

**Table 1.8-1
Anticipated Permits for South Dakota Segment of the Heartland Greenway Pipeline System**

Agency	Permit/Consultation/ Notification	Agency Action	Estimated Application Date
Federal			
U.S. Army Corps of Engineers, Omaha District – South Dakota Regulatory Office	Sections 404/401 Clean Water Act Nationwide Permit 58 with PCN	Authorization of discharge of fill material into waters of the U.S., including wetlands	Submitted Pre-Construction Notification February 2023
	Section 106 Archaeological Resources Protection Act	Section 106 consultation through the Nationwide Permit 58 process	February 2023
U.S. Fish and Wildlife Service, South Dakota Ecological Services Field Office	Endangered Species Act Section 7 Consultation	Consider lead agency findings of impacts on federally listed; provide Biological Opinion if the Project is likely to adversely affect federally listed or proposed species or their habitats	Submit Draft Biological Assessment to USACE May 2023
Farm Service Agency	Conservation Reserve Program	Authorization of crossing areas enrolled in the Conservation Reserve Program	Second quarter of 2023
Pipeline Hazardous Materials Safety Administration (PHSMA)	Operator ID	Issue Operator Identification Number	Received November 2021
	Notification Type F – Construction or Rehabilitation of Gas or Liquid Facilities	Filed February 2022	
State			
South Dakota Department of Agriculture and Natural Resources	NPDES (General Permit SDR100000) Authorizing Stormwater Discharges Associated with Construction Activities under the South Dakota Surface Water Discharge System	Consider issuance of General Permit for hydrostatic test water discharge to waters of the U.S., construction dewatering to waters of the state	Fourth Quarter 2023
	NPDES (General Permit SDR070000) Authorizing Temporary Discharges Activities under the South Dakota Surface Water Discharge System	Covers non-stormwater construction dewatering, hydrostatic testing discharges.	Prior to Construction for trench dewatering at least 15 days prior to each hydrostatic discharge
	Permit to Appropriate Water	Consider issuance of water withdrawal permit for temporary use	Prior to Construction
South Dakota Game, Fish, and Parks	State Listed Threatened and Endangered Species	Consultation on natural resources	November 2022, September 2022, March 2023, April 2023 (ongoing)
South Dakota State Historical Society, State Historic Preservation Office	Section 106 of National Historic Preservation Act	Review and comment on activities regarding jurisdictional cultural resources	February 2023
Local			
County Road Departments	Crossing Permits	Issuance of permits for crossing of county roads	Fourth quarter of 2023/First quarter of 2024

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Anticipated Permits for South Dakota Segment of the Heartland Greenway Pipeline System**

Agency	Permit/Consultation/ Notification	Agency Action	Estimated Application Date
County and Local Authorities	Floodplain, Conditional Use, Weed Control, Dust Control, Noise Control, and Building permits where required	Review under county approval process	Third and fourth quarter of 2023 through first quarter of 2024

Table 2.1-1

Summary of the Project Facilities in South Dakota

Pipeline Crossing Length (miles)	Counties	Milepost Start	Milepost End
Aurora to Hartley			
63.8	Brookings	0	8
	Moody	8	36.8
	Minnehaha	36.8	63.9
POET Chancellor			
22.6	Turner	0	2.1
	Lincoln	2.1	22.6
POET Hudson			
26.1	Lincoln	0	26.1
Total			112.6

**Table 6.2-1
Geologic Formations Crossed by the Project**

Geologic Rock Formation	Pipeline / Milepost	Geologic Age	Primary Lithology	Secondary Lithology
Sioux Quartzite	Aurora to Hartley 0.0 – 9.09 37.58 – 50.13 50.82 – 54.07 58.51 – 63.80 POET Chancellor 0.00 – 1.78 7.74 – 8.04	Lower Proterozoic	Quartzite	Metaconglomerate, Slate
Carlile Shale	POET Chancellor 3.25 – 6.57 8.46 – 12.12 15.02 – 15.97 16.56 – 18.42 20.89 – 22.31 22.31 – 22.59 POET Hudson 0.00 – 13.63 15.57 – 17.68 19.13 – 19.81 22.64 – 23.88	Upper Cretaceous	Shale	Sandstone, Carbonate, Marlstone
Niobrara Formation	Aurora to Hartley 17.41 – 18.38 22.54 – 23.14 POET Chancellor 12.12 – 15.02 15.97 – 16.56 18.42 – 20.89 POET Hudson 13.63 – 15.57 17.68 – 19.13 19.81 – 22.64 23.88 – 26.04	Upper Cretaceous	Chalk, Marlstone, Shale	Sand, Bentonite

**Table 6.2-1
Geologic Formations Crossed by the Project**

Geologic Rock Formation	Pipeline / Milepost	Geologic Age	Primary Lithology	Secondary Lithology
Cretaceous, undifferentiated	Aurora to Hartley 18.38 – 22.54 23.14 – 37.58 50.13 – 50.82 54.07 – 58.51 POET Chancellor 1.78 – 3.25 6.57 – 7.74 8.04 – 8.46	Upper to Lower Cretaceous	Shale, Chert, Chalk	Fine-detrital, Sandstone
Pierre Shale	Aurora to Hartley 9.09 – 17.41	Upper Cretaceous	Bentonite, Shale	Carbonate, Sandstone, Conglomerate

Source: USGS,2005; SDGS, 2004a

Table 6.2-2			
Geologic Hazards in the Project Area			
Hazard	Pipeline	Milepost Range	Hazard Risk
Karst	Aurora to Hartley	17.41 – 18.38 22.54 – 23.14	Low
	POET Chancellor Lateral	12.12 – 15.02 15.97 – 16.56 18.42 – 20.89	Low
	POET Hudson Lateral	13.64 – 15.57 17.68 – 19.13 19.81 – 22.64 23.88 – 26.04	Low
Landslides (Pierre Shale)	Aurora to Hartley	9.08 – 17.41	Low incidence

Table 6.3-1

Summary of Major Soil Characteristics Impacted by Project (miles)

Lateral	Prime Farmland / Statewide Importance ^b	Hydric Soils ^b	Soil Rutting Hazard ^{b, c}	Compaction Potential ^d	Erosion Potential ^b		Steep Slopes ^{b, g}	Shallow Bedrock ^{b, h}	Revegetation Potential ⁱ
					Water Erodibility Potential ^e	Wind Erodibility Potential ^f			
Aurora to Hartley Lateral	58.57	6.94	63.11	6.53	28.55	0	6.9	3.02	3.67
POET Chancellor Lateral	21.44	3.1	22.57	3.26	3.78	0	1.06	0	0.84
POET Hudson Lateral	23.85	1.31	25.97	1.31	11.4	0	5.85	0	0.15
Project Totals	103.86	11.35	111.65	11.1	43.73	0	13.81	3.02	4.66

^a Miles presented represent miles crossed by Project centerlines.

^b As designated by the Natural Resources Conservation Service.

^c Includes soils that have a high soil rutting hazard.

^d Includes soils that have a high compaction potential.

^e Includes soils that have a high erodibility potential due to water.

^f Includes soils that have a high erodibility potential due to wind.

^g Includes soils with slopes greater than 8 percent.

^h Includes soils with unconsolidated rock 60 inches or less from the surface.

ⁱ Includes soils with a low revegetation potential.

Table 6.4-2**Water Wells within 400 feet of the HGPS Centerline**

County	Approximate MP	Well Number	Well Owner	Depth (feet)	Distance and Direction from Project Centerline	Use or Status
Aurora to Hartley Lateral						
Moody	17.45	IU	Marvin Hasvold	12	352 feet SW	Plugged
Moody	31.5	IU	Mrs. Harold Solsaa	88	181 feet W	Plugged
POET Chancellor Lateral						
No water wells were identified within 400 feet of the POET Chancellor Lateral centerline.						
POET Hudson Lateral						
Lincoln	18.97	IU	Paul Iverson	180	167 feet W ^a	Geothermal
Lincoln	24.01	IU	Dennis Geraets	65	229 feet SW	Domestic

Sources: SDDANR, 2022c

IU - Information Unavailable

^a Distance is based on coordinates provided by the SDDANR. According to the well completion report, 5 holes were drilled.

Table 6.4-3	
South Dakota Rural Water Systems Crossed by the Project	
Name	Approximate Miles Crossed
Aurora to Hartley	
Big Sioux	31.32
Minnehaha	28.72
Lewis & Clark ^a	28.43
POET Chancellor Lateral	
Lincoln	3.74
South Lincoln	18.91
Lewis & Clark ^a	22.32
POET Hudson Lateral	
Lincoln	26.05
Lewis & Clark ^a	26.05
Source: South Dakota Rural Water Systems, 2022	
^a Lewis & Clark is identified as a Regional Water System and overlaps the Minnehaha, South Lincoln and Lincoln systems along the project.	

**Table 6.5-1
Vegetative Communities Crossed by the Project**

Counties Crossed (North to South)	Vegetation Communities (miles)							
	Cultivated Crops	Deciduous Forest	Developed	Emergent Herbaceous Wetlands	Grassland / Herbaceous	Open Water	Pasture / Hay-areas of Grasses, legumes, or grass	Grand Total ^a
Aurora to Hartley								
Brookings	6.11	0.02	0.24	0.3	0.04	0	1.33	8.04
Moody	23.12	0.05	0.66	0.24	0	0.06	2.97	27.1
Minnehaha	25.55	0.07	2.07	0	0.18	0.03	0.86	28.76
POET Chancellor Lateral								
Lincoln	18.07	0	0.46	0.19	0.33	0.03	1.47	20.55
Turner	1.53	0.02	0.1	0	0.02	0	0.39	2.06
POET Hudson Lateral								
Lincoln	24.6	0	0.52	0.15	0.03	0	0.8	26.1
State Total	98.98	0.16	4.05	0.88	0.6	0.12	7.82	112.61

^a Numbers have been rounded for presentation purposes; therefore, the total may not equal the sum of the addends.

Table 6.6-1				
Summary of Wetlands Crossed by the Project by County				
County	PEM (miles)	PSS (miles)	PFO (miles)	Total (miles)
Aurora to Hartley				
Brookings	0.43	0.00	0.00	0.43
Moody	0.59	0.00	0.00	0.59
Minnehaha	0.25	0.07	0.02	0.34
POET Chancellor Lateral				
Lincoln	0.36	0.00	0.00	0.36
Turner	0.01	0.00	0.00	0.01
POET Hudson Lateral				
Lincoln	0.10	0.00	0.00	0.10
Project Total	0.72	0.07	0.02	0.81

Table 6.6-2			
Horizontal Directional Drill Locations ^a			
County	MP	Waterbody Name/ Feature Name	HDD Length (feet)
Aurora to Hartley			
Brookings	0.4	CP Rail Systems Railroad	675
Brookings	3.4	Medary Creek	660
Brookings	7.3	Unnamed Tributary to the Big Sioux River	600
Moody	8.9	Creek	600
Moody	10.6	Big Sioux River	700
Moody	18.5	Hwy 32	600
Moody	23.6	Big Sioux river	800
Moody	30	Brookfield Creek	600
Minnehaha	46.4	West Pipestone Creek	700
Minnehaha	48.7	Split Rock Creek	1,300
Minnehaha	50.1	Split Rock Creek	920
Minnehaha	54.5	I-90	600
Minnehaha	56.4	Ellis & Eastern Railroad	600
Minnehaha	56.6	Beaver Creek	600
Minnehaha	58.7	Fourmile Creek	700
POET Chancellor Lateral			
Turner	0	Burlington Northern Santa Fe Railroad	600
Turner	0.9	463 rd Street	680
Turner	1.5	Long Creek	TBD
Lincoln	8.5	I-29	600
Lincoln	15.6	Dakota & Iowa Railroad	600
Lincoln	22.4	Big Sioux River	1600
POET Hudson Lateral			
Lincoln	15.7	285 th Street	600
Lincoln	17.3	Beaver Creek	1120
Lincoln	19	Creek/BNSF Railroad	1040
Lincoln	22.8	Beaver Creek	600

^a Additional HDD crossings are under consideration and will be finalized pending the completion of the 2022/2023 field season.

**Table 6.8-2
Land Uses Crossed by the Heartland Greenway Pipeline System Centerline**

Counties Crossed (North to South)	Land Use Disturbed (miles)									
	Cultivated Crops	Deciduous Forest	Developed, low intensity	Developed, Medium Intensity	Developed, Open Space	Emergent Herbaceous Wetlands	Grassland / Herbaceous	Open Water	Pasture / Hay-areas of Grasses, legumes, or grass	Project Total ^a
Aurora to Hartley										
Brookings	6.11	0.02	0	0	0.24	0.3	0.04	0	1.33	8.04
Moody	23.12	0.05	0.06	0	0.6	0.24	0	0.06	2.97	27.1
Minnehaha	25.55	0.07	0.15	0.07	1.85	0	0.18	0.03	0.86	28.76
POET Chancellor Lateral										
Lincoln	18.07	0	0.02	0.04	0.4	0.19	0.33	0.03	1.47	20.55
Turner	1.53	0.02	0.04	0.01	0.05	0	0.02	0	0.39	2.06
POET Hudson Lateral										
Lincoln	24.6	0	0.04	0.02	0.46	0.15	0.03	0	0.8	26.05
STATE TOTAL	98.98	0.16	0.31	0.14	3.6	0.88	0.6	0.12	7.82	112.61

^a Numbers have been rounded for presentation purposes; therefore, the total may not equal the sum of the addends.

**Table 6.10-1
EPA Listed 303(d) Listed Waterbodies**

County	Pipeline/ Approximate Milepost	Waterbody Name	State Water Quality	Supports Use Designation	Source of Impairment	Priority¹
Brookings	Aurora to Hartley 3.4	Medary Creek (SD-BS- R-MEDARY_01)	Warmwater Marginal Fish Life	Full Support	N/A	High
			Limited Contact Recreation	Nonsupport	<i>E.coli</i>	
			Fish and Wildlife Propagation, Recreation, and Stock Watering	Full Support	N/A	
			Irrigation waters	Full Support	N/A	
Moody	Aurora to Hartley 10.6 23.6	Big Sioux River (SD- BS-R- BIG_SIOUX_07)	Domestic Water Supply	Full Support	N/A	Low
			Warmwater semipermanent fish life propagation waters	Nonsupport	Methylmercury /Total Suspended Solids	
			Limited Contact Recreation	Full Support	N/A	
			Fish and Wildlife Propagation, Recreation, and Stock Watering	Nonsupport	Methylmercury	
			Irrigation Waters	Full Support	N/A	
Minnehaha	Aurora to Hartley 48.8	Split Rock Creek (SD- BS-R- SPLIT_ROCK_02)	Warmwater semipermanent fish life propagation waters	Full Support	N/A	High
			Immersion recreation waters	Nonsupport	<i>E.coli</i>	
			Limited-contact recreation waters	Nonsupport	<i>E.coli</i>	
			Fish and Wildlife Propagation, Recreation, and Stock Watering	Full Support	N/A	
			Irrigation waters	Full Support	N/A	
	Aurora to Hartley 56.7	Beaver Creek (SD-BS- R-BEAVER_02)	Warmwater Marginal Fish Life	Full Support	N/A	Low
			Limited Contact Recreation	Nonsupport	<i>E.coli</i>	
			Fish and Wildlife Propagation, Recreation, and Stock Watering	Full Support	N/A	
			Irrigation waters	Full Support	N/A	

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County	Pipeline/ Approximate Milepost	Waterbody Name	State Water Quality	Supports Use Designation	Source of Impairment	Priority¹
Lincoln	POET Chancellor Lateral 22.5	Big Sioux River (SD-BS-R- BIG_SIOUX_14)	Warmwater semipermanent fish life propagation waters	Nonsupport	Total Suspended Solids	High
			Immersion recreation waters	Nonsupport	<i>E.coli</i> /fecal coliform	
			Limited-contact recreation waters	Nonsupport	<i>E.coli</i> /fecal coliform	
			Fish and Wildlife Propagation, Recreation, and Stock Watering	Full Support	N/A	
			Irrigation waters	Full Support	N/A	

Source: SDDANR, 2022f; SDGFP, 2022c

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Aurora to Hartley											
Brookings County											
Brookings silty clay loam, 0 to 2 percent slopes	Bf	0.92	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Buse-Barnes loams, 6 to 9 percent slopes	BgC	0.07	Farmland of Statewide Importance	No	High	Moderate	Moderate	Moderate	Yes	No	High
Doland loam, 2 to 6 percent slopes	DoB	0.21	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Flandreau-Maddock complex, 2 to 6 percent slopes	FmB	<0.01	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Hamerly-Badger complex, 0 to 2 percent slopes	Hb	0.09	Prime Farmland if Drained	No	High	Moderate	Moderate	Moderate	No	No	High

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Kranzburg-Brookings silty clay loams, 0 to 2 percent slopes	KrA	0.13	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Kranzburg-Brookings silty clay loams, 1 to 6 percent slopes	KrB	0.92	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Mckranz-Badger silty clay loams, 0 to 2 percent slopes	Mt	0.17	Prime Farmland if Drained	No	High	Moderate	High	Moderate	No	No	High
Strayhoss loam, 2 to 6 percent slopes	SrB	0.54	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Strayhoss-Maddock complex, 2 to 6 percent slopes	StB	0.35	Prime Farmland if Irrigated	No	High	Moderate	High	Low	No	No	High

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Vienna-Brookings complex, 1 to 6 percent slopes	VbB	0.45	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Rauville silty clay loam, coteau, 0 to 1 percent slopes, frequently flooded	Z150A	0.27	Not Prime Farmland	Yes	High	High	Moderate	Moderate	No	No	Low
Lamoure silty clay loam, coteau, 0 to 1 percent slopes, occasionally flooded	Z152A	0.05	Prime Farmland if Drained	No	High	Moderate	Moderate	Moderate	No	No	High

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Lamoure-Rauville silty clay loams, channeled, 0 to 2 percent slopes, frequently flooded	Z153A	0.39	Not Prime Farmland	Yes	High	High	Moderate	Moderate	No	No	Low
Lowe, occasionally flooded-Ludden, frequently flooded, complex, 0 to 1 percent slopes	Z155A	0.46	Prime Farmland if Drained	Yes	High	High	Moderate	Moderate	No	No	High
Marysland loam, 0 to 1 percent slopes, occasionally flooded	Z158A	0.1	Prime Farmland if Drained	Yes	High	High	Moderate	Moderate	No	No	High

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Divide loam, 0 to 2 percent slopes, occasionally flooded	Z159A	0.57	Prime Farmland if Drained	No	High	Moderate	Moderate	Moderate	No	No	High
Moritz, occasionally flooded-Lamoure, frequently flooded, complex, 0 to 2 percent slopes	Z160A	0.1	Prime Farmland if Drained	No	High	Moderate	Moderate	Moderate	No	No	High
Fordtown loam, 0 to 2 percent slopes, rarely flooded	Z166A	0.95	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Renshaw-Fordville loams, coteau, 0 to 2 percent slopes	Z171A	1	Prime farmland if Irrigated	No	High	Moderate	Moderate	Low	No	No	High

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Renshaw-Fordville loams, coteau, 2 to 6 percent slopes	Z171B	0.23	Prime farmland if Irrigated	No	High	Moderate	Moderate	Low	No	No	High
Moody County											
Alcester silty clay loam, cool, 0 to 2 percent slopes	AcA	0.11	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Alwilda sandy loam	Ad	0.05	Prime Farmland if Irrigated	No	Moderate	Moderate	Low	Moderate	No	No	High
Blendon fine sandy loam, cool, 0 to 3 percent slopes	BeA	0.07	Prime Farmland	No	Moderate	Moderate	Moderate	Moderate	No	No	High
Bon loam, 0 to 2 percent slopes, occasionally flooded	Bo	0.52	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High

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Chaska loam, channeled, 0 to 3 percent slopes, frequently flooded	Ch	0.2	Not Prime Farmland	Yes	High	High	Moderate	Moderate	No	No	Low
Clamo silty clay	Cm	0.13	Prime Farmland if Drained	Yes	High	High	Moderate	Moderate	No	No	High
Davis loam, 0 to 2 percent slopes	DaA	0.19	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Davis loam, 2 to 9 percent slopes	DaB	0.08	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Davison-Crossplain clay loams	Dc	1.4	Prime Farmland if Drained	No	High	Moderate	Moderate	Moderate	No	No	High
Davison-Crossplain clay loams, 0 to 2 percent slopes	Dd	0.03	Prime Farmland if Drained	No	High	Moderate	Moderate	Moderate	No	No	High

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Dempster silt loam, 0 to 2 percent slopes	DmA	0.06	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Dempster silt loam, 2 to 6 percent slopes	DmB	0.05	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Dimo clay loam	Do	0.14	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Doland loam, 2 to 6 percent slopes	DsB	0.92	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Doland-Bonilla loams, 0 to 2 percent slopes	DvA	0.88	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Dobalt-Bonilla loams, 0 to 2 percent slopes	DyA	0.24	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Enet loam, 0 to 2 percent slopes	EnA	0.03	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High

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Flandreau loam, 0 to 2 percent slopes	FaA	0.22	Prime Farmland	No	High	Moderate	Moderate	Low	No	Yes	High
Flandreau loam, 2 to 6 percent slopes	FaB	1.28	Prime Farmland	No	High	Moderate	Moderate	Low	No	Yes	High
Flandreau-Maddock complex, 2 to 6 percent slopes	FmB	0.17	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Graceville silty clay loam	Ga	0.19	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Grovena loam, 2 to 6 percent slopes	GrB	0.31	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Grovena-Bonilla loams, 0 to 2 percent slopes	GvA	0.67	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Houdek clay loam, 0 to 2 percent slopes	HoA	0.46	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High

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Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Houdek clay loam, 2 to 6 percent slopes	HoB	5.57	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Houdek-Shindler clay loams, 5 to 9 percent slopes	HsC	1.07	Farmland of Statewide Importance	No	High	Moderate	Moderate	Low	No	No	High
Houdek-Shindler clay loams, 6 to 25 percent slopes	HsD	0.35	Not Prime Farmland	No	High	Moderate	Moderate	Low	Yes	No	Moderate
Houdek-Talmo complex, 6 to 40 percent slopes	HtD	0.05	Not Prime Farmland	No	High	Moderate	Moderate	Low	Yes	No	Moderate
Kranzburg-Brookings silty clay loams, 1 to 6 percent slopes	KaB	1.36	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Lamo silty clay loam, cool, 0 to 2 percent slopes, occasionally flooded	La	1.36	Prime Farmland if Drained	Yes	High	High	Moderate	Low	No	No	High
Lamo silty clay loam, frequently flooded	Lb	0.76	Not Prime Farmland	Yes	High	High	Moderate	Moderate	No	No	Low
Moody-Nora complex, 2 to 6 percent slopes	MnB	1.79	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Moody silty clay loam, cool, 2 to 6 percent slopes	MoB	2.94	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Moody-Trent complex, 0 to 2 percent slopes	MtA	1.26	Prime Farmland	No	High	Moderate	High	Low	No	No	High

Table C-1
Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Nora-Moody silty clay loams, 5 to 9 percent slopes	NmC	0.06	Farmland of Statewide Importance	No	High	Moderate	High	Low	No	No	High
Orthents, gravelly	Og	0.04	Not Prime Farmland	No	Low	Low	Low	Low	Yes	No	Moderate
Shindler-Houdek clay loams, 15 to 40 percent slopes	ShE	0.11	Not Prime Farmland	No	High	Moderate	Moderate	Low	Yes	No	Moderate
Strayhoss-Maddock Complex, 2 to 6 percent slopes	StB	0.01	Prime Farmland if Irrigated	No	High	Moderate	High	Low	No	No	High
Wakonda-Chancellor complex, 0 to 2 percent slopes	Wa	1.37	Prime Farmland if Drained	No	High	Moderate	High	Moderate	No	No	High
Worthing silty clay loam, 0 to 1 percent slopes	Wo	0.18	Not Prime Farmland	Yes	High	High	Moderate	Low	No	No	Low

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Lamoure-Rauville silty clay loams, channeled, 0 to 2 percent slopes, frequently flooded	Z153A	0.2	Not Prime Farmland	Yes	High	High	Moderate	Moderate	No	No	Low
Sioux-Renshaw complex, coteau, 9 to 15 percent slopes	Z174D	0.04	Not Prime Farmland	No	Moderate	Moderate	Low	Low	Yes	No	Moderate
Estelline-Sioux complex, coteau, 2 to 6 percent slopes	Z183B	0.19	Not Prime Farmland	No	High	Moderate	High	Low	No	No	Moderate
Minnehaha County											
Alcester silty clay loam, cool, 0 to 2 percent slopes	AcA	0.09	Prime Farmland	No	High	Moderate	High	Low	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Benclare-Corson complex, 0 to 2 percent slopes	BcA	0.07	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Chancellor silty clay loam, 0 to 2 percent slopes, frequently flooded	Cb	0.05	Prime Farmland if Drained	Yes	High	High	Moderate	Low	No	No	High
Chaska loam, 0 to 2 percent slopes	Cd	0.09	Prime Farmland if Drained	No	High	Moderate	Moderate	Moderate	No	No	High
Chaska loam, channeled, 0 to 3 percent slopes, frequently flooded	Ch	0.38	Not Prime Farmland	Yes	High	High	Moderate	Moderate	No	No	Low
Clamo silty clay, 0 to 1 percent slopes	Cm	0.12	Prime Farmland if Drained	Yes	High	High	Moderate	Moderate	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Corson silty clay, 2 to 6 percent slopes	CoB	0.4	Prime Farmland	No	High	Moderate	Low	Low	No	No	High
Corson-Henkin complex, 6 to 9 percent slopes	CpC	0.1	Farmland of Statewide Importance	No	High	Moderate	Low	Moderate	Yes	No	High
Crofton-Nora complex, 9 to 15 percent slopes	CrD	0.1	Not Prime Farmland	No	High	Moderate	High	Low	Yes	No	Moderate
Davis loam, 0 to 2 percent slopes	DcA	0.06	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Davison-Crossplain clay loams, 0 to 2 percent slopes	Dd	0.24	Prime Farmland if Drained	No	High	Moderate	Moderate	Moderate	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Ruttng Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Delmont-Enet loams, 2 to 6 percent slopes	DeB	0.18	Prime Farmland if Irrigated	No	High	Moderate	Moderate	Low	No	No	High
Dempster silt loam, 0 to 2 percent slopes	DmA	0.05	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Dempster silt loam, 2 to 6 percent slopes	DmB	0.11	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Dobalt loam, 2 to 6 percent slopes	DxB	0.18	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Dobalt-Bonilla loams, 0 to 2 percent slopes	DyA	0.01	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Flandreau loam, 0 to 2 percent slopes	FaA	0.09	Prime Farmland	No	High	Moderate	Moderate	Low	No	Yes	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Flandreau loam, 2 to 6 percent slopes	FaB	1.3	Prime Farmland	No	High	Moderate	Moderate	Low	No	Yes	High
Flandreau-Thurman complex, 2 to 6 percent slopes	FtB	0.15	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Graceville silty clay loam, 0 to 2 percent slopes	GrA	0.08	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Grovena loam, 2 to 6 percent slopes	GsB	1.67	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Grovena-Bonilla loams, 0 to 2 percent slopes	GvA	0.27	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Houdek-Shindler clay loams, 6 to 9 percent slopes	HsC	0.08	Farmland of Statewide Importance	No	High	Moderate	Low	Low	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Houdek-Talmo complex, 9 to 15 percent slopes	HtD	0.06	Not Prime Farmland	No	High	Moderate	Low	Low	No	No	Moderate
Ihlen-Rock outcrop complex, 4 to 35 percent slopes	IrE	0.13	Not Prime Farmland	No	High	Moderate	High	Low	Yes	Yes	Moderate
Lamo silty clay loam, cool, 0 to 2 percent slopes, occasionally flooded	La	0.03	Prime Farmland if Drained	Yes	High	High	Moderate	Low	No	No	High
Lamo silty clay loam, channeled	Lb	0.41	Not Prime Farmland	Yes	High	Moderate	Low	Moderate	No	No	Low
Moody silty clay loam, cool, 2 to 6 percent slopes	MdB	3.91	Prime Farmland	No	High	Moderate	High	Low	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Moody-Nora complex, 2 to 6 percent slopes	MnB	3.56	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Moody-Nora silty clay loams, 6 to 9 percent slopes	MnC	2.11	Farmland of Statewide Importance	No	High	Moderate	High	Low	Yes	No	High
Moody-Trent complex, 0 to 2 percent slopes	MtA	4.2	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Nora-Crofton complex, 6 to 9 percent slopes	NcC	3.26	Farmland of Statewide Importance	No	High	Moderate	High	Low	Yes	No	High
Obert silty clay loam, 0 to 1 percent slopes	Ob	0.88	Not Prime Farmland	Yes	High	High	Moderate	Low	No	No	Low

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Splitrock silty clay loam, 0 to 2 percent slopes	SpA	0.29	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Splitrock silty clay loam, 2 to 6 percent slopes	SpB	1.02	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Thurman-Flandreau complex, 6 to 9 percent slopes	TfC	0.54	Not Prime Farmland	No	Moderate	Moderate	Moderate	Moderate	Yes	No	Moderate
Trent silty clay loam, 0 to 3 percent slopes	Tr	0.62	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Wakonda-Chancellor complex, 0 to 2 percent slopes	Wa	0.86	Prime Farmland if Drained	No	High	Moderate	High	Moderate	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Whitewood silty clay loam, 0 to 2 percent slopes	Wk	1.02	Prime Farmland if Drained	Yes	High	High	Moderate	Low	No	No	High
POET Chancellor Lateral											
Turner County											
Bon loam, channeled, 0 to 2 percent slopes, frequently flooded	Cc	0.05	Not Prime Farmland	No	High	Moderate	Moderate	Low	No	No	Moderate
Delmont-Enet loams, high precipitation, 2 to 6 percent slopes	DehB	0.13	Prime Farmland if Irrigated	No	High	Moderate	Moderate	Low	No	No	High
Egan silty clay loam, 3 to 6 percent slopes	EaB	<0.01	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Ruttng Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Egan-Ethan complex, 2 to 6 percent slopes	EeB	0.27	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Egan-Trent silty clay loams, 0 to 2 percent slopes	EfA	0.12	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Egan-Wentworth complex, 2 to 6 percent slopes	EgB	0.36	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Ethan-Egan complex, 5 to 9 percent slopes	EtC	0.04	Farmland of Statewide Importance	No	High	Moderate	Moderate	Moderate	No	No	High
Lamo silty clay loam, cool, 0 to 2 percent slopes, occasionally flooded	La	0.14	Prime Farmland if Drained	Yes	High	High	Moderate	Low	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Tetonka silt loam, 0 to 1 percent slopes	Te	0.1	Prime Farmland if Drained	Yes	High	High	High	Low	No	No	High
Wentworth-Chancellor-Wakonda silty clay loams, 0 to 2 percent slopes	WcA	0.77	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Worthing silty clay loam, 0 to 1 percent slopes	Wo	0.07	Not Prime Farmland	Yes	High	High	Moderate	Low	No	No	Low
Lincoln County											
Alcester silty clay loam, 0 to 2 percent slopes	AcA	0.13	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Bon soils, frequently flooded	Bo	0.16	Not Prime Farmland	No	High	High	Moderate	Low	No	No	Moderate

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Ruttng Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Chancellor-Tetonka complex, 0 to 2 percent slopes	Ca	2.15	Prime Farmland if Drained	No	High	Moderate	Moderate	Low	No	No	High
Chancellor-Viborg silty clay loams	Cd	0.68	Prime Farmland if Drained	Yes	High	High	Moderate	Low	No	No	High
Chancellor-Wakonda-Tetonka complex	Ch	0.4	Farmland of Statewide Importance	Yes	High	High	Moderate	Low	No	No	High
Clamo silty clay loam	Co	0.61	Prime Farmland if Drained	Yes	High	High	Moderate	Moderate	No	No	High
Egan silty clay loam, 3 to 6 percent slopes	EaB	2.09	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Egan-Chancellor silty clay loams, 0 to 4 percent slopes	EcB	0.67	Farmland of Statewide Importance	No	High	Moderate	Moderate	Low	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Ruttng Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Egan-Shindler complex, 2 to 6 percent slopes	EsB	1.52	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Egan-Shindler complex, 6 to 9 percent slopes	EsC	0.98	Farmland of Statewide Importance	No	High	Moderate	Moderate	Low	Yes	No	High
Graceville silty clay loam	Gr	0.45	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Baltic silty clay loam, ponded	Mh	0.03	Not Prime Farmland	Yes	High	High	Moderate	Low	No	No	Low
Shindler-Egan complex, 9 to 15 percent slopes, eroded	SkD2	0.04	Not Prime Farmland	No	High	Moderate	Moderate	Low	Yes	No	Moderate
Shindler and Talmo soils, 6 to 30 percent slopes	StD	0.04	Not Prime Farmland	No	High	Moderate	Moderate	Low	Yes	No	Moderate

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Tetonka silt loam, 0 to 2 percent slopes, frequently ponded	Te	0.33	Prime Farmland if Drained	Yes	High	High	High	Low	No	No	High
Wentworth silty clay loam, 0 to 2 percent slopes	WeA	2.09	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes	WhA	7.41	Prime Farmland if Drained	No	High	Moderate	Moderate	Low	No	No	High
Worthing silty clay loam, 0 to 1 percent slopes	Ws	0.74	Not Prime Farmland	Yes	High	High	Moderate	Low	No	No	Low

POET Hudson Lateral

Lincoln County

Table C-1
Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Ruttng Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Alcester silty clay loam, 0 to 2 percent slopes	AcA	0.8	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Alcester silty clay loam, 2 to 6 percent slopes	AcB	0.56	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Alcester silty clay loam, channeled	Af	0.16	Not Prime Farmland	No	High	Moderate	Moderate	Low	No	No	Moderate
Chancellor-Tetonka complex, 0 to 2 percent slopes	Ca	0.95	Prime Farmland if Drained	No	High	Moderate	Moderate	Low	No	No	High
Chancellor-Viborg silty clay loams	Cd	0.37	Prime Farmland if Drained	Yes	High	High	Moderate	Low	No	No	High
Chancellor-Wakonda-Tetonka complex	Ch	0.04	Farmland of Statewide Importance	Yes	High	High	Moderate	Low	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Ruttng Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Crofton-Nora complex, 11 to 17 percent slopes, eroded	CpD2	1.56	Not Prime Farmland	No	High	Moderate	High	Moderate	Yes	No	Moderate
Delmont loam, 0 to 2 percent slopes	DeA	0.12	Prime Farmland if Irrigated	No	High	Moderate	Moderate	Low	No	No	High
Egan silty clay loam, 3 to 6 percent slopes	EaB	2.88	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Egan-Shindler complex, 2 to 6 percent slopes	EsB	0.24	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High
Egan-Shindler complex, 6 to 9 percent slopes	EsC	0.95	Farmland of Statewide Importance	No	High	Moderate	Moderate	Low	Yes	No	High
Graceville silty clay loam	Gr	0.84	Prime Farmland	No	High	Moderate	Moderate	Low	No	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Lamo silty clay loam, cool, 0 to 2 percent slopes, occasionally flooded	La	0.44	Prime Farmland if Drained	Yes	High	High	Moderate	Low	No	No	High
Moody silty clay loam, 0 to 2 percent slopes	MoA	0.18	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Moody silty clay loam, 2 to 6 percent slopes	MoB	2.52	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Moody-Nora complex, warm, 2 to 6 percent slopes	MpB	0.31	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Moody-Nora silty clay loams, 6 to 10 percent slopes, eroded	MpC2	3.09	Farmland of Statewide Importance	No	High	Moderate	High	Low	Yes	No	High

Table C-1

Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Salmo silty clay loam, very wet	Sa	0.15	Not Prime Farmland	Yes	High	High	Moderate	Moderate	No	No	Low
Shindler clay loam, 9 to 15 percent slopes	ShD	0.15	Not Prime Farmland	No	High	Moderate	Moderate	Low	Yes	No	Moderate
Shindler clay loam, 25 to 40 percent slopes	ShF	0.02	Not Prime Farmland	No	High	Moderate	Moderate	Low	Yes	No	Moderate
Shindler-Egan complex, 9 to 15 percent slopes, eroded	SkD2	0.06	Not Prime Farmland	No	High	Moderate	Moderate	Low	Yes	No	Moderate
Shindler and Talmo soils, 6 to 30 percent slopes	StD	0.02	Not Prime Farmland	No	High	Moderate	Moderate	Low	Yes	No	Moderate

Table C-1
Soils Characteristics of Soil Map Units Crossed by the Heartland Greenway Pipeline System Centerlines

Map Unit Name	Map Unit Symbol	Pipeline Crossing Length (miles)	Prime Farmland ^a	Hydric Soils ^a	Soil Rutting Hazard ^a	Compaction Potential	Water Erodibility Potential ^{a, b}	Wind Erodibility Potential ^{a, c}	Steep Slopes ^{a, d}	Shallow Bedrock ^{a, e}	Re-vegetation Potential
Tetonka silt loam, 0 to 2 percent slopes, frequently ponded	Te	0.31	Prime Farmland if Drained	Yes	High	High	High	Low	No	No	High
Wentworth silty clay loam, 0 to 2 percent slopes	WeA	2.07	Prime Farmland	No	High	Moderate	High	Low	No	No	High
Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes	WhA	7.18	Prime Farmland if Drained	No	High	Moderate	Moderate	Low	No	No	High

Note: Areas classified by the Natural Resources Conservation Services as "Water" are not included in this table.

Source: USDA-Natural Resources Conservation Service Web Soil Survey, 2021

^a As designated by the Natural Resources Conservation Service.

^b Water Erodibility Potential – Based on the K-Factor which indicates the susceptibility of a soil to sheet and rill erosion by water: High (0.48-0.69), Moderate (0.25-0.47), Low (0.02-0.24)

^c Wind Erodibility Potential – Based on wind erodibility group classification: High (1.0-2.0), Moderate (3.0-4.0), Low (≥ 5.0)

^d Steep Slopes - Represents soils with slopes greater than 8 percent.

^e Shallow bedrock – Represents soils with unconsolidated rock 60 inches or less from the surface.

Table C-2 Surface Waterbodies Crossed by the Heartland Greenway Pipeline System Centerlines					
Approximate Milepost	Feature ID	Flow Regime	State Water Quality Classification	Supports Use Designation	Proposed Crossing Length (feet)
Aurora to Hartley					
Brookings County					
7.3	SO1019	Perennial	-	-	25.28
Moody County					
8.9	SP8014	Intermittent	-	-	38.04
10.4	SP9974_DT	IU ^a	-	-	20.68
10.6	SP9973_DT	IU ^a	-	-	117.26
11.6	SP9202	Ephemeral	-	-	4.03
20.7	SO1022	Intermittent	-	-	10.99
22.1	SO1023	Intermittent	-	-	3.19
23.6	SO1025	Perennial	-	-	163.02
29.7	SP9211	Ephemeral	-	-	1
30	SO2009	Perennial	-	-	31.49
Minnehaha County					
38.5	SP9205	Ephemeral	-	-	3.24
46.5	SP9967_DT	IU ^a	-	-	39.37
48.9	SO1027	Perennial	-	-	113.28
50.1	SO1028	Intermittent	-	-	19.23
50.3	SO1029	Intermittent	-	-	31.92
56.6	SP9966_DT	IU ^a	-	-	83.24
56.7	SP9965_DT	IU ^a	-	-	43.28
56.9	SP9964_DT	IU ^a	-	-	24.06
57	SP9963_DT	IU ^a	-	-	28.2
57	SP9962_DT	IU ^a	-	-	68.5
58.8	SP9961_DT	IU ^a	-	-	9.63
58.8	SP9960_DT	IU ^a	-	-	15.01
60.1	SO2011	Intermittent	-	-	3.19
60.6	SO2010	Perennial	-	-	2.77
62.5	SP9959_DT	IU ^a	-	-	43.68
POET Chancellor					
Turner County					
1.4	SP20003	Perennial	-	-	38.76
1.5	SP20004	Ephemeral	-	-	4.07
Lincoln County					

**Table C-2
Surface Waterbodies Crossed by the Heartland Greenway Pipeline System Centerlines**

Approximate Milepost	Feature ID	Flow Regime	State Water Quality Classification	Supports Use Designation	Proposed Crossing Length (feet)
Lincoln	2.5	SP20005	-	-	10.05
Lincoln	3.6	SP20007	-	-	2.61
Lincoln	5.4	SP8013	-	-	1.82
Lincoln	7.8	SP20009	-	-	35.08
Lincoln	7.9	SP20008	-	-	132.52
Lincoln	9.1	SP20010	-	-	6
Lincoln	9.3	SP20012	-	-	3.62
Lincoln	10.9	SP8012	-	-	9.39
Lincoln	18.9	SP20912	-	-	12.9
Lincoln	22.6	SMNR3006	-	-	131.48
POET Hudson					
Lincoln County					
0	SP8001	Ephemeral	-	-	2
4.6	SP8005	Ephemeral	-	-	3.34
5.6	SP8006	Ephemeral	-	-	4.04
8.4	SP8007	Ephemeral	-	-	1.52
10.1	SP9220	Intermittent	-	-	3.36
16.6	SP9808_DT	Intermittent	-	-	5.89
17.2	SP8010	Ephemeral	-	-	2.73
17.6	SP8011	Perennial	-	-	20.2
19.4	SP9806_DT	Perennial	-	-	13.08
19.4	SP9807_DT	Intermittent	-	-	6.9
23.1	SP9213_B	Intermittent	-	-	5
24	SP9810_DT	Intermittent	-	-	5.07

Note: In accordance with the 2020 Navigable Waters Protection Rule, ephemeral streams are not considered waters of the U.S.

IU – Information unavailable

^a Feature identified through desktop analysis and flow regime is unknown.