Appendix D

Sandpiper Route Alternatives (2014) Scoping Summary Report

Sandpiper Alternative Routes Summary Report

In the Matter of the Application of North Dakota Pipeline Company LLC for a Pipeline Routing Permit for the Sandpiper Pipeline Project in Minnesota

Docket No. PL-6668/PPL-13-474

July 16, 2014

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Summary of System and Route Alternatives

The comment period for identification of route or route segment alternatives to the proposed North Dakota Pipeline Company (Enbridge) Sandpiper pipeline ended May 30, 2014. During the comment period, approximately 1090 comments were received by letter, email and verbal communications recorded by a court reporter at seven public meetings. The written and verbal comments were screened to determine whether commenters had proposed alternatives, yielding a total of 62 proposals. As necessary, commenters were contacted to clarify the location and purpose of their proposals.

The 62 proposals were then sorted into two categories: system alternatives and route alternatives.

This Sandpiper Alternative Routes Summary Report, prepared by the Department of Commerce Energy Environmental Review and Analysis (EERA), is a summary of those system and route alternatives and provides recommendations on routes or route segments for consideration at public hearing and evaluation in the Comparative Environmental Analysis (CEA) pursuant to Minnesota Rule 7852.1400, Route Proposal Acceptance.

System Alternatives

A system alternative is an alternate that proposes a different configuration of pipelines for moving oil from the Williston Basin than the applicant's proposal. It is a wholly separate or independent route from the Applicant's proposed route and is, in essence, a different project than the one proposed by the applicant.

Enbridge is requesting a route permit to transport oil produced in North Dakota to the terminals in Clearbrook, Minnesota, and Superior, Wisconsin. Minnesota Rule 7852.0100, subpart 31, defines a route as "the proposed location of a pipeline between two end points." In this docket, Enbridge has requested a route from the North Dakota border to Clearbrook and from Clearbrook to Superior. Thus, the project, for route permit application purposes, is defined by these three points.

However, eight alternatives proposed during the comment period do not connect with one or more of these three points (Table 1 and Figure 1). The proposed system alternatives include routing the pipeline far north or far south of the applicant's proposed route. None of the system alternatives would connect to the new Clearbrook terminal. Three of the system alternatives do not connect into Enbridge's Superior Terminal.

Because the proposed system alternatives are not alternative routes for meeting the purpose of the project as identified in the permit application, EERA does not believe that these alternatives are appropriate for further consideration.

Two proposals, SA-02 and SA-03, might be appropriate for further consideration if connector segments between them and the Clearbrook terminal were developed.

System Alternatives

Table 1: Proposed System Alternatives (Figure 1)

Comment Number	System Alternative Number	Commenter	County/State	Comment[1]	Evaluation[2]
50	SA-01	Robert and Karen Lindesmith	N/A	Would like Enbridge to route through Canada	The route does not go through Clearbrook, which provides redundant delivery if a component is out of service, or terminate at Superior.
94	SA-02	Sharon Natzel (Long Lake Area Association)	Northern Minnesota	Commenter route proposal is intended to maximizes the protection of the clearest waters of northern Minnesota and the groundwater that are most susceptible. Ronald Vegemast, commenter 156, suggested a very similar route.	The route does not go through Clearbrook, which provides redundant delivery if a component is out of service. Needs connector to Clearbrook. Estimated at 340 miles in length.
182	SA-03	Minnesota Pollution Control Agency	Minnesota	Route would follow the existing 24-inch Viking Natural Gas Pipeline south and southeast to Chisago County, then turn north paralleling existing 8-inch Magellan refined products pipeline and/or a Northern Natural Gas Pipeline to a point where it would interconnect with Sandpiper Alternative Routes in Carlton County, then to terminal in Superior. Calls for new terminal in Crookston area.	The route does not go through Clearbrook, which provides redundant delivery if a component is out of service. Needs connector to Clearbrook. Estimated at 360 miles in length.
116A	SA-04	Friends of the Headwaters	North Dakota, South Eastern Minnesota, Iowa, Illinois	Follows the Alliance Natural Gas Pipeline to parallel an existing pipeline right-of-way; traverses primarily agricultural land and avoids the freshwater lakes.	The route does not go through Clearbrook, which provides redundant delivery if a component is out of service, or terminate at Superior. Estimated at 1050 miles in length.
116B	SA-05	Friends of the Headwaters	North Dakota, South Dakota, Minnesota, Iowa, Illinois	This route is modeled after 116A and parallels the Northern Border Natural Gas Pipeline, traversing primarily agricultural land and avoids crossing the Red River of the North.	The route does not go through Clearbrook, which provides redundant delivery if a component is out of service, or terminate at Superior. Estimated at 1100 miles in length.

Comment Number	System Alternative Number	Commenter	County/State	Comment[1]	Evaluation[2]
116C	SA-06	Friends of the Headwaters	North Dakota, Minnesota	Route would follow Minnesota Highway 9 south, until it intersects existing Magellan 8 to 12-inch product pipeline that it would follow south and east to a point where it crosses the MinnCan pipeline, then follow the MinnCan alignment to the existing Minnesota refineries, then continue north by following I-35 or the Northern Natural Gas and Magellan products pipelines north to a point where the route would intersect with the Sandpiper route alternatives in Carlton County and then continue to the terminal in Superior. Also suggested that pipeline route could follow the 8-inch Magellan products pipeline east into Wisconsin and then follow Enbridge's existing pipeline right-of-way back to Superior or down to the Chicago area.	The route does not go through Clearbrook, which provides redundant delivery if a component is out of service. Needs connector to Clearbrook. Estimated at 390 miles in length.
116D	SA-07	Friends of the Headwaters	North Dakota, Minnesota	SA-07 can be viewed as a combination of two different systems. One is a combination of SA-07 and SA-06, and the other as a combination of SA-07 and SA-08. See Figure 1 System Alternatives. SA-07 and SA-06 when combined to form SA-07, would follow I-29 in North Dakota to Fargo, then follow the same corridor east southeast adjacent to I-94, then follow an existing Magellan product pipeline south and east to a point where it intersects with the MinnCan 24-inch crude oil pipeline to Minnesota's two existing refineries. At those points it is suggested that the pipeline can proceed northward to the Duluth area by following I-35 or the existing Magellan product and Northern Natural gas pipelines to a point when they can interconnect with other alternative Sandpiper routes that continue to the Wisconsin border and terminal in Superior. The other system alternative would combine SA-07 and SA-08, by following SA-08 (I-94) and extending it through the Twin Cities along the freeway or existing Magellan product pipeline to 1) a point where it intersects I-35 and two other pipelines (Magellan and Northern Natural Gas) that proceed northward as described above, or 2) follow an existing Magellan Product pipeline east into Wisconsin until it intersect the existing Enbridge right-of-way at which point a pipeline could be built to carry the oil back up to Superior or down to Chicago.	The route does not go through Clearbrook, which provides redundant delivery if a component is out of service. Needs connector to Clearbrook. Estimated at 395 miles in length.

Comment Number	System Alternative Number	Commenter	County/State	Comment[1]	Evaluation[2]
133	SA-08	Honor the Earth		Wants route to follow I-29 in North Dakota and I-94 in Minnesota.	The route does not go through Clearbrook, which provides redundant delivery if a component is out of service, or terminate at Superior. Estimated at 400 miles in length, if continued on to Superior.

[1] Comment: The comment column is a summary of the issue that was identified in the comment submitted during notice period.

[2] Evaluation: The evaluation column describes why the system alternative will not be further analyzed.

Route Alternatives

A route alternative deviates from the applicant's preferred route to address a commenter's concern or issue. Fifty four route alternatives were proposed during the comment period. The alternatives were suggested by Enbridge, Minnesota Department of Natural Resource (DNR), Minnesota Pollution Control Agency (PCA), and stakeholders. A route alternative was deemed viable if it met the purpose and need of the project and contained no apparent major engineering or environmental issue, based on a visual desktop assessment.

The proposed project is approximately 300 miles long and because of its length the results of the screening effort have been divided into five geographic areas to illustrate locations of the proposed route alternatives (Tables 2 through 6 and Figures 2 through 6):

- North Dakota to Clearbrook
- Clearbrook to Wisconsin
- Clearbrook to Aitkin County
- Aitkin County
- Carlton County

Specific maps of each route alternative are included in Appendix A.

North Dakota to Clearbrook

The North Dakota to Clearbrook area includes five route alternatives, as shown on Figure 2. A brief summary of the comment regarding the route alternative and the justification for moving forward with the alternative is included in Table 2, below.

Table 2: North Dakota to Clearbrook

Route Alternative Number	County	Project Section	Comment[1]	Justification[2]	Enbridge Alt[3]	Comment Database Number	Comment Source[4]	Length (miles)
RA-01	Polk	North Dakota to Clearbrook	Co-locating the proposed pipeline with the existing line 81 would reduce habitat fragmentation and there would be fewer cumulative effects	Addresses DNR concerns regarding fragmentation and stream erosion. Impacts new property owners.		186	PC	3.76
RA-02	Polk	North Dakota to Clearbrook	Route alternative requested to move pipeline further away from property owner house, Wants pipeline to be 700 feet away from home instead of 200 feet	The route alternative impacts the same environmental features as he proposed route and new landowners are impacted.	5/30 #1		EPC	1.61
RA-03	Polk	North Dakota to Clearbrook	Route alternative requested to minimize impacts to agricultural research sites. Avoidance of "Field 18" and moving north to drainage ditch in "Field 17" to make sure field 18 can still be used in future research	Addresses University of Minnesota's concern regarding future use of field research plots and does not impact new property owners.	5/30 #2	66	EPC	1.88
RA-04	Polk	North Dakota to Clearbrook	Route alternative to avoid an overhead power line.	Route alternative increases safety during construction. Environmental impacts are the same and no new landowners are impacted.	5/30 #3		ED	0.23
RA-05	Clearwater	North Dakota to Clearbrook	Route alternative requested to accommodate refinement of facility design at the Clearbrook Terminal.	Route alternative impacts the same environmental features as the proposed route and no new landowners are impacted.	5/30 #4		ED	0.33

[1] Comment: The comment column is a summary of the issue that was identified in the comment submitted during notice period.

[2] Justification: The justification column describes why the route alternative is being carried forward for further analysis.

[3] Enbridge Alternative: The Enbridge alternative column tracks routes developed to address commenter concerns by Enbridge according to their letter submittal dates of 4/4 or 5/30.

[4] Comment Source: PC = Public comment submitted route during comment period; EPC = Public comment submitted route during comment period, Enbridge submitted route that addresses the comment; ELO = Enbridge submitted route that addresses an unknown landowner concern; ED = Enbridge submitted route that addresses an engineering design concern

Clearbrook to Wisconsin

The Clearbrook to Wisconsin includes three route alternatives from Clearbrook to just west of the Wisconsin/Minnesota border following either existing pipelines or going north around several lakes and the Leech Lake Band of Ojibwe Reservation. The route alternatives are shown on Figure 3.

Table 3: Clearbrook to Wisconsin

Route Alternative Number	County	Project Section	Comment[1]	Justification[2]	Enbridge Alt[3]	Comment Database Number	Comment Source[4]	Length (miles)
RA-06	Clearwater, Beltrami, Koochiching, Itasca	Clearbrook to Wisconsin	The pipeline should be routed to the north around the lakes area.	Addresses commenters concerns regarding lakes area impacts. Route alternative would impact the Chippewa National Forest (CNF), state forest land and the Dishpan Wildlife Management Area (WMA).		3	PC	205.52
RA-07	Clearwater, Beltrami, Koochiching, Itasca	Clearbrook to Wisconsin	The pipeline should be routed with existing pipelines along highway 2. (Enbridge's mainline)	Addresses commenter's and DNR and PCA concerns regarding lakes area impacts. Route alternative would impact the CNF and the Leech Lake Band of Ojibwe Reservation (LLBO). In addition, the alternative would cross several populated areas.		3	PC	179.82
RA-08	Great Lakes Gas Pipeline	Clearbrook to Wisconsin	The pipeline should be routed with existing Great Lakes pipelines that run generally south of Hwy 2 through Beltrami, Cass, Itasca and St Louis Counties	Addresses DNR concerns regarding lakes area impacts and utilizing existing corridors. Route alternative would impact the CNF, the Leech Lake Band of Ojibwe Reservation (LLBO). In addition, the route would cross several populated areas and is space limited due to other utilities within the corridor.		186	PC	174.22

[1] Comment: The comment column is a summary of the issue that was identified in the comment submitted during notice period.

[2] Justification: The justification column describes why the route alternative is being carried forward for further analysis.

[3] Enbridge Alternative: The Enbridge alternative column tracks routes developed to address commenter concerns by Enbridge according to their letter submittal dates of 4/4 or 5/30.

[4] Comment Source: PC = Public comment submitted route during comment period; EPC = Public comment submitted route during comment period, Enbridge submitted route that addresses the comment; ELO = Enbridge submitted route that addresses an unknown landowner concern; ED = Enbridge submitted route that addresses an engineering design concern

Clearbrook to Aitkin County

The Clearbrook to Aitkin County area includes 10 route alternatives, as shown on Figure 4. Several of the alternatives were developed to avoid sensitive resources in the Big LaSalle Lake and LaSalle Creek area.

Table 4: Clearbrook to Aitkin County

Route Alternative Number	County	Project Section	Comment[1]	Justification[2]	Enbridge Alt[3]	Comment Database Number	Comment Source[4]	Length (miles)
RA-09	Clearwater Hubbard	Clearbrook to Aitkin County	Alternative route starting in Section 11 of Itasca Township in Clearwater County and Hattie Township in Hubbard County to avoid the Big LaSalle Lake area.	Avoids the Big LaSalle Lake area, however, impacts new property owners.		194	PC	8.05
RA-10	Clearwater	Clearbrook to Aitkin County	Big La Salle Creek alternative, lack of access near crossing of LaSalle Creek could result in delayed spill response times, suggest moving route to a crossing that is more accessible	Addresses PCA concern for more accessible crossing, farther away from Big LaSalle Lake. Alternative recommended would impact new property owners.		182	PC	6.83
RA-11	Clearwater	Clearbrook to Aitkin County	Route Alternative proposed to accommodate a landowner request to avoid the lake.	This re-route reduces impacts to lake front property and is further away from Big LaSalle Lake. No new landowners will be impacted.	4/4 #1		ELO	0.90
RA-12	Hubbard	Clearbrook to Aitkin County	Route alternative is being requested to remove a temporary workspace from adjacent land.	Route alternative requested by landowner because it would impact fewer property owners. No new landowners will be impacted.	4/4 #2		ELO	0.34
RA-13	Hubbard	Clearbrook to Aitkin County	Route alternative requested to route through North Dakota Pipeline Company land recently purchased.	Re-route environmental impacts are the same and no new landowners are impacted.	5/30 #5		ED	0.18
RA-14	Hubbard	Clearbrook to Aitkin County	Route alternative being requested because two property owners want the pipeline further away from structures.	Re-route does not involve new landowners; however, it does move the route onto an existing landowner's property. This alternative would avoid taking down two barns.	4/4 #3		ELO	1.57

Route Alternative Number	County	Project Section	Comment[1]	Justification[2]	Enbridge Alt[3]	Comment Database Number	Comment Source[4]	Length (miles)
RA-15	Hubbard	Clearbrook to Aitkin County	Twin Lakes route alternative, lack of access near Twin Lakes and Shell river could result in delayed spill response times. Twin Lakes are identified as wild rice lakes by the DNR.	Addresses PCA concern for more accessible crossing. Alternative recommended would impact new property owners and traverse an area of center pivot irrigation. It would also be closer to the town of Hubbard.		182	PC	9.46
RA-16	Hubbard, Wadena	Clearbrook to Aitkin County	Enbridge provided a route to avoid the Crow Wing WMA due to easement restrictions.	Addresses DNR concerns of avoiding the WMA. Alternative would impact new landowners.			ELO	10.46
RA-17	Cass	Clearbrook to Aitkin County	Route Alternative being proposed to avoid a large wetland complex in Foot Hill State Forest.	Route alternative would impact 1 wetland the original route impacts 2. Both the original and alternative are within the Foot Hill State Forest.	4/4 #4		ED	0.41
RA-18	Cass	Clearbrook to Aitkin County	Route alternative requested to accommodate changes to engineering design to add a pipeline inspection gauge launcher and receiver trap.	Route alternative environmental impacts are the same and no new landowners are impacted.	5/30 #6		ED	0.18
RA-19	Cass	Clearbrook to Aitkin County	Route alternative requested that the pipeline be constructed near an existing fence line.	Route alternative impacts more greenfield than the original route and does not affect new landowners.	5/30 #7		ELO	1.11
RA-20	Aitkin	Clearbrook to Aitkin County	DNR requested a wider route south of the Spire Valley Fish Hatchery to minimize impacts the hatchery.	The wider route provides flexibility to address DNR concerns about the fish hatchery.		186	PC	1.25

[1] Comment: The comment column is a summary of the issue that was identified in the comment submitted during notice period.

[2] Justification: The justification column describes why the route alternative is being carried forward for further analysis.

[3] Enbridge Alternative: The Enbridge alternative column tracks routes developed to address commenter concerns by Enbridge according to their letter submittal dates of 4/4 or 5/30.

[4] Comment Source: PC = Public comment submitted route during comment period; EPC = Public comment submitted route during comment period, Enbridge submitted route that addresses the comment; ELO = Enbridge submitted route that addresses an unknown landowner concern; ED = Enbridge submitted route that addresses an engineering design concern

Aitkin County

The Aitkin County area includes 23 route alternatives, as shown on Figure 5. Several of the route alternatives suggested in this area were landowner requests that the pipeline avoid structures on their property. In addition, a number of the route alternatives suggested to avoid sensitive natural resources.

Table 5: Aitkin County

Route Alternative Number	County	Project Section	Comment[1]	Justification[2]	Enbridge Alt[3]	Comment Database Number	Comment Source[4]	Length (miles)
RA-21	Aitkin	Aitkin County	DNR recommended the Aitkin County Power Line as a route alternative to eliminate concerns regarding Sandy River fisheries and wild rice habitat as well as trout stream habitat. This would also avoid 3.1 miles of WMA's and follows existing corridor.	Addresses DNR concerns regarding the fisheries and habitat impacts, however, it does impact new property owners.		186	PC	53.88
RA-22	Aitkin, St Louis, Carlton	Aitkin County	DNR recommended a route alternative that would avoid critical habitat in the Big Sandy lake watershed as well as Grayling Marsh WMA, McGregor WMA, Lawler WMA and Salo Marsh WMA.	Addresses DNR concerns related to resources in the area follows existing corridors, however, impacts new property owners.		186	PC	38.82
RA-23	Aitkin	Aitkin County	The Aitkin County Soo Line Route Alternative was considered in the Enbridge January 31, 2014 Permit Application but removed from further analysis by the company.	The Soo Line Route Alternative removed from further analysis by Enbridge is being carried forward into the route analysis because it was recommended by several landowners throughout the comment period and it would parallel the existing ATV trail.			PC	31.13
RA-24	Aitkin	Aitkin County	Commenter proposing route alternative to minimize forest fragmentation and avoid old growth forests in the Hill River State Park	Route impacts less greenfield. The applicant proposed route and the suggested route alternative are both located in the Hill River State Park.	4/4 #6	186	EPC	1.65
RA-25	Aitkin	Aitkin County	Commenter would like the route to move to the east across wetland (former rice paddy areas) to preserve all high land for future building plans.	Addresses landowner concern. Alternative recommended would not impact new property owners.	5/30 #8	229	EPC	0.61
RA-26	Aitkin	Aitkin County	Commenter would prefer route alternative that would veer south and southeast from the intersection of US Highway 169 and CSAH 3 west of Palisade.	Route alternative impacts state forest land and new landowners.	4/4 #7	262	EPC	3.41
RA-27	Aitkin, Carlton	Aitkin County	DNR is recommending that the analysis includes the Soo line to avoid the McGregor SNA and the Sandy River watershed	Addresses DNR concerns related to the McGregor SNA and the Sandy River Watershed.		186	PC	13.23

Route Alternative Number	County	Project Section	Comment[1]	Justification[2]	Enbridge Alt[3]	Comment Database Number	Comment Source[4]	Length (miles)
RA-28	Aitkin	Aitkin County	Commenter suggested a route alternative that turns south in Aitkin County and meets back with the proposed route to the east.	There was a map submitted during the comment period without a written comment attached. Based on the aerial image the proposed route was suggested to avoid gravel pits.		757	PC	3.50
RA-29	Aitkin	Aitkin County	Commenter suggested a route alternative suggested accommodating landowner request related to future home sites along the road.	Route alternative would impact more greenfield and wetland. There would be no new landowner impacts.	4/4 #8		ELO	0.66
RA-30	Aitkin	Aitkin County	Route alternative requested to avoid bending the pipeline in the road ditch which could impact the integrity of the roadway.	Route alternative environmental impacts would be the same and no new landowners are impacted.	5/30 #9		ELO	0.07
RA-31	Aitkin	Aitkin County	Commenter requested a route alternative to cut straight and diagonally across several miles in Aitkin County.	Addresses commenter concern regarding distance from home. Alternative recommended would impact new property owners.		2.3	PC	6.12
RA-32	Aitkin	Aitkin County	Commenter is requesting that the pipeline be located on Aitkin County Tax forfeit land which avoids an Old Growth Forest.	Addresses commenter concerns which would avoid the old growth forest would put route alternative on tax forfeit land.		75	PC	0.45
RA-33	Aitkin	Aitkin County	Commenter would like the pipeline moved east to the back edge of his property where it joins with the Peat Plant.	Addresses commenter concern and would impact new property owners.		89	PC	1.80
RA-34	Aitkin	Aitkin County	Commenter suggesting shifting the pipeline north into the tree line.	Addresses commenter concern regarding distance from home. Alternative recommended would impact new property owners.		2.1	PC	2.22
RA-35	Aitkin	Aitkin County	Commenter suggesting route alternative that would cut south on township road 270th and traverse east until it meets with the proposed route.	Addresses commenter concern regarding distance from home. Alternative route would impact new property owners and potentially impact a peat farm.		2.2	PC	1.72
RA-36	Carlton	Aitkin County	Commenter suggesting a route alternative to shift the pipeline to the north into tree line.	Route alternative addresses concern with other environmental impacts the same as the proposed route; no new landowners are impacted.	5/30 #10		ELO	0.38

Route Alternative Number	County	Project Section	Comment[1]	Justification[2]	Enbridge Alt[3]	Comment Database Number	Comment Source[4]	Length (miles)
RA-37	Aitkin, Carlton	Aitkin County	Commenter suggesting Route Alternative that would parallel Hwy 210 after mile marker 550 then turn south to reconnect with the proposed route south of Cloquet.	The recommended route alternative would follow existing corridor, avoiding the Salo Marsh and Lawler WMA.		756.1	PC	38.68
RA-38	Aitkin, Carlton	Aitkin County	Commenter suggested a Route Alternative to avoid the Salo Marsh WMA.	Route alternative avoids the Salo Marsh WMA and does not impact new property owners.	5/30 #11		ELO	6.73

[1] Comment: The comment column is a summary of the issue that was identified in the comment submitted during notice period.

[2] Justification: The justification column describes why the route alternative is being carried forward for further analysis.

[3] Enbridge Alternative: The Enbridge alternative column tracks routes developed to address commenter concerns by Enbridge according to their letter submittal dates of 4/4 or 5/30.

[4] Comment Source: PC = Public comment submitted route during comment period; EPC = Public comment submitted route during comment period, Enbridge submitted route that addresses the comment; ELO = Enbridge submitted route that addresses an unknown landowner concern; ED = Enbridge submitted route that addresses an engineering design concern

Carlton County

The Carlton County area includes thirteen route alternatives, as shown on Figure 6. Many of the route alternatives from landowners request that the pipeline avoid structures on their property.

Table 6: Carlton County

Route Alternative Number	County	Project Section	Comment[1]	Justification[2]	Enbridge Alt[3]	Comment Database Number	Comment Source[4]	Length (miles)
RA-39	Carlton and Aitkin	Aitkin County	Commenter would prefer route alternative that veers south of proposed route near Salo Marsh WMA Impoundment to avoid mineral development land.	Addresses commenter concern. Alternative recommended would impact new property owners, the Salo Marsh, and State Forest Land.		183	PC	9.01
RA-40	Carlton	Carlton County	Commenter suggested a route to use county land to the north of property owners land.	Addresses commenter concern regarding distance from home. Alternative recommended would not impact new property owners.		756.2	PC	1.04
RA-41	Carlton	Carlton County	Commenter suggested shifting the pipeline south to avoid a beaver dam.	Addresses commenter concern regarding the impacts to the beaver dam. Alternative recommended would not impact new property owners.	4/4 #9		ELO	0.61
RA-42	Carlton	Carlton County	Commenter requesting to co-locate pipeline with an existing power line corridor.	Addresses commenter concern. Alternative recommended would impact new property owners.		152	PC	3.48
RA-43	Carlton	Carlton County	Commenter suggesting to move pipeline to north side of Hwy 61, co-locating it with a utility corridor.	Addresses commenter concerns regarding continuity of utility corridors. Alternative recommended would impact new property owners.		34	PC	3.08
RA-44	Carlton	Carlton County	Commenter suggested following and existing utility corridor on the north side of Highway 61 to avoid the Blackhoof watershed.	Addresses commenter concern regarding groundwater flow around the watershed. Alternative recommended would impact new property owners.		97	PC	7.66
RA-45	Carlton	Carlton County	Commenter suggested following south side of Highway 61 to avoid the Blackhoof Watershed	Addresses commenter concern regarding ground water flow around the watershed. Alternative recommended would impact new property owners.		97	PC	7.13

Route Alternative Number	County	Project Section	Comment[1]	Justification[2]	Enbridge Alt[3]	Comment Database Number	Comment Source[4]	Length (miles)
RA-46	Carlton	Carlton County	Commenter suggested shifting the pipeline to the south, running parallel to County Road 61.	Addresses commenter concern. Alternative recommended would impact new property owners.		121	PC	1.91
RA-47	Carlton	Carlton County	Route alternative requested moving the pipeline south to avoid a grove of trees.	Addresses commenter concern regarding distance from the trees. Alternative would not impact new property owners.	4/4 #10		ELO	0.85
RA-48	Carlton	Carlton County	Commenter suggested shifting the pipeline to the other side of I-35 to avoid cutting off access road.	Addresses commenter concerns regarding road access. Alternative recommended would impact new property owners.		68	PC	1.28
RA-49	Carlton	Carlton County	Commenter requested to follow the south sides of I-35 and Highway 61 to distance pipeline from multiple properties.	Addresses commenter concern. Alternative recommended would impact new property owners.		162	PC	5.96
RA-50	Carlton	Carlton County	Commenter requested to reduce the number of Blackhoof River crossings.	Addressed commenter concern reducing river crossings down from 4 to 1. Increases wetland and greenfield impacts. Alternative would not impact new landowners	4/4 #11		PC	0.56
RA-51	Aitkin	Carlton County	Commenter proposed shifting the pipeline north to follow the tree line and distance it from homesteads.	Addresses commenter concern regarding distance from home. Alternative recommended would impact new property owners.		1	PC	1.41
RA-52	Aitkin	Carlton County	Commenter proposed shifting the pipeline north to follow the tree line and distance it from homesteads.	Addresses landowner concern regarding distance from home. Alternative would impact new property owners.		1	PC	0.84
RA-53	Carlton	Carlton County	Enbridge requested route alternative to avoid multiple crossings of an overhead power line.	Addresses crossing concerns and reduces the number of property owners impacted. Also, has about the same environmental impacts as the original route.	4/4 #12		ED	0.20
RA-54	Carlton	Carlton County	Commenter suggested locating the pipeline closer to an existing natural gas line.	Addresses commenter concerns regarding co-locating the pipeline. Reduces impacts to greenfield; no new property owners impacted.	4/4 #13		ELO	0.31

[1] Comment: The comment column is a summary of the issue that was identified in the comment submitted during notice period.
[2] Justification: The justification column describes why the route alternative is being carried forward for further analysis.
[3] Enbridge Alternative: The Enbridge alternative column tracks routes developed to address commenter concerns by Enbridge according to their letter submittal dates of 4/4 or 5/30.

[4] Comment Source: PC = Public comment submitted route during comment period; EPC = Public comment submitted route during comment period, Enbridge submitted route that addresses the comment; ELO = Enbridge submitted route that addresses an unknown landowner concern; ED = Enbridge submitted route that addresses an engineering design concern

Recommended Route Alternatives

Fifty-four route alternatives were proposed by Enbridge, agencies and stakeholders. Fifty-three of the 54 route alternatives are recommended to be carried forward for analysis in the CEA. Route alternative RA-31 is not recommended to be carried forward, because the same landowner offered two other route alternatives that addressed similar concerns.

In general, a width of 500 feet is recommended to be used to analyze the proposed and alternate routes in the CEA. In most cases, this width provides ample room for the development of a centerline. However, there are several areas where a wider width would be beneficial to the analysis, due to existing conditions or the presence of multiple route alternatives in close proximity to each other. These areas are listed below. Widths of up to 6,500 feet are recommended for analysis in these areas.

Wider Analysis Areas

CARLTON COUNTY 1

Eight route alternatives (RA-42 to RA-49) were suggested in an area surrounding several existing pipelines, Highway 61, and Interstate-35 in Carlton County (Figure 7). A width ranging from 2,500 feet to 6,500 feet would allow for flexibility in using different parts of the route alternatives to develop a route that minimizes impacts.

CARLTON COUNTY 2

Carlton County 2 is a smaller area adjacent to Carlton County 1 and encompasses three route alternatives (RA-50, 51, and 52) that deviate slightly from the proposed route (Figure 7). A width of 1,500 feet to 2,500 feet would allow for analysis of these alternatives.

AITKIN COUNTY

Four route alternatives (RA-33 to RA-36) were suggested in Aitkin County along Highway 65 (Figure 8). A width of 1,500 feet to 4,700 feet would allow for flexibility in comparing the alternatives and developing a route that minimizes impacts.

SPIRE VALLEY AQUATIC MANAGEMENT AREA

The DNR requested that a wider route alternative width be analyzed in this area (RA-20) to minimize potential impacts to the Spire Valley fish hatchery, due to construction activities (Figure 9). The width recommended for this area is 3,000 feet.

CROW WING CHAIN WILDLIFE MANAGEMENT AREA (CROW WING WMA)

The DNR expressed concerns regarding the crossing of the Crow Wing Chain WMA (RA-16) because of deed restrictions associated with gifted properties from the Nature Conservancy to the State. Enbridge provided a route alternative in late June to avoid the WMA. A width of 9,400 feet is recommended, which would provide flexibility in further developing a route in the area of the WMA (Figure 10).

LASALLE CREEK

Two similar route alternatives (RA-09 and 10) were suggested to minimize impacts to Big LaSalle Lake and LaSalle Creek (Figure 11). A 6,500 foot width is recommended to allow for flexibility to avoid impacts to Big LaSalle Lake and LaSalle Creek.

NORTHERN PIPELINES

Numerous commenters, including the DNR and PCA, expressed interest in analyzing existing pipeline corridors (Enbridge and Great Lakes) that run generally along Highway 2 from Clearbrook to Superior (RA-7 and 8). A width of 500 feet to 6,500 feet would allow flexibility in following the existing pipelines, railroad, and/or Highway 2 and is based on the proximity of the existing infrastructure to each other.

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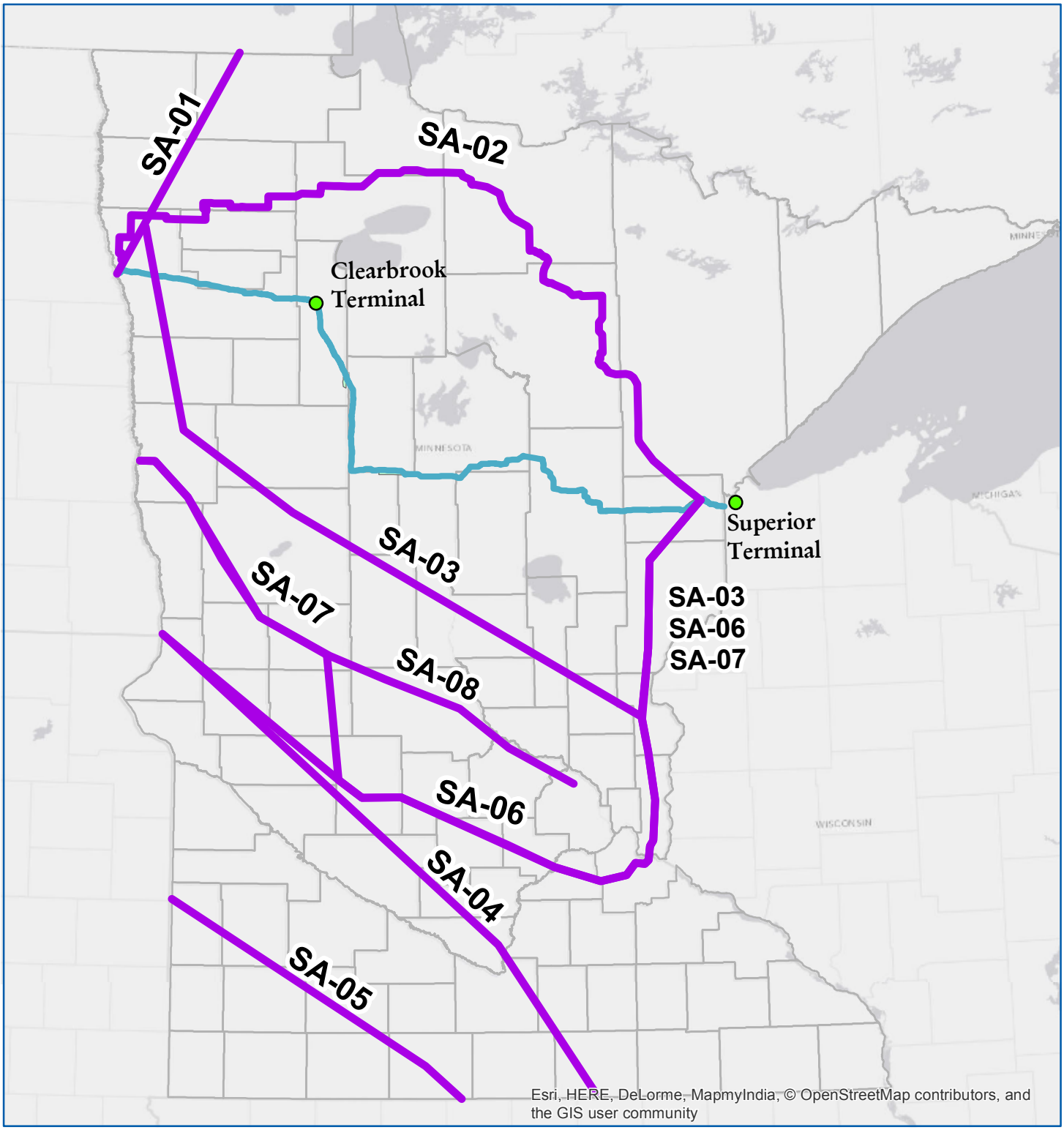
Figure 1 System Alternatives
Sandpiper Alternatives Summary



Legend

- System Alternative
- System Alternative Connector
- Sandpiper Proposed Route
- County Boundary

0 100 Miles

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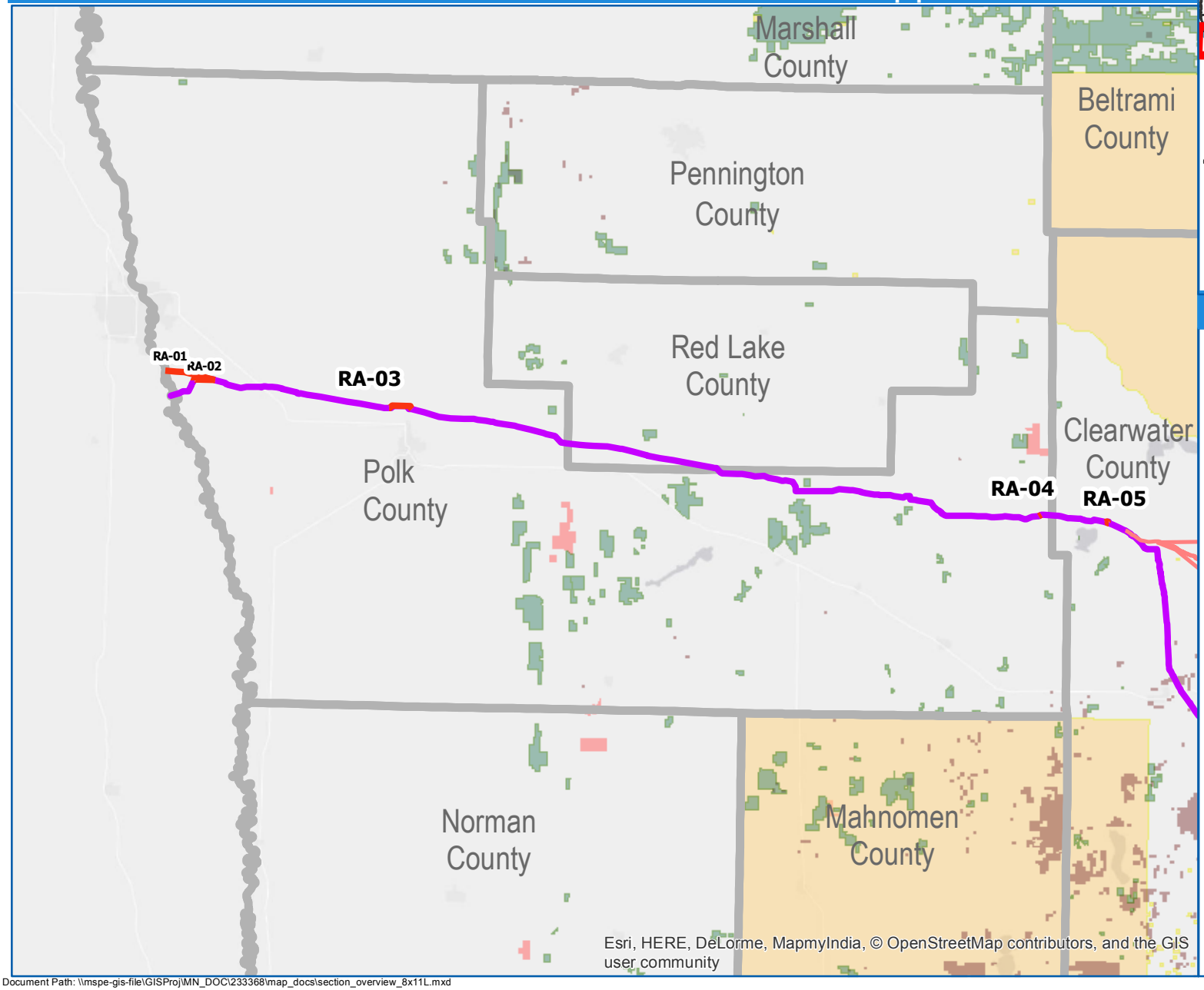
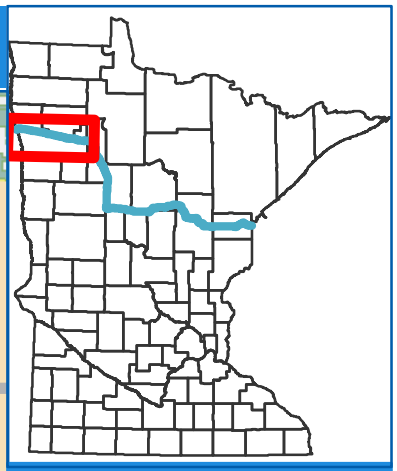
Figure 2 North Dakota to Clearbrook
Sandpiper Route Alternatives





Legend

- Sandpiper Route Alternative
- Sandpiper Proposed Route
- Adjacent Route Alternatives
- Reservation Boundary
- Chippewa National Forest
- Scientific & Natural Area
- Wildlife Management Area
- State Forest
- Soo Line ATV Trail
- County Boundary

0 — 10 Miles

N

HDR

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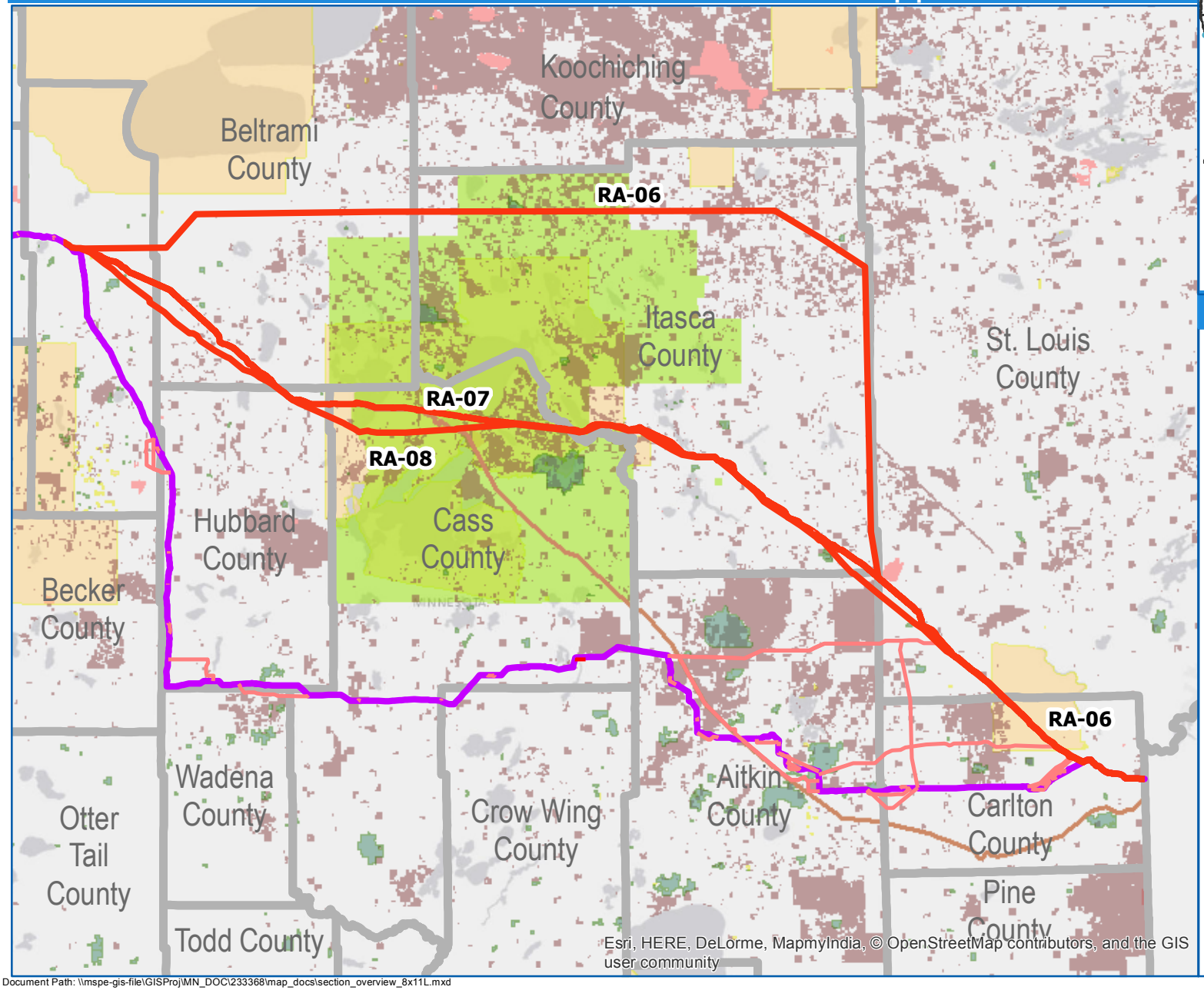
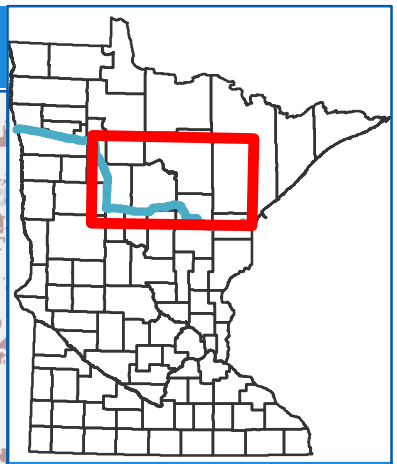
Figure 3 Clearbrook to Wisconsin Sandpiper Route Alternatives





Legend

- Sandpiper Route Alternative
- Sandpiper Proposed Route
- Adjacent Route Alternatives
- Reservation Boundary
- Chippewa National Forest
- Scientific & Natural Area
- Wildlife Management Area
- State Forest
- Soo Line ATV Trail
- County Boundary

0 25 Miles

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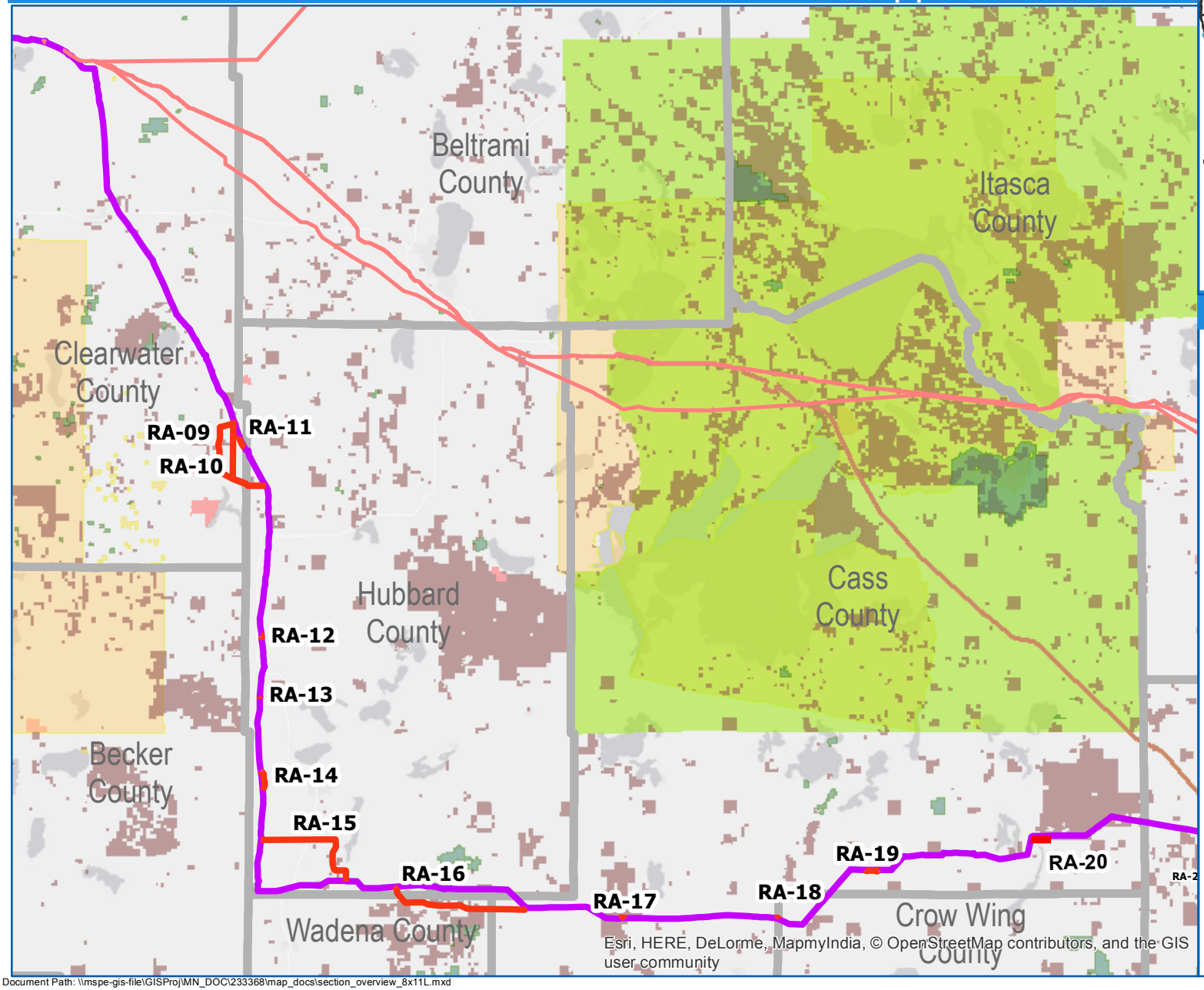
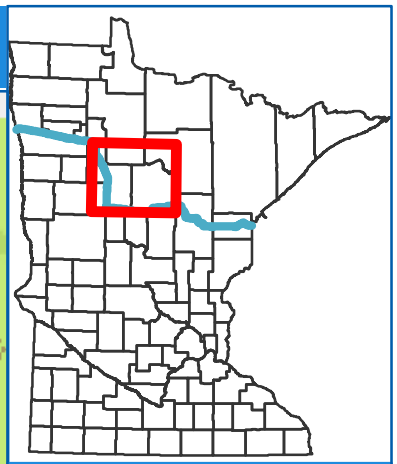
Figure 4 Clearbrook to Aitkin County
Sandpiper Route Alternatives





Legend

- Sandpiper Route Alternative
- Sandpiper Proposed Route
- Adjacent Route Alternatives
- Reservation Boundary
- Chippewa National Forest
- Scientific & Natural Area
- Wildlife Management Area
- State Forest
- Soo Line ATV Trail
- County Boundary

0 10 Miles

HDR

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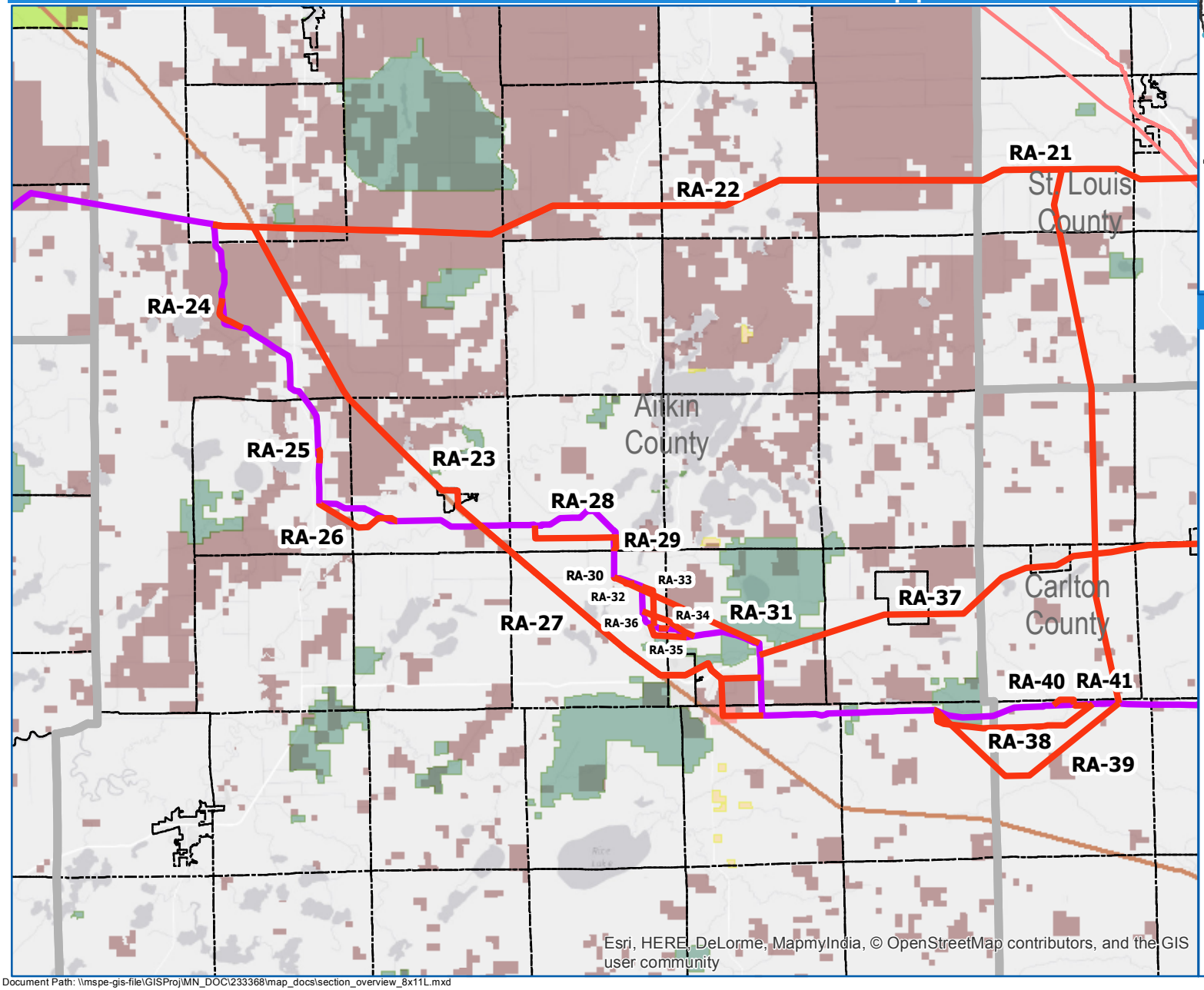
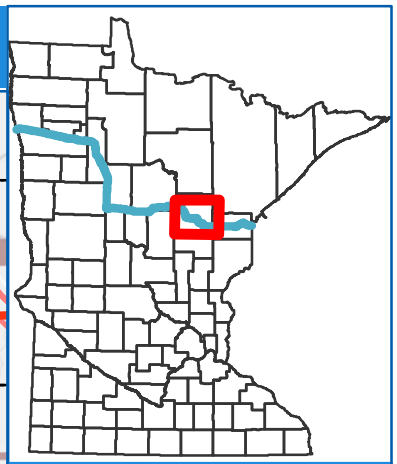
Figure 5 Aitkin County
Sandpiper Route Alternatives





Legend

- Sandpiper Route Alternative
- Sandpiper Proposed Route
- Adjacent Route Alternatives
- Reservation Boundary
- Chippewa National Forest
- Scientific & Natural Area
- Wildlife Management Area
- State Forest
- Soo Line ATV Trail
- County Boundary
- City / Township Boundary

0 — 8 Miles

HDR

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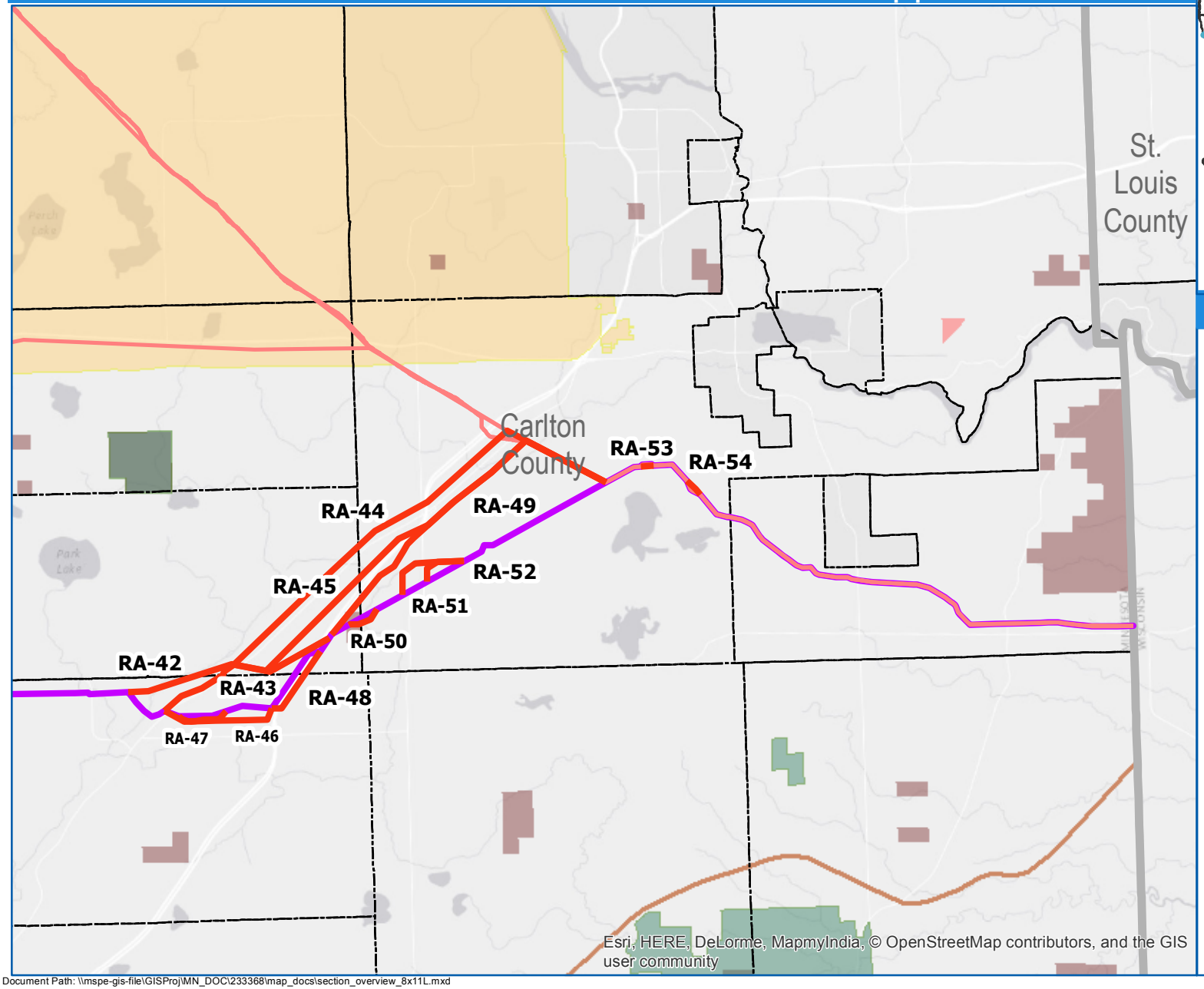
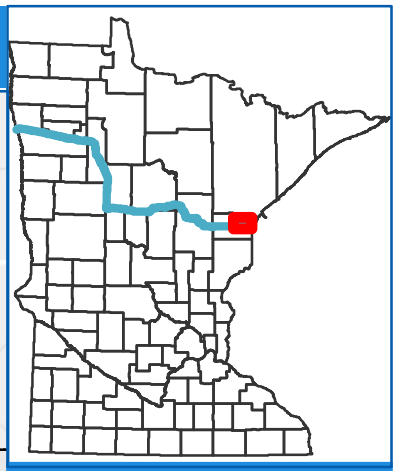
Figure 6 Carlton County Sandpiper Route Alternatives





Legend

- Sandpiper Route Alternative
- Sandpiper Proposed Route
- Adjacent Route Alternatives
- Reservation Boundary
- Chippewa National Forest
- Scientific & Natural Area
- Wildlife Management Area
- State Forest
- Soo Line ATV Trail
- County Boundary
- City / Township Boundary

0 3 Miles

HDR

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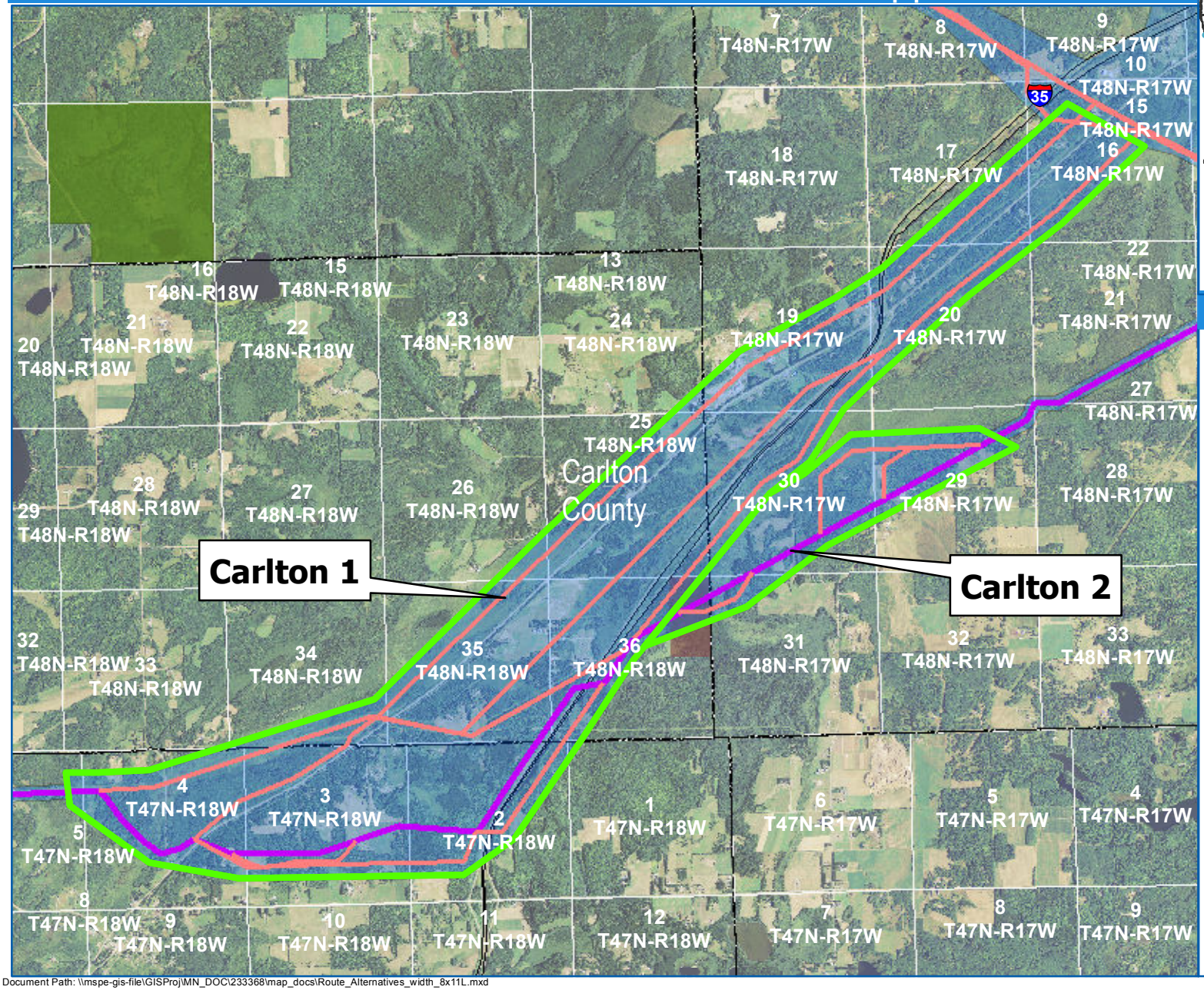
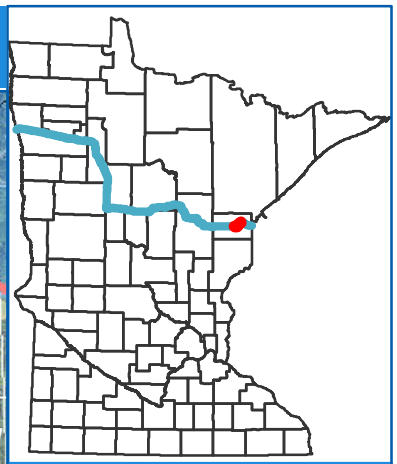
Figure 7 Carlton 1 and 2
Sandpiper Wider Route Areas





Legend

- Sandpiper Proposed Route
- Route Alternatives
- Areas where route is wider
- Route Alternative Width
- Reservation Boundary
- Chippewa National Forest
- Scientific & Natural Area
- Wildlife Management Area
- State Forest
- County Boundary
- City / Township Boundary

Carlton 1	Carlton 2
RA-42	RA-50
RA-43	RA-51
RA-44	RA-52
RA-45	
RA-46	
RA-47	
RA-48	
RA-49	

0 — 1 Miles

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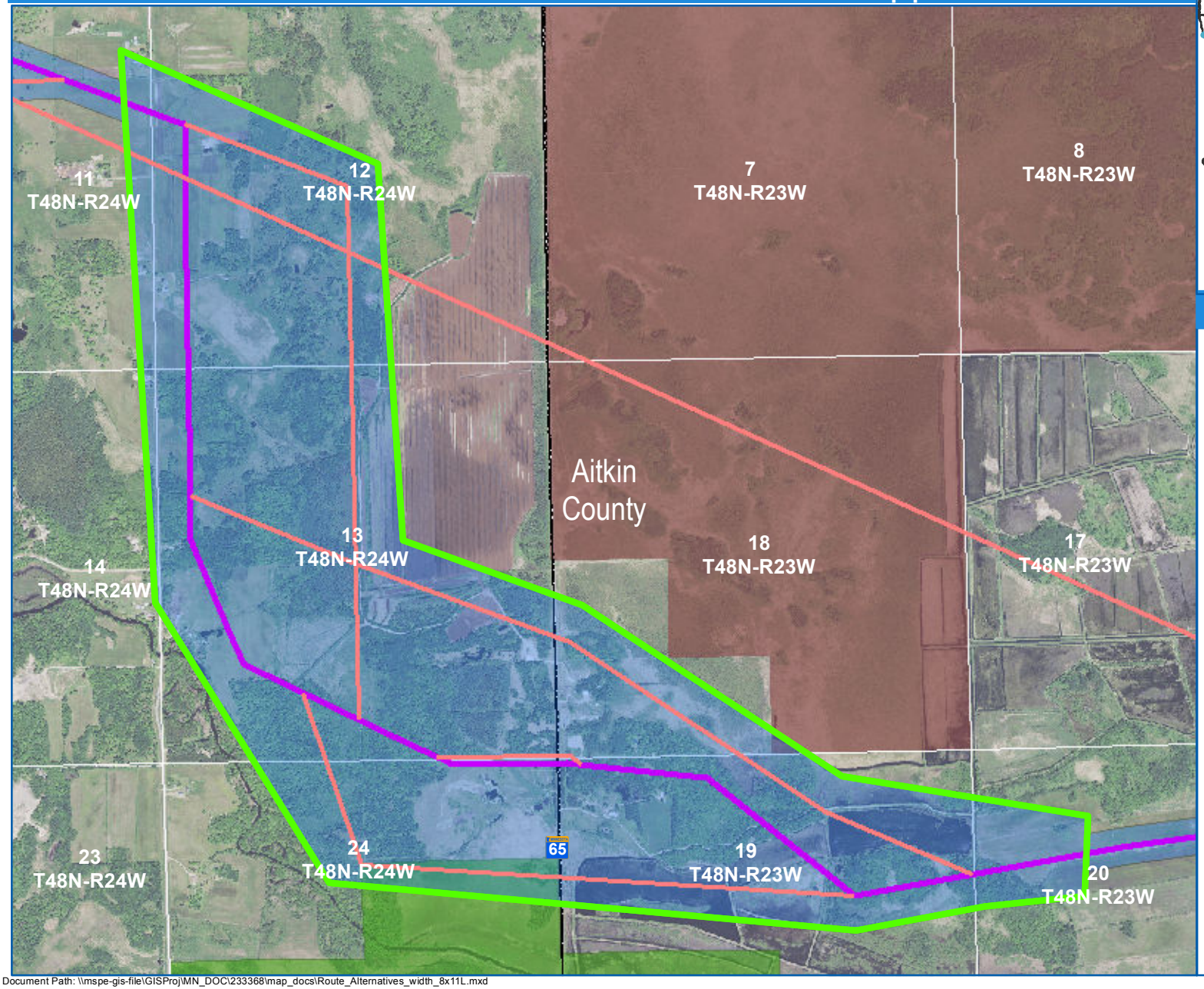
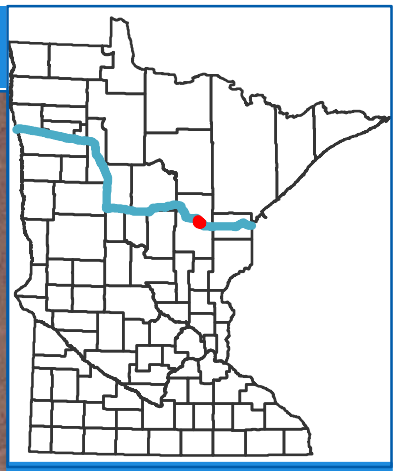
Figure 8 Aitkin County
Sandpiper Wider Route Areas





Legend

- Sandpiper Proposed Route
- Route Alternatives
- Areas where route is wider
- Route Alternative Width
- Reservation Boundary
- Chippewa National Forest
- Scientific & Natural Area
- Wildlife Management Area
- State Forest
- County Boundary
- City / Township Boundary

Aitken County

RA-33
RA-34
RA-35
RA-36

0 — 0.5 Miles

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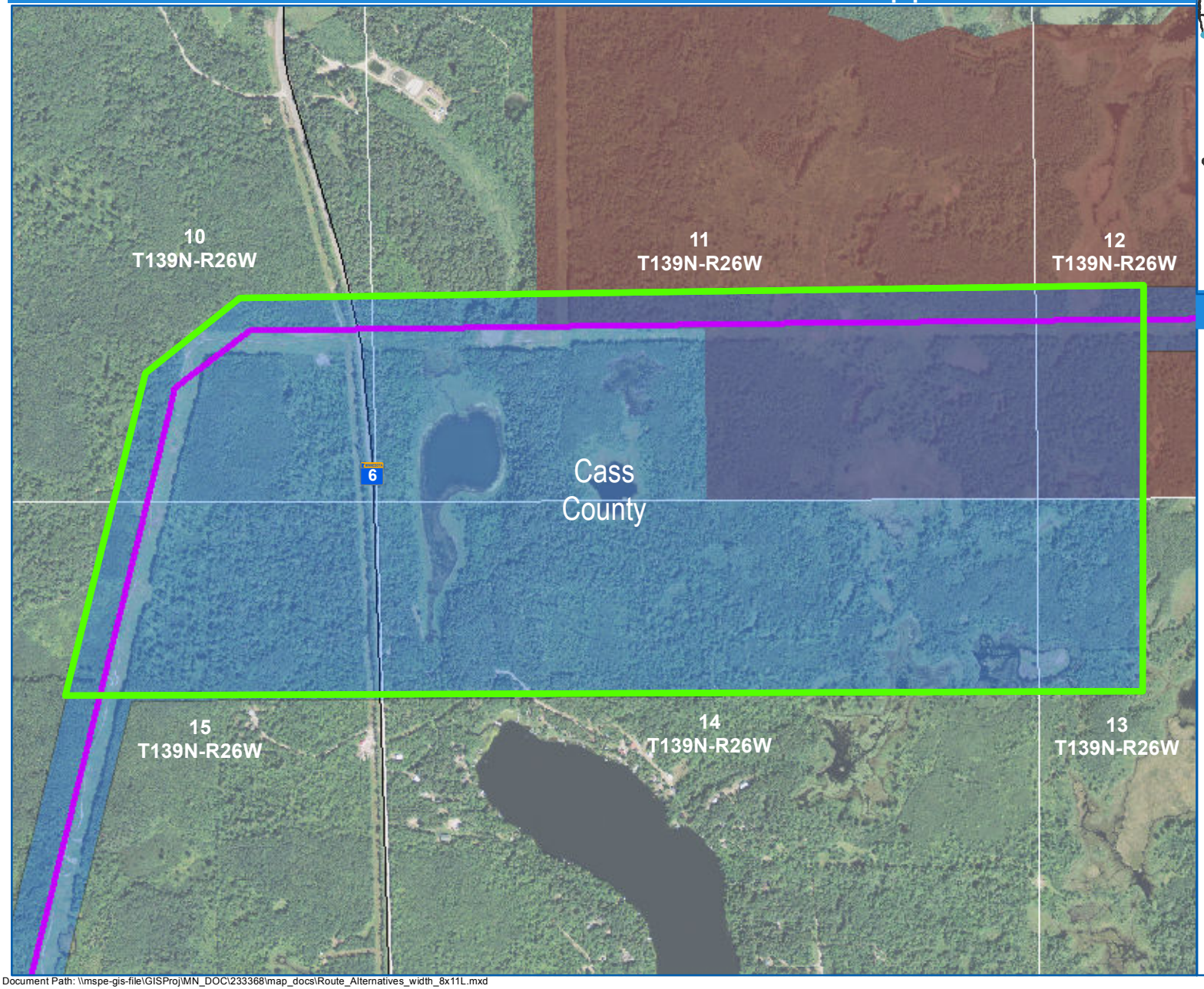
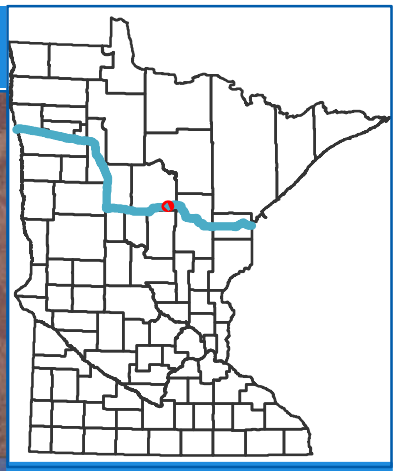
Figure 9 Spire Valley AMA
Sandpiper Wider Route Areas





Legend

- Sandpiper Proposed Route
- Route Alternatives
- Areas where route is wider
- Route Alternative Width
- Reservation Boundary
- Chippewa National Forest
- Scientific & Natural Area
- Wildlife Management Area
- State Forest
- County Boundary
- City / Township Boundary

Spire Valley AMA

RA-20

0 — 0.3 Miles

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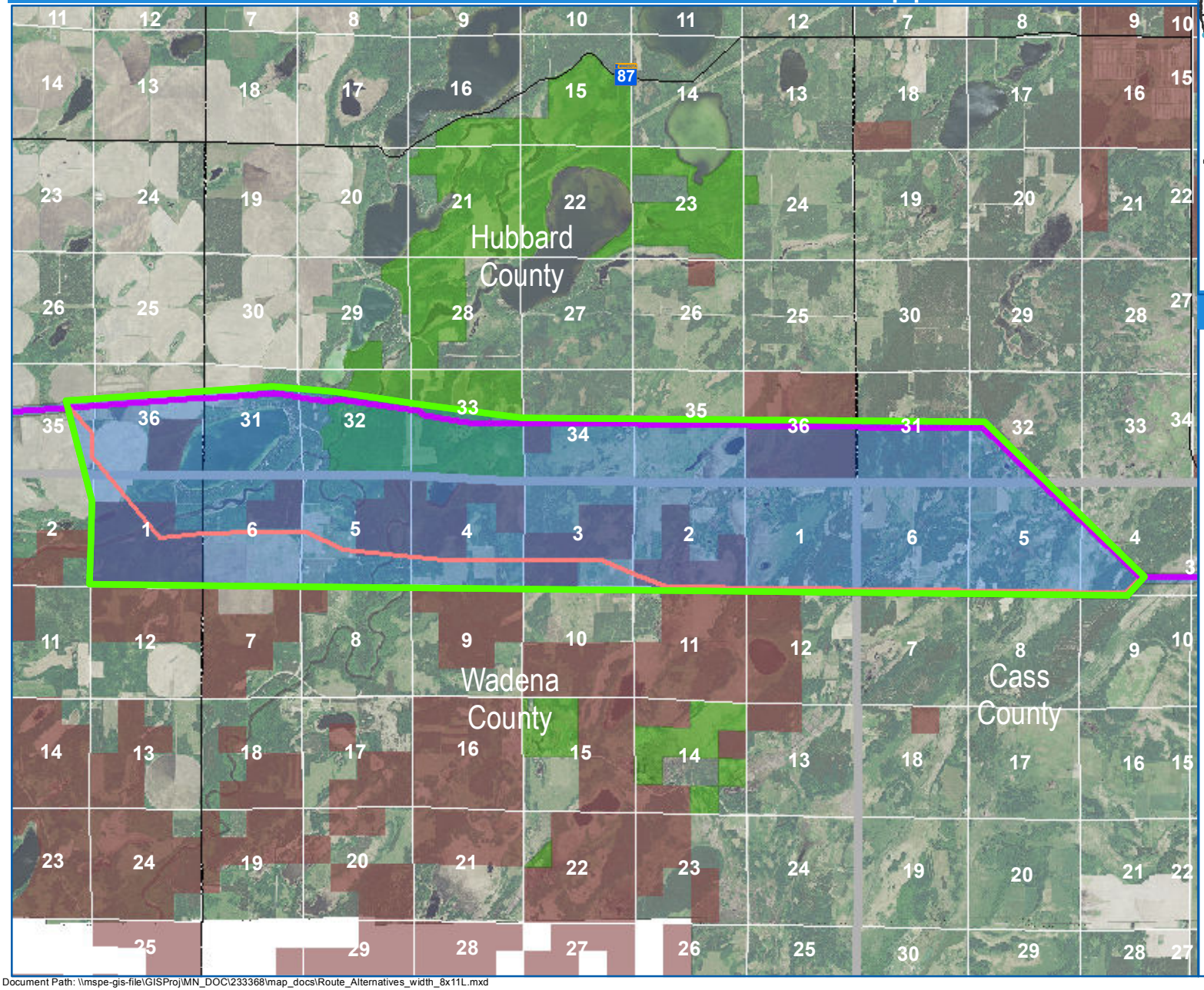
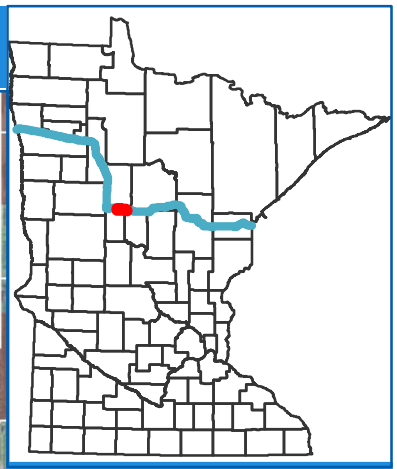
Figure 10 Crow Wing Chain WMA
Sandpiper Wider Route Areas





Legend

- Sandpiper Proposed Route
- Route Alternatives
- Areas where route is wider
- Route Alternative Width
- Reservation Boundary
- Chippewa National Forest
- Scientific & Natural Area
- Wildlife Management Area
- State Forest
- County Boundary
- City / Township Boundary

Crow Wing Chain WMA

RA-16

0 1.5 Miles

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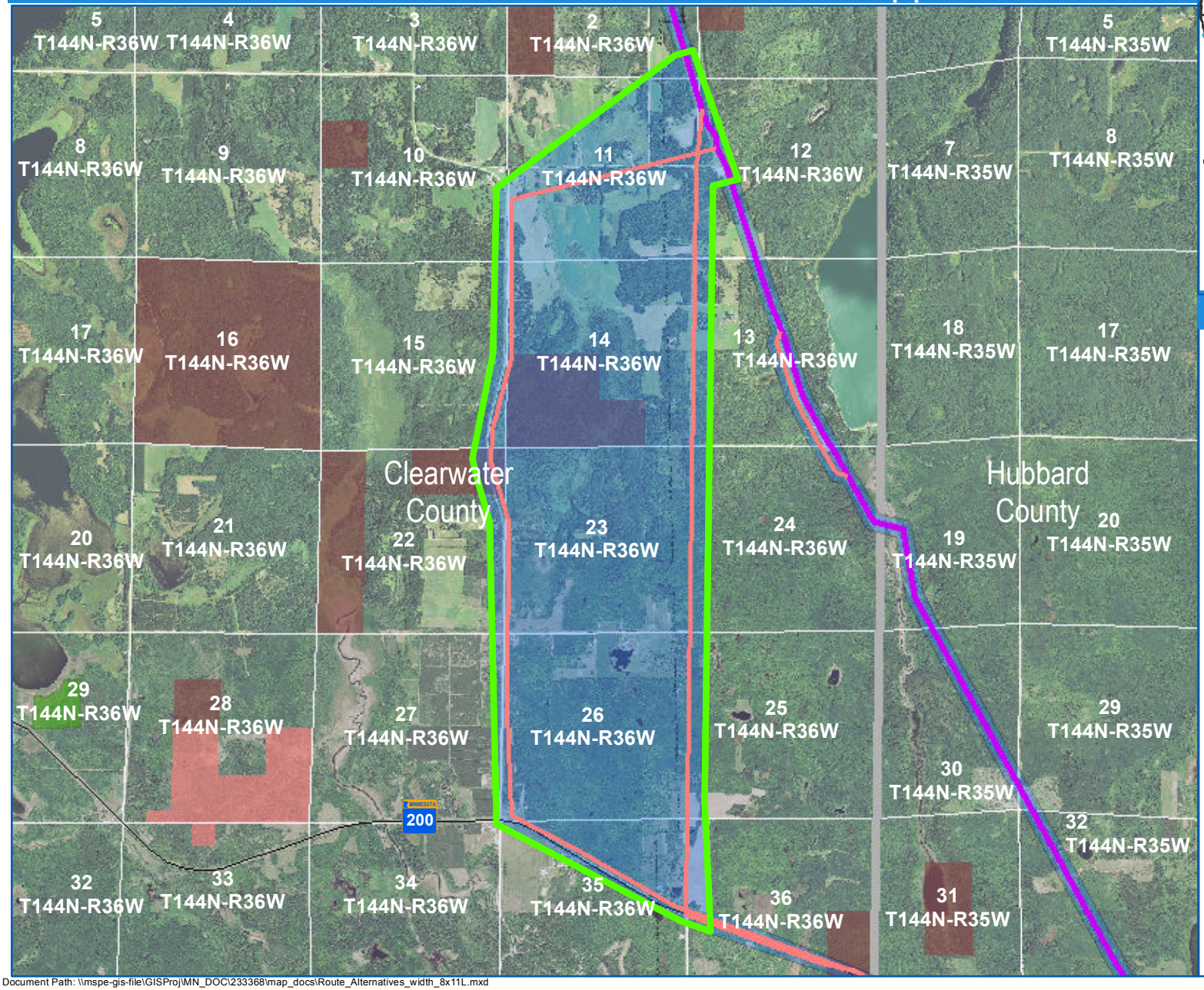
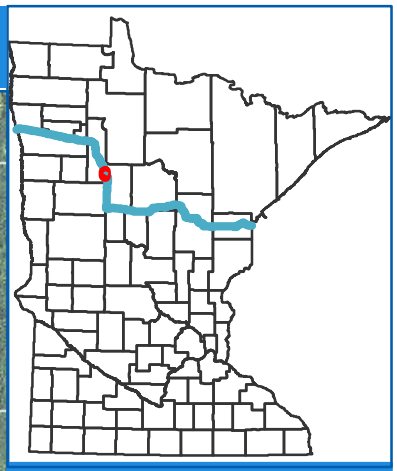
Figure 11 LaSalle Creek
Sandpiper Wider Route Areas





Legend

- Sandpiper Proposed Route
- Route Alternatives
- Areas where route is wider
- Route Alternative Width
- Reservation Boundary
- Chippewa National Forest
- Scientific & Natural Area
- Wildlife Management Area
- State Forest
- County Boundary
- City / Township Boundary

LaSalle Creek

RA-09
RA-10

0 1 Miles

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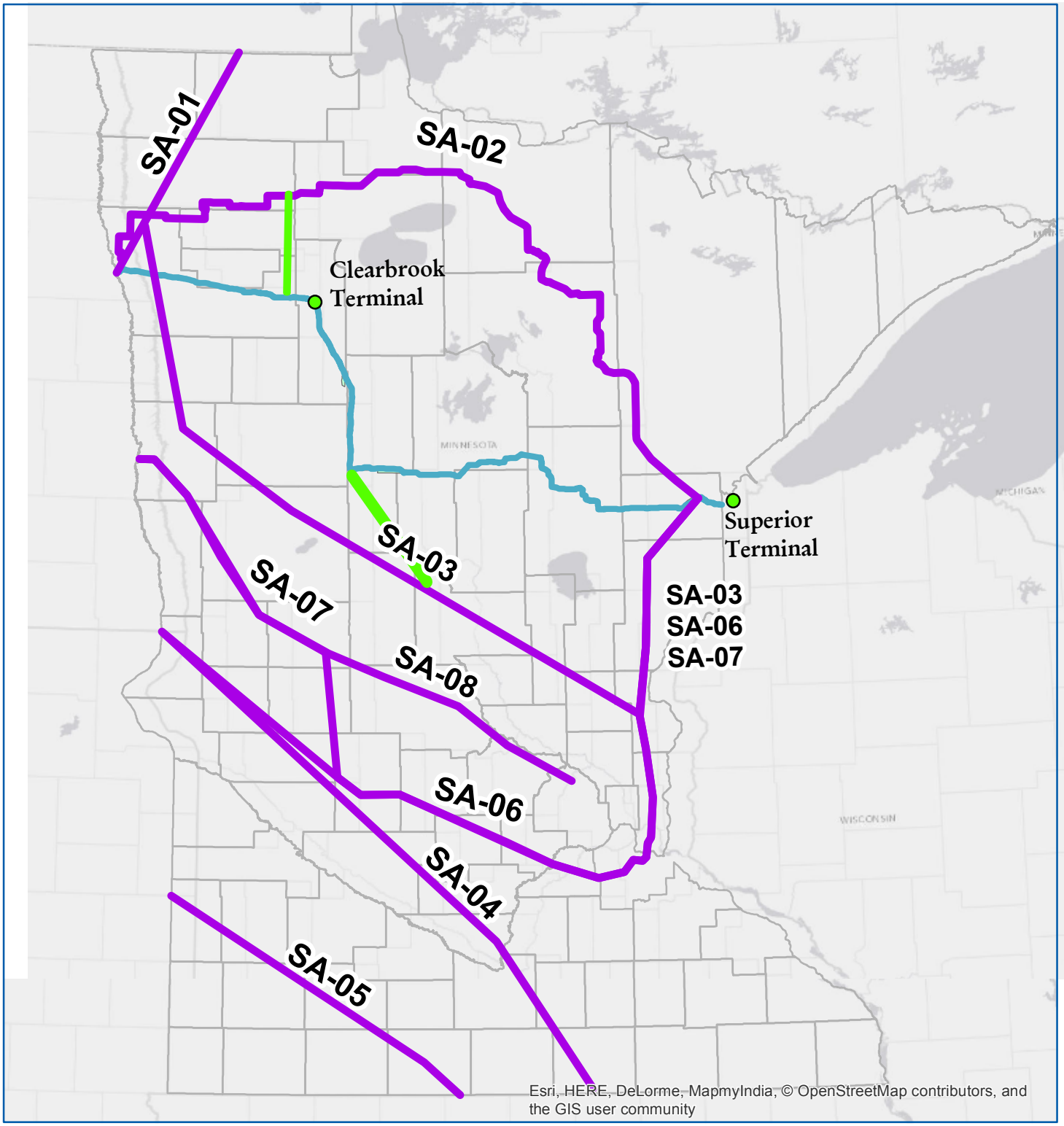
SA-02 and 03 System Alternative Connector Segments



Legend

- System Alternative
- System Alternative Connector
- Sandpiper Proposed Route
- County Boundary

0 100 Miles

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