

Appendix B

Section 5 Tables

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Table B-1. Groundwater Resources Impacts by Route

	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Length of pipeline in Decorah Edge (feet)	18,530		17,507		20,253	
Geologic Sensitivity (acres) ^a						
Very high	15.6	31.2	18.0	36.1	18.7	37.5
High	15.7	31.7	23.7	48.0	23.8	47.9
High moderate	8.9	18.0	9.4	18.8	3.6	7.2
Moderate	13.8	27.5	8.7	17.3	13.0	25.9
Low moderate	9.4	18.8	7.0	14.0	9.4	18.8
Low	16.5	33.2	15.5	31.2	16.5	33.2
Total	79.8	160.5	82.2	165.4	84.9	170.6

Notes:

Perm. = permanent; Const. = construction; Very High= contaminants will almost certainly reach the system in hours to months; High= contaminants will probably reach the system in weeks to years; High moderate = contaminants will reach the system in several years to about a decade; Moderate = contaminants will reach the system in years to decades; Low moderate = contaminants will probably not reach the system for decades; Low = contaminants will require decades to centuries to reach the system; Very low = contaminants will probably require centuries to reach the system. ¹
^a Reported acreages do not include permanent impact to 2.76 acres for the TBS 1D, Proposed TBS, Proposed DRS and temporary impact to 10.0 acres for the temporary storage yard as precise locations have not yet been determined. These facilities would not be sited in areas of high or very high geologic sensitivity to the extent practicable.

Table B-2. Land Requirements of Evaluated Segment Alternatives

Segment Alternative	Route Segments	Pipeline length (feet)	Pipeline length (miles)	Construction Area (acres)	Permanent Right-of-Way (acres)
<i>TBS 1D to Proposed TBS</i>					
AB-1	1P	6,240	1.2	14.5	7.2
AB-2	10	5,443	1.0	12.7	6.3
BC	2P	10,122	1.9	23.4	11.7
CD-1	3P	18,316	3.5	42.2	21.1
CD-2	11	14,485	2.7	33.4	16.7
<i>Proposed TBS to County Road 8</i>					
DE-1	4P	8,109	1.5	18.8	9.3

¹ Meyer, G. 1990. *Sensitivity of Ground-Water Systems to Pollution*. County Atlas Series. Atlas C-5, Plate 6 of 7. Pollution Sensitivity. Minnesota Geological Survey.

Segment Alternative	Route Segments	Pipeline length (feet)	Pipeline length (miles)	Construction Area (acres)	Permanent Right-of-Way (acres)
DE-2	12	6,358	1.2	14.8	7.3
EF-1	5P	10,583	2.0	24.5	12.2
EF-2	14, 16	9,635	1.8	22.5	11.1
EF-3	13, 15, 16	10,544	2.0	24.7	12.2
EG-1	5P, 21	11,829	2.2	27.5	13.7
EG-2	14, 16, 21	10,880	2.1	25.5	12.6
EG-3	14, 19	9,926	1.9	23.1	11.5
EG-4	14, 18, 20	12,332	2.3	28.8	14.3
EG-5	13, 15, 16, 21	11,789	2.2	27.8	13.7
EG-6	13, 15, 19	10,835	2.1	25.4	12.6
EG-7	13, 15, 18, 20	13,241	2.5	31.1	15.4
EG-8	13, 17, 20	14,318	2.7	33.4	16.6
<i>Country Road 8 to 11th Avenue SW</i>					
FH-1	6P, 7P	10,541	2.0	24.6	12.2
FH-2	6P, 23, 24, 25	13,084	2.5	30.7	15.2
FH-3	21, 22, 24, 25	13,140	2.5	30.9	15.3
FI-1	6P, 23, 24	12,040	2.3	28.2	14.0
FI-2	6P, 7P, 25	11,585	2.2	27.1	13.4
FI-3	21, 22, 24	12,097	2.3	28.3	14.0
GH-1	22, 24, 25	11,895	2.3	27.8	13.8
GH-2	21, 6P, 7P	11,787	2.2	27.6	13.7
GI-1	22, 24	10,851	2.1	25.3	12.5
GI-2	21, 6P, 7P, 25	12,830	2.4	30.2	14.9
GI-3	21, 6P, 23, 24	13,286	2.5	31.2	15.4
<i>11th Avenue SW to Proposed DRS</i>					
HJ-1	8P, 9P	9,742	1.8	22.7	11.3
HJ-2	26, 9P	7,956	1.5	18.6	9.2

Segment Alternative	Route Segments	Pipeline length (feet)	Pipeline length (miles)	Construction Area (acres)	Permanent Right-of-Way (acres)
HJ-3	25, 27, 29	12,516	2.4	29.3	14.5
HJ-4	25, 28, 29	11,597	2.2	27.2	13.5
IJ-1	25, 8P, 9P	10,786	2.0	25.3	12.5
IJ-2	25, 26, 9P	9,000	1.7	21.2	10.5
IJ-3	27, 29	11,473	2.2	26.7	13.3
IJ-4	28, 29	10,553	2.0	24.6	12.2

Notes:

TBS = Town Border Station; DRS = District Regulator Station

Table B-3. Land Requirements of Evaluated Routes

	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Permanent Right-of-Way	Const. Area	Permanent Right-of-Way	Const. Area	Permanent Right-of-Way	Const. Area
<i>Land Requirements (acres)</i>						
Pipeline	79.8	160.5	82.2	165.4	84.9	170.6
TBS 1D	0.92	-	0.92	-	0.92	-
Proposed TBS	0.92	-	0.92	-	0.92	-
Proposed DRS	0.92	-	0.92	-	0.92	-
Temporary storage area	-	10.0	-	10.0	-	10.0
Total acreage	82.6	170.5	85.0	175.4	87.7	180.6
Total pipeline length (miles)	13.1	-	13.4	-	13.9	-

Notes:

Const. = construction; TBS = Town Border Station; DRS = District Regulator Station

Table B-4. Geologic Resource Impacts by Route

Resource Category	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Length of pipeline in bedrock less than 5 feet (feet)	16,188		20,525		19,098	
Sinkhole Formation Probability (acres)						
High probability	1.4	2.9	4.3	8.7	-	-
Moderate to high probability	-	-	-	-	-	-
Low to moderate probability	44.4	89.3	48.1	96.8	52.9	106.2
Low probability	34.0	68.3	25.6	59.8	32.1	64.4
Total	79.8	160.5	78.1	165.4	84.9	170.6

Notes:

Perm. = permanent; Const. = construction

Reported acreages do not include permanent impact to 2.76 acres for the Town Border Station (TBS) 1D, Proposed TBS, Proposed District Regulator Station and temporary impact to 10.0 acres for the temporary storage yard as precise locations have not yet been determined.

Table B-5. Geologic Resource Impacts - TBS 1D to Proposed TBS Segment Alternatives

Segment Alternative	AB-1 ^{a,b}		AB-2		BC ^{a,b}		CD-1 ^a		CD-2 ^b	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	1P		10		2P		3P		11	
Length of pipeline in bedrock less than 5 feet (feet)	-		-		-		503		-	
Sinkhole Formation Probability (acres)										
High probability	-	-	-	-	-	-	-	-	-	-
Moderate to high probability	-	-	-	-	-	-	-	-	-	-
Low to moderate probability	-	-	-	-	-	-	13.3	26.6	12.5	25.1
Low probability	7.2	14.5	6.3	12.7	11.7	23.4	7.8	15.6	4.1	8.3
Total	7.2	14.5	6.3	12.7	11.7	23.4	21.1	42.2	16.7	33.4

Notes:

TBS = Town Border Station; Perm. = permanent; Const. = construction

^a Evaluated as part of the Application Preferred and Modified Preferred Routes

^b Evaluated as part of the Application Alternative Route

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Table B-6. Geologic Resource Impacts - Proposed TBS to County Road 8 Segment Alternatives

Segment Alternative	DE-1 ^a		DE-2 ^b		EF-1 ^c		EF-2 ^b		EF-3		EG-1		EG-2		EG-3		EG-4 ^a		EG-5		EG-6		EG-7		EG-8	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	4P		12		5P		14, 16		13, 15, 16		5P, 21		14, 16, 21		14, 19		14, 18, 20		13, 15 16, 21		13, 15, 19		13, 15 18, 20		13, 17, 20	
Length of pipeline in bedrock less than 5 feet (feet)	1,521		277		8,519		6,045		6,880		9,764		7,290		8,623		9,130		8,125		9,459		9,965		8,050	
Sinkhole Formation Probability (acres)																										
High probability	-	-	-	-	-	-	1.4	2.9	1.4	2.9	-	-	1.4	2.9	3.3	6.6	4.3	8.7	1.4	2.9	3.3	6.6	4.3	8.7	4.7	9.5
Moderate to high probability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Low to moderate probability	9.0	18.0	6.4	12.8	12.2	24.5	9.7	19.6	10.8	21.9	13.7	27.5	11.2	22.6	8.2	16.6	10.0	20.1	12.3	24.9	9.3	18.8	11.1	22.4	11.9	23.9
Low probability	0.4	0.8	1.0	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	9.3	18.8	7.3	14.8	12.2	24.5	11.1	22.5	12.2	24.7	13.7	27.5	12.6	25.5	11.5	23.4	14.3	28.8	13.7	27.8	12.6	25.4	15.4	31.1	16.6	33.4

Notes:
TBS = Town Border Station; Perm. = permanent; Const. = construction
^a Included as part of the Application Alternative Route
^b Included as part of the Application Preferred Route
^c Included as part of the Modified Preferred Route

Table B-7. Geologic Resource Impacts - County Road 8 to 11th Avenue SW Segment Alternatives

Segment Alternative	FH-1 ^a		FH-2		FH-3		FI-1		FI-2		FI-3		GH-1 ^b		GH-2		GI-1		GI-2		GI-3	
Resource	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area
Route Segment(s)	6P, 7P		6P, 23, 24, 25		21, 22, 24, 25		6P, 23, 24		6P, 7P, 25		21, 22, 24		22, 24, 25		21, 6P, 7P		22, 24		21, 6P, 7P, 25		21, 6P, 23, 24	
Length of pipeline in bedrock less than 5 feet (feet)	8,138		7,142		9,340		7,142		8,138		9,340		8,095		9,383		8,095		9,383		8,388	
Sinkhole Formation Probability (acres)																						
High probability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moderate to high probability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Low to moderate probability	12.2	24.6	15.2	30.7	15.3	30.9	14.0	28.2	13.4	27.1	14.0	28.3	13.8	27.8	13.7	27.6	12.5	25.3	14.9	30.2	15.4	31.2
Low probability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	12.2	24.6	15.2	30.7	15.3	30.9	14.0	28.2	13.4	27.1	14.0	28.3	13.8	27.8	13.7	27.6	12.5	25.3	14.9	30.2	15.4	31.2

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Application Preferred Route and the Modified Preferred Route
^b Evaluated as part of the Application Alternative Route

Table B-8. Geologic Resource Impacts - 11th Avenue SW to Proposed District Regulator Station Segment Alternatives

Segment Alternative	HJ-1 ^a		HJ-2 ^b		HJ-3		HJ-4		IJ-1		IJ-2		IJ-3		IJ-4	
Resource	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area
Route Segment(s)	8P, 9P		26, 9P		25, 27, 29		25, 28, 29		25, 8P, 9P		25, 26, 9P		27, 29		28, 29	
Length of pipeline in bedrock less than 5 feet (feet)	416		1,502		738		1,448		416		1,502		738		1,448	
Sinkhole Formation Probability (acres)																
High probability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moderate to high probability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Low to moderate probability	6.3	12.6	2.9	5.8	5.8	11.7	5.1	10.3	7.5	15.2	4.1	8.4	4.5	9.1	3.8	7.7
Low probability	5.0	10.1	6.4	12.8	8.7	17.6	8.4	16.9	5.0	10.1	6.4	12.8	8.7	17.6	8.4	16.9
Total	11.3	22.7	9.2	18.6	14.5	29.3	13.5	27.2	12.5	25.3	10.5	21.2	13.3	26.7	12.2	24.6

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Modified Preferred Route.
^b Evaluated as part of the Application Preferred Route and the Application Alternative Route.

Table B-9. Soil Resource Impacts by Route

Resource Category	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
<i>Soils (acres)^a</i>						
Prime farmland	41.9	83.9	45.8	92.4	48.0	96.3
Farmland of statewide importance	12.9	25.7	2.9	25.5	12.3	24.4
Prime farmland if drained	14.2	28.4	10.4	20.9	13.7	27.5
Prime farmland if drained and protected from flooding or not frequently flooded	0.7	1.4	1.1	2.3	0.7	1.4
Not prime farmland	10.1	21.0	12.0	24.4	10.2	21.0
Total	79.8	160.5	82.2	165.4	84.9	170.6
Highly Erodible Land (acres)	6.7	13.9	6.6	13.5	6.1	12.5

Notes:

Perm. = permanent; Const. = construction

^a Reported acreages do not include permanent impact to 2.76 acres for the TBS 1D, Proposed TBS, Proposed DRS and temporary impact to 10.0 acres for the temporary storage yard as precise locations have not yet been determined.

Table B-10. Soil Resource Impacts - TBS 1D to Proposed TBS Segment Alternatives

Segment Alternative	AB-1 ^{a,b}		AB-2		BC ^{a,b}		CD-1 ^a		CD-2 ^b	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	1P		10		2P		3P		11	
Soils (acres)										
Prime farmland	3.8	7.8	4.1	8.2	4.3	8.5	10.7	21.5	8.9	18.1
Farmland of statewide importance	2.7	5.2	0.2	0.5	5.5	11.1	2.4	4.8	3.4	6.7
Prime farmland if drained	-	-	1.5	3.0	0.7	1.4	6.7	13.5	2.9	5.8
Prime farmland if drained and protected from flooding or not frequently flooded	0.7	1.4	0.5	1.0	-	-	-	-	-	-
Not prime farmland	-	-	-	-	1.2	2.5	1.2	2.4	1.4	2.8
Total	7.2	14.5	6.3	12.7	11.7	23.4	21.1	42.2	16.7	33.4
Highly Erodible Land (acres)	-	-	-	-	-	-	-	-	-	-

Notes:

TBS = Town Border Station; Perm. = permanent; Const. = construction

^a Evaluated as part of the Application Preferred and Modified Preferred Routes

^b Evaluated as part of the Application Alternative Route

Table B-11. Soil Resource Impacts - Proposed TBS to County Road 8 Segment Alternatives

Segment Alternative	DE-1 ^a		DE-2 ^b		EF-1 ^c		EF-2 ^b		EF-3		EG-1		EG-2		EG-3		EG-4 ^a		EG-5		EG-6		EG-7		EG-8	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	4P		12		5P		14, 16		13, 15, 16		5P, 21		14, 16, 21		14, 19		14, 18, 20		13, 15 16, 21		13, 15, 19		13, 15 18, 20		13, 17, 20	
Soils (acres)																										
Prime farmland	6.5	13.0	4.9	9.8	9.0	18.0	6.8	13.7	7.1	14.4	10.4	21.0	8.3	16.7	8.9	17.7	11.8	23.8	8.6	17.4	9.2	18.4	12.2	24.4	12.7	25.5
Farmland of statewide importance	-	-	0.2	0.5	0.2	0.4	0.5	1.1	0.5	1.1	0.2	0.4	0.5	1.1	0.1	0.2	0.1	0.2	0.5	1.1	0.1	0.2	0.1	0.2	0.2	0.3
Prime farmland if drained	2.0	3.9	0.8	1.6	-	-	1.1	2.2	1.5	2.9	-	-	1.1	2.2	0.5	1.0	-	-	1.5	2.9	0.9	1.7	0.4	0.7	0.4	0.7
Prime farmland if drained and protected from flooding or not frequently flooded	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Not prime farmland	0.9	1.8	1.4	2.8	3.0	6.1	2.7	5.5	3.0	6.3	3.0	6.1	2.7	5.5	2.1	4.3	2.3	4.9	3.0	6.3	2.5	5.2	2.7	5.7	3.3	6.8
Total	9.3	18.8	7.3	14.8	12.2	24.5	11.1	22.5	12.2	24.7	13.7	27.5	12.6	25.5	11.5	23.1	14.3	28.8	13.7	27.8	12.6	25.4	15.4	31.1	16.6	33.4
Highly Erodible Land (acres)	0.5	1.1	0.8	1.6	3.2	6.6	2,7	5.4	3.0	6.4	2.7	5.5	2.7	5.4	2.1	4.2	2.3	4.7	3.0	6.4	2.4	5.2	2.6	5.7	2.5	5.2

Notes:
TBS = Town Border Station; Perm. = permanent; Const. = construction
^a Included as part of the Application Alternative Route
^b Included as part of the Application Preferred Route
^c Included as part of the Modified Preferred Route

Table B-12. Soil Resource Impacts - County Road 8 to 11th Avenue SW Segment Alternatives

Segment Alternative	FH-1 ^a		FH-2		FH-3		FI-1		FI-2		FI-3		GH-1 ^b		GH-2		GI-1		GI-2		GI-3	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	6P, 7P		6P, 23, 24, 25		21, 22, 24, 25		6P, 23, 24		6P, 7P, 25		21, 22, 24		22, 24, 25		21, 6P, 7P		22, 24		21, 6P, 7P, 25		21, 6P, 23, 24	
Soils (acres)																						
Prime farmland	7.8	15.2	6.9	13.6	8.3	16.9	6.6	13.1	8.0	15.8	8.1	16.3	6.9	13.8	9.2	18.3	6.6	13.2	9.5	18.9	8.1	16.1
Farmland of statewide importance	1.5	3.0	2.7	5.3	1.1	2.2	2.7	5.3	1.5	3.0	1.1	2.2	1.1	2.2	1.5	3.0	1.1	2.2	1.5	3.0	2.7	5.3
Prime farmland if drained	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prime farmland if drained and protected from flooding or not frequently flooded	-	-	0.4	0.9	0.4	0.9	0.4	0.9	-	-	0.4	0.9	0.4	0.9	-	-	0.4	0.9	-	-	0.4	0.9
Not prime farmland	3.0	6.4	5.3	10.9	5.4	11.0	4.3	8.9	3.9	8.4	4.4	9.0	5.4	11.0	3.0	6.4	4.4	9.0	3.9	8.4	4.3	8.9
Total	12.2	24.6	15.2	30.7	15.3	30.9	14.0	28.2	13.4	27.1	14.0	28.3	13.8	27.8	13.7	27.6	12.5	25.3	14.9	30.2	15.4	31.2
Highly Erodible Land (acres)	2.8	6.0	2.8	6.0	3.3	6.7	3.8	7.6	2.8	6.0	3.3	6.7	3.3	6.7	2.8	6.0	3.3	6.7	2.8	6.0	3.8	7.6

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Application Preferred Route and the Modified Preferred Route
^b Evaluated as part of the Application Alternative Route

Table B-13. Soil Resource Impacts - 11th Avenue SW to Proposed District Regulator Station Segment Alternatives

Segment Alternative	HJ-1 ^a		HJ-2 ^b		HJ-3		HJ-4		IJ-1		IJ-2		IJ-3		IJ-4	
Resource	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area
Route Segment(s)	8P, 9P		26, 9P		25, 27, 29		25, 28, 29		25, 8P, 9P		25, 26, 9P		27, 29		28, 29	
Soils (acres)																
Prime farmland	6.1	12.2	3.7	7.4	8.2	16.3	7.9	15.8	6.3	12.8	3.9	8.0	7.9	15.7	7.6	15.3
Farmland of statewide importance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prime farmland if drained	4.3	8.6	4.9	9.7	3.2	6.7	3.3	6.7	4.3	8.6	4.9	9.7	3.2	6.7	3.3	6.7
Prime farmland if drained and protected from flooding or not frequently flooded	-	-	-	-	0.8	1.7	-	-	-	-	-	-	0.8	1.7	-	-
Not prime farmland	0.9	1.9	0.7	1.5	2.3	4.6	2.3	4.7	1.9	3.9	1.7	3.5	1.3	2.6	1.4	2.7
Total	11.3	22.7	9.2	18.6	14.5	29.3	13.5	27.2	12.5	25.3	10.5	21.2	13.3	26.7	12.2	24.6
Highly Erodible Land (acres)	-	-	0.5	0.9	-	-	0.6	1.1	-	-	0.5	0.9	-	-	0.6	1.1

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Modified Preferred Route.
^b Evaluated as part of the Application Preferred Route and the Application Alternative Route.

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Table B-14. Township and City of Rochester Crossing Lengths by Route

Jurisdiction ^a	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Length (miles)	Percent of Route	Length (miles)	Percent of Route	Length (miles)	Percent of Route
Cascade Township	0.1	0.5	0.1	0.5	0.1	0.5
Kalmar Township	2.5	19.3	2.5	18.8	2.5	18.1
Salem Township	4.0	30.4	4.3	31.6	5.0	35.8
Rochester Township	5.0	38.5	3.4	25.6	25.1	35.8
City of Rochester	1.5	11.2	3.2	23.5	1.3	9.1
Total	13.1	100	13.5	100	13.9	100

Notes:

^a Reported acreages do not include permanent impact to 2.76 acres for the Town Border Station (TBS) 1D, Proposed TBS, Proposed District Regulator Station (DRS) and temporary impact to 10.0 acres for the temporary storage yard and additional temporary workspaces as precise locations have not yet been determined. TBS 1D, the Proposed TBS, and the Proposed DRS would be located in Kalmar/Cascade Townships, Salem Township, and Marion Township respectively.

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Table B-15. Township and City of Rochester Crossing Lengths - TBS 1D to Proposed TBS Segment Alternatives

Segment Alternative	AB-1 ^{a,b}		AB-2		BC ^{a,b}		CD-1 ^a		CD-2 ^b	
Resource	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.
Route Segment(s)	1P		10		2P		3P		11	
Jurisdiction										
Cascade Township	0.1	6.0	<0.1	4.1	-	-	-	-	-	-
Kalmar Township	1.1	94.0	1.0	95.9	1.4	77	-	-	-	-
Salem Township	-	-	-	-	0.5	23	3.5	100	2.7	100
Rochester Township	-	-	-	-	-	-	-	-	-	-
City of Rochester	-	-	-	-	-	-	-	-	-	-
Total	1.2	100	1.0	100	1.9	100	3.5	100	2.7	100

Notes:

TBS = Town Border Station; mi = miles; Alt. = alternative

^a Evaluated as part of the Application Preferred and Modified Preferred Routes

^b Evaluated as part of the Application Alternative Route

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Table B-16. Township and City of Rochester Crossing Lengths - Proposed TBS to County Road 8 Segment Alternatives

Segment Alternative	DE-1 ^a		DE-2 ^b		EF-1 ^c		EF-2 ^b		EF-3		EG-1		EG-2		EG-3		EG-4 ^a		EG-5		EG-6		EG-7		EG-8	
Resource	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.
Route Segment(s)	4P		12		5P		14, 16		13, 15, 16		5P, 21		14, 16, 21		14, 19		14, 18, 20		13, 15 16, 21		13, 15, 19		13, 15 18, 20		13, 17, 20	
Jurisdiction																										
Cascade Township	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kalmar Township	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salem Township	1.0	66.6	<0.1	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rochester Township	0.5	33.4	1.2	98.7	2.0	100	1.8	100	2.0	100	2.2	99.1	2.0	99.0	1.9	99.2	2.3	99.4	2.2	99.1	2.0	99.3	2.5	99.4	2.7	99.5
City of Rochester	-	-	-	-	-	-	-	-	-	-	<0.1	0.9	<0.1	1.0	<0.1	0.8	<0.1	0.6	<0.1	0.9	<0.1	0.7	<0.1	0.6	<0.1	0.5
Total	1.5	100.	1.2	100	2.0	100	1.8	100	2.0	100	2.2	100	2.1	100	1.9	100	2.3	100	2.2	100	2.1	100	2.5	100	2.7	100

Notes:
TBS = Town Border Station; mi = miles; Alt. = Alternative
^a Evaluated as part of the Application Alternative Route
^b Evaluated as part of the Application Preferred Route
^c Evaluated as part of the Modified Preferred Route

Table B-17. Township and City of Rochester Crossing Lengths - County Road 8 to 11th Avenue SW Segment Alternatives

Segment Alternative	FH-1 ^a		FH-2		FH-3		FI-1		FI-2		FI-3		GH-1 ^b		GH-2		GI-1		GI-2		GI-3	
Resource	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.
Route Segment(s)	6P, 7P		6P, 23, 24, 25		21, 22, 24, 25		6P, 23, 24		6P, 7P, 25		21, 22, 24		22, 24, 25		21, 6P, 7P		22, 24		21, 6P, 7P, 25		21, 6P, 23, 24	
Jurisdiction																						
Cascade Township	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kalmar Township	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salem Township	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rochester Township	2.0	100	1.9	75.9	0.8	31.8	1.9	82.3	2.0	91.3	0.8	34.3	0.6	25.6	2.2	99.1	0.6	27.7	2.2	91.3	2.1	83.1
City of Rochester	-	-	0.6	24.1	1.7	68.2	0.4	17.7	0.2	8.7	1.5	65.7	1.7	74.4	<0.1	0.9	1.5	72.3	0.2	8.7	0.4	16.9
Total	2.0	100	2.5	100	2.5	100	2.3	100	2.2	100	2.3	100	2.3	100	2.2	100	2.1	100	2.4	100	2.5	100

Notes:
mi= miles; Alt. = Alternative
^a Evaluated as part of the Application Preferred Route and the Modified Preferred Route
^b Evaluated as part of the Application Alternative Route

Table B-18. Township and City of Rochester Crossing Lengths - 11th Avenue SW to Proposed District Regulator Station Segment Alternatives

Segment Alternative	HJ-1 ^a		HJ-2 ^b		HJ-3		HJ-4		IJ-1		IJ-2		IJ-3		IJ-4	
Resource	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.	Length (mi)	Percent of Alt.
Route Segment(s)	8P, 9P		26, 9P		25, 27, 29		25, 28, 29		25, 8P, 9P		25, 26, 9P		27, 29		28, 29	
Jurisdiction																
Cascade Township	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kalmar Township	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salem Township	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rochester Township	0.6	31.0	<0.1	2.5	<0.1	1.6	<0.1	1.8	0.6	28.3	<0.1	2.5	<0.1	1.5	<0.1	1.6
City of Rochester	1.3	69.0	1.5	97.5	2.3	98.4	2.2	98.2	1.5	71.7	1.7	97.5	2.1	98.5	2.0	98.4
Total	1.8	100	1.5	100	2.4	100	2.2	100	2.0	100	1.7	100	2.2	100	2.0	100

Notes:
mi = miles; Alt. = Alternative
^a Evaluated as part of the Modified Preferred Route.
^b Evaluated as part of the Application Preferred Route and the Application Alternative Route.

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Table B-19. City and County Zoning Districts

Olmsted County Zoning Districts		City of Rochester Zoning Districts	
Symbol	District	Symbol	District
A-1, A-2	Agricultural Protection	Performance Districts	
A-3	Agricultural	D	Developing District
A-4	Agricultural Urban Expansion	CDC	Central Development Core
A/RC-AER	Agricultural/Resource Commercial – Aggregate Extraction and Reuse	CN	Core Neighborhood District
A/RC-LILI	Agricultural/Resource Commercial – Land Intensive Low Impact Uses	Established Districts	
ARC	Agricultural Residential Cluster	R-Sa	Mixed Single Family Overlay
RSD	Rural Service Center	R-1	Mixed Single Family
RA	Rural Residential	R-1x	Mixed Single Family Extra
R-1	Low Density Residential	R-2	Low Density Residential
R-2	Mixed Low Density Residential	R-3	Medium Density Residential
RC	Recreational Commercial	R-4	High Density Residential
SC	Commercial Service	B-1	Restricted Commercial
HC	Highway Commercial	B-2	Pedestrian Oriented Restricted Commercial
I	Industrial	B-4	General Commercial
MI	Medical Institutional	B-5	Residential Commercial
Overlay Zoning Districts		M-1	Mixed Commercial-Industrial
FW	Floodway	M-2	Industrial
FFA, FFB	Flood Fringe	M-3	Low Intensity Mixed Commercial-Industrial
FP	Flood Plain	AG	Agricultural
-	Shoreland	MRD	Mixed Redevelopment
DE	Decorah Edge	FF	Flood Fringe
		FW	Floodway
		FP	Flood Prone
		PUD	Planned Unit Development
		SD	Special District
		H	Holding Zone
		I	Interim Zone

Table B-20. Zoning Districts for Each Route^{2,3}

	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
City and County Zoning Districts (acres)^a						
Olmsted County Zoning Districts						
Agricultural/Resource Commercial District - Aggregate Extraction and Reuse (A/RC AER)	0.2	0.4	1.0	2.0	1.0	2.0
Agricultural Protection District (A-1, A-2)	54.1	108.6	55.0	108.4	58.5	116.8
Agricultural District (A-3)	9.3	18.7	5.5	11.0	5.6	11.2
Agricultural Urban Expansion District (A-4)	6.5	13.2	5.0	9.3	9.7	19.5
Sand and Gravel Mining (AgRM)	-	-	2.1	4.5	2.1	4.5
Low Density Residential (R-1)	-	-	-	-	-	-
Rural Residential District (RA)	0.4	0.8	0.4	0.8	0.4	0.8
Special District (other) (SD)	0.4	0.9	-	0.0	-	0.1
City of Rochester Zoning Districts						
General Commercial (B-4)	3.6	7.2	3.6	7.2	3.6	7.2
Mixed Commercial-Industrial (M-1)	3.4	6.9	3.4	6.9	0.8	1.8
Mixed Single Family (R-1)	1.5	3.0	4.5	12.1	0.6	1.1

² Rochester-Olmsted Planning Department (2013) Olmsted County Zoning GIS Mapping. GIS Department. Updated 2013.

³ Rochester-Olmsted Planning Department (2014) City of Rochester Zoning GIS Mapping. GIS Department. Updated 2014.

	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Low Density Residential (R-2)	0.4	0.9	1.7	3.3	2.7	5.6
Medium Density Residential (R-3)	-	-	-	-	-	-
Total	79.8	160.5	82.2	165.4	84.9	170.6

Notes:

Perm. = permanent; Const. = construction

^a Reported acreages do not include permanent impact to 2.76 acres for the TBS 1D, Proposed TBS, Proposed DRS, and temporary impact of 10.0 acres for the temporary storage yard and additional temporary workspaces as precise locations have not yet been determined.

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Table B-21. Zoning Districts - TBS 1D to Proposed TBS Segment Alternatives^{4,5}

Segment Alternative	AB-1 ^{a,b}		AB-2		BC ^{a,b}		CD-1 ^a		CD-2 ^b	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	1P		10		2P		3P		11	
City and County Zoning Districts (acres)										
Olmsted County Zoning Districts										
Agricultural/Resource Commercial District - Aggregate Extraction and Reuse (A/RC AER)	-	-	-	-	-	-	0.1	0.1	0.1	0.1
Agricultural Protection District (A-1, A-2)	6.8	13.6	6.0	12.1	6.3	12.6	21.0	41.9	16.6	33.2
Agricultural District (A-3)	-	-	-	-	5.4	10.8	0.1	0.1	0.1	0.2
Agricultural Urban Expansion District (A-4)	0.4	0.9	0.3	0.6	-	-	-	-	-	-
Sand and Gravel Mining (AgRM)	-	-	-	-	-	-	-	-	-	-
Low Density Residential (R-1)	-	-	-	-	-	-	-	-	-	-
Rural Residential District (RA)	-	-	-	-	-	-	-	-	-	-
Special District (other) (SD)	-	-	-	-	-	-	-	-	-	-
City of Rochester Zoning Districts										
General Commercial (B-4)	-	-	-	-	-	-	-	-	-	-
Mixed Commercial-Industrial (M-1)	-	-	-	-	-	-	-	-	-	-
Mixed Single Family (R-1)	-	-	-	-	-	-	-	-	-	-
Low Density Residential (R-2)	-	-	-	-	-	-	-	-	-	-
Medium Density Residential (R-3)	-	-	-	-	-	-	-	-	-	-

⁴ Rochester-Olmsted Planning Department (2013) Olmsted County Zoning GIS Mapping. GIS Department. Updated 2013.

⁵ Rochester-Olmsted Planning Department (2014) City of Rochester Zoning GIS Mapping. GIS Department. Updated 2014.

Segment Alternative	AB-1 ^{a,b}		AB-2		BC ^{a,b}		CD-1 ^a		CD-2 ^b	
Resource	Perm. Right- of- Way	Const. Area	Perm. Right- of- Way	Const. Area	Perm. Right- of- Way	Const. Area	Perm. Right- of- Way	Const. Area	Perm. Right- of- Way	Const. Area
Total	7.2	14.5	6.3	12.7	11.7	23.4	21.1	42.2	16.7	33.5

Notes:

Perm. = permanent; Const. = construction

^a Evaluated as part of the Application Preferred and Modified Preferred Routes

^b Evaluated as part of the Application Alternative Route

Table B-22. Zoning Districts - Proposed TBS to County Road 8 Segment Alternatives^{6,7}

Segment Alternative	DE-1 ^a		DE-2 ^b		EF-1 ^c		EF-2 ^b		EF-3		EG-1		EG-2		EG-3		EG-4 ^a		EG-5		EG-6		EG-7		EG-8		
Resource	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	Perm. Right-of-	Const. Area	
Route Segment(s)	4P		12		5P		14, 16		13, 15, 16		5P, 21		14, 16, 21		14, 19		14, 18, 20		13, 15 16, 21		13, 15, 19		13, 15 18, 20		13, 17, 20		
City and County Zoning Districts (acres)																											
Olmsted County Zoning Districts																											
Agricultural/Resource Commercial District - Aggregate Extraction and Reuse (A/RC AER)	0.9	1.8	0.1	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Agricultural Protection District (A-1, A-2)	6.4	12.5	2.9	5.9	12.1	24.1	11.1	22.5	12.2	24.8	13.5	27.1	12.6	25.5	11.4	23.1	14.3	28.8	13.7	27.7	12.5	25.3	15.4	31.0	16.5	33.3	
Agricultural District (A-3)	-	-	3.9	7.8	0.1	0.2	-	-	-	-	0.1	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Agricultural Urban Expansion District (A-4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sand and Gravel Mining (AgRM)	2.1	4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rural Residential District (RA)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Low Density Residential (R-1)	-	-	-	-	-	<0.1	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Special District (other) (SD)	-	<0.1	0.4	0.9	-	0.1	-	<0.1	-	<0.1	-	0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1	
City of Rochester Zoning Districts																											
General Commercial (B-4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mixed Commercial-Industrial (M-1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mixed Single Family (R-1)	-	-	-	-	-	-	-	-	-	-	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	
Low Density Residential (R-2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Medium Density Residential (R-3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	9.3	18.8	7.3	14.8	12.2	24.5	11.1	22.5	12.2	24.7	13.7	27.5	12.6	25.5	11.5	23.1	14.3	28.8	13.7	27.8	12.6	25.4	15.4	31.1	16.6	33.4	

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Application Alternative Route
^b Evaluated as part of the Application Preferred Route
^c Evaluated as part of the Modified Preferred Route

⁶ Rochester-Olmsted Planning Department (2013) Olmsted County Zoning GIS Mapping. GIS Department. Updated 2013.
⁷ Rochester-Olmsted Planning Department (2014) City of Rochester Zoning GIS Mapping. GIS Department. Updated 2014.

Table B-23. Zoning Districts - County Road 8 to 11th Avenue SW Segment Alternatives^{8,9}

Segment Alternative	FH-1 ^a		FH-2		FH-3		FI-1		FI-2		FI-3		GH-1b		GH-2		GI-1		GI-2		GI-3	
Resource	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area
Route Segment(s)	6P, 7P		6P, 23, 24, 25		21, 22, 24, 25		6P, 23, 24		6P, 7P, 25		21, 22, 24		22, 24, 25		21, 6P, 7P		22, 24		21, 6P, 7P, 25		21, 6P, 23, 24	
City and County Zoning Districts (acres)																						
Olmsted County Zoning Districts																						
Agricultural/Resource Commercial District - Aggregate Extraction and Reuse (A/RC AER)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Agricultural Protection District (A-1, A-2)	6.0	12.1	6.0	12.1	6.2	10.8	6.0	12.1	6.0	12.1	6.2	10.8	4.7	7.8	7.5	15.1	4.7	7.8	7.5	15.1	7.5	15.1
Agricultural District (A-3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Agricultural Urban Expansion District (A-4)	5.8	11.6	6.7	12.7	4.3	7.7	6.6	12.4	5.9	12.0	4.2	7.4	4.3	7.7	5.8	11.6	4.2	7.4	5.9	12.0	6.6	12.4
Sand and Gravel Mining (AgRM)	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Low Density Residential (R-1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rural Residential District (RA)	0.4	0.8	-	<0.1	0.4	0.8	-	<0.1	0.4	0.8	0.4	0.7	0.4	0.8	0.4	0.8	0.4	0.7	0.4	0.8	-	<0.1
Special District (other) (SD)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
City of Rochester Zoning Districts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
General Commercial (B-4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mixed Commercial-Industrial (M-1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mixed Single Family (R-1)	-	-	1.2	3.5	3.0	9.1	1.2	3.5	-	-	3.0	9.1	3.0	9.0	<0.1	0.1	3.0	9.0	<0.1	0.1	1.2	3.5
Low Density Residential (R-2)	<0.1	0.1	1.3	2.5	1.3	2.5	0.1	0.3	1.2	2.3	0.1	0.3	1.3	2.5	<0.1	0.1	0.1	0.3	1.2	2.3	0.1	0.3
Medium Density Residential (R-3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	12.2	24.6	15.2	30.7	15.3	30.9	14.0	28.2	13.4	27.1	14.0	28.3	13.8	27.8	13.7	27.6	12.5	25.3	14.9	30.2	15.4	31.2

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Application Preferred Route and the Modified Preferred Route
^b Evaluated as part of the Application Alternative Route

⁸ Rochester-Olmsted Planning Department (2013) Olmsted County Zoning GIS Mapping. GIS Department. Updated 2013.
⁹ Rochester-Olmsted Planning Department (2014) City of Rochester Zoning GIS Mapping. GIS Department. Updated 2014.

Table B-24. Zoning Districts - 11th Avenue SW to Proposed District Regulator Station Segment Alternatives^{10,11}

Segment Alternative	HJ-1 ^a		HJ-2 ^b		HJ-3		HJ-4		IJ-1		IJ-2		IJ-3		IJ-4	
Resource	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area
Route Segment(s)	8P, 9P		26, 9P		25, 27, 29		25, 28, 29		25, 8P, 9P		25, 26, 9P		27, 29		28, 29	
City and County Zoning Districts (acres)																
Olmsted County Zoning Districts																
Agricultural/Resource Commercial District - Aggregate Extraction and Reuse (A/RC AER)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Agricultural Protection District (A-1, A-2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Agricultural District (A-3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Agricultural Urban Expansion District (A-4)	3.5	7.0	0.3	0.6	0.3	1.6	0.3	1.6	3.6	7.3	0.4	1.0	0.2	1.3	0.2	1.3
Sand and Gravel Mining (AgRM)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Low Density Residential (R-1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rural Residential District (RA)	-	<0.1	-	-	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	-	-	-
Special District (other) (SD)	-	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
City of Rochester Zoning Districts																
General Commercial (B-4)	3.6	7.2	3.6	7.2	1.8	3.6	<0.1	0.1	3.6	7.2	3.6	7.2	1.8	3.6	<0.1	0.1
Mixed Commercial-Industrial (M-1)	0.8	1.8	3.4	6.9	6.3	12.8	7.1	14.4	0.8	1.8	3.4	6.9	6.3	12.8	7.1	14.4
Mixed Single Family (R-1)	0.6	1.1	1.5	3.0	<0.1	0.1	-	-	0.6	1.1	1.5	3.0	<0.1	0.1	-	-
Low Density Residential (R-2)	2.7	5.5	0.4	0.8	4.8	9.3	4.8	9.3	3.8	7.7	1.5	3.0	3.7	7.1	3.7	7.0
Medium Density Residential (R-3)	-	-	-	-	.1.1	1.7	1.1	1.7	-	-	-	-	1.1	1.7	1.1	1.7
Total	11.3	22.7	9.2	18.6	14.5	29.3	13.5	27.2	12.5	25.3	10.5	21.2	13.3	26.7	12.2	24.6

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Modified Preferred Route.
^b Evaluated as part of the Application Preferred Route and the Application Alternative Route.

¹⁰ Rochester-Olmsted Planning Department (2013) Olmsted County Zoning GIS Mapping. GIS Department. Updated 2013.
¹¹ Rochester-Olmsted Planning Department (2014) City of Rochester Zoning GIS Mapping. GIS Department. Updated 2014.

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Table B-25. Structures Located near Each Route

# of Structures	Building Type	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
		Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Within right-of-way	Residence	-	-	-	-	-	-
	Commercial	-	-	1	1	1	1
	Agricultural	1	1	1	1	2	4
	Other	-	-	-	-	-	-
	Total	1	1	2	2	3	5
Within 50 feet	Residence	-	-	-	1	-	1
	Commercial	-	-	1	1	1-	1
	Agricultural	1	3	3	6	5	6
	Other	-	-	-	-	-	-
	Total	1	3	4	8	6	8
Within 100 feet	Residence	1	3	7	29	2	7
	Commercial	-	1	1	1	1	1
	Agricultural	3	4	8	12	7	11
	Other	-	-	-	-	10	1
	Total	4	8	16	42	20	20
Within 200 feet	Residence	20	24	69	85	27	32
	Commercial	1	3	2	3	4	6
	Agricultural	7	11	31	46	20	27
	Other	-	-	-	-	1	1
	Total	28	38	102	134	52	66

Notes:

Perm. = permanent; Const. = construction

Table B-26. Structures Located within the Associated Facilities' Buffers

Building Type	TBS 1D Buffer	Proposed TBS Buffer	Proposed DRS Buffer
Residence	13	15	16
Commercial	15	4	12
Agricultural	24	45	26
Other	-	1	
Total	39	65	54

Notes:

TBS = Town Border Station; DRS = District Regulation Station

The buildings within the buffers of the associated facilities may include some of the same buildings counted for each of the Routes and listed in Table B-25.

Table B-27. Residences and Commercial Buildings - TBS 1D to New TBS Segment Alternatives

Segment Alternative		AB-1 ^{a,b}		AB-2		BC ^{a,b}		CD-1 ^a		CD-2 ^b	
Resource Type		Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)		1P		10		2P		3P		11	
# of Structures	Building Type										
Within right-of-way	Residence	-	-	-	-	-	-	-	-	-	-
	Commercial	-	-	-	-	-	-	-	-	-	-
	Agricultural	-	-	-	-	-	-	-	-	-	-
	Other	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-
Within 50 Feet	Residence	-	-	-	-	-	-	-	-	-	-
	Commercial	-	-	-	-	-	-	-	-	-	-
	Agricultural	-	-	-	-	-	-	-	-	-	1
	Other	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	1
Within 100 Feet	Residence	-	1	-	-	-	-	-	1	-	1
	Commercial	-	-	-	-	-	-	-	-	-	-
	Agricultural	-	-	-	-	-	-	-	1	1	1
	Other	-	-	-	-	-	-	-	-	-	-
	Total	-	1	-	-	-	-	-	2	1	2
Within 200 Feet	Residence	2	4	-	-	-	-	5	5	1	2
	Commercial	-	-	-	-	-	-	-	-	-	-
	Agricultural	1	2	-	1	-	-	1	2	1	1

Segment Alternative		AB-1 ^{a,b}		AB-2		BC ^{a,b}		CD-1 ^a		CD-2 ^b	
Resource Type		Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area
	Other	-	-	-	-	-	-	-	-	-	-
	Total	3	6	-	1	-	-	6	7	2	3

Notes:

TBS = Town Border Station; Perm. = permanent; Const. = construction

^a Evaluated as part of the Application Preferred, Application Alternative, and Modified Preferred Routes

^b Evaluated as part of the Application Alternative Route

Table B-28. Residences and Commercial Buildings - Proposed TBS to County Road 8 Segment Alternatives

Segment Alternative		DE-1 ^a		DE-2 ^b		EF-1 ^c		EF-2 ^b		EF-3		EG-1		EG-2		EG-3		EG-4 ^a		EG-5		EG-6		EG-7		EG-8	
Resource Type		Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area
Route Segment(s)		4P		12		5P		14, 16		13, 15, 16		5P, 21		14, 16, 21		14, 19		14, 18, 20		13, 15 16, 21		13, 15, 19		13, 15 18, 20		13, 17, 20	
# of Structures	Building Type																										
Within right-of-way	Residence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Commercial	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Agricultural	1	1	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2	2	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Within 50 Feet	Residence	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Commercial	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Agricultural	1	2	-	-	2	3	-	2	-	2	1	3	-	2	-	-	-	1	-	2	-	-	-	1	-	1
	Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	3	4	-	-	2	3	-	2	-	2	1	3	-	2	-	-	-	1	-	2	-	-	-	1	-	1
Within 100 Feet	Residence	1	1	-	-	-	3	-	-	1	1	1	4	1	1	4	5	2	9	2	2	5	6	3	10	2	11
	Commercial	1	1	-	-	-	-	-	1	-	1	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-
	Agricultural	3	5	-	-	3	4	2	2	2	2	3	4	2	2	-	-	1	1	2	2	-	-	1	1	2	2
	Other	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	5	7	-	-	3	8	2	3	3	4	4	9	3	4	4	5	3	10	4	5	5	6	4	11	4	13
Within 200 Feet	Residence	4	4	1	1	8	9	7	8	12	17	10	14	9	13	11	13	22	24	14	22	16	22	27	33	14	17
	Commercial	2	2	-	-	-	1	1	2	1	2	-	1	1	2	-	-	-	-	1	2	-	-	-	-	-	-
	Agricultural	6	7	1	1	11	12	3	3	4	5	12	17	4	8	1	5	7	12	5	10	2	7	8	14	9	15
	Other	-	-	-	-	1	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	12	13	2	2	20	23	11	13	17	24	23	33	14	23	12	18	29	36	20	34	18	29	35	47	23	32

Notes:
TBS = Town Border Station; Perm. = permanent; Const. = construction
^a Included as part of the Application Alternative Route
^b Included as part of the Application Preferred Route
^c Included as part of the Modified Preferred Route

Table B-29. Residences and Commercial Buildings - County Road 8 to 11th Avenue SW Segment Alternatives

Segment Alternative		FH-1 ^a		FH-2		FH-3		FI-1		FI-2		FI-3		GH-1 ^b		GH-2		GI-1		GI-2		GI-3	
Resource Type		Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)		6P, 7P		6P, 23, 24, 25		21, 22, 24, 25		6P, 23, 24		6P, 7P, 25		21, 22, 24		22, 24, 25		21, 6P, 7P		22, 24		21, 6P, 7P, 25		21, 6P, 23, 24	
# of Structures	Building Type																						
Within right-of-way	Residence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Commercial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Agricultural	1	1	-	-	-	-	-	-	1	1	-	-	-	-	1	1	-	-	1	1	-	-
	Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	1	1	-	-	-	-	-	-	1	1	-	-	-	-	1	1	-	-	1	1	-	-
Within 50 Feet	Residence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Commercial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Agricultural	1	1	-	-	1	2	-	-	1	1	1	2	1	2	1	1	1	2	1	1	-	-
	Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	1	1	-	-	1	2	-	-	1	1	1	2	1	2	1	1	1	2	1	1	-	-
Within 100 Feet	Residence	1	1	-	2	5	18	-	1	1	2	5	17	4	17	2	2	4	16	2	3	1	2
	Commercial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Agricultural	1	1	-	1	3	5	-	-	1	2	3	5	3	5	1	1	3	4	1	2	-	-
	Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2	2	-	3	8	23	-	1	2	4	8	22	7	22	3	3	7	20	3	5	1	2
Within 200 Feet	Residence	3	2	15	17	40	52	12	14	6	5	37	49	38	47	5	7	35	44	8	10	14	19
	Commercial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Agricultural	1	3	2	2	17	29	-	-	3	5	15	27	16	24	2	8	14	22	4	10	1	5
	Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	4	5	17	19	57	81	12	14	9	10	52	76	54	71	7	15	49	66	12	20	15	24

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Application Preferred Route and the Modified Preferred Route
^b Evaluated as part of the Application Alternative Route

Table B-30. Residences and Commercial Buildings - 11th Avenue SW to Proposed District Regulator Station Segment Alternatives

Segment Alternative		HJ-1 ^a		HJ-2 ^b		HJ-3		HJ-4		IJ-1		IJ-2		IJ-3		IJ-4	
Resource Type		Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)		8P, 9P		26, 9P		25, 27, 29		25, 28, 29		25, 8P, 9P		25, 26, 9P		27, 29		28, 29	
# of Structures	Building Type																
Within right-of-way	Residence	-	-	-	-	10	15	10	15	-	-	-	-	10	15	10	15
	Commercial	-	-	-	-	-	1	-	1	-	-	-	-	-	1	-	1
	Agricultural	-	-	-	-	-	2	-	2	-	-	-	-	-	2	-	2
	Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	10	18	10	18	-	-	-	-	10	18	10	18
Within 50 Feet	Residence	-	-	-	-	16	16	16	16	-	-	-	-	16	16	16	16
	Commercial	-	-	-	-	2	4	2	5	-	-	-	-	2	4	2	5
	Agricultural	-	-	-	-	4	5	4	5	-	-	-	-	-	5	-	5
	Other	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4	-
	Total	-	-	-	-	22	25	22	26	-	-	-	-	22	25	22	26
Within 100 Feet	Residence	-	-	-	-	16	18	16	18	-	1	-	1	16	17	16	17
	Commercial	-	-	-	-	4	7	5	9	-	-	-	-	4	7	5	9
	Agricultural	-	-	-	-	5	6	5	6	-	1	-	1	5	5	5	5
	Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	3	4	-	-	25	31	26	33	-	2	-	2	25	29	26	31
Within 200 Feet	Residence	2	3	-	1	28	28	28	28	6	7	3	3	25	25	25	25
	Commercial	-	1	-	-	7	7	10	10	2	3	-	1	7	7	10	10
	Agricultural	-	-	-	-	10	10	10	10	2	3	2	2	8	8	8	8
	Other	5	8	-	1	-	-	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	45	45	48	48	10	13	5	6	40	40	43	43

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Application Preferred Route and the Modified Preferred Route
^b Evaluated as part of the Application Alternative Route

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Table B-31. Length of Pipeline Located Parallel to Existing Rights-of-Way for Each Route

Routes	Length of pipeline parallel to existing rights-of-way			Length of pipeline not parallel to existing Rights-of-Way
	Existing Road Right-of-Way	Existing Pipeline Right-of-Way	Existing Electrical Distribution Line Right-of-Way	
Application Preferred Route	29,882 (43%)	8,478 (12%)	3,388 (5%)	27,421 (40%)
Application Alternative Route	42,332 (60%)	18,546 (26%)	3,388 (5%)	6,874 (10%)
Modified Preferred Route	54,294 (74%)	-	3,388 (5%)	15,972 (22%)

Table B-32. Length of Pipeline Located Parallel to Existing Rights-of-Way for Each Segment Alternative

Segment Alternative	Route Segment(s)	Length of Pipeline Parallel to Existing Rights-of-Way (feet)			Length of Pipeline Not Parallel to Existing Rights-of-Way (feet)
		Existing Road Right-of-Way	Existing Pipeline Right-of-Way	Existing Electrical Distribution Line	
TBS 1D to Proposed TBS					
AB-1	1P	6,240 (100%)	-	-	-
AB-2	10	-	5,443 (100%)	-	-
BC	2P	5,181 (51%)	-	3,388 (33%)	1,553 (15%)
CD-1	3P	15,825 (86%)	-	-	2,491 (14%)
CD-2	11	1,637 (11%)	12,848 (89%)	-	-
Proposed TBS to County Road 8					
DE-1	4P	8,109 (100%)	-	-	-
DE-2	12	-	5,710 (90%)	-	648 (10%)
EF-1	5P	10,583 (100%)	-	-	-
EF-2	14, 16	-	2,767 (29%)	-	6,867 (71%)
EF-3	13, 15, 16	2,618 (25%)	-	-	7,926 (75%)
EG-1	5P, 21	11,829 (100%)	-	-	-
EG-2	14, 16, 21	1,245 (11%)	2,767 (25%)	-	6,867 (63%)
EG-3	14, 19	-	2,767 (28%)	-	7,159 (72%)
EG-4	14, 18, 20	6,634 (54%)	5,697 (46%)	-	-

Segment Alternative	Route Segment(s)	Length of Pipeline Parallel to Existing Rights-of-Way (feet)			Length of Pipeline Not Parallel to Existing Rights-of-Way (feet)
		Existing Road Right-of-Way	Existing Pipeline Right-of-Way	Existing Electrical Distribution Line	
EG-5	13, 15, 16, 21	3,863 (33%)	-	-	7,926 (67%)
EG-6	13, 15, 19	2,618 (24%)	-	-	8,217 (76%)
EG-7	13, 15, 18, 20	9,252 (70%)	2,930 (22%)	-	1,059 (8%)
EG-8	13, 17, 20	14,318 (100%)	-	-	-
<i>Country Road 8 to 11th Avenue SW</i>					
FH-1	6P, 7P		-	-	10,541 (100%)
FH-2	6P, 23, 24, 25	5,290 (40%)	-	-	7,794 (60%)
FH-3	21, 22, 24, 25	13,140 (100%)	-	-	-
FI-1	6P, 23, 24	4,247 (35%)	-	-	7,794 (65%)
FI-2	6P, 7P, 25	1,044 (9%)	-	-	10,541 (91%)
FI-3	21, 22, 24	12,097 (100%)	-	-	-
GH-1	22, 24, 25	11,895 (100%)	-	-	-
GH-2	21, 6P, 7P	1,245 (11%)	-	-	10,541 (89%)
GI-1	22, 24	10,851 (100%)	-	-	-
GI-2	21, 6P, 7P, 25	2,289 (18%)	-	-	10,541 (82)
GI-3	21, 6P, 23, 24	5,492 (41%)	-	-	7,794 (59)
<i>11th Avenue SW to Proposed DRS</i>					
HJ-1	8P, 9P	8,355 (86%)	-	-	1,387 (14%)
HJ-2	26, 9P	2,635 (33%)	-	-	5,321 (67%)
HJ-3	25, 27, 29	3,660 (29%)	-	-	8,857 (71%)
HJ-4	25, 28, 29	8,801 (76%)	-	-	2,797 (24%)
IJ-1	25, 8P, 9P	9,399 (87%)	-	-	1,387 (13%)
IJ-2	25, 26, 9P	3,679 (41%)	-	-	5,321 (59%)
IJ-3	27, 29	2,616 (23%)	-	-	8,857 (77%)
IJ-4	28, 29	7,757 (74%)	-	-	2,797 (26%)

Notes:

TBS = Town Border Station; DRS = District Regulator Station

Table B-33. Existing Roads, Railroads, and Pipelines Crossed or Adjacent to Each Route

Name	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Route Segment(s)	Type	Route Segment(s)	Type	Route Segment(s)	Type
60th Street NW	1P	Crossing	1P	Crossing	1P	Crossing
19th Avenue NW	1P	Parallel/ Crossing	1P	Parallel/ Crossing	1P	Parallel/ Crossing
NNG Pipeline	2P	Crossing	2P	Crossing	2P	Crossing
70th Avenue NW	2P	Parallel	2P	Parallel	2P	Parallel
14th Street NW	2P	Crossing	2P	Crossing	2P	Crossing
DM&E Railroad	2P	Crossing	2P	Crossing	2P	Crossing
Trunk Highway 14	2P	Crossing	2P	Crossing	2P	Crossing
70th Avenue SW	2P	Parallel/ Crossing	2P	Parallel/ Crossing	2P	Parallel/ Crossing
CR 34/Country Club Road W	2P	Crossing	2P	Crossing	2P	Crossing
BP Pipeline	2P	Crossing	2P, 11	Crossing/ Parallel	2P	Crossing
70th Avenue SW	3P	Parallel/ Crossing	11	Crossing	3P	Parallel/ Crossing
10th Street SW	3P	Crossing	11	Crossing	3P	Crossing
20th Street SW	3P	Crossing	11	Crossing	3P	Crossing
CR 25/Salem Road SW	3P	Parallel/ Crossing	11	Crossing	3P	Parallel/ Crossing
CR 15	3P	Parallel	-	-	3P	Parallel
60th Avenue SW	3P, 12	Parallel/ Crossing	11, 4P	Parallel/ Crossing	3P, 4P	Parallel/ Crossing
BP Pipeline	12	Parallel	-	-	-	-
40th Street SW	12	Crossing	4P	Parallel	4P, 5P	Parallel/ Crossing
55th Avenue SW	-	-	4P	Crossing	4P	Crossing
BP Pipeline	14, 16	Parallel/ Crossing	14, 18	Parallel/ Crossing	5P	Crossing
50 th Street SW	-	-	20	Parallel/ Crossing	-	-
CR 8/Bamber Valley Road SW	16	Crossing	20	Parallel/ Crossing	5P	Parallel/ Crossing
48th Street SW	-	-	22, 24	Parallel/ Crossing	-	-
48th Street SE	-	-	24	Crossing	-	-
11th Avenue SW	7P	Crossing	24, 25	Parallel/ Crossing	7P, 8P	Parallel/ Crossing
40th Street SW	9P	Parallel/ Crossing	9P	Parallel/ Crossing	8P, 9P	Parallel/ Crossing
U.S. Highway 63/ Broadway Ave	9P	Crossing	9P	Crossing	9P	Crossing
Wood Lake Drive SE	9P	Crossing	9P	Crossing	9P	Crossing

Notes:
NNG = Northern Natural Gas; DM&E = Dakota, Minnesota and Eastern; CR = County Road; BP = British Petroleum

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Table B-34. Existing Roads, Railroads, and Pipelines Crossed or Adjacent to the Segment Alternatives

Segment Alternative	Route Segment	Name	Type
TBS 1D to Proposed TBS			
AB-1	1P	60th Street NW	Crossing
		19th Avenue NW	Parallel/Crossing
AB-2	10	60th Street NW	Crossing
		NNG Pipeline	Parallel
BC	2P	NNG Pipeline	Crossing
		70th Avenue NW	Parallel
		14th Street NW	Crossing
		DM&E Railroad	Crossing
		Trunk Highway 14	Crossing
		70th Avenue SW	Parallel/Crossing
		CR 34/Country Club Road W	Crossing
		BP Pipeline	Crossing
CD-1	3P	70th Avenue SW	Parallel/Crossing
		10th Street SW	Crossing
		20th Street SW	Crossing
		CR 25/Salem Road SW	Parallel/Crossing
		CR 15	Parallel
		60th Avenue SW	Parallel
CD-2	11	70th Avenue SW	Crossing
		BP Pipeline	Parallel
		10th Street SW	Crossing
		20th Street SW	Crossing
		CR 25/Salem Road SW	Crossing
		60th Avenue SW	Parallel
Proposed TBS to County Road 8			
DE-1	4P	60th Avenue SW	Parallel/Crossing
		40th Street SW	Parallel
		55th Avenue SW	Crossing
DE-2	12	60th Avenue SW	Crossing
		BP Pipeline	Parallel

Segment Alternative	Route Segment	Name	Type
		40th Street SW	Crossing
EF-1	5P	BP Pipeline	Crossing
		40th Street SW	Parallel/Crossing
		CR 8/Bamber Valley Road SW	Parallel/Crossing
EF-2	14	BP Pipeline	Parallel
	16	BP Pipeline	Crossing
		CR 8/Bamber Valley Road SW	Crossing
EF-3	13	55th Avenue SW	Parallel
	15	-	-
	16	BP Pipeline	Crossing
		CR 8/Bamber Valley Road SW	Crossing
EG-1	5P	BP Pipeline	Crossing
		40th Street SW	Parallel/Crossing
		CR 8/Bamber Valley Road SW	Parallel/Crossing
	21	CR 8/Bamber Valley Road SW	Parallel
EG-2	14	BP Pipeline	Parallel
	16	BP Pipeline	Crossing
		CR 8/Bamber Valley Road SW	Crossing
	21	CR 8/Bamber Valley Road SW	Parallel
EG-3	14	BP Pipeline	Parallel
	19	BP Pipeline	Crossing
		CR 8/Bamber Valley Road SW	Crossing
EG-4	14	BP Pipeline	Parallel
	18	BP Pipeline	Crossing
	20	50th Street SW	Parallel/Crossing
		CR 8/Bamber Valley Road SW	Parallel/Crossing
EG-5	13	55th Avenue SW	Parallel
	15	-	-
	16	BP Pipeline	Crossing
	21	CR 8/Bamber Valley Road SW	Crossing
		CR 8/Bamber Valley Road SW	Parallel
EG-6	13	55th Avenue SW	Parallel
	15	-	-

Segment Alternative	Route Segment	Name	Type
	19	BP Pipeline	Crossing
		CR 8/Bamber Valley Road SW	Crossing
EG-7	13	55th Avenue SW	Parallel
	15	-	-
	18	BP Pipeline	Crossing
	20	50th Street SW	Parallel/Crossing
		CR 8/Bamber Valley Road SW	Parallel/Crossing
EG-8	13	55th Avenue SW	Parallel
	17	55th Avenue SW	Parallel/Crossing
		50th Street SW	Parallel
		BP Pipeline	Crossing
	20	50th Street SW	Parallel/Crossing
		CR 8/Bamber Valley Road SW	Parallel/Crossing
Country Road 8 to 11th Avenue SW			
FH-1	6P	-	-
	7P	11th Avenue SW	Crossing
FH-2	6P	-	-
	23	-	-
	24	48th Street SW	Parallel/Crossing
		11th Avenue SW	Crossing
	25	11th Avenue SW	Parallel
FH-3	21	CR 8/Bamber Valley Road SW	Parallel
	22	48th Street SW	Parallel/Crossing
	24	48th Street SW	Parallel/Crossing
		11th Avenue SW	Crossing
	25	11th Avenue SW	Parallel
FI-1	6P	-	-
	23	-	-
	24	48th Street SW	Parallel/Crossing
		11th Avenue SW	Crossing
FI-2	6P	-	-
	7P	11th Avenue SW	Crossing
	25	11th Avenue SW	Parallel

Segment Alternative	Route Segment	Name	Type
FI-3	21	CR 8/Bamber Valley Road SW	Parallel
	22	48th Street SW	Parallel/Crossing
		48th Street SW	Parallel/Crossing
	24	11th Avenue SW	Crossing
GH-1	22	48th Street SW	Parallel/Crossing
		48th Street SW	Parallel/Crossing
	24	11th Avenue SW	Crossing
	25	11th Avenue SW	Parallel
GH-2	21	CR 8/Bamber Valley Road SW	Parallel
	6P	-	-
	7P	11th Avenue SW	Crossing
GI-1	22	48th Street SW	Parallel/Crossing
		48th Street SW	Parallel/Crossing
	24	11th Avenue SW	Crossing
GI-2	21	CR 8/Bamber Valley Road SW	Parallel
	6P	-	-
	7P	11th Avenue SW	Crossing
	25	11th Avenue SW	Parallel
GI-3	21	CR 8/Bamber Valley Road SW	Parallel
	6P	-	-
	23	-	-
		48th Street SW	Parallel/Crossing
	24	11th Avenue SW	Crossing
<i>11th Avenue SW to Proposed DRS</i>			
HJ-1		11th Avenue SW	Parallel
	8P	40th Street SW	Parallel
		40th Street SW	Parallel/Crossing
		U.S. Highway 63/Broadway Ave	Crossing
	9P	Wood Lake Drive SE	Crossing
HJ-2	26	-	-
	9P	40th Street SW	Parallel/Crossing

Segment Alternative	Route Segment	Name	Type
HJ-3		U.S. Highway 63/Broadway Ave	Crossing
		Wood Lake Drive SE	Crossing
	25	11th Avenue SW	Parallel
	27	48th Street SW	Parallel/Crossing
		Commercial Drive SW	Parallel/Crossing
		U.S. Highway 63/Broadway Ave	Parallel/Crossing
	29	Maine Avenue SE	Crossing
		St. Bridget Road SE	Crossing/Parallel
		45th Street SE	Parallel
		Fern Avenue SE	Crossing
HJ-4	25	11th Avenue SW	Parallel
	28	48th Street SW	Parallel
		Commercial Drive SW	Crossing
		U.S. Highway 63/Broadway Ave	Crossing
		Maine Avenue SE	Crossing
	29	St. Bridget Road SE	Crossing/Parallel
		45th Street SE	Parallel
		Fern Avenue SE	Crossing
IJ-1	25	11th Avenue SW	Parallel
	8P	11th Avenue SW	Parallel
		40th Street SW	Parallel
	9P	40th Street SW	Parallel/Crossing
		U.S. Highway 63/Broadway Ave	Crossing
		Wood Lake Drive SE	Crossing
IJ-2	25	11th Avenue SW	Parallel
	26	-	-
	9P	40th Street SW	Parallel/Crossing
		U.S. Highway 63/Broadway Ave	Crossing
		Wood Lake Drive SE	Crossing

Segment Alternative	Route Segment	Name	Type
IJ-3	27	48th Street SW	Parallel/Crossing
		Commercial Drive SW	Parallel/Crossing
		U.S. Highway 63/Broadway Ave	Parallel/Crossing
		Maine Avenue SE	Crossing
	29	St. Bridget Road SE	Crossing/Parallel
		45th Street SE	Parallel
		Fern Avenue SE	Crossing
IJ-4	28	48th Street SW	Parallel
		Commercial Drive SW	Crossing
		U.S. Highway 63/Broadway Ave	Crossing
		Maine Avenue SE	Crossing
	29	St. Bridget Road SE	Crossing/Parallel
		45th Street SE	Parallel
		Fern Avenue SE	Crossing

Notes:

TBS = Town Border Station; NNG = Northern Natural Gas; DM&E = Dakota, Minnesota and Eastern; CR = County Road; BP = British Petroleum; DRS = District Regulator Station

Table B-35. MPCA Listing of Potentially Contaminated Sites within 500 feet of the Project Area¹²

Name	Address	Minnesota Pollution Control Agency ID	Activity	Segment	Distance (ft)	Risk Ranking
MERC Rochester 1D TBS	1836 NW 60th Ave, Rochester	MNS 000176628	Hazardous Waste, Small to Minimal QG	10	123	Low
				1P	147	Low
L & S Services	303 40th St SW, Rochester	PW 5103028481	Hazardous Waste, Small to Minimal QG	8P	157	Low
				26	290	Low
				9P	292	Low
Health East Transportation	303 C 40th St SW, Rochester	MNR 000061812	Hazardous Waste, Small to Minimal QG	8P	157	Low
				26	290	Low
				9P	292	Low
Donovan Bodyworks	3701 60th Ave SW, Rochester	MND 985686518	Hazardous Waste, Small to Minimal QG	4P	47	Low
Willow Creek Golf Course	1700 48th St SW, Rochester	Multiple Activities Tank Site- 4906 Generator 108506	Hazardous Waste, Small to Minimal QG, Active Tank Site (AST), and removed USTs	24	117	Medium
Drain Master Plumbing	4011 11th Ave SW, Rochester	MND 985694694	Hazardous Waste, Small to Minimal QG	8P	180	Low
Elcor Construction Inc.	5000 Saint Bridget Rd SE, Rochester	Multiple Activities	Hazardous Waste, Small to Minimal QG	TBS 1D	Inside Buffer Area	Low
Elcor Construction Quarry	5000 Saint Bridget Rd SE, Rochester	Multiple Activities Leak Site- 16969	Inactive Tank Site (removed USTs) and Closed Leak Site (2008)	TBS 1D	Inside Buffer Area	Medium
Envoy	Rochester International Airport, Rochester	Multiple Activities	Hazardous Waste, Small to Minimal QG	16	294	Low

¹² Minnesota Pollution Control Agency (2016) "What's In My Neighborhood?" Database queried on June 24, 2016.

Name	Address	Minnesota Pollution Control Agency ID	Activity	Segment	Distance (ft)	Risk Ranking
Evers Carl	1035 40th St SW, Rochester	MNR 000018234	Hazardous Waste, Small to Minimal QG	8P	128	Low
Former Hadley Valley School	1295 48th St NE, Rochester	20797	Inactive Tank Site (removed USTs)	24	73	Medium
Milestone Materials Donovan Pit	3105 60th Ave SW, Rochester	126226	Active Tank Site (AST)	3P	44	Medium
				11	44	Medium
				12	343	Medium
				4P	346	Medium
				Proposed TBS	Inside Buffer Area	Medium
Northwest Airlines - Rochester	Rochester International Airport, Rochester	Multiple Activities	Hazardous Waste, Small to Minimal QG, and Closed Leak Site (1998)	16	294	Medium
RDO Equipment Co - Rochester	1328 60th Ave NW, Rochester	MND 980901326	Hazardous Waste, Small to Minimal QG	TBS 1D	Inside Buffer Area	Low
Superior Mechanical	1244 60th Ave NW, Rochester	MNR 000078154	Hazardous Waste, Small to Minimal QG	TBS 1D	Inside Buffer Area	Low
Township of Rochester	4111 11th Ave SW, Rochester	MNR 000066696	Hazardous Waste, Small to Minimal QG	8P	124	Low
Veit Disposal Systems	5920 15th St NW, Rochester	SW516	Landfill, Open	TBS1D	Inside Buffer Area	High
Veit Disposal Systems Inc.	5920 15th St NW, Rochester	Multiple Activities Tank Site- 122920 A00002183	Hazardous Waste, Small to Minimal QG, and Active Tank Site (AST)	TBS 1D	Inside Buffer Area	Medium

Notes:

TBS= Town Border Station; QG = Quantity Generator, AST=aboveground storage tank; UST= underground storage tank.

Table B-36. Surface Water Resources for Each Route

Resources	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Number of waterbody crossings	5 ^b	-	5 ^b	-	5	-
<i>Wetlands (acres)^a</i>						
PEM	2.0	3.7	2.6	5.0	2.3	4.5
PFO, PSS	0.1	0.2	0.1	0.1	0.4	0.9
Total	2.1	3.9	2.6	5.1	2.8	5.4

Notes:

Perm. = permanent; Const. = construction; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine shrub

^a Reported acreages do not include permanent impact to 2.76 acres for the TBS 1D, Proposed TBS, Proposed DRS and temporary impact to 10.0 acres for the temporary storage yard as precise locations have not yet been determined. These facilities would not be sited in wetlands or waterbodies.

^b include crossing of Willow Creek in location not adjacent to existing road/pipeline rights-of-way.

Table B-37. Decorah Edge and Groundwater Sensitivity - TBS 1D to Proposed TBS Segment Alternative

Segment Alternative	AB-1 ^{a,b}		AB-2		BC		CD-1 ^a		CD-2 ^b	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	1P		10		2P		3P		11	
Length of pipeline in Decorah Edge (feet)	-		-		-		11,983.1		8,235.1	
<i>Groundwater Sensitivity (acres)^c</i>										
Very high	-	-	-	-	-	-	-	-	-	-
High	-	-	-	-	-	-	0.6	1.2	2.4	4.8
High moderate	-	-	-	-	-	-	2.6	5.1	4.1	8.3
Moderate	-	-	-	-	-	-	11.3	22.5	6.9	13.9
Low moderate	4.7	9.5	6.3	12.6	1.8	3.6	2.4	4.8	-	-
Low	2.5	4.9	0.0	0.1	9.8	19.8	4.2	8.5	3.2	6.5

Segment Alternative	AB-1 ^{a,b}		AB-2		BC		CD-1 ^a		CD-2 ^b	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Total	7.2	14.5	6.3	12.7	11.7	23.4	21.1	42.2	16.7	33.4
Number of waterbody crossings	1	-	2	-	1	-	2	-	2	-
<i>Wetlands (acres)</i>										
PEM	-	-	-	-	-	-	0.4	0.8	0.8	1.6
PFO, PSS	-	-	-	-	-	-	-	-	-	-
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	0.8	1.6

Notes:

Perm. = permanent; Const. = Construction; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine shrub

^a Evaluated as part of the Application Preferred and Modified Preferred Routes

^b Evaluated as part of the Application Alternative Route

^c Very high = contaminants will almost certainly reach the system in hours to months; High = contaminants will probably reach the system in weeks to years; High moderate = contaminants will reach the system in several years to about a decade; Moderate = contaminants will reach the system in years to decades; Low moderate = contaminants will probably not reach the system for decades; Low = contaminants will require decades to centuries to reach the system.

Table B-38. Decorah Edge and Groundwater Sensitivity - Proposed TBS to County Road 8 Segment Alternatives

Segment Alternative	DE-1 ^a		DE-2 ^b		EF-1 ^c		EF-2 ^b		EF-3		EG-1		EG-2		EG-3		EG-4 ^a		EG-5		EG-6		EG-7		EG-8		
Resource	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	
Route Segment(s)	4P		12		5P		14, 16		13, 15, 16		5P, 21		14, 16, 21		14, 19		14, 18, 20		13, 15 16, 21		13, 15, 19		13, 15 18, 20		13, 17, 20		
Length of pipeline in Decorah Edge (feet)	3,677		3,186		-		-		-		-		-		-		-		-		-		-		2,103		
Groundwater Sensitivity (acres) ^d																											
Very high	0.3	0.6	-	-	8.4	16.9	5.7	11.2	7.3	14.5	9.9	20.0	7.1	14.2	7.9	15.9	9.9	19.9	8.8	17.6	9.6	19.3	11.5	23.2	8.7	17.7	
High	7.4	14.8	4.8	9.8	3.3	6.7	0.3	0.7	0.3	0.7	3.3	6.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.7	1.5	
High moderate	-	-	-	-	0.4	0.8	5.2	10.6	4.6	9.5	0.4	0.8	5.2	10.6	3.2	6.5	4.1	8.2	4.6	9.5	2.7	5.5	3.5	7.2	5.5	11.0	
Moderate	1.7	3.4	2.5	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6	3.1	
Low moderate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	9.3	18.8	7.3	14.8	12.2	24.5	11.1	22.5	12.2	24.7	13.7	27.5	12.6	25.5	11.5	23.1	14.3	28.8	13.7	27.8	12.6	25.4	15.4	31.1	16.6	33.4	
Number of waterbody crossings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wetlands (acres)																											
PEM	0.3	0.7	0.2	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PFO, PSS	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	0.3	0.7	0.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Notes:
Perm. = permanent; Const. = construction; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine shrub
^a Included as part of the Application Alternative Route
^b Included as part of the Application Preferred Route
^c Included as part of the Modified Preferred Route
^d Very high = contaminants will almost certainly reach the system in hours to months; High = contaminants will probably reach the system in weeks to years; High moderate = contaminants will reach the system in several years to about a decade; Moderate = contaminants will reach the system in years to decades; Low moderate = contaminants will probably not reach the system for decades; Low = contaminants will require decades to centuries to reach the system.

Table B-39. Decorah Edge and Groundwater Sensitivity - County Road 8 to 11th Avenue SW Segment Alternatives

Segment Alternative	FH-1 ^a		FH-2		FH-3		FI-1		FI-2		FI-3		GH-1 ^b		GH-2		GI-1		GI-2		GI-3	
Resource	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area
Route Segment(s)	6P, 7P		6P, 23, 24, 25		21, 22, 24, 25		6P, 23, 24		6P, 7P, 25		21, 22, 24		22, 24, 25		21, 6P, 7P		22, 24		21, 6P, 7P, 25		21, 6P, 23, 24	
Length of pipeline in Decorah Edge (feet)	463		2,696		2,696		1,653		1,507		1,653		2,696		463		1,653		1,507		1,653	
Groundwater Sensitivity (acres) ^d																						
Very high	9.9	20.0	9.8	19.6	9.3	18.6	9.8	19.6	9.9	20.0	9.3	18.6	7.8	15.6	11.4	23.0	7.8	15.6	11.4	23.0	11.3	22.7
High	2.3	4.6	5.4	11.1	6.0	12.2	4.2	8.5	3.5	7.1	4.8	9.6	6.0	12.2	2.3	4.6	4.8	9.6	3.5	7.1	4.2	8.5
High moderate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moderate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Low moderate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	12.2	24.6	15.2	30.7	15.3	30.9	14.0	28.2	13.4	27.1	14.0	28.3	13.8	27.8	13.7	27.6	12.5	25.3	14.9	30.2	15.4	31.2
Number of waterbody crossings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wetlands (acres)																						
PEM	-	-	-	-	-	0.1	-	-	-	-	-	0.1	-	0.1	-	-	-	0.1	-	-	-	-
PFO, PSS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0

Notes:
Perm. = permanent; Const. = Construction; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine shrub
^a Evaluated as part of the Application Preferred Route and the Modified Preferred Route
^b Evaluated as part of the Application Alternative Route
^d Very high = contaminants will almost certainly reach the system in hours to months; High = contaminants will probably reach the system in weeks to years; High moderate = contaminants will reach the system in several years to about a decade; Moderate = contaminants will reach the system in years to decades; Low moderate = contaminants will probably not reach the system for decades; Low = contaminants will require decades to centuries to reach the system.

Table B-40. Decorah Edge and Groundwater Sensitivity - 11th Avenue SW to Proposed District Regulator Station Segment Alternatives

Segment Alternative	HJ-1 ^a		HJ-2 ^b		HJ-3		HJ-4		IJ-1		IJ-2		IJ-3		IJ-4	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	8P, 9P		26, 9P		25, 27, 29		25, 28, 29		25, 8P, 9P		25, 26, 9P		27, 29		28, 29	
Length of pipeline in Decorah Edge Overlay (feet)	4,129		2,898		9,540		8,621		5,173		3,942		8,496		7,577	
Groundwater Sensitivity (acres) ^d																
Very high	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
High	10.2	20.6	7.7	15.5	4.0	8.1	3.3	6.7	11.5	23.2	8.9	18.0	2.7	5.6	2.0	4.1
High moderate	0.6	1.3	1.2	2.3	3.1	6.1	2.8	5.5	0.6	1.3	1.2	2.3	3.1	6.1	2.8	5.5
Moderate	-	-	-	-	0.8	1.6	0.8	1.6	-	-	-	-	0.8	1.6	0.8	1.6
Low moderate	0.4	0.8	0.4	0.8	6.0	12.2	6.0	12.2	0.4	0.8	0.4	0.8	6.0	12.2	6.0	12.2
Low	-	-	-	-	0.6	1.2	0.6	1.2	-	-	-	-	0.6	1.2	0.6	1.2
Total	11.3	22.7	9.2	18.6	14.5	29.3	13.5	27.2	12.5	25.3	10.5	21.2	13.3	26.7	12.2	24.6
Number of waterbody crossings	1 ^c	-	1	-	1	-	1	-	1	-	1 ^c	-	1	-	1	-
Wetlands (acres)																
PEM	1.7	2.9	1.4	2.6	0.1	0.3	0.1	0.3	1.7	2.9	1.4	2.6	0.1	0.3	0.1	0.3
PFO, PSS	0.4	0.9	0.1	0.1	0.1	0.4	-	-	0.4	0.9	0.1	0.1	0.1	0.4	-	-
Total	2.1	3.8	1.5	2.7	0.2	0.7	0.1	0.3	2.1	3.8	1.5	2.7	0.2	0.7	0.1	0.3

Notes:
Perm. = permanent; Const. = Construction; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine shrub
^a Evaluated as part of the Modified Preferred Route.
^b Evaluated as part of the Application Preferred Route and the Application Alternative Route.
^c Waterbody crossing location not adjacent to existing road or pipeline rights-of-way
^d Very high = contaminants will almost certainly reach the system in hours to months; High = contaminants will probably reach the system in weeks to years; High moderate = contaminants will reach the system in several years to about a decade; Moderate = contaminants will reach the system in years to decades; Low moderate = contaminants will probably not reach the system for decades; Low = contaminants will require decades to centuries to reach the system.

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Table B-41. National Wetlands Inventory Wetlands within the Project Area¹³

Wetland Type	Area Within Project Area (acres)
Emergent wetland (PEM)	39.1
Forested, scrub/shrub wetland (PFO, PSS)	23.2
Freshwater pond (PUB)	0.7
Total	63

Notes:

PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine shrub; PUB = palustrine unconsolidated bottom

Table B-42. MLCCS Land Cover Types

MLCCS Land Cover Type
Agricultural Land
Maintained Tall Grasses
Tree Plantation
Forest
Wetland Forest
Shrubland
Wetland Emergent Vegetation
Short Grasses
Tall Grasses
Dry Tall Grasses
Open Water
Impervious Lands ^a

Notes:

MLCCS = Minnesota Land Cover Classification System

^a Over 5% covered by impervious surfaces.

Table B-43. Native Plant Communities within 1 Mile of Project Area¹⁴

NHIS Site Name and/or Database Source	Associated Native Community Type(s) (State Rank ^a)	Location	Overlaps Project Area?	Biodiversity
Meadow Crossing - MCBS	Dry Bedrock Bluff Prairie (Southern) (S3)	Sections 17, 18, 19, and 20 of Rochester Township (T106, R14)	No	Moderate

¹³ Ibid.

¹⁴ DNR. June 22, 2016. *Natural Heritage Information System*. Minnesota Department of Natural Resources, Division of Ecological and Water Resources.

NHIS Site Name and/or Database Source	Associated Native Community Type(s) (State Rank ^a)	Location	Overlaps Project Area?	Biodiversity
Mayowood - MCBS	Sugar Maple - Basswood - Red Oak - (Blue Beech) Forest (S1)	Sections 7, 8, 17 and 18, of Rochester Township (T106, R14)	No	High
Salem 14 - MCBS	-	Section 14 of Salem Township (T106, R15)	Yes	Moderate
Salem 25 - MCBS	Elm - Ash - Basswood Terrace Forest (S2)	Sections 24 and 25 of Salem Township (T106, R15)	No	Moderate
Rochester 16, 21 Woods - MCBS	-	Sections 15, 16, 21 and 22 of Rochester Township (T106, R14)	No	Moderate
Rochester 22 - MCBS Rochester 23 (Calcareous fen)	Calcareous Fen (Southeastern) (S1)	Section 22 and 23 of Rochester Township (T106, R14)	No	Moderate
Rochester 24 - MCBS	Shrubby wetland complex	Section 24 of Rochester Township (T106, R14)	Yes	Moderate
Rochester 31 - MCBS	Dry Bedrock Bluff Prairie (Southern) (S3)	Section 31 of Rochester Township (T016, R14)	Yes	Moderate
Marion 30 - MCBS	Calcareous Fen (Southeastern) (S1) Seepage Meadow/Carr, Tussock Sedge Subtype (S3) Wet Seepage Prairie (Southern) (S1)	Section 30 of Marion Township (T106, R 13)	Yes	High
Gamehaven Boyscout Ranch - MCBS	Dry Bedrock Bluff Prairie (Southern)(S3)	Section 30 and 31 of Marion Township (106 Range 13) and Section 36 of Rochester Township (106 R 14)	No	Moderate
Railroad Rights-of-Way Prairie - MBS		Sections 35 and 36 of Kalmar Township (T107 R 15)	Yes	-

Note:

NHIS = Natural Heritage Information System; MCBS = Minnesota County Biological Survey

^a S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable to Extirpation; S4 = uncommon but not rare; S5 = not ranked.

Table B-44. MLCCS Land Cover Types by Route¹⁵

	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
<i>MLCCS Land Cover Type (acres)^a</i>						
Agricultural Land	43.1	77.3	45.6	81.7	45.4	79.1
Maintained Tall Grasses	1.5	3.1	1.5	3.1	0.4	0.8
Tree Plantation	-	-	0.1	0.1	0.1	0.2
Forest	3.4	8.5	7.2	13.2	5.4	10.6
Wetland Forest	-	-	0.2	0.4	0.2	0.4
Shrubland	0.1	0.2	0.2	0.3	0.1	0.2
Wetland Emergent Vegetation	0.7	1.3	1.0	2.1	0.6	1.2
Short Grasses	-	-	0.3	0.6	-	-
Tall Grasses	8.3	16.3	8.7	16.1	11.6	21.7
Dry Tall Grasses	17.4	31.5	8.6	15.1	10.4	17.0
Open Water	0.1	0.1	0.1	0.1	0.1	0.1
Impervious Lands	5.3	22.3	8.7	32.5	10.6	39.3
Total	79.8	160.5	82.2	165.4	84.9	170.6

Notes:

MLCCS = Minnesota Land Cover Classification System; Perm = permanent; Const. = construction

^a Reported acreages do not include permanent impact to 2.76 acres for the TBS 1D, Proposed TBS, Proposed DRS, and temporary impact of 10.0 acres for the temporary storage yard and additional temporary workspaces as precise locations have not yet been determined.

¹⁵ DNR. December 17, 2015. *Minnesota Land Cover Classification System land cover data set*. Minnesota Department of Natural Resources.

Table B-45. MLCCS Land Cover Types - TBS 1D to Proposed TBS Segment Alternatives¹⁶

Segment Alternative	AB-1 ^{a,b}		AB-2		BC ^{a,b}		CD-1 ^a		CD-2 ^b	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	1P		10		2P		3P		11	
MLCCS Land Cover Type (acres)										
Agricultural Land	6.3	10.2	5.2	10.5	8.4	14.9	12.4	20.6	13.2	25.7
Maintained Tall Grasses	-	-	-	-	-	-	-	-	-	-
Tree Plantation	-	-	-	-	-	-	-	-	-	-
Forest	-	-	-	-	-	0.3	0.2	0.4	0.7	1.4
Wetland Forest	-	-	-	-	-	-	-	-	-	-
Shrubland	-	-	-	-	-	0.1	0.1	0.1	0.1	0.3
Wetland Emergent Vegetation	-	-	-	-	-	-	0.1	0.3	-	-
Short Grasses	-	-	-	-	-	-	-	-	-	-
Tall Grasses	-	-	-	-	0.1	0.6	0.8	1.4	1.5	3.1
Dry Tall Grasses	0.2	0.3	0.9	1.8	2.0	3.3	5.4	8.8	0.3	0.6
Open Water	-	-	-	-	-	-	0.1	0.1	0.1	0.1
Impervious Lands	0.7	4.0	0.1	0.4	1.1	4.3	1.9	10.5	0.7	2.3
Total	7.2	14.5	6.3	12.7	11.7	23.4	21.1	42.2	16.7	33.5

Notes:

MLCCS = Minnesota Land Cover Classification System; Perm. = permanent; Const. = construction

^a Evaluated as part of the Application Preferred and Modified Preferred Routes

^b Evaluated as part of the Application Alternative Route

¹⁶ DNR. December 17, 2015. *Minnesota Land Cover Classification System land cover data set*. Minnesota Department of Natural Resources.

Table B-46. MLCCS Land Cover Types - Proposed TBS to County Road 8 Segment Alternatives¹⁷

Segment Alternative	DE-1 ^a		DE-2 ^b		EF-1 ^c		EF-2 ^b		EF-3		EG-1		EG-2		EG-3		EG-4 ^a		EG-5		EG-6		EG-7		EG-8	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	4P		12		5P		14, 16		13, 15, 16		5P, 21		14, 16, 21		14, 19		14, 18, 20		13, 15 16, 21		13, 15, 19		13, 15 18, 20		13, 17, 20	
MLCCS Land Cover Type (acres)																										
Agricultural Land	5.4	8.9	0.6	1.4	3.6	6.0	6.7	12.8	5.9	11.1	4.0	6.7	7.1	13.5	5.5	11.9	6.9	12.3	6.3	11.8	4.7	10.1	6.1	10.5	5.2	9.5
Maintained Tall Grasses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tree Plantation	0.1	0.1	-	-	<0.1	0.1	-	-	-	-	0.1	0.1	<0.1	<0.1	-	-	-	-	<0.1	<0.1	-	-	-	-	-	<0.1
Forest	1.3	2.2	0.6	1.4	1.1	1.8	1.4	3.4	2.8	6.2	1.2	2.1	1.6	3.7	2.2	4.0	1.5	3.1	3.0	6.5	3.6	6.8	2.9	5.8	0.7	2.5
Wetland Forest	0.2	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shrubland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wetland Emergent Vegetation	<0.1	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Short Grasses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tall Grasses	0.1	0.2	-	-	3.5	5.8	0.7	1.2	0.7	1.2	4.1	6.6	1.2	2.0	0.1	0.2	0.6	1.3	1.2	2.0	0.1	0.2	0.6	1.3	0.2	0.8
Dry Tall Grasses	1.0	1.5	5.9	11.6	-	6.0	2.3	4.5	1.7	3.4	-	6.7	2.3	4.5	3.6	6.7	3.6	6.4	1.7	3.4	3.1	5.6	3.0	5.3	2.7	4.9
Open Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Impervious Lands	1.1	5.4	0.2	0.4	4.0	10.8	0.1	0.5	1.1	2.8	4.2	12.0	0.4	1.6	0.1	0.3	1.7	5.8	1.4	4.0	1.1	2.7	2.7	8.1	7.8	15.7
Total	9.3	18.8	7.3	14.8	12.2	24.5	11.1	22.5	12.2	24.7	13.7	27.5	12.6	25.5	11.5	23.1	14.3	28.8	13.7	27.8	12.6	25.4	15.4	31.1	16.6	33.4

Notes:
MLCCS = Minnesota Land Cover Classification System; TBS = Town Border Station; Perm. = permanent; Const. = construction
^a Evaluated as part of the Application Alternative Route
^b Evaluated as part of the Application Preferred Route
^c Evaluated as part of the Modified Preferred Route

¹⁷ DNR. December 17, 2015. Minnesota Land Cover Classification System land cover data set. Minnesota Department of Natural Resources.

Table B-47. MLCCS Land Cover Types - County Road 8 to 11th Avenue SW Segment Alternatives¹⁸

Segment Alternative	FH-1 ^a		FH-2		FH-3		FI-1		FI-2		FI-3		GH-1 ^b		GH-2		GI-1		GI-2		GI-3	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	6P, 7P		6P, 23, 24, 25		21, 22, 24, 25		6P, 23, 24		6P, 7P, 25		21, 22, 24		22, 24, 25		21, 6P, 7P		22, 24		21, 6P, 7P, 25		21, 6P, 23, 24	
MLCCS Land Cover Type (acres)																						
Agricultural Land	6.8	13.4	4.4	8.5	3.9	6.5	4.4	8.5	6.8	13.4	3.9	6.5	3.5	5.8	7.3	14.1	3.5	5.8	7.3	14.1	4.9	9.1
Maintained Tall Grasses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tree Plantation	-	-	-	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Forest	0.6	1.8	1.3	2.7	3.3	5.4	0.5	1.4	1.4	3.1	2.5	4.1	3.2	5.1	0.8	2.1	2.3	3.8	1.6	3.4	0.6	1.7
Wetland Forest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shrubland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wetland Emergent Vegetation	-	-	0.5	1.1	0.4	0.9	0.3	0.6	0.3	0.5	0.2	0.4	0.4	0.9	-	-	0.2	0.4	0.3	0.5	0.3	0.6
Short Grasses	-	-	0.3	0.6	0.3	0.6	0.3	0.6	-	-	0.3	0.6	0.3	0.6	-	-	0.3	0.6	-	-	0.3	0.6
Tall Grasses	4.6	9.0	8.1	14.7	4.7	7.6	8.1	14.7	4.6	9.0	4.7	7.6	4.2	6.7	5.2	9.8	4.2	6.7	5.2	9.8	8.7	15.6
Dry Tall Grasses	<0.1	0.1	<0.1	0.1	<0.1	0.1	4.4	8.5	0.1	0.2	3.9	6.5	<0.1	0.1	<0.1	0.1	-	5.8	0.1	0.2	4.9	9.1
Open Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Impervious Lands	0.1	0.3	0.5	3.1	2.5	9.7	0.3	2.4	0.3	1.0	2.4	9.0	2.2	8.5	0.4	1.5	2.1	7.8	0.6	2.2	0.6	3.5
Total	12.2	24.6	15.2	30.7	15.3	30.9	14.0	28.2	13.4	27.1	14.0	28.3	13.8	27.8	13.7	27.6	12.5	25.3	14.9	30.2	15.4	31.2

Notes:
MLCCS = Minnesota Land Cover Classification System; Perm. = permanent; Const. = construction
^a Evaluated as part of the Application Preferred Route and the Modified Preferred Route
^b Evaluated as part of the Application Alternative Route

¹⁸ DNR. December 17, 2015. Minnesota Land Cover Classification System land cover data set. Minnesota Department of Natural Resources.

Table B-48. MLCCS Land Cover Types - 11th Avenue SW to Proposed District Regulator Station Segment Alternatives¹⁹

Segment Alternative	HJ-1 ^a		HJ-2 ^b		HJ-3		HJ-4		IJ-1		IJ-2		IJ-3		IJ-4	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	8P, 9P		26, 9P		25, 27, 29		25, 28, 29		25, 8P, 9P		25, 26, 9P		27, 29		28, 29	
MLCCS Land Cover Type (acres)																
Agricultural Land	2.5	5.2	1.9	3.9	6.5	13.3	6.6	13.3	2.5	5.2	1.9	3.9	6.5	13.3	6.6	13.3
Maintained Tall Grasses	0.4	0.8	1.5	3.1	0.1	0.2	-	-	0.4	0.8	1.5	3.1	0.1	0.2	-	-
Tree Plantation	-	-	-	-	0.2	0.3	-	-	-	-	-	-	0.2	0.3	-	-
Forest	2.1	4.1	0.6	1.2	0.9	1.5	0.8	1.3	3.0	5.4	1.4	2.5	0.1	0.3	-	-
Wetland Forest	-	-	-	-	0.2	0.6	-	-	-	-	-	-	0.2	0.6	-	-
Shrubland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wetland Emergent Vegetation	0.5	0.9	0.5	1.0	1.2	2.4	1.2	2.4	0.7	1.4	0.8	1.5	0.9	1.9	0.9	1.9
Short Grasses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tall Grasses	2.4	4.8	2.1	4.2	0.6	1.3	0.3	0.8	2.4	4.8	2.1	4.2	0.6	1.3	0.3	0.8
Dry Tall Grasses	1.6	3.0	1.4	2.8	0.3	0.8	1.9	3.8	1.7	3.1	1.5	2.9	0.3	0.7	1.8	3.7
Open Water	-	-	-	-	0.2	0.3	-	-	-	-	-	-	-	0.3	-	-
Impervious Lands	1.8	2.8	1.2	1.1	4.3	8.5	2.7	5.6	1.9	3.5	1.3	1.8	4.1	7.8	2.6	4.9
Total	11.3	22.7	9.2	18.6	14.5	29.3	13.5	27.2	12.5	25.3	10.5	21.2	13.3	26.7	12.2	24.6

Notes:
MLCCS = Minnesota Land Cover Classification System; Perm. = permanent; Const. = construction
^a Evaluated as part of the Modified Preferred Route.
^b Evaluated as part of the Application Preferred Route and the Application Alternative Route.

¹⁹ DNR. December 17, 2015. Minnesota Land Cover Classification System land cover data set. Minnesota Department of Natural Resources.

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Table B-49. Fish Species Occurring in Zumbro Lake²⁰

Common Name	Scientific Name
black bullhead	<i>Ameiurus melas</i>
black crappie	<i>Pomoxis nigromaculatus</i>
bluegill	<i>Lepomis macrochirus</i>
bluntnose minnow	<i>Pimephales notatus</i>
carpsucker	<i>Carpionodes carpio</i>
channel catfish	<i>Ictalurus punctatus</i>
common carp	<i>Cyprinus carpio</i>
freshwater drum	<i>Aplodinotus grunniens</i>
golden redhorse	<i>Moxostoma erythrurum</i>
highfin carpsucker	<i>Carpionodes velifer</i>
Johnny darter	<i>Etheostoma nigrum</i>
largemouth bass	<i>Micropterus salmoides</i>
muskellunge	<i>Esox masquinongy</i>
logperch	<i>Percina caprodes</i>
northern pike	<i>Esox lucius</i>
orangespotted sunfish	<i>Lepomis humilis</i>
quillback	<i>Carpionodes cyprinus</i>
river carpsucker	<i>Carpionodes carpio</i>
shorthead redhorse	<i>Moxostoma macrolepidotum</i>
silver redhorse	<i>Moxostoma anisurum</i>
smallmouth bass	<i>Micropterus dolomieu</i>
walleye	<i>Sander vitreus</i>
white bass	<i>Morone chrysops</i>
white crappie	<i>Pomoxis annularis</i>
white sucker	<i>Catostomus commersonii</i>
yellow bullhead	<i>Ameiurus natalis</i>
yellow perch	<i>Perca flavescens</i>

²⁰ Ibid.

Table B-50. Typical Wildlife Species Commonly Occurring in Olmsted County²¹

Common Name	Scientific Name	Common Name	Scientific Name
Mammals			
meadow vole	<i>Microtus pennsylvanicus</i>	eastern cottontail	<i>Sylvilagus floridanus</i>
raccoon	<i>Procyon lotor</i>	eastern gray squirrel	<i>Sciurus carolinensis</i>
white-tailed deer	<i>Odocoileus virginianus</i>	thirteen-lined ground squirrel	<i>Ictidomys tridecemlineatus</i>
stripped skunk	<i>Mephitis mephitis</i>	Virginia opossum	<i>Didelphis virginiana</i>
little brown bat	<i>Myotis lucifugus</i>	coyote	<i>Canis latrans</i>
big brown bat	<i>Eptesicus fuscus</i>		
Birds²²			
American crow	<i>Corvus brachyrhynchos</i>	horned lark	<i>Eremophila alpestris</i>
American goldfinch	<i>Spinus tristis</i>	house sparrow	<i>Passer domesticus</i>
American robin	<i>Turdus migratorius</i>	house wren	<i>Troglodytes aedon</i>
barn swallow	<i>Hirundo rustica</i>	killdeer	<i>Charadrius vociferous</i>
belted kingfisher	<i>Megasceryle alcyon</i>	mallard	<i>Anas platyrhynchos</i>
black-capped chickadee	<i>Poecile atricapillus</i>	mourning dove	<i>Zenaida macroura</i>
Canada goose	<i>Branta canadensis</i>	red-tailed hawk	<i>Buteo jamaicensis</i>
chimney swift	<i>Chaetura pelagica</i>	red-winged blackbird	<i>Agelaius phoeniceus</i>
eastern bluebird	<i>Sialia sialis</i>	rock pigeon	<i>Columba livia</i>
eastern kingbird	<i>Tyrannus tyrannus</i>	song sparrow	<i>Melospiza melodia</i>
eastern meadowlark	<i>Sturnella magna</i>	tree swallow	<i>Tachycineta bicolor</i>
European starling	<i>Sturnus vulgaris</i>	vesper sparrow	<i>Pooecetes gramineus</i>
great blue heron	<i>Ardea herodias</i>	wild turkey	<i>Meleagris gallopavo</i>
great horned owl	<i>Bubo virginianus</i>		
Amphibians and Reptiles²³			
mudpuppy	<i>Necturus maculosus</i>	snapping turtle	<i>Chelydra serpentina</i>
eastern tiger salamander	<i>Ambystoma tigrinum</i>	pond slider	<i>Trachemys scripta</i>
spring peeper	<i>Pseudacris crucifer</i>	eastern musk turtle	<i>Sternotherus odoratus</i>
eastern gray tree frog	<i>Hyla versicolor</i>	eastern garter snake	<i>Thamnophis sirtalis</i>
American toad	<i>Bufo americanus</i>	plains garter snake	<i>Thamnophis radix</i>
northern leopard frog	<i>Rana pipiens</i>	redbelly snake	<i>Storeria occipitomaculata</i>

²¹ DNR 2014.

²² MBBA. 2014. "Breeding Bird County Checklists". Minnesota Breeding Bird Atlas Project – Online. <http://www.mnbba.org/cgi-bin/countychecklist.pl>.

²³ DNR. October 30, 2013. Minnesota Distribution Map of Salamanders and Amphibians of Minnesota. Minnesota Department of Natural Resources. http://files.dnr.state.mn.us/eco/mcbs/herp_maps/reptile_and_amphibian_maps_2ecs.pdf.

Common Name	Scientific Name	Common Name	Scientific Name
green frog	<i>Lithobates clamitans</i>	western fox snake	<i>Mintonius ramspotti</i>
northern map turtle	<i>Graptemys geographica</i>	northern water snake	<i>Nerodia sipedon</i>
wood turtle	<i>Glyptemys insculpta</i>	milk snake	<i>Lampropeltis triangulum</i>
Blanding's turtle	<i>Emydoidea blandingii</i>	North American racer	<i>Coluber constrictor</i>
painted turtle	<i>Chrysemys picta</i>		

Table B-51. Wildlife Habits within Each Route

	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
<i>Habitat Types (acres)^{a,b}</i>						
Upland forest ^c	3.4	8.5	7.3	13.4	5.5	10.8
Wetland forest	-	-	0.2	0.4	0.2	0.4
Scrubland	0.1	0.2	0.2	0.3	0.1	0.2
Grasslands ^d	27.2	50.8	19.1	34.9	22.3	39.4
Emergent wetland	0.7	1.3	1.0	2.1	0.6	1.2
Open water	0.1	0.1	0.1	0.1	0.1	0.1
Total	31.5	61.0	27.8	51.2	28.9	52.1

Notes:

Perm. = permanent; Const. = construction

^a Habitat types do not include agricultural land and impervious lands

^b Reported acreages do not include permanent impact to 2.76 acres for the TBS 1D, Proposed TBS, Proposed DRS and temporary impact to 10.0 acres for the temporary storage yard and additional temporary workspaces as precise locations have not yet been determined. These facilities would be sited in agricultural areas to the extent practicable.

^c Includes forest and tree plantations

^d includes maintained tall grass, dry tall grass, tall grasses, and short grasses

Table B-52. Wildlife Habitats - TBS 1D to Proposed TBS Segment Alternatives

Segment Alternative	AB-1 ^{a,b}		AB-2		BC ^{a,b}		CD-1 ^a		CD-2 ^b	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	1P		10		2P		3P		11	
<i>Habitat Type (acres)^c</i>										
Upland forest ^d	-	-	-	-	-	0.3	0.2	0.4	0.7	1.4
Wetland forest	-	-	-	-	-	-	-	-	-	-
Scrubland	-	-	-	-	-	0.1	0.1	0.1	0.1	0.3
Grasslands ^e	0.2	0.3	0.9	1.8	2.2	3.8	6.3	10.2	1.8	3.7
Emergent wetland	-	-	-	-	-	-	0.1	0.3	-	-
Open water	-	-	-	-	-	-	0.1	0.1	0.1	0.1
Total	0.2	0.3	0.9	1.8	2.2	4.2	6.8	11.1	2.7	5.5

Notes:

TBS = Town Border Station; Perm. = permanent; Const. = construction

^a Evaluated as part of the Application Preferred and Modified Preferred Routes

^b Evaluated as part of the Application Alternative Route

^c Habitat types do not include agricultural land and impervious lands

^d Includes forest and tree plantations

^e includes maintained tall grass, dry tall grass, tall grasses, and short grasses

Table B-53. Wildlife Habitats - Proposed TBS to County Road 8 Segment Alternatives

Segment Alternative	DE-1 ^a		DE-2 ^b		EF-1 ^c		EF-2 ^b		EF-3		EG-1		EG-2		EG-3		EG-4 ^a		EG-5		EG-6		EG-7		EG-8	
Resource	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area
Route Segment(s)	4P		12		5P		14, 16		13, 15, 16		5P, 21		14, 16, 21		14, 19		14, 18, 20		13, 15 16, 21		13, 15, 19		13, 15 18, 20		13, 17, 20	
Habitat Type (acres) ^d																										
Upland forest ^e	1.4	2.3	0.6	1.4	1.1	1.9	1.4	3.4	2.8	6.2	1.3	2.2	1.6	3.8	2.2	4.0	1.5	3.1	3.0	6.5	3.6	6.8	2.9	5.8	0.7	2.5
Wetland forest	0.2	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrubland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grasslands ^f	1.1	1.7	5.9	11.6	3.5	5.8	3.0	5.7	2.4	4.6	4.1	6.6	3.5	6.6	3.7	6.9	4.2	7.8	3.0	5.5	3.2	5.8	3.7	6.7	2.9	5.7
Emergent wetland	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Open water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.8	4.5	6.5	13.0	4.7	7.7	4.4	9.2	5.2	10.8	5.4	8.8	5.1	10.4	5.9	10.9	5.7	10.8	6.0	12.0	6.7	12.6	6.6	12.5	3.6	8.2

Notes:
TBS = Town Border Station; Perm. = permanent; Const. = construction
^a Evaluated as part of the Application Alternative Route
^b Evaluated as part of the Application Preferred Route
^c Evaluated as part of the Modified Preferred Route
^d Habitat types do not include agricultural land and impervious lands
^e Includes forest and tree plantations
^f Includes maintained tall grass, dry tall grass, tall grasses, and short grasses

Table B-54. Wildlife Habitats - County Road 8 to 11th Avenue SW Segment Alternatives

Segment Alternative	FH-1 ^a		FH-2		FH-3		FI-1		FI-2		FI-3		GH-1 ^b		GH-2		GI-1		GI-2		GI-3	
Resource	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area	Perm. Right-of-Way	Const. Area
Route Segment(s)	6P, 7P		6P, 23, 24, 25		21, 22, 24, 25		6P, 23, 24		6P, 7P, 25		21, 22, 24		22, 24, 25		21, 6P, 7P		22, 24		21, 6P, 7P, 25		21, 6P, 23, 24	
Habitat Type (acres) ^c																						
Upland forest ^d	0.6	1.8	1.3	2.7	3.3	5.4	0.5	1.4	1.4	3.1	2.5	4.2	3.2	5.1	0.8	2.2	2.3	3.8	1.6	3.4	0.6	1.8
Wetland forest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrubland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grasslands ^e	4.6	9.1	8.5	15.4	5.1	8.3	8.4	15.3	4.6	9.2	5.0	8.2	4.5	7.5	5.2	9.9	4.5	7.4	5.2	10.0	9.0	16.2
Emergent wetland	-	-	0.5	1.1	0.4	0.9	0.3	0.6	0.3	0.5	0.2	0.4	0.4	0.9	-	-	0.2	0.4	0.3	0.5	0.3	0.6
Open water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	5.2	10.9	10.3	19.2	8.8	14.7	9.2	17.3	6.3	12.8	7.7	12.8	8.1	13.5	6.0	12.1	7.0	11.6	7.1	14.0	9.9	18.5

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Application Preferred Route and the Modified Preferred Route
^b Evaluated as part of the Application Alternative Route
^c Habitat types do not include agricultural land and impervious lands
^d Includes forest and tree plantations
^e Includes maintained tall grass, dry tall grass, tall grasses, and short grasses

Table B-55. Wildlife Habitats - 11th Avenue SW to Proposed District Regulator Station Segment Alternatives

Segment Alternative	HJ-1 ^a		HJ-2 ^b		HJ-3		HJ-4		IJ-1		IJ-2		IJ-3		IJ-4	
Resource	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area	Perm. Right-of- Way	Const. Area
Route Segment(s)	8P, 9P		26, 9P		25, 27, 29		25, 28, 29		25, 8P, 9P		25, 26, 9P		27, 29		28, 29	
Habitat Type (acres) ^c																
Upland forest ^d	2.1	4.1	0.6	1.2	1.1	1.8	0.8	1.3	3.0	5.4	1.4	2.5	0.3	0.5	-	-
Wetland forest	-	-	-	-	0.2	0.6	-	-	-	-	-	-	0.2	0.6	-	-
Scrubland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grasslands ^e	4.4	8.5	5.0	10.1	1.1	2.3	2.2	4.6	4.4	8.6	5.1	10.2	1.0	2.2	2.2	4.5
Emergent wetland	0.5	0.9	0.5	1.0	1.2	2.4	1.2	2.4	0.7	1.4	0.8	1.5	0.9	1.9	0.9	1.9
Open water	-	-	-	-	0.2	0.3	-	-	-	-	-	-	0.2	0.3	-	-
Total	7.0	13.5	6.1	12.4	3.7	7.5	4.2	8.3	8.1	15.4	7.3	14.2	2.6	5.6	3.1	6.4

Notes:
Perm. = permanent; Const. = construction
^a Evaluated as part of the Modified Preferred Route.
^b Evaluated as part of the Application Preferred Route and the Application Alternative Route.
^c Habitat types do not include agricultural land and impervious lands
^d Includes forest and tree plantations
^e Includes maintained tall grass, dry tall grass, tall grasses, and short grasses

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Table B-56. Previously Recorded Cultural Resource Sites near Each Route

Resource Category	Application Preferred Route		Application Alternative Route		Modified Preferred Route	
	Route ^a	Const. Area	Route ^a	Const. Area	Route ^a	Const. Area
Number of Architectural Sites	1	-	1	-	1	-
Number of GLO Sites	33	22	33	22	33	22

Notes:

Const. = construction; GLO = General Land Office

^a The route is comprised of the 500- to 2,000-foot-wide area in which the alignment will be sited (see **Figure 2**).

Table B-57. Previously Recorded Cultural Resource Sites - TBS 1D to Proposed TBS Segment Alternatives

Segment Alternative	AB-1 ^{a,b}		AB-2		BC ^{a,b}		CD-1 ^a		CD-2 ^b	
Resource	Route ^c	Const. Area	Route ^c	Const. Area	Route ^c	Const. Area	Route ^c	Const. Area	Route ^c	Const. Area
Route Segment(s)	1P		10		2P		3P		11	
Number of Architectural Sites	1	-	-	-	-	-	-	-	-	-
Number of GLO Sites	3	1	2	1	6	5	7	5	6	5

Notes:

Const. = construction; GLO = General Land Office

^a Evaluated as part of the Application Preferred and Modified Preferred Routes

^b Evaluated as part of the Application Alternative Route

^c The route is comprised of the 500- to 2,000-foot-wide area in which the alignment will be sited (see **Figure 2**).

Table B-58. Previously Recorded Cultural Resource Sites - Proposed TBS to County Road 8 Segment Alternatives

Segment Alternative	DE-1 ^a		DE-2 ^b		EF-1 ^c		EF-2 ^b		EF-3		EG-1		EG-2		EG-3		EG-4 ^a		EG-5		EG-6		EG-7		EG-8	
Resource	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area	Routed ^d	Const. Area
Route Segment(s)	4P		12		5P		14, 16		13, 15, 16		5P, 21		14, 16, 21		14, 19		14, 18, 20		13, 15 16, 21		13, 15, 19		13, 15 18, 20		13, 17, 20	
Number of Architectural Sites	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of GLO	4	2	2	2	6	3	4	4	4	4	7	4	5	4	4	3	7	4	6	5	5	4	8	5	8	5

Notes:
Const. = construction; GLO = General Land Office
^a Included as part of the Application Alternative Route
^b Included as part of the Application Preferred Route
^c Included as part of the Modified Preferred Route
^d The route is comprised of the 500- to 2,000-foot-wide area in which the alignment will be sited (see **Figure 2**).

Table B-59. Previously Recorded Cultural Resource Sites - County Road 8 to 11th Avenue SW Segment Alternatives

Segment Alternative	FH-1 ^a		FH-2		FH-3		FI-1		FI-2		FI-3		GH-1 ^b		GH-2		GI-1		GI-2		GI-3	
Resource	Routed ^c	Const. Area	Routed ^c	Const. Area	Routed ^c	Const. Area	Routed ^c	Const. Area	Routed ^c	Const. Area	Routed ^c	Const. Area	Routed ^c	Const. Area	Routed ^c	Const. Area	Routed ^c	Const. Area	Routed ^c	Const. Area	Routed ^c	Const. Area
Route Segment(s)	6P, 7P		6P, 23, 24, 25		21, 22, 24, 25		6P, 23, 24		6P, 7P, 25		21, 22, 24		22, 24, 25		21, 6P, 7P		22, 24		21, 6P, 7P, 25		21, 6P, 23, 24	
Number of Architectural Sites	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of GLO	5	3	5	3	7	4	5	3	5	3	7	4	6	3	6	4	5	3	6	3	6	4

Notes:
Const. = construction; GLO = General Land Office;
^a Evaluated as part of the Application Preferred Route and the Modified Preferred Route
^b Evaluated as part of the Application Alternative Route
^c The route is comprised of the 500- to 2,000-foot-wide area in which the alignment will be sited (see **Figure 2**).

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Table B-60. Previously Recorded Cultural Resource Sites - 11th Avenue SW to Proposed District Regulator Station Segment Alternatives

Segment Alternative	HJ-1 ^a		HJ-2 ^b		HJ-3		HJ-4		IJ-1		IJ-2		IJ-3		IJ-4	
Route Segment(s)	Route ^c	Const. Area	Route ^c	Const. Area	Route ^c	Const. Area	Route ^c	Const. Area	Route ^c	Const. Area	Route ^c	Const. Area	Route ^c	Const. Area	Route ^c	Const. Area
Route Segment(s)	8P, 9P		26, 9P		25, 27, 29		25, 28, 29		25, 8P, 9P		25, 26, 9P		27, 29		28, 29	
Number of Architectural Sites	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of GLO	4	3	3	3	3	2	3	2	4	3	3	3	3	1	3	1

Notes:

Const. = construction; GLO = General Land Office

^a Evaluated as part of the Modified Preferred Route.

^b Evaluated as part of the Application Preferred Route and the Application Alternative Route.

^c The route is comprised of the 500 to 2,000 foot-wide area in which the alignment will be sited (see **Figure 2**)

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