidents on local roadways. Reduce access of emergency vehicles.	Increased risk of accidents on local roadways due to increased traffic and the presence of construction vehicles. Reduced access of emergency vehicles	Reduced access of emergency vehicles.
HAZARDOUS MATERIALS						
Transportation of Hazardous Materials	No increase in the amount or type of hazardous materials transported by DM&E.	No increase in the amount or type of hazardous materials transported by DM&E.	No increase in the amount or type of hazardous materials transported by DM&E.	No increase in the amount or type of hazardous materials transported by DM&E.	No increase in the amount or type of hazardous materials transported by DM&E.	No increase in the amount or type of hazardous materials transported by DM&E.
Hazardous Waste Sites	Disturbance of unknown sites may cause exposure to contamination.	Potential contamination in the event of an accidental spill or improper handling of hazardous substances.	Disturbance of unknown sites may cause exposure to contamination.	Potential contamination in the event of an accidental spill or improper handling of hazardous substances.	Disturbance of unknown sites may cause exposure to contamination.	Potential contamination in the event of an accidental spill of improper handling of hazardous substances.

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Table 6 Summary of Environmental Impacts of the Proposed Project Staging and Marshalling Yards – Minnesota, South Dakota and Wyoming						
Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
ENERGY RESOURCES						
Transportation of Energy Resources	No impacts expected.	All rail yards would facilitate the efficient transportation of energy resources.	No impacts expected.	All rail yards would facilitate the efficient transportation of energy resources.	No impacts expected.	All rail yards would facilitate the efficient transportation of energy resources.
Utilization of Energy Resources	No impacts expected.	More efficient rail line and rail facilities would facilitate better use of energy resources.	No impacts expected.	More efficient rail line and rail facilities would facilitate better use of energy resources.	No impacts expected.	More efficient rail line and rail facilities would facilitate better use of energy resources.
Cultural Resources	No known sites. Any resources located within the proposed yard site may be recovered and scientific information acquired. Possible loss of resources due to inadvertent discovery.	No impacts expected.	No known sites. Any resources located within the proposed yard site may be recovered and scientific information acquired. Possible loss of resources due to inadvertent discovery.	No impacts expected.	No known sites. Any resources located within the proposed yard site may be recovered and scientific information acquired. Possible loss of resources due to inadvertent discovery.	No impacts expected.
SOCIOECONOMICS						
Socioeconomics	Approximately 119 two-year jobs created. Small number of relocations due to	Approximately 365-450 jobs at full operating level. Estimated \$18 million	Approximately 117 two year jobs created. Small number of relocations due to	Approximately 240-350 jobs at full operating level. Estimated \$12 million	Approximately 63 two-year jobs created. Small number of relocations due to	Approximately 300 jobs at full operating level. Earnings increase estimated over \$12

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Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	employment opportunities. Increased tax revenue. Increased use of local public facilities.	in earnings at full operation and an estimated \$2.2 million in tax revenues paid. Potential increase in local populations. Improvement of public services.	employment opportunities. Increased tax revenue. Increased use of local public facilities.	per year in earning at full operation, and estimated \$1.2 million in tax revenues paid. Potential increase in local populations. Improvement of public services.	employment opportunities. Increased tax revenue. Increased use of local facilities.	million per year. Increased tax revenues paid. Potential increase in local populations. Improvement of public services.
RECREATION						
Recreation	No impacts expected.	Increased noise, dust, and vehicle delays. Disturbance of park users in proximity to rail yards. Crowding in areas farther from rail yards. Possible decreased use.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
AESTHETICS						
Wild and Scenic Rivers	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
Viewsheds/ Scenic Values	Ground disturbance and the presence of construction equipment	The presence of rail yards would change the appearance of local	Ground disturbance and the presence of construction	The presence of a rail yard would change the appearance of local	Ground disturbance and the presence of construction equipment	The presence of a rail yard would change the appearance of local

Appendix E - FRA Record of Decision
DM&E Powder River Basin Expansion Project STB EIS Impacts Summary

Table 6
Summary of Environmental Impacts of the Proposed Project
Staging and Marshalling Yards – Minnesota, South Dakota and Wyoming

Alternative	Minnesota Rebuild		South Dakota Rebuild		South Dakota and Wyoming New Construction	
Action	Construction	Operation	Construction	Operation	Construction	Operation
	would disrupt local scenery.	scenery.	equipment would disrupt local scenery.	scenery.	would disrupt local scenery.	scenery.