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Chapter 12
Cumulative Potential Effects

12.1 PURPOSE AND DESCRIPTION OF CUMULATIVE POTENTIAL EFFECTS ANALYSIS

Cumulative potential effects result when impacts associated with the proposed Line 3 Project (Project) are combined with impacts associated with past, present, or reasonably foreseeable future actions within the area affected by the proposed Project. Analysis of cumulative potential effects accounts for the possibility that, added together, the minor impacts of many separate actions could be significant. This cumulative potential effects analysis considers resources that are expected to be affected by the proposed Project or its alternatives and assesses past, present, and reasonably foreseeable future actions to identify any geographic or temporal overlap in impacts on these resources.

Although Project-Specific, This Analysis Also Considers Wider Effects on Air Resources

The environmentally relevant area for evaluating cumulative potential effects varies in size depending on the types of resources and potential impacts considered. This cumulative effects analysis provides a focused, Project-specific review of cumulative potential effects and does not address impacts outside of the environmentally relevant area at a broad regional level.[1] For example, the geographic area over which the Project and its alternatives may affect air resources (related to the airshed) is larger than the geographic area over which the Project and its alternatives may affect some habitats (the pipeline construction work area). As a result, in this instance, a broader geographic region is explored in assessing the potential for past, present, and reasonably foreseeable actions to have a compounding impact on air resources, while the exploration of the potential for past, present, and reasonably foreseeable actions to have a compounding impact on certain habitat types is limited to the pipeline's construction footprint.

Both Temporary and Long-Term Effects Are Considered

The time period over which cumulative potential effects are evaluated also varies depending on the types of resources and potential impacts being considered. Impacts associated with construction noise, for example, are limited to the construction period, while impacts on wooded habitat within the permanent right-of-way could persist for decades. As a result, in this instance, the time window considered in the search for past, present, and reasonably foreseeable actions with noise impacts that may overlap with noise impacts from pipeline construction is limited to the construction period, while the timeframe considered in the search for past, present, and reasonably foreseeable actions with overlapping impacts on wooded habitat extends several decades.

The sections that follow identify reasonably foreseeable actions (Section 12.2) and review cumulative potential effects of these reasonably foreseeable actions in combination with Enbridge's proposed Project and the Certificate of Need (CN) Alternatives considered in Chapter 5 (Section 12.3) and with the route alternatives considered in Chapter 6 (Section 12.4). It primarily evaluates projects within

[1] Card v. Kandiyohi County Board of Commissioners, 713 N.W.2d 817

Minnesota. The final section of this chapter considers more broadly the cumulative potential effects of these projects on climate change and the impacts of climate change on resources that are affected both by the proposed Project and by climate change (Section 12.5). Cumulative potential effects associated with route segment alternatives are addressed in Chapter 7. Cumulative potential effects relevant to tribal uses and environmental justice communities are discussed in Chapters 9 and 11, respectively.

Cumulative potential effects for each resource analyzed in Chapters 5 and 6 were evaluated. Resources included the following:

- Water resources;
- Geology and soils;
- Vegetation;
- Fish and wildlife;
- Unique natural resources;
- Public lands;
- Air quality;
- Commodity production;
- Recreation and tourism;
- Population;
- Employment, income, and tax revenues;
- Cultural resources;
- Planning and zoning;
- Noise and vibration;
- Aesthetics/visual resources;
- Housing; and
- Transportation and public services.

Within the discussion for each cumulative potential effect in the following sections, resources identified as potentially affected are listed and described. Other resources, however, that are not anticipated to be potentially affected are not mentioned or discussed.

12.2 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

Future Actions Include Other Projects and the Possibility of Corridor Sharing

This Environmental Impact Statement (EIS) accounts for past, present, or reasonably foreseeable actions with impacts that could overlap with impacts at the same time or place as the proposed Project or its alternatives. For the purposes of this EIS, past and present actions and their associated impacts are now

part of the existing environment and are included in the affected environment described in Chapters 5 and 6.[2] In determining what is "reasonably likely to occur," this cumulative potential effects assessment considers whether any applications for permits have been filed with any units of government or whether detailed plans and specifications have been prepared for a project, among other considerations. A project need not be permitted to be reasonably likely to occur.

In addition, this analysis considers potential future corridor sharing. The Minnesota Public Utilities Commission (Commission) is required to consider corridor sharing in determining which route to select and permit (*Minnesota Rules 7852.1900 Subp. 2 F*). This cumulative potential effects analysis acknowledges that if a new pipeline corridor is permitted for this Project outside of the existing Enbridge Mainline, the new corridor creates an opportunity for future corridor sharing that could ultimately result in accumulation of multiple pipelines within the corridor chosen for the Line 3 Project. To address potential cumulative effects, the impacts of an additional pipeline in the Line 3 Project corridor have been assessed.

The future actions considered in this cumulative potential effects analysis are summarized in Table 12.2-1 and presented in Figure 12.2-1.

Table 12.2-1. Reasonably Foreseeable Actions Considered in the Analysis

Plans, Programs, or Project	Description	Type
1. Line 67 Expansion Project *Recently constructed, environmental review for increase in throughput underway*	Line 67 began transporting 450,000 barrels per day (bpd) from Canada in 2010. It received a CN from the Commission to expand its capacity to 800,000 bpd in November 2014, but is awaiting the issuance of a Presidential Permit from the U.S. Department of State, which is required of pipeline projects that cross an international boundary. The increased capacity required construction of four new pumping stations and upgrades to three existing pump stations along the existing line. Construction of the pumping stations has been completed and increased volumes have been achieved by transferring oil to a reinforced section of existing Line 3 to cross the U.S.-Canada border and then transferring the oil back to Line 67. The design capacity of Line 67, with the current number of pumping units installed, is approximately 890,000 bpd for heavy crude oil (U.S. Department of State 2017). Environmental Review Document: https://www.state.gov/documents/organization/267747.pdf	Crude oil pipeline

[2] Minn. R. 4410.0200, Subp. 11a

Table 12.2-1. Reasonably Foreseeable Actions Considered in the Analysis

Plans, Programs, or Project	Description	Type
2. Minnesota Pipe Line Company, LLC (MPL) Reliability Project *Construction*	The MPL Reliability Project will add six pump stations along MPL Line 4 or the "MinnCan Pipeline" route and upgrade two existing stations in Clearbrook and Albany. MPL Line 4, constructed in 2008, is a 300-mile-long, 24-inch-diameter crude oil pipeline that runs from Clearbrook to Rosemount, Minnesota. Currently MPL Line 4 is configured to transport approximately 165,000 bpd, but after improvements will be able to transport 350,000 bpd. The work related to the new pump stations will occur on six parcels of land located in the counties of Hubbard, Wadena, Morrison, Meeker, McLeod, and Scott, on parcels (each approximately 5–7 acres) owned or to be purchased by MPL (Department of Commerce, Energy Environmental Review and Analysis [DOC-EERA] 2015a). Environmental Review Document: http://mn.gov/commerce/energyfacilities/documents/34034/Environmental%20Review%20of%20Alternatives_Final.pdf	Pump stations
3. Koch Pipeline Company, Clearbrook Tanks Project *In permitting*	Expansion is proposed at the existing Clearbrook terminal by constructing four 300,000-barrel crude oil breakout tanks. The project will require a new 1,500-foot access road, two small buildings to house power zone centers and necessary pumps, and piping. The project footprint would affect approximately 18.0 acres of primarily agricultural land and some fragmented wooded forest land (Minnesota PCA 2015). Environmental Review Document: https://www.pca.state.mn.us/sites/default/files/p-ear2-69a.pdf	Crude oil breakout tanks
4. Menahga Area 115-kilovolt (kV) Transmission Line Project *Preconstruction*	Great River Energy's Menahga Project will construct approximately 22.5 miles of a 115-kV high-voltage transmission line (HVTL) in Hubbard, Wadena, and Becker counties to meet existing and future electric load requirements and provide electric service to a proposed Todd-Wadena distribution substation that will serve the proposed MPL Sebeka pump station. The transmission line would generally require a 500-foot right-of-way, and wider widths would be required to accommodate associated facilities (DOC-EERA 2015b). Environmental Review Document: http://mn.gov/commerce/energyfacilities//resource.html?Id=34290	Transmission line
5. MPL-Laporte 115-kV Transmission Line Project *In permitting*	Minnkota Power Cooperative proposes to build an approximately 9.4-mile 115-kV HVTL and a new 115/4.16-kV distribution substation to serve a new pumping station to be constructed and operated by MPL (DOC-EERA 2016). Based on the project docket, the Commission approved the Route Permit for the project preferred route in June 2017. Environmental Review Document: http://mn.gov/commerce/energyfacilities//resource.html?Id=34630	Transmission line
6. Motley Area 115kV Transmission Project *Construction*	Great River Energy has received approval from the Commission to construct and operate 16 miles of new 115-kV overhead transmission near Motley in Morrison, Cass, and Todd Counties to ensure the reliability of electric service to members of Crow Wing Power. The project will connect to an existing Minnesota Power 115kV transmission line in Cass County and extend approximately 5 miles south to the existing Crow Wing Motley Substation; the line will then continue westward along Azalea Road to U.S. Highway 10, and then southward along U.S. 10 approximately 7 miles to serve a new distribution substation. In most areas, the project will require a 100-foot-wide right-of-way. Environmental Review Document: https://mn.gov/commerce/energyfacilities//resource.html?Id=34336	Transmission Line

Table 12.2-1. Reasonably Foreseeable Actions Considered in the Analysis

Plans, Programs, or Project	Description	Type
7. Valley Expansion Pipeline Project *In permitting*	WBI Energy has proposed to construct a 38.0-mile, 16-inch natural gas pipeline that would connect WBI Energy's existing system near Mapleton, North Dakota, with the Viking Gas Transmission Company pipeline near Felton, Minnesota. Survey work has begun on the route and construction is proposed to start in early 2018.[3] Environmental Review Document: May 2017 Draft Applicant-Prepared EA for Valley Expansion Completed *http://www.wbienergy.com/docs/default-source/valley-expansion-project/may-2017-draft-applicant-prepared-ea-for-valley-expansion-project.pdf?sfvrsn=2*	Natural gas pipeline
8. Great Northern Transmission Line *Preconstruction*	On April 8, 2016, the Commission published an order issuing a route permit to Minnesota Power to construct a 500-kV transmission line from the Minnesota-Manitoba border to the Blackberry 500-kV substation near Grand Rapids, Minnesota, as well as associated substation facilities and transmission system modifications. On November 16, 2016, Minnesota Power received a Presidential Permit from the U.S. Department of Energy for the Minnesota-Manitoba border crossing (DOC-EERA; U.S. Department of Energy 2015). Environmental Review Document: http://mn.gov/commerce/energyfacilities//resource.html?Id=34321	Transmission line
9. Fargo-Moorhead Metropolitan Area Flood Risk Management Project *Preconstruction*	The Fargo-Moorhead Metropolitan Area Flood Risk Management Project is a 30.0-mile-long, 1,500-foot-wide diversion channel including a 12.0-mile-long southern embankment, 19 highway bridges, four railroad bridges, three gated control structures, and two aqueduct structures. The project would provide flood risk reduction for more than 230,000 people and 70.0 square miles of infrastructure in the communities of Fargo, Moorhead, West Fargo, Horace, and Harwood (Minnesota Department of Natural Resources [Minnesota DNR] 2016). Environmental Review Document: http://www.dnr.state.mn.us/input/environmentalreview/fm_flood_risk/feis.html	Water diversion channel
10. Addition of pipeline in same corridor	If a new pipeline corridor is permitted for this Project, outside of the existing Enbridge Mainline, the new corridor creates an opportunity for future corridor sharing that could ultimately result in accumulation of multiple pipelines within the corridor chosen for the Line 3 Project. This analysis considers the future addition of another pipeline to a new Line 3 pipeline corridor.	Crude oil pipeline

[3] Federal Register / Vol. 82, No. 3 / Thursday, January 5, 2017

Figure 12.2-1. Reasonably Foreseeable Actions for Cumulative Potential Effects Analysis

12.3 CUMULATIVE POTENTIAL EFFECTS – CERTIFICATE OF NEED ALTERNATIVES

12.3.1 Applicant's Preferred Route

The duration and geographical extent of impacts associated with construction and operation of the Applicant's preferred route are summarized in Chapter 5. Based on the temporal and geographic extent of impacts described in Chapter 5, this analysis of cumulative potential effects for the Applicant's preferred route focuses on five reasonably foreseeable projects located within several miles of the Applicant's preferred route that are expected to be under construction or operational during or after the time the Project would be constructed, as early as spring 2018, but more likely later in 2018. According to the Applicant, construction would be expected to begin as soon as all applicable regulatory approvals have been obtained:

- Line 67 Expansion Project;
- Minnesota Pipeline Company, LLC Reliability Project;
- Koch Pipeline Company, Clearbrook Tanks Project;
- MPL-Laporte 115-kilovolt (kV) Transmission Line Project; and
- Menahga Area 115-kV Transmission Line Project.

12.3.1.1 Line 67 Expansion Project

The potential cumulative effects of the Line 67 Expansion Project in combination with the Line 3 Project were evaluated in the 2017 Draft EIS prepared by the U.S. Department of State for the former. That environmental review document is incorporated here by reference (U.S. Department of State 2017).

Enbridge's Line 67 is located within the Enbridge Mainline corridor; between Neche, North Dakota, and Clearbrook, Minnesota, the Applicant's preferred route and Line 67 would run parallel within the Mainline corridor (Figure 12.2-1).

Increased Throughput on Line 67 Would Not Increase Cumulative Potential Effects

Line 67 was constructed in 2009 and began transporting 450,000 barrels per day (bpd) from Canada in 2010. It received a CN from the Commission to expand its capacity to 800,000 bpd in November 2014, but is awaiting the issuance of a Presidential Permit from the U.S. Department of State, which is required of pipeline projects that cross an international boundary. Construction activities for the Line 67 upgrade are complete and the increased throughput volumes that the project was designed to handle have been achieved by transferring oil to a reinforced section of existing Line 3 to cross the U.S.-Canada border and then transferring the oil back to Line 67. As noted above, for the purposes of this EIS, past and present actions and their associated impacts are now part of the existing environment and are included in the affected environment described in Chapters 5 and 6.[4]

The issuance of a Presidential Permit will authorize the movement of the increased throughput volumes in Line 67, but will not materially change the environmental impacts already present as a result of

[4] Minn. R. 4410.0200, Subp. 11a

construction and operation of the Line 67 Expansion Project. No net increase of volume is anticipated to occur. Therefore, issuance of the Presidential Permit and operation of Line 67 at full capacity is not expected to cause any new cumulative potential effects with the Applicant's preferred route for the Line 3 Project.

12.3.1.2 Minnesota Pipeline Company Reliability Project

The impacts of the Minnesota Pipe Line Company (MPL) Reliability Project were evaluated in the 2015 Comparative Environmental Review completed by the Minnesota Department of Commerce, Energy Environmental Review and Analysis (DOC-EERA) for that project. That environmental review document is incorporated here by reference and its conclusions form the basis for this assessment of the potential for cumulative effects (DOC-EERA 2015a).

New and Upgraded Pump Stations Would Increase Capacity of MPL Line 4

The MPL Reliability Project would install six new pumping stations and upgrade two others in order to increase the pumping capacity of the 305-mile-long MPL Line 4. The Commission issued a route permit for MPL Line 4 ("MinnCan pipeline") on April 13, 2007, and the newly installed pipeline went into operation before the end of 2008. MPL Line 4 has a designed capacity of approximately 350,000 bpd, but is currently limited to a throughput capability of approximately 165,000 bpd.

The MPL Reliability Project would optimize the throughput capacity of MPL Line 4 without altering the actual pipeline by upgrading the existing pump stations in Clearbrook, Minnesota, and Albany, Minnesota, and installing new pump stations along the current MPL Line 4 route in rural areas of Hubbard, Wadena, Morrison, Meeker, McLeod, and Scott counties. The work related to the new pump stations will occur on six small parcels of land, each approximately 5 to 7 acres, owned or to be purchased by MPL. No new pipeline would be required and no new pipeline right-of-way would be acquired for the project.

A Portion of MPL Line 4 Shares Corridor with the Line 3 Project and One Pump Station Would Be Nearby; Widening the Corridor Could have Negligible Cumulative Potential Effects

The Applicant's preferred route is located within the same general corridor as MPL Line 4 between Clearbrook and the southern corner of Hubbard County, where the Applicant's preferred route turns east while MPL Line 4 continues south to the Twin Cities area (Figure 12.2-1). Pump upgrades at the MPL/Koch Pipeline Company Clearbrook terminal proposed as part of the MPL Reliability Project will occur immediately south of the proposed Line 3 Project pump upgrades at Enbridge's Clearbrook terminal. One of the new MPL Line 4 pump stations, to be located near Laporte, Minnesota, would be situated adjacent to the Applicant's preferred route for the Line 3 Project. The potential corridor widening that would result from the Line 3 Project located parallel to MPL Line 4 would be evaluated for cumulative potential effects.

The other new pump stations and pump station upgrades proposed as part of the MPL Line 4 Reliability Project are located well south of where the Applicant's preferred route splits from the MPL Line 4 corridor and travels east.

The MPL Reliability Project is anticipated to be constructed and operational by the fourth quarter of 2017, well before construction of the Line 3 Project would be anticipated to begin (as early as spring 2018, but likely later in 2018). As a result, no cumulative potential effects are anticipated from construction activities (e.g., construction stormwater, construction noise), assuming that all post-

construction restoration activities associated with the MPL Reliability Project have been completed prior to commencing construction activities on Line 3 Project.

12.3.1.2.1 Noise and Vibration

Added Pump Stations Would Increase Noise, but Would Still Be Within Statutory Limits

Operational impacts of the MPL Reliability Project are primarily associated with pump station noise that will contribute to higher noise levels at local receptors, particularly residences. Near the MPL Clearbrook terminal, pump station upgrades at Enbridge's Clearbrook terminal will also contribute noise impacts. MPL has calculated that the closest residence to any pump station is approximately 0.1 mile (over 500 feet); at that distance, noise impacts from the MPL Reliability Project should be well within the state standard. See Section 6.2.2 for a discussion of noise associated with the proposed Project and alternatives to the proposed Project as well as state noise standards.

As discussed in Section 6.2.2, Enbridge has also modeled compliance with the state noise standard. In addition, both MPL and Enbridge have committed to post-construction monitoring and mitigation, if necessary, to maintain compliance with the state noise standard. As a result, cumulative potential effects on noise in the Clearbrook area are not anticipated to be significant. In the vicinity of the MPL Laporte terminal, no noise impacts are expected from operation of the Line 3 Project, so no cumulative potential effects are anticipated.

As previously noted, construction of the MPL Reliability Project is anticipated to be complete prior to the commencement of construction activities related to the Line 3 Project; therefore, cumulative potential effects associated with construction are not anticipated.

12.3.1.2.2 Vegetation

Need to Clear Forested Land is Minimized by Corridor Sharing

Permanent impacts of the new MPL Laporte pump station include clearing approximately 10 acres of forested land. The Applicant's preferred route for the Line 3 Project would result in loss or alteration of up to 5,617 acres of existing vegetation during construction in North Dakota, Minnesota, and Wisconsin.

The clearing of vegetation and conversion from forested to open habitats could impede native vegetation by increasing potential for spread of invasive species and noxious weeds and could also increase the effects of light penetration, wind, and humidity that are more prominent on edges between different habitat types. These impacts could have significant cumulative potential effects on a large scale; the use of a shared corridor, however, tends to minimize the introduction of new impacts. Due to the use of a shared corridor and the relatively small area that would be cleared, no significant cumulative potential effect to vegetation resources due to clearing are anticipated.

12.3.1.2.3 Wildlife

Potential Cumulative Effects on Wildlife Are Not Anticipated to Be Significant

The new MPL Laporte pump station is not anticipated to have a significant impact on wildlife. The forested area to be converted for the Laporte pump station is already a fragmented habitat, due to the existing MPL pipeline corridor. The pump station would be in immediate proximity to the pipeline, creating a nominal incremental effect. The addition of the proposed Line 3 pipeline along this corridor would further widen the cleared area, but it would be in immediate proximity to the MPL pipeline,

creating a nominal, incremental effect on wildlife. Therefore, no significant cumulative potential effects are anticipated.

12.3.1.2.4 Risk of Accidental Release

Increased Capacity of MPL Line 4 Would Not Significantly Increase Spill Risk

As discussed in Chapter 10, increases in throughput do not directly translate into greater risk of accidental release. The addition of the proposed Line 3 pipeline within the MPL corridor increases total risk of incident within the corridor by adding an entirely new pipeline. The increase in throughput on MPL Line 4 is not anticipated to significantly add to the risk profile in terms of likelihood of an event, exposure of resources, or measurable change in the ultimate size of a spill.

12.3.1.3 Koch Pipeline Company, Clearbrook Tanks Project

The potential cumulative effects of the Koch Pipeline Company's Clearbrook Tanks Project in combination with the Line 3 Project were evaluated in a 2015 Environmental Assessment Worksheet prepared by Minnesota Pollution Control Agency (Minnesota PCA) for that project (Minnesota PCA 2015). That environmental review document is incorporated here by reference, and its conclusions are summarized below.

The Clearbrook Tanks Project Would Require Four New Tanks and Other Infrastructure

The Clearbrook Tanks Project involves the addition of four field-erected 300,000-barrel (approximately 50,400,000 gallons total) external floating roof crude oil tanks at Koch Pipeline Company's existing Clearbrook terminal. The new tanks will be 196 feet in diameter and 56 feet high, and will have foundations that extend below the ground surface. In addition to the tanks and their associated containment areas, the project will require new infrastructure that would include a new 1,500-foot access road, two small buildings to house power zone centers as well as necessary pumps, and piping.

Clearbrook Tanks Project is Not Anticipated to Have Cumulative Short-Term Construction Effects

The MPL/Koch Pipeline Company Clearbrook terminal is located south of Enbridge's Clearbrook terminal. The Applicant's preferred route and proposed Line 3 Project upgrades to the Enbridge Clearbrook station would occur in the immediate vicinity of the Clearbrook Tanks Project.

Construction of the Clearbrook Tanks Project is expected to be complete before construction of the Line 3 Project would begin. As a result, no cumulative potential effects are anticipated from construction activities (e.g., construction stormwater, construction noise).

Cumulative potential effects of operations of the two projects that have been identified are described below, organized by potentially affected resource.

12.3.1.3.1 Water Resources

One-Time Water Appropriations Would Not Overlap, So Would Have No Cumulative Effects

The Clearbrook Tanks Project will require a one-time water appropriation from Steenerson Lake under an existing permit for hydrostatic testing of the tanks before they are put into service.

Approximately 120 million gallons of water would be requested through water appropriation permits for hydrostatic testing for the 340 miles of the Applicant's preferred route in Minnesota. The total amounts

of water needed for these activities for the Applicant's preferred route have not been determined for North Dakota and Wisconsin. While a time lag is anticipated between commissioning of the Clearbrook Tanks and commissioning of the proposed Line 3 pipeline, resulting in no overlap in hydrostatic test water appropriations (and consequently, no cumulative potential effects), if hydrostatic testing activities for the tanks overlap with hydrostatic testing of the pipeline, cumulative potential effects may occur if source water for the hydrostatic testing activity for both projects is drawn from Steenerson Lake. At this time, Enbridge has not selected a specific water source; per discussion in Section 5.2.1.1.3, the Applicant would source water from surface water and private and public wells; the proportion of water that would be obtained from groundwater versus surface water has not been determined.

Mitigation of said cumulative potential effects may be accomplished through utilization of other water sources in order to avoid adverse effects on a single waterbody.

12.3.1.3.2 Air Quality

Volatile Organic Compound Emissions Would Have Negligible Cumulative Potential Effect Compared to Actual Statewide Emissions

The primary cumulative potential effect of the Clearbrook Tanks Project is related to increases in air emissions in the environmentally relevant area around the Clearbrook terminal due to operation of tanks and pump stations. The Clearbrook Tanks Project's main potential environmental effects would be an increase in permitted air emissions (primarily volatile organic compounds [VOCs] and hazardous air pollutants [HAPs]). Koch Pipeline Company holds an air permit from Minnesota PCA to operate their terminal, including the new tanks, and will continue to operate within the limitations set forth in the air permit. Impacts from the Clearbrook Tanks Project air emissions would be localized and limited to the Clearbrook terminal and immediate surrounding area.

Actual VOC emissions for the Koch Pipeline Company's Clearbrook terminal were 20.91 tons per year. As indicated in Section 5.2.7, VOC emissions at Enbridge's Clearbrook terminal after the proposed Project are expected to be approximately 21 tons per year. Understanding the regional transport nature of ozone generation due to VOC emissions, the cumulative emissions from both the Koch Pipeline Company and Enbridge terminals are negligible in comparison to statewide actual VOC emissions from stationary sources and appropriate air permit requirements would apply.

12.3.1.4 MPL-Laporte 115-kV Transmission Line Project

The potential for cumulative effects resulting from the MPL-Laporte 115-kV Transmission Line Project with the Line 3 Project was evaluated in a 2016 Environmental Assessment prepared by DOC-EERA for that project (DOC-EERA 2016a). That environmental review document is incorporated here by reference and the primary areas where cumulative potential effects were identified in that assessment are summarized below.

The MPL-Laporte 115-kV Transmission Line Project involves the construction of approximately 9.4 miles of 115-kV high-voltage transmission line (HVTL) as well as a new 115/4.16-kV distribution substation to serve the Laporte pump station proposed as part of the MPL Line 4 Reliability Project discussed in Section 12.3.1.2.

MPL-Laporte Transmission Line Project Would Have No Cumulative Short-Term Construction Effects

The Applicant's preferred route for the Line 3 Project overlaps the environmentally relevant area of the MPL-Laporte 115-kV HVTL, south of the location at which the approved Applicant's preferred route diverts from the existing Line 3 and follows the MPL pipeline corridor south across the Clearwater-Hubbard county line.

Construction of the MPL-Laporte 115-kV HVTL is anticipated to be complete in the fourth quarter of 2017, prior to construction of the Line 3 Project would be expected to begin. As a result, no cumulative potential effects are anticipated from construction (e.g., construction stormwater, construction noise).

12.3.1.4.1 Aesthetics/Visual Resources

With Line 3 Project Underground, Cumulative Aesthetic/Visual Impacts Would Be Compatible with Existing Conditions

The preferred route for the Laporte 115-kV would not parallel the existing MPL pipeline corridor and would not result in a cumulative widening of this treeless linear feature. The approved Laporte preferred route would primarily parallel road right-of-way in the general area, potentially resulting in some additional clearing. While some tree clearing could occur at the north end of the proposed transmission line, collocated with the existing MPL pipeline corridor. The potential cumulative aesthetic effects along the route for the Laporte 115-kV are not expected to be significant as this infrastructure would be anticipated to be compatible with existing aesthetic conditions.

12.3.1.4.2 Water Resources

MPL-Laporte 115-kV Transmission Line Project Could Cumulatively Affect Wetlands and Wetland Vegetation

The MPL-Laporte 115-kV HVTL and the Applicant's preferred route for the Line 3 Project could collectively result in adverse, regional cumulative impacts on wetlands. Linear projects, such as transmission lines and pipelines, require removal of woody vegetation from the project rights-of-way for construction and operation. Should woody vegetation be removed from forested or shrub wetlands, it would convert the wetland to a different vegetation community and wetland type (see Sections 5.2.1.3 and 6.3.1.3). For the MPL-Laporte project, the total estimated acres of forested/shrub wetlands within the right-of-way of the various routing options ranges from 0.28 acres to 13.21 acres. With regard to the Line 3 Project, the Applicant's proposed project would potentially impact 618.2 acres of wetlands during construction. Of these 618.2 acres of wetland construction wetland impact, 195.7 acres of these will consist of forested wetlands. When considered collectively, the MPL-Laporte 115-kV HVTL in combination with the Applicant's preferred route for the Line 3 Project would be expected to cumulatively result in a conversion of wetland vegetation community and wetland type.

MPL-Laporte 115-kV Transmission Line Project and Line 3 Project Crossings May Result in Cumulative Potential Effects

The MPL-Laporte 115-kV HVTL would cross LaSalle Creek; the Applicant's preferred route also crosses LaSalle Creek. Portions of LaSalle Creek are identified as a designated trout stream; clearing vegetation adjacent to trout streams can result in increased water temperature, potentially resulting in less suitable trout habitat. Additionally, portions of LaSalle Creek are also identified as Aquatic Management Areas.

The MPL-Laporte 115-kV HVTL can be designed to span watercourses, floodplains, and wetlands, thereby minimizing direct impacts. Vegetation maintenance would also be required for the right-of-way for the Applicant's preferred route, and pipeline construction at LaSalle Creek is anticipated to be accomplished through the dry crossing method, resulting in temporary impacts on LaSalle Creek. However, cumulative potential effects to LaSalle Creek itself are not anticipated as the MPL-Laporte HVTL is expected to avoid directly impacting LaSalle Creek (DOC-EERA 2016). No structures are expected to be located in wetlands as a result of the MPL-Laporte 115-kV HVTL project.

12.3.1.4.3 Vegetation

Clearing of Vegetation Would Be Minimized by Using Parallel Existing Corridors

Potential cumulative effects on vegetation resources can occur if multiple projects are constructed in close proximity to each other. As noted above, the clearing of vegetation and conversion from forested to open habitats could impede native vegetation by increasing potential for spread of invasive species and noxious weeds and could also increase the effects of light penetration, wind, and humidity that are more prominent on edges between different habitat types. Permanent removal of trees and shrubs would be required along the rights-of-way for both the Minnkota MPL-Laporte 115-kV Transmission Line Project and the Line 3 Project; these impacts could have significant cumulative potential effects. In this case, however, these impacts are minimized to the extent possible through paralleling existing corridors.

12.3.1.4.4 Fish and Wildlife

Cumulative Long-Term Effects on Wildlife is Anticipated to Be Minimal

The MPL-Laporte 115-kV transmission line and Applicant's preferred route for the Line 3 Project could result in cumulative potential effects on wildlife resources; specifically, the clearing of vegetation and disturbance of wildlife habitats could physically harm or displace wildlife species. These projects could further alter the amount and quality of habitat available to wildlife in the vicinity due to tree clearing for rights-of-way. The Applicant's preferred route and the MPL-Laporte 115-kV preferred (selected) route interact at the northern and southern ends of the transmission preferred route within the MPL corridor, so while these impacts would be long term, their localized nature and the availability of abundant forested habitat in the vicinity are anticipated to result in insignificant cumulative potential effects.

12.3.1.4.5 Unique Natural Resources

The MPL-Laporte 115-kV transmission line and the Line 3 Project both involve tree removal, which could contribute to cumulative potential effects on the northern long-eared bat, which relies on forested habitat for summer foraging and roosting.

Field Surveys Would Be Necessary to Confirm the Presence of Rare/Protected Species or Communities

If rare/protected species are located in disturbed areas of projects constructed in close proximity to one another, the cumulative potential effects could be detrimental to individual rare communities. Field

surveys would be required, however, to confirm the presence or probable absence of rare/protected species in the respective project rights-of-way prior to construction. If rare/protected species are found, the permittee would be required to coordinate with the U.S. Fish and Wildlife Service (USFWS) or Minnesota Department of Natural Resources (Minnesota DNR) regarding avoidance or mitigation.

Potentially Significant Effects on Rare/Protected Species or Communities Would Be Minimized by Using Parallel Existing Corridors

Permanent loss of forest would lead to fragmentation by reducing intact blocks of forest vegetation. Removal of vegetation and conversion to open habitats would increase the potential for spread of invasive species and would alter the structure and function of rare communities, potentially making them less suitable for the species that would typically inhabit them. Cumulative potential effects on rare communities could be significant if projects are constructed in close proximity. In this case, however, they are minimized by paralleling existing corridors.

12.3.1.4.6 Commodity Production

Project Overlap Would Minimize Cumulative Effects on Forestry and Timber Operations

Potential impacts on forestry from the MPL-Laporte 115-kV transmission line are direct and long term because, in order to operate transmission lines safely, tall growing trees are not allowed in transmission line rights-of-way. The same requirement would apply to the Line 3 Project. No active timber management lands (state forest, private tree farms) have been identified, however, within the preferred route for the MPL-Laporte 115-kV Transmission Line Project. Cumulative potential effects on forestry and timber operations are expected to be minimal.

12.3.1.5 Menahga Area 115-kV Transmission Line Project

The potential effects of the Menahga Area 115-kV Transmission Line Project were evaluated in a 2015 Environmental Assessment prepared by DOC-EERA for that project (DOC-EERA 2015b). That environmental review document is incorporated here by reference, and its conclusions form the basis for this assessment of the potential for cumulative effects.

The Menahga Area 115-kV Transmission Line Project involves the construction of approximately 22.5 miles of new 115-kV transmission line from the existing Hubbard substation in southwestern Hubbard County westward to a new Straight River substation, and then southward to a new substation near the city of Menahga and to a new Red Eye substation. The proposed project is expected to relieve potential overloads on the existing 34.5-kV transmission system near the city of Menahga. It will serve the Sebeka pump station proposed as part of the MPL Reliability Project discussed above.

Menahga Area Transmission Line Would Have No Cumulative Short-Term Construction Effects

The Applicant's preferred route for the Line 3 t Project overlaps the environmentally relevant area of the Menahga Area 115-kV transmission line where the two would share a corridor for approximately 1 mile (Figure 12.2-1), following the existing MPL pipeline corridor to the southern border of Hubbard County. The Straight River substation would be located adjacent to this shared corridor.

Construction of the Menahga Area 115-kV transmission line is anticipated to be complete in 2017, prior to the start of Line 3 Project construction activities. As a result, no cumulative potential short-term effects are anticipated from construction (e.g., construction stormwater, construction noise).

12.3.1.5.1 Aesthetics and Visual Resources

With Line 3 Project Underground, Cumulative Aesthetic Impacts Would Be Compatible with Existing Conditions

The Menahga Area 115-kV transmission line would follow the existing MPL pipeline corridor near the Hubbard-Wadena county line and would result in a cumulative widening of this treeless linear feature. The addition of the proposed Line 3 pipeline in this area would cumulatively create an even wider, longer area of visual disturbance. The proposed Line 3 pipeline, however, would be located underground, so while the addition of the pipeline would further increase the width of the cleared corridor, there would be no structures or conductors added to the viewshed as a result of the Line 3 Project. The potential cumulative aesthetic/visual effects are not expected to be significant as this infrastructure would not be incompatible with existing conditions.

12.3.1.5.2 Vegetation

Clearing of Vegetation Would Be Minimized by Using Parallel Existing Corridors

As noted above, vegetation clearing would be required to maintain the right-of-way for both the Menahga Area 115-kV transmission line and the Applicant's preferred route for the Line 3 Project. The Menahga Area 115-kV project was anticipated to impact approximately 60 acres of forested land (DOC-EERA 2015b). The Applicant's preferred route for the Line 3 Project would result in loss or alteration of up to 5,617 acres of existing vegetation during construction in North Dakota, Minnesota, and Wisconsin. Conversion from forested to open habitats could impede native vegetation by increasing potential for spread of invasive species and noxious weeds and could also increase the effects of light penetration, wind, and humidity that are more prominent on edges between different habitat types. The cumulative potential effects of multiple corridors would be minimized by establishing parallel facilities in one corridor. A shared corridor anticipated to be utilized for these facilities; therefore, cumulative potential effects are anticipated to be minimal when compared with the cumulative potential effects resulting from a separate corridor for each facility within the environmentally relevant area.

12.3.1.5.3 Wildlife

Cumulative Long-Term Effects on Wildlife Are Anticipated to Be Minimal

The Menahga Area 115-kV transmission line and Applicant's preferred route for the Line 3 Project both pass approximately 0.5 mile from the Lowe Wildlife Management Area. The projects could result in cumulative potential effects on wildlife resources; specifically, the clearing of vegetation and disturbance of wildlife habitats could physically harm or displace wildlife species. These projects could further alter the amount and quality of habitat available to wildlife in their vicinity due to tree clearing for rights-of-way for transmission lines and a pipeline. The localized nature and the availability of abundant forested habitat in the vicinity mean that these cumulative potential effects are not expected to be significant.

12.3.1.5.4 Unique Natural Resources

The Menahga Area 115-kV transmission line and the Line 3 Project both involve tree removal, which could contribute to cumulative potential effects on the northern long-eared bat, which relies on forested habitat for summer foraging and roosting.

Field Surveys Would Be Necessary to Confirm the Presence of Rare/Protected Species or Communities

If rare/protected species are located in disturbed areas of projects constructed in close proximity to one another, the cumulative potential effects could be detrimental to individual rare communities. Field surveys, however, would be required to confirm the presence or probable absence of rare/protected species in the respective project rights-of-way prior to construction. If rare/protected species are found, the permittee would be required to coordinate with USFWS or Minnesota DNR regarding avoidance or mitigation.

Potentially Significant Effects on Rare/Protected Species or Communities Would Be Minimized by Using Parallel Existing Corridors

Permanent loss of forest would lead to fragmentation by reducing intact blocks of forest vegetation. Removal of vegetation and conversion to open habitats would increase the potential for spread of invasive species and would alter the structure and function of rare communities, potentially making them less suitable for the species that would typically inhabit them. Cumulative potential effects on rare communities could be significant if projects are constructed in close proximity. In this case, however, they are minimized by paralleling existing corridors.

12.3.1.5.5 Commodity Production

Project Overlap Would Minimize Cumulative Potential Effects on Forestry and Timber Operations

Potential impacts on forestry from the Menahga Area 115-kV transmission line are direct and long term because, in order to operate transmission lines safely, tall growing trees are not allowed in transmission line rights-of-way. The same requirement would apply to the Line 3 Project. No active timber management lands (state forest, private tree farms) are located in or adjacent to the shared corridor. Because parts of the Menahga Area 115-kV transmission line and the Applicant's preferred route for the Line 3 Project overlap, the cumulative potential effects on forestry and timber operations are expected to be minimal.

Expanded or New Rights-of-Way Could Create New Utility Corridors

An important incremental effect associated with a new pipeline along the Applicant's preferred route in combination with past, present, and reasonably foreseeable actions is expansion of existing and creation of new rights-of-way. The amount of area necessary for new permanent rights-of-way would vary in width depending on the terms of existing easements and the current alignment of existing pipelines or utilities within existing easements.

The Applicant's preferred route for the Line 3 pipeline would create approximately 60 miles of a new right-of-way, which could potentially cause new utility corridors to be established, as the Commission considers permitting routes for future projects that co-locate within existing corridors.

New Utility Corridors Could Change Land Use, Reduce Vegetation, and Affect Wildlife Habitats

The addition of rights-of-way could cumulatively affect existing land uses. Adding pipelines in a new or expanded right-of-way could incrementally cause further reductions in forested and agricultural lands, associated reductions in commodity production, and loss of important vegetation and wildlife habitats, including unique habitats. A new utility corridor could also contribute to industrial character and new air pollutant sources from constructed facilities.

12.3.1.6 Potential for Cumulative Spills – Applicant's Preferred Route

Identifying the potential cumulative effects from crude oil spills is based on the following assumptions: (1) that spills would have to occur "simultaneously" (temporal nature may vary based on resource) between the Project and a reasonably foreseeable future action; (2) that spills would have to be significant enough to result in appreciable environmental impacts; and (3) that the simultaneous spills would have to occur in collocated, adjacent, or nearby locations. There are four reasonably foreseeable actions identified in Section 12.2 that would potentially contribute to cumulative effects from inadvertent spills when combined with the Line 3 Project during operations. These include:

- Line 67 Expansion Project,
- MPL Reliability Project,
- Clearbrook Tanks Project, and
- The addition of pipeline in the same corridor.

Product pipeline spills can have adverse effects on various environmental resources, including: air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use. Specific impacts on these resources are discussed in greater detail in Chapter 10; similarly, potential cumulative effects as a result of spills is further discussed in Section 12.5.

12.3.2 Continued Use of Existing Line 3

The duration and geographical extent of impacts associated with the continued use of Line 3 are summarized in Chapter 5. Based on the temporal and geographic extent of the impacts described in Chapter 5, this analysis of cumulative potential effects for the continued use of existing Line 3 focuses on two reasonably foreseeable projects located within the same environmentally relevant area as existing Line 3:

- Line 67 Expansion Project, and
- Clearbrook Tanks Project.

12.3.2.1 Line 67 Expansion Project

As noted above, Enbridge's Line 67 is located within the Enbridge Mainline corridor. Thus, for their entire lengths the existing Line 3 and Line 67 run parallel to one another within the Mainline corridor (Figure 12.2-1).

Presidential Permit for Line 67 Expansion Project Would Not Lead to Any New Cumulative Effects

As noted above, construction activities for the Line 67 expansion are complete, and the increased throughput volumes that the project was designed to handle have already been achieved by transferring oil to a reinforced section of existing Line 3 to cross the U.S.-Canada border and then transferring the oil back to Line 67. The issuance of a Presidential Permit will authorize the movement of the increased throughput volumes through Line 67, but will not materially change the environmental impacts already present as a result of construction and operation of the Line 67 Expansion Project. Therefore, the Presidential Permit is not expected to cause any new cumulative potential effects in combination with the continued use of existing Line 3.

12.3.2.2 Koch Pipeline Company, Clearbrook Tanks Project

As noted above, Koch Pipeline Company's Clearbrook terminal is located south of Enbridge's Clearbrook terminal. Construction activities are not anticipated for the continued use of existing Line 3. As a result, no cumulative potential effects are anticipated from construction activities (e.g., construction stormwater, construction noise) associated with the Clearbrook Tanks Project.

While the continued use of existing Line 3 would not require upgrades to the Enbridge Clearbrook terminal, it is possible that integrity dig activity required for the ongoing maintenance of existing Line 3 would occur in the vicinity of the Clearbrook Tanks Project.

12.3.2.2.1 Air Quality

Line 3 Integrity Digs Are Not Anticipated to Have Significant Cumulative Potential Effects on Air Quality

As described above in Section 12.3.1.3, the primary long-term impact of the Clearbrook Tanks Project is increased air emissions, created by the operation of tanks and pump stations around the Clearbrook terminal. If integrity digs were to become necessary along the portion of the existing Line 3 that is within the airshed around the Clearbrook Tanks Project, operation of equipment for the dig would contribute to air emissions. Any emissions associated with integrity digs, however, would be minor and temporary, so no significant cumulative effects are anticipated.

12.3.2.2.2 Water Resources

Line 3 Integrity Digs Are Not Anticipated to Have Significant Cumulative Potential Effects on Water Resources

As excavation activities associated with integrity digs may result in erosion and sedimentation to nearby waterbodies, cumulative potential effects of integrity digs occurring during of around the same time as construction of the Clearbrook Tanks Project, and the construction of the Clearbrook Tanks Project, on water quality of nearby waterbodies such as Steenerson Lake were considered. As appropriate erosion and sediment control measures are anticipated to be utilized for both integrity digs and the Clearbrook Tanks Project, with the former occurring over a matter of days, cumulative potential effects are anticipated to be minimal at most.

12.3.2.3 Potential for Cumulative Spills – Continued Use of Existing Line 3

There are two reasonably foreseeable actions identified in Section 12.2 that would potentially contribute to cumulative effects from inadvertent spills when combined with the continued use of existing Line 3:

- Line 67 Expansion Project, and
- Clearbrook Tanks Project.

Product pipeline spills can have adverse effects on various environmental resources, including: air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use. Specific impacts on these resources are discussed in greater detail in Chapter 10; similarly, potential cumulative effects as a result of spills is further discussed in Section 12.5.

12.3.3 System Alternative SA-04

The duration and geographical extent of impacts associated with constructing and operating system alternative SA-04 are summarized in Chapter 5. Based on the temporal and geographic extent of the impacts described in Chapter 5, this analysis of cumulative potential effects for system alternative SA-04 focuses on three reasonably foreseeable projects located within several miles of SA-04 that are expected to be under construction or operational during or after the time SA-04 would be constructed (as early as spring 2018, but more likely later in 2018):

- Line 67 Expansion Project,
- Valley Expansion Pipeline Project, and
- Fargo-Moorhead Metropolitan Area Flood Risk Management Project.

12.3.3.1 Line 67 Expansion Project

Presidential Permit for Line 67 Would Have No Potential Cumulative Effects

As noted above, Enbridge's Line 67 is located within the Enbridge Mainline corridor. Thus, from Neche to the junction near the North Dakota-Minnesota border where system alternative SA-04 splits from Enbridge's Mainline corridor in a southerly direction, system alternative SA-04 and Line 67 would run parallel to one another within the Mainline corridor (Figure 12.2-1).

As noted above, construction of the Line 67 expansion is complete, and the increased throughput volumes that the project was designed to handle have been achieved by transferring oil to a reinforced section of existing Line 3 to cross the U.S.-Canada border and then transferring the oil back to Line 67. The issuance of a Presidential Permit will authorize the movement of the increased throughput volumes through Line 67, but will not materially change the environmental impacts already present as a result of construction and operation of the Line 67 Expansion Project. Therefore, the Presidential Permit is not expected to cause any new cumulative potential effects in combination with system alternative SA-04.

12.3.3.2 Valley Expansion Pipeline Project

WBI Energy has proposed to construct a 38.0-mile, 16-inch natural gas pipeline that would connect WBI Energy's existing system in North Dakota with the Viking Gas Transmission Company pipeline in Minnesota. The project would provide 40 million cubic feet per day (MMcf/d) of bidirectional capacity from an interconnection with WBI Energy's existing pipeline located near the town of Mapleton in Case County, North Dakota, to Viking Gas Transmission's existing pipeline located near the town of Felton in Clay County, Minnesota.

With Construction Anticipated to Begin in 2018, Timing of the Two Projects Could Overlap

This project would serve new and existing customers in eastern North Dakota and western Minnesota. In January 2017, the Federal Energy Regulatory Commission published *Notice of Intent to Prepare an Environmental Assessment for the Planned Valley Expansion Project and Request for Comments on Environmental Issues*.[5] In May 2017, WBI Energy prepared a Draft EA. According to WBI Energy, survey

[5] Federal Register / Vol. 82, No. 3 / Thursday, January 5, 2017

work started in 2016, and actual construction activities are proposed to start in summer 2018, with a proposed in-service date of November 1, 2018 (WBI Energy 2017).

System alternative SA-04 overlaps the environmentally relevant area of the Valley Expansion Pipeline Project where SA-04 crosses the proposed Valley Expansion Pipeline Project corridor just north of the Fargo-Moorhead metropolitan area. With construction of the Valley Expansion Pipeline Project proposed to begin in 2018, it is possible that the timing of construction would overlap for the two projects for a duration of several days to a month or more. Therefore, cumulative potential effects on resources resulting from construction activities is considered in the following sections.

12.3.3.2.1 Noise and Vibration

If Construction Activities Overlap, Noise Effects Would Be Short Term and Potentially Significant in Localized Areas

As discussed above, construction activities of these two projects may occur simultaneously, whether for a single day, several weeks or longer. For a single construction project, noise impacts are typically short-term and transient. However, should construction in the overlapping environmentally relevant area of both projects occur during simultaneous time periods, especially for a duration of several weeks or longer, temporary noise effects would be exacerbated during concurrent construction phases and could result in significant, adverse cumulative potential effects in localized areas. Cumulative potential effects are variable and dependent on various factors, including duration of simultaneous construction activities; nature of construction activities; and distance from residences, schools, churches, and hospitals.

12.3.3.2.2 Aesthetics/Visual Resources

Overlapping Corridors Are Not Anticipated to Result in Significant Cumulative Potential Effects on Visual Aesthetics But Are Potentially Significant in Localized Areas But Maybe Would Not Significantly Affect Visual Aesthetics

If construction of these two projects occurred simultaneously, temporary aesthetic impacts could overlap, and be potentially significant for any residences, schools, churches and/or hospitals within the viewshed of the overlapping environmentally relevant area. However, given the short-term nature of construction activities, cumulative potential effects are not anticipated to be significant from a visual/aesthetic perspective, even in the case that construction for both projects occurred in the same localized area.

During operation, aesthetic impacts are primarily associated with the maintenance of a cleared right-of-way. Where the two corridors cross, the cleared corridors would overlap, changing the viewshed in both directions. Both projects would, however, be located underground, and their visual impacts would overlap parallel to Interstate 29, where no notable tree or brush clearing would be required. Therefore, the cumulative potential effect of these changes is unlikely to significantly alter the existing visual character of the area.

12.3.3.2.3 Transportation and Public Services

Simultaneous Construction Would Have a Short-Term, Adverse Cumulative Potential Effect on Local Transportation

If the two projects were constructed simultaneously, increased construction vehicle traffic could result in localized short-term, adverse traffic impacts, as well as potentially adverse impacts on public services. The small number of residents living in the construction overlap area could experience cumulative potential effects of an adverse nature, such as delays in travel and receiving public services, e.g. emergency medical, fire, police, and would likely face the need to take alternate routes for the duration of construction activities. However, simultaneous construction activities would not likely be anticipated to last more than several weeks. Furthermore, coordinated construction would likely occur outside of peak commute hours and include traffic management plans to allow emergency services to reach residents without difficulty. Therefore, cumulative potential effects would be localized and adverse but unlikely to be significant.

12.3.3.2.4 Wildlife

Clearing Vegetation in Overlapping Area Would Not Significantly Affect Wildlife

The clearing of vegetation and disturbance of wildlife habitats for these projects could directly harm or displace wildlife species. In addition, indirect impacts such as disturbance related to construction noise could occur. For non-listed wildlife species, these impacts are not be expected to be significant. Furthermore, in the area where the two projects overlap, they are located adjacent to Interstate 29, so nearby wildlife are likely habituated to disturbance and noise in the area.

12.3.3.2.5 Commodity Production

Simultaneous Construction Would Have Little Cumulative Effect on Agriculture

The construction of these two projects could result in short-term, adverse cumulative potential effects on agricultural operations and practices, which may need to be altered in certain areas to avoid conflicts with construction activities. However, these effects would remain insignificant relative to overall commodity production in the area.

Since pipeline land uses are compatible with agriculture practices, operation of these utilities are anticipated to have minimal cumulative potential effects on agriculture.

12.3.3.2.6 Employment/Income/Tax Revenues

Simultaneous Construction May Positively Affect Direct and Indirect Jobs and Increase Tax Revenue

If the projects were constructed at the same time, cumulative socioeconomic benefit with respect to employment could result. Direct positive effects on local employment could occur if both projects were to occur as there may be increased incentive to hire local labor for construction if the projects are staged to occur simultaneously or in immediate succession. This may also appear to non-technical pipeline construction labor such as excavation and restoration. Along with these construction jobs, tax revenues, gross output, and value-added spending would occur from development and construction of the proposed projects.

12.3.3.3 Fargo-Moorhead Metropolitan Area Flood Risk Management Project

The impacts of the Fargo-Moorhead Metropolitan Area Flood Risk Management Project were evaluated in the 2016 EIS completed by Minnesota DNR for that project (Minnesota DNR 2016). That environmental review document is incorporated here by reference, and its conclusions form the basis for this assessment of the potential for cumulative effects.

As indicated in Table 12.2-1, the Fargo-Moorhead Metropolitan Area Flood Risk Management Project is a 30-mile-long, 1,500-foot-wide diversion channel including a 12.0-mile-long southern embankment, 19 highway bridges, four railroad bridges, three gated control structures, and two aqueduct structures. The project would provide flood risk reduction for more than 230,000 people and 70 square miles of infrastructure in the communities of Fargo, Moorhead, West Fargo, Horace, and Harwood.

Feasibility of Co-Locating the Two Projects Has Not Yet Been Analyzed

The system alternative SA-04 corridor coincides with the proposed diversion channel west of the Fargo-Moorhead metropolitan area, from a point just south of where system alternative SA-04 splits from Interstate 29 to the point just south of the Fargo-Moorhead metropolitan area where SA-04 re-joins Interstate 29. As proposed, SA-04 would be co-located along the diversion channel and would require a number of crossings of the channel and associated facilities (e.g., staging areas). A detailed engineering analysis of the feasibility of this arrangement has not been conducted. The description of cumulative potential effects below assumes collocation in this area is a viable option and describes the general impacts that could result.

12.3.3.3.1 Displacement

Corridor Sharing Could Cause Additional Displacement of Homes

The Fargo-Moorhead Metropolitan Area Flood Risk Management Project is expected to result in some displacement of homes/residences. Depending on how system alternative SA-04 were configured in relation to the final design of the diversion project, the impact of locating these two projects in a shared corridor through a relatively restricted area could cause additional displacement of homes/residences.

12.3.3.3.2 Noise and Vibration

Simultaneous Construction Would Only Have a Short-Term Effect on Noise Levels

If construction of these two projects occurred simultaneously, temporary noise effects would be exacerbated during concurrent construction phases, but their short-term nature would mean these adverse impacts are not expected to be significant.

12.3.3.3.3 Aesthetics and Visual Resources

Simultaneous Construction Would Only Have a Short-Term Effect on Aesthetics

If construction of these two projects occurred simultaneously, temporary aesthetic impacts could overlap, but their short-term nature would mean these adverse impacts are not expected to be significant.

12.3.3.3.4 Housing

Increased Demand for Housing Would Be Short Term

If construction of these two projects occurred simultaneously in this area, the influx of workers would result in a cumulative increase in demand for housing. These impacts would, however, be short term, and neither project has identified a risk of housing shortage.

12.3.3.3.5 Transportation and Public Services

Simultaneous Construction Would Have Only a Short-Term Effect on Transportation Services

If constructed simultaneously, increased construction vehicle traffic could result in short-term, adverse traffic impacts. Both projects would be required to comply with all applicable road authorities' management standards and policies during construction, however, so cumulative potential effects are not anticipated to be significant.

12.3.3.3.6 Water Resources

Potentially Significant Cumulative Effects Could Be Mitigated by Permitting, Zoning, and Use of BMPs

Together, these two projects could collectively result in adverse, regional cumulative impacts on wetlands, floodplains, and surface waters. Both projects would cause wetland impacts in this region, including construction impacts and fill or type conversion. The addition of a pipeline in the same corridor would exacerbate the impacts of both construction and operation of the Fargo-Moorhead Metropolitan Area Flood Risk Management Project, increasing potential impacts associated with construction stormwater, further altering the floodplain, and potentially causing additional impacts on local hydrology. These cumulative effects have the potential to be significant, but may be managed through compliance with wetland permitting requirements, local floodplain zoning, application of stormwater control best management practices (BMPs) during construction, and proper restoration following construction.

12.3.3.3.7 Fish and Wildlife

Potentially Significant Effects on Fish and Aquatic Habitats Could Also Be Mitigated

To the extent that these two projects could collectively result in adverse, regional cumulative potential impacts on wetlands, floodplains, and surface waters, they could also affect fish and aquatic habitat. As noted above, these cumulative effects have the potential to be significant, but may be managed through compliance with wetland permitting requirements, local floodplain zoning, application of stormwater control BMPs during construction, and proper restoration following construction.

12.3.3.3.8 Employment/Income/Tax Revenues

Simultaneous Construction Would Create Jobs and Increase Tax Revenue

If the projects were constructed at the same time, there would be a cumulative socioeconomic benefit, primarily in the form of short-term construction employment and long-term revenue from taxes. Along with these construction jobs, tax revenues, gross output, and value-added spending would occur from development and construction of the proposed projects.

12.3.3.4 Potential for Cumulative Spills – SA-04

There are two reasonably foreseeable actions identified in Section 12.2 that would potentially contribute to cumulative effects from inadvertent spills where operation of the reasonably foreseeable action is combined with the operation of SA-04:

- Line 67 Expansion Project, and
- Valley Pipeline Expansion Project.

Product pipeline spills can have adverse effects on various environmental resources, including: air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use. Specific impacts on these resources are discussed in greater detail in Chapter 10; similarly, potential cumulative effects as a result of spills is further discussed in Section 12.5.

12.3.4 Transportation by Rail

The duration and geographical extent of impacts associated with transportation by rail are summarized in Chapter 5. Based on the temporal and geographic extents described in Chapter 5, this analysis of cumulative potential effects for transportation by rail focuses on reasonably foreseeable projects located within several miles of the loading facilities and rail access construction and upgrades described in Chapter 4.

Because this construction is localized near Gretna, Manitoba; Clearbrook, Minnesota; and Superior, Wisconsin, the search for reasonably foreseeable projects with the potential to overlap the environmentally relevant area was focused in these three general locations. Koch Pipeline Company's Clearbrook Tanks Project was identified as having the potential to overlap with rail loading and access expansion at Clearbrook required under the transportation by rail alternative.

As noted above, Koch Pipeline Company's Clearbrook terminal is located south of Enbridge's Clearbrook terminal. The proposed rail upgrades would likely occur in the vicinity of the Clearbrook Tanks Project.

Construction of Rail Upgrades and Clearbrook Tank Project Would Not Overlap

Construction of the Clearbrook Tanks Project is expected to be completed well before construction of the rail loading and access facilities would begin. As a result, no cumulative potential effects are anticipated from construction activities (e.g., construction stormwater, construction noise).

12.3.4.1 Noise and Vibration

Rail Facilities Would Not Have Significant Cumulative Effects on Noise Levels

Operational impacts of the MPL Reliability Project are primarily associated with pump station noise that will contribute to higher noise levels at local receptors, particularly residences. In the vicinity of the MPL Clearbrook terminal, pump station upgrades at Enbridge's Clearbrook terminal would also contribute to noise impacts. MPL has calculated that the closest residence to any pump station is approximately 0.1 mile (over 500 feet); at that distance, noise impacts from the MPL Project should be well within the state standard.

Noise from rail loading and access facilities in the Clearbrook area would further contribute to industrial noise in the area. Post-construction monitoring and mitigation might be necessary to maintain compliance with the state noise standard. If post-construction noise monitoring is conducted and mitigation is applied, cumulative potential effects on noise in the Clearbrook area are not anticipated to be significant.

12.3.4.2 Water Resources

New Rail Facilities Would Have No Significant Cumulative Effects on Water Resources

Both the Clearbrook Tanks Project and potential new rail loading and access facilities in the Clearbrook area would add new impervious surfaces—18.27 acres—(MPCA 2015) and would be new sources of industrial stormwater in the area. Construction of the new tanks, secondary containment, and new internal roads will increase the impervious area of the Koch Pipeline Company's Clearbrook terminal site by approximately 18 acres and therefore requires a National Pollutant Discharge Elimination System/State Disposal System Construction Stormwater General permit.

Most of the runoff from the new impervious surfaces would be collected and retained in the secondary containment system. As a result, the new impervious surfaces would not significantly increase the rate at which water is discharged from the site to the surrounding watershed area. Accumulated stormwater would be inspected prior to discharge and would be discharged in a manner that prevents erosion or scouring in the conveyance ditch. Potential new rail loading and access facilities in the Clearbrook area would be subject to the same regulations and would not significantly increase the rate at which water is discharged from the site to the surrounding watershed area. As a result, no significant cumulative effects are anticipated.

12.3.4.3 Air Quality

New Rail Facilities Would Have No Significant Cumulative Effects on Air Quality

The primary cumulative potential effect of the Clearbrook Tanks Project would be air emissions from operating tanks and pump stations, which could potentially increase permitted air emissions (primarily VOCs and HAPs). A new rail loading facility could contribute air emissions of a similar nature during loading. Understanding the regional transport nature of ozone generation due to VOC emissions, the cumulative emissions from both the Koch Pipeline Company terminal and a new rail loading facility are negligible in comparison to regional actual VOC emissions from stationary sources.

12.3.4.4 Potential for Cumulative Spills – Transportation by Rail

Should spills occur during operations of one of the reasonably foreseeable future actions and transportation by rail (either simultaneously or relatively simultaneously, depending on the affected resource), there is a potential for significant cumulative effects. Air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use would be potentially adversely impacted from a single spill.

There is one reasonably foreseeable actions identified in Section 12.2 that would potentially contribute to cumulative effects from inadvertent spills when combined with the Transportation by Truck alternative. This is the Clearbrook Tanks project.

Product pipeline spills can have adverse effects on various environmental resources, including: air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use. Specific impacts on these resources are discussed in greater detail in Chapter 10; similarly, potential cumulative effects as a result of spills is further discussed in Section 12.5.

These adverse effects, both anticipated and observed in historic situations, would be exacerbated if a spill or accident occurring during rail transport or loading were to happen in a similar time period and in a nearby location as a spill during operations of one of the aforementioned reasonably foreseeable actions. Stringent preventative measures would be anticipated to minimize this potential. Refer to Section 12.5 for additional details.

12.3.5 Transportation by Truck

The duration and geographical extent of impacts associated with construction and operation of transportation by truck are summarized in Chapter 5. Based on the temporal and geographic extents described in Chapter 5, this analysis of cumulative potential effects for transportation by truck focuses on reasonably foreseeable projects located within several miles of the loading facilities and truck access construction and upgrades described in Chapter 4.

Because this construction would be localized near Gretna, Manitoba; Clearbrook, Minnesota; and Superior, Wisconsin, the search for reasonably foreseeable projects with the potential to overlap the environmentally relevant area was focused in these three general locations. Koch Pipeline Company's Clearbrook Tanks Project was identified as having the potential to overlap with truck loading and access expansion at Clearbrook required under the transportation by truck alternative.

As noted above, Koch Pipeline Company's Clearbrook terminal is located south of Enbridge's Clearbrook terminal. The proposed truck upgrades would likely occur in the vicinity of the Clearbrook Tanks Project.

Construction of Clearbrook Tanks Project and Truck Facilities Would Not Overlap

Construction of the Clearbrook Tanks Project is expected to be complete well before construction of the truck loading and access facilities for the Line 3 Project would begin. As a result, no cumulative potential short-term effects are anticipated from construction (e.g., construction stormwater, construction noise).

12.3.5.1 Noise

Truck Facilities Would Not Have Significant Cumulative Potential Effects on Noise Levels

Operational impacts of the MPL Reliability Project are primarily associated with pump station noise that would contribute to higher noise levels at local receptors, particularly residences. In the vicinity of the MPL Clearbrook terminal, pump station upgrades at Enbridge's Clearbrook terminal would also contribute noise impacts. MPL has calculated that the closest residence to any pump station is approximately 0.1 mile (over 500 feet); at that distance, noise impacts from the MPL Reliability Project should be well within the state standard.

Noise from truck loading and access facilities in the Clearbrook area would further contribute to industrial noise in the area. Post-construction monitoring and mitigation might be necessary to maintain compliance with the state noise standard. If post-construction noise monitoring is conducted and

mitigation is applied, cumulative potential effects on noise in the Clearbrook area are not anticipated to be significant.

12.3.5.2 Water Resources

New Truck Facilities Would Have No Significant Cumulative Potential Effects on Water Resources

Both the Clearbrook Tanks Project and potential new truck loading and access facilities in the Clearbrook area would add new impervious surfaces and would be new sources of industrial stormwater in the area. Construction of the new tanks, secondary containment, and new internal roads will increase the impervious area of the Koch Pipeline Company's Clearbrook terminal site by approximately 18 acres and therefore requires a National Pollutant Discharge Elimination System/State Disposal System Construction Stormwater General permit.

Most of the runoff from the new impervious surfaces would be collected and retained in the secondary containment system. As a result, the new impervious surfaces would not significantly increase the rate at which water is discharged from the site to the surrounding watershed area. Accumulated stormwater would be inspected prior to discharge and would be discharged in a manner that prevents erosion or scouring in the conveyance ditch. Potential new truck loading and access facilities in the Clearbrook area would be subject to the same regulations and would not significantly increase the rate at which water is discharged from the site to the surrounding watershed area. As a result, no significant cumulative effects are anticipated.

12.3.5.3 Air Quality

New Truck Facilities Would Have No Significant Cumulative Potential Effects on Air Quality

The primary cumulative potential effect of the Clearbrook Tanks Project would be air emissions from operating tanks and pump stations, which could potentially increase permitted air emissions (primarily VOCs and HAPs). A new truck loading facility could contribute air emissions of a similar nature during loading. Understanding the regional transport nature of ozone generation due to VOC emissions, the cumulative emissions from both the Koch Pipeline Company terminal and a new truck loading facility are negligible in comparison to actual regional VOC emissions from stationary sources.

12.3.5.4 Potential for Cumulative Spills – Transportation by Truck

Should spills occur during operations of one of the reasonably foreseeable future actions and transportation by truck (either simultaneously or relatively simultaneously, depending on the affected resource), there is a potential for significant cumulative effects. Air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use would be potentially adversely impacted from a single spill.

There is one reasonably foreseeable actions identified in Section 12.2 that would potentially contribute to cumulative effects from inadvertent spills when combined with the Transportation by Rail alternative. This is the Clearbrook Tanks Project.

Product pipeline spills can have adverse effects on various environmental resources, including: air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use. Specific impacts on these resources are discussed in

greater detail in Chapter 10; similarly, potential cumulative effects as a result of spills is further discussed in Section 12.5.

These adverse effects, both anticipated and observed in historic situations, would be exacerbated if a spill or accident occurring during truck transport or loading were to happen in a similar time period and in a nearby location as a spill during operations of one of the aforementioned reasonably foreseeable actions. It is anticipated that the potential cumulative effects would be lesser than those discussed previously for the Applicant's preferred route or SA-04, as the quantity held by a truck would be less than that held by another pipeline. However, given the general rate at which truck transport accidents occur relative to pipeline releases, the likelihood of cumulative spills occurring for this alternative relative to others may be higher. Stringent preventative measures would be anticipated to minimize this potential. Refer to Section 12.5 for additional details.

12.3.6 Existing Line 3 Supplemented by Rail

Continuing to Use Existing Line 3 Supplemented by Rail Would Have Negligible to Minor Cumulative Potential Effects

The duration and geographical extent of impacts from continuing to use existing Line 3 supplemented by constructing and operating the transportation by rail alternative are summarized in Chapter 5. Based on these temporal and geographic extents, this analysis of cumulative potential effects for existing Line 3 supplemented by rail considers two reasonably foreseeable projects located within several miles of the both the existing Line 3 and the rail routes previously identified in Chapter 4:

- Line 67 Expansion Project, and
- Clearbrook Tanks Project.

As described in the preceding sections, cumulative potential effects include possible stormwater, noise, and air quality impacts. The potential for effects of cumulative spills is also a consideration.

12.3.7 Existing Line 3 Supplemented by Truck

Continuing to Use Existing Line 3 Supplemented by Truck Would Have Negligible to Minor Cumulative Potential Effects

The duration and geographical extent of impacts from continuing to use existing Line 3 supplemented by constructing and operating the transportation by truck alternative are summarized in Chapter 5. Based on these temporal and geographic extents, this analysis of cumulative potential effects for existing Line 3 supplemented by truck considers two reasonably foreseeable projects located within several miles of the both the existing Line 3 and the truck routes identified in Chapter 4:

- Line 67 Expansion Project, and
- Clearbrook Tanks Project.

As described in the preceding sections, cumulative potential effects include possible stormwater, noise, and air quality impacts. The potential for effects of cumulative spills is also a consideration.

12.4 CUMULATIVE POTENTIAL EFFECTS – ROUTE ALTERNATIVES

12.4.1 Applicant's Preferred Route

Cumulative potential effects of the Applicant's preferred route are described above in Section 12.3.1.

12.4.2 Route Alternative RA-03AM

The duration and geographical extent of impacts from constructing and operating RA-03AM are summarized in Chapter 6. Based on these temporal and geographic extents, this analysis of cumulative potential effects for RA-03AM focuses on six reasonably foreseeable projects located within several miles of RA-03AM that are expected to be under construction or operational during or after the time the Project is constructed, as early as spring 2018, but likely later in 2018:

- Line 67 Expansion Project (same as Applicant's preferred route),
- MPL Reliability Project,
- Koch Pipeline Company, Clearbrook Tanks Project (same as Applicant's preferred route),
- MPL-Laporte 115-kV Transmission Line Project (same as Applicant's preferred route),
- Menahga Area 115-kV Transmission Line Project, and
- Motley Area 115-kV Transmission Project.

12.4.2.1 Line 67 Expansion Project

Cumulative Effects of Line 67 Expansion Project Would Be the Same as Those for the Applicant's Preferred Route

As indicated previously, Enbridge's Line 67 is located within the Enbridge Mainline corridor. Between Neche, North Dakota, and Clearbrook, Minnesota, RA-03AM follows the same route as that proposed by the Applicant, running parallel to Line 67 within the Mainline corridor (Figure 12.2-1). The potential for cumulative effects is the same as described for the Applicant's preferred route in Section 12.3.1.1.

12.4.2.2 Minnesota Pipeline Company Reliability Project

Similar to the Applicant's preferred route, RA-03AM is located within the same general corridor as MPL Line 4 between Clearbrook and the southern corner of Hubbard County. However, where the Applicant's preferred route turns east at the southern corner of Hubbard County, RA-03AM continues to follow MPL Line 4 south before splitting from MPL Line 4 to head east as it enters Morrison County (Figure 12.2-1).

Therefore, between Clearbrook and the southern corner of Hubbard County, the potential for cumulative effects resulting from construction and operation of RA-03AM and the MPL Reliability Project is the same as described for the Applicant's preferred route in Section 12.3.1.2. Where RA-03AM follows the same general corridor as MPL Line 4 through Hubbard and Wadena counties and into Morrison County, however, the additional cumulative potential effects that may occur where the Sebeka and Fish Trap pump stations are proposed to be constructed adjacent to the shared MPL Line 4/RA-03AM corridor are described below. The other four pump stations/pump station upgrades proposed as part of the MPL Reliability Project are located well south of where the RA-03AM route splits from the MPL Line 4 corridor and heads east.

Construction of the MPL Reliability Project Would Have No Cumulative Potential Effects

The MPL Reliability Project is anticipated to be constructed and operational by the fourth quarter of 2017, which is before construction of the Line 3 Project would be anticipated to begin (as early as spring 2018, but more likely later in 2018). As a result, no cumulative potential short-term effects are anticipated from construction (e.g., construction stormwater, construction noise).

12.4.2.2.1 Noise and Vibration

Operating the MPL Reliability Project Would Have No Cumulative Potential Effects on Noise

Operational impacts of the MPL Reliability Project are primarily associated with pump station noise that will contribute to higher noise levels at local receptors, particularly residences. In the vicinity of the MPL Sebeka and Fish Trap pump stations, no noise impacts are expected from operation of the Line 3 Project, so no cumulative potential effects are anticipated.

12.4.2.2.2 Vegetation

Corridor Sharing Would Minimize Cumulative Effects on Vegetation

Constructing the new MPL Fish Trap pump station will require clearing approximately 9 acres of forested land. Permanent impacts of the new MPL Sebeka pump station will include conversion of approximately 40 acres of land. This land, however, is predominantly agricultural. Constructing and operating RA-03AM would result in further clearing within the nearby corridor, adding to the loss of forest vegetation in this Fish Trap area.

The clearing of vegetation and conversion from forested to open habitats could impede native vegetation by increasing potential for spread of invasive species and noxious weeds and could also increase the effects of light penetration, wind, and humidity that are more prominent on edges between different habitat types. These impacts could have significant cumulative potential effects. The use of a shared corridor, however, tends to minimize the introduction of new impacts.

12.4.2.2.3 Wildlife

New MPL Pump Stations Would Have No Significant Cumulative Potential Effects on Wildlife

The new MPL pump stations at Sebeka and Fish Trap are not anticipated to have a significant impact on wildlife. The forested area to be converted for the Fish Trap station is already a fragmented habitat, due to the existing MPL pipeline corridor. The pump station would be right next to the pipeline, and would have a nominal, incremental effect. The addition of the Line 3 pipeline on the RA-03AM route along this corridor would further widen the cleared area, but it similarly would be in immediate proximity to the MPL pipeline, creating a nominal, incremental effect on wildlife. Therefore, no significant cumulative potential effects are anticipated.

12.4.2.2.4 Commodity Production

Land Conversions Would Have Only Temporary Cumulative Effects on Agriculture

As noted above, the permanent impacts of the new MPL Sebeka station will include conversion of approximately 40 acres of predominantly agricultural land to industrial use. The construction of RA-03AM could result in short-term cumulative potential effects on agricultural operations and practices, which may need to be altered in certain areas to avoid conflicts with construction activities. Since

pipeline land uses are compatible with agriculture practices, cumulative potential effects on agriculture are expected to be temporary and negligible.

12.4.2.3 Koch Pipeline Company, Clearbrook Tanks Project

Potential Cumulative Effects of Clearbrook Tanks Project Are the Same as Those for the Applicant's Preferred Route

As noted above Koch Pipeline Company's Clearbrook terminal is located south of Enbridge's Clearbrook terminal. The Line 3 Project upgrades to the Enbridge Clearbrook station would occur in the immediate vicinity of the Clearbrook Tanks Project. The upgrades required for RA-03AM are the same as those required for the Applicant's preferred route. Therefore, the potential for cumulative effects is the same as described for the Applicant's preferred route in Section 12.3.1.3.

12.4.2.4 MPL-Laporte 115-kV Transmission Line Project

Potential Cumulative Effects of MPL-Laporte 115-kV Transmission Line Project Are the Same as Those for the Applicant's Preferred Route

The RA-03AM route and the Applicant's preferred route are the same in the environmentally relevant area for the MPL-Laporte 115-kV transmission line. Therefore, the potential for cumulative effects is the same as described for the Applicant's preferred route in Section 12.3.1.4.

12.4.2.5 Menahga Area 115-kV Transmission Line Project

Cumulative Potential Effects of Menahga Project Are the Same as Those for the Applicant's Preferred Route

The RA-03AM route and the Applicant's preferred route are the same in the environmentally relevant area for the Menahga Area 115-kV transmission line. Therefore, the potential for cumulative effects is the same as described for the Applicant's preferred route in Section 12.3.1.5.

12.4.2.6 Motley Area 115-kV Transmission Line Project

The RA-03AM route is the only route alternative that would be anticipated to share a common environmentally relevant area with the Motley Area 115-kV Transmission Line Project. As described in Table 12.2-1, the latter project would be constructed and operated by Great River Energy and includes 16 miles of new 115-kV overhead transmission near Motley in Morrison, Cass, and Todd Counties. In most areas, the project will require a 100-foot-wide right-of-way.

According to Great River Energy, construction of the Motley Area 115-kV project commenced in January 2017, with energization scheduled for August 2017.

Motley Area Transmission Line Would Have No Cumulative Short-Term Construction Effects

The RA-03AM route alternative's environmentally relevant area overlaps that of the Motley Area 115-kV transmission line west of Lake Alexander. A common corridor or adjacent corridors would likely be utilized near the intersection of U.S. 10 and County Highway 7. Just south, RA-03AM would run adjacent to a new distribution substation associated with the Motley Area transmission line (Figure 12.2-1).

Construction of the Motley Area 115-kV transmission line is anticipated to be complete in 2017, prior to the start of Line 3 Project construction activities. As a result, no cumulative potential short-term effects are anticipated from construction (e.g., construction stormwater, construction noise).

12.4.2.6.1 Aesthetics and Visual Resources

Line 3 Project RA-03AM would Follow Existing MPL, Negligible Anticipated Cumulative Potential Effects With Respect to Aesthetics and Visual Resources

RA-03AM would follow the existing MPL Line 4 corridor in the environmentally relevant area common to the Motley Area transmission line. The addition of the Line 3 pipeline within this corridor would be anticipated to result in no or minimal additional tree clearing through corridor widening in this area; thus potential cumulative aesthetic/visual effects are not expected to be significant.

12.4.2.6.2 Vegetation

Clearing of Vegetation Would Be Minimized by Use of Existing Corridors for Both the Motley Area Transmission Line and the Line 3 Project RA-03AM Alternative

Minimal vegetation clearing would be required for construction and operation of rights-of-way for both the Motley Area 115-kV transmission line and the Line 3 Project RA-03AM alternative. The Motley Area 115-kV project would utilize US 10 right-of-way (DOC-EERA 2015b); while some clearing would be anticipated; use of the existing corridor would minimize vegetation clearing. Additionally, minimal clearing would be anticipated for RA-03AM; as previously stated, the route alternative would follow existing MPL Line 4 corridor.

Conversion from forested to open habitats could impede native vegetation by increasing potential for spread of invasive species and noxious weeds and could also increase the effects of light penetration, wind, and humidity that are more prominent on edges between different habitat types. The cumulative potential effects of multiple corridors would be minimized by establishing parallel facilities in one corridor. A shared corridor anticipated to be utilized for these facilities; therefore, cumulative potential effects are anticipated to be negligible to minimal when compared with the cumulative potential effects resulting from a separate corridor for each facility within the environmentally relevant area.

12.4.2.6.3 Wildlife

Cumulative Long-Term Effects on Wildlife Are Anticipated to Be Minimal

The Motley Area 115-kV transmission line and Applicant's preferred route for the Line 3 Project both pass approximately 0.5 mile from the Lowe Wildlife Management Area. The projects could result in cumulative potential effects on wildlife resources; specifically, the clearing of vegetation and disturbance of wildlife habitats could physically harm or displace wildlife species. These projects could further alter the amount and quality of habitat available to wildlife in their vicinity due to tree clearing for rights-of-way for transmission lines and a pipeline.

Portion of the Applicant's preferred route and the preferred route for the Laporte 115-kV project parallel the MPL corridor, so while impacts on wildlife would be long term, their localized nature and the availability of abundant forested habitat in the vicinity mean that these cumulative potential effects are not expected to be significant.

12.4.2.6.4 Unique Natural Resources

The Motley Area 115-kV transmission line and the Line 3 Project RA-03AM would both involve some tree removal, which could contribute to cumulative potential effects on the northern long-eared bat, which relies on forested habitat for summer foraging and roosting.

Field Surveys Would Be Necessary to Confirm the Presence of Rare/Protected Species or Communities

If rare/protected species are located in disturbed areas of projects constructed in close proximity to one another, the cumulative potential effects could be detrimental to individual rare communities. Field surveys, however, would be required to confirm the presence or probable absence of rare/protected species in the respective project rights-of-way prior to construction. If rare/protected species are found, the permittee would be required to coordinate with USFWS or Minnesota DNR regarding avoidance or mitigation.

Potentially Significant Effects on Rare/Protected Species or Communities Would Be Minimized by Using Parallel Existing Corridors

Permanent loss of forest would lead to fragmentation by reducing intact blocks of forest vegetation. Removal of vegetation and conversion to open habitats would increase the potential for spread of invasive species and would alter the structure and function of rare communities, potentially making them less suitable for the species that would typically inhabit them. Cumulative potential effects on rare communities could be significant if projects are constructed in close proximity. In this case, however, they are minimized by paralleling existing corridors.

12.4.2.6.5 Commodity Production

Project Overlap Would Minimize Cumulative Potential Effects on Forestry and Timber Operations

Potential impacts on forestry from the Motley Area 115-kV transmission line are direct and long term because, in order to operate transmission lines safely, tall growing trees are not allowed in transmission line rights-of-way. The same requirement would apply to the Line 3 Project RA-03AM. No active timber management lands (state forest, private tree farms) appear to be crossed by or are adjacent to the corridors. Due to the use of existing rights-of-way, the cumulative potential effects on forestry and timber operations are expected to be minimal.

12.4.2.7 Potential for Cumulative Spills – RA-03AM

There are four reasonably foreseeable actions identified in Section 12.2 that would potentially contribute to cumulative effects from inadvertent spills when combined with the Line 3 Project RA-03AM alternative during operations:

- Line 67 Expansion Project,
- MPL Reliability Project,
- Clearbrook Tanks Project, and
- The addition of pipeline in the same corridor.

Product pipeline spills can have adverse effects on various environmental resources, including: air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use. Specific impacts on these resources are discussed in greater detail in Chapter 10; similarly, potential cumulative effects as a result of spills is further discussed in Section 12.5.

12.4.3 Route Alternative RA-06

The duration and geographical extent of impacts associated with constructing and operating RA-06 are summarized in Chapter 6. Based on these temporal and geographic extents, this analysis of cumulative potential effects for RA-06 focuses on three reasonably foreseeable projects located within several miles of RA-06 that are expected to be under construction or operational during or after the time the Project would be constructed (as early as spring 2018, but more likely later in 2018):

- Line 67 Expansion Project,
- Clearbrook Tanks Project, and
- Great Northern Transmission Line (GNTL) Project.

12.4.3.1 Line 67 Expansion Project

Cumulative Potential Effects of Line 67 Project Are the Same as Those for the Applicant's Preferred Route

As indicated previously, Enbridge's Line 67 is located within the Enbridge Mainline corridor. Between Neche, North Dakota, and Clearbrook, Minnesota, RA-06 follows the same route as that proposed by the Applicant, running parallel to Line 67 within the Mainline corridor (Figure 12.2-1). The potential for cumulative effects is the same as described for the Applicant's preferred route in Section 12.3.1.1.

12.4.3.2 Koch Pipeline Company, Clearbrook Tanks Project

Cumulative Potential Effects of Clearbrook Tanks Project Would Be the Same as Those for the Applicant's Preferred Route

As noted above, Koch Pipeline Company's Clearbrook terminal is located south of Enbridge's Clearbrook terminal. The Line 3 Project upgrades to the Enbridge Clearbrook terminal would occur in the immediate vicinity of the Clearbrook Tanks Project. The upgrades required for RA-06 are the same as those required for the Applicant's preferred route. Therefore, the potential for cumulative effects is the same as described for the Applicant's preferred route in Section 12.3.1.3.

12.4.3.3 Great Northern Transmission Line Project

The potential for cumulative effects to result from the GNTL Project and RA-06 was evaluated in a 2015 EIS prepared by DOC-EERA and the U.S. Department of Energy for that project (DOC-EERA and U.S. Department of Energy 2015). That environmental review document is incorporated here by reference, and the areas where cumulative potential effects were identified in that assessment are summarized below.

The GNTL Project involves constructing more than 200 miles of 500-kV HVTL and a new 500-kV substation. It would run from an international border crossing in Roseau County, Minnesota, to the new Iron Range 500-kV Substation to be constructed just east of the existing Blackberry Substation near Grand Rapids, Minnesota. It would be located on a new 200-foot-wide right-of-way with a wider area required for certain spans at angle and corner structures, for guyed structures, or where special design requirements are dictated by topography.

On April 8, 2016, the Commission published an order issuing a route permit to Minnesota Power to construct a 500-kV transmission line from the Minnesota-Manitoba border to the 500-kV Blackberry

Substation near Grand Rapids, as well as associated substation facilities and transmission system modifications. On November 16, 2016, Minnesota Power received a Presidential Permit from the U.S. Department of Energy for the Minnesota-Manitoba border crossing

The RA-06 route for the Line 3 Project overlaps the environmentally relevant area of the GNTL Project in northeastern Itasca County, where RA-06 would cross the permitted route for the transmission line, before turning south and paralleling the permitted route for the GNTL Project at a distance of approximately 4 miles for a short stretch northwest of Hibbing, Minnesota.

12.4.3.3.1 Aesthetics

Great Northern Transmission Line Project Would Have No Significant Effect on Aesthetics

Route alternative RA-06, if selected, would intersect the permitted GNTL route, but would be located underground where it would cross the 200-foot right-of-way of the GNTL Project. The potential cumulative aesthetic impacts in this area are not expected to be significant because they would only involve paralleling transmission lines for a short distance, and this infrastructure would not be incompatible with existing conditions.

12.4.3.3.2 Vegetation

Right-of-Way Clearing for Route Alternative RA-06 and Great Northern Transmission Line Would Have Significant Cumulative Potential Effects on Native Vegetation

Vegetation clearing would be required to maintain the right-of-way for both the GNTL and the Line 3 Project. Conversion from forested to open habitat could impede native vegetation by increasing potential for spread of invasive species and noxious weeds and could also increase the effects of light penetration, wind, and humidity that are more prominent on edges between different habitat types. These cumulative impacts could be significant, particularly where existing corridors are not used.

In the case of RA-06 and the GNTL, there is notable distance (approximately 4 miles) between the corridors that would be cleared and maintained free of woody vegetation. While the permitted route for the GNTL will parallel existing transmission infrastructure in this area, the addition of cleared right-of-way 4 miles east for RA-06 would exacerbate potential for spread of invasive species and noxious weeds and could also increase the effects of light penetration, wind, and humidity in the area.

12.4.3.3.3 Wildlife

Right-of-Way Clearing for Route Alternative RA-06 and Great Northern Transmission Line Would Further Fragment Wildlife Habitat

The GNTL Project and RA-06 could result in cumulative potential effects on wildlife resources; specifically, the clearing of vegetation and disturbance of wildlife habitats could directly harm or displace wildlife species. These projects could further alter the amount and quality of habitat available to wildlife in the vicinity due to tree clearing for rights-of-way for transmission lines and a pipeline.

As noted above, there is notable distance (approximately 4 miles) between the corridors that would be cleared. While the permitted route for the GNTL will parallel existing transmission infrastructure in this area, the addition of cleared right-of-way 4 miles east for RA-06 would contribute to a cumulative fragmentation of wildlife habitat in the area.

12.4.3.3.4 Unique Natural Resources

The GNTL Project and the Line 3 Project both involve tree removal, which could contribute to cumulative potential effects on the northern long-eared bat, which relies on forested habitat for summer foraging and roosting.

Field Surveys Would Be Necessary to Confirm the Presence of Rare/Protected Species or Communities

If rare/protected species are located in disturbed areas of projects constructed in close proximity to one another, the cumulative potential effects could be detrimental to individual rare communities. Field surveys would be required, however, to confirm the presence or absence of rare/protected species in the respective project rights-of-way prior to construction. If rare/protected species are found, the permittee would be required to coordinate with USFWS or Minnesota DNR regarding avoidance or mitigation.

Cumulative Fragmentation of Wildlife Habitat Could Potentially Affect Rare/Protected Species and Communities

Permanent loss of forest would lead to fragmentation by reducing intact blocks of forest vegetation. Removal of vegetation and conversion to open habitat would increase the potential for spread of invasive species and would alter the structure and function of rare communities, potentially making them less suitable for the species that would typically inhabit them. As noted above, the addition of cleared right-of-way for RA-06 4 miles east of the GNTL Project would contribute to a cumulative fragmentation of wildlife habitat in the area including rare/protected species and communities.

12.4.3.3.5 Commodity Production

Route Alternative RA-06 or Great Northern Transmission Line Might Need to Be Relocated to Protect Mineral Resources

The GNTL and RA-06 would both cross areas of known mineral resources. If both projects were eventually constructed in these areas, portions of one or both of these projects may need to be relocated in the future to protect access to mineral resources.

12.4.3.3.6 Employment/Income/Tax Revenues

Route Alternative RA-06 and Great Northern Transmission Line Would Create New Jobs but not Significantly Affect Housing

The GNTL Project and RA-06 would both create new employment during construction and could contribute to a temporary housing shortage if both projects were to be constructed at the same time. Because Grand Rapids is within commuting distance of the construction area of the GNTL Project, any housing shortage would not be expected to be significant.

12.4.3.4 Potential for Cumulative Spills – RA-06

There are three reasonably foreseeable actions identified in Section 12.2 that would potentially contribute to cumulative effects from inadvertent spills when combined with the Line 3 Project RA-06 alternative during operations. These actions are:

- Line 67 Expansion Project,
- Clearbrook Tanks Project, and

- The addition of pipeline in the same corridor.

Product pipeline spills can have adverse effects on various environmental resources, including: air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use. Specific impacts on these resources are discussed in greater detail in Chapter 10; similarly, potential cumulative effects as a result of spills is further discussed in Section 12.5.

12.4.4 Route Alternative RA-07

The duration and geographical extent of impacts associated with constructing and operating RA-07 are summarized in Chapter 6. Based on these temporal and geographic extents, this analysis of cumulative potential effects for RA-07 focuses on two reasonably foreseeable projects located within several miles of RA-07 that are expected to be under construction or operational during or after the time the Project would be constructed (as early as spring 2018, but more likely later in 2018):

- Line 67 Expansion Project, and
- Clearbrook Tanks Project.

12.4.4.1 Line 67 Expansion Project

Potential Cumulative Effects of Route Alternative RA-07 and Line 67 Expansion Project Are the Same as Those for the Applicant's Preferred Route

As indicated previously, Enbridge's Line 67 is located within the Enbridge Mainline corridor. Between Neche, North Dakota, and Clearbrook, Minnesota, RA-07 follows the same route as that proposed by the Applicant, running parallel to Line 67 within the Mainline corridor (Figure 12.2-1). The potential for cumulative effects is the same as described for the Applicant's preferred route in Section 12.3.1.1.

12.4.4.2 Koch Pipeline Company, Clearbrook Tanks Project

Potential Cumulative Effects of Route Alternative RA-07 and Clearbrook Tanks Project Are the Same as Those for the Applicant's Preferred Route

As noted above, Koch Pipeline Company's Clearbrook terminal is located south of Enbridge's Clearbrook terminal. The Line 3 Project upgrades to the Enbridge Clearbrook terminal would occur in the immediate vicinity of the Clearbrook Tanks Project. The upgrades required for RA-07 are the same as those required for the Applicant's preferred route. Therefore, the potential for cumulative effects is the same as described for the Applicant's preferred route in Section 12.3.1.3.

12.4.4.3 Potential for Cumulative Spills – RA-07

There are two reasonably foreseeable actions identified in Section 12.2 that would potentially contribute to cumulative effects from inadvertent spills when combined with the Line 3 Project RA-07 alternative during operations. These actions are:

- Line 67 Expansion Project; and
- Clearbrook Tanks Project.

12.4.5 Clearbrook Tanks Project.

Product pipeline spills can have adverse effects on various environmental resources, including: air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use. Specific impacts on these resources are discussed in greater detail in Chapter 10; similarly, potential cumulative effects as a result of spills is further discussed in Section 12.5.

12.4.6 Route Alternative RA-08

The duration and geographical extent of impacts associated with constructing and operating RA-08 are summarized in Chapter 6. Based on these temporal and geographic extents, this analysis of cumulative potential effects for RA-08 focuses on two reasonably foreseeable projects located within several miles of RA-08 that are expected to be under construction or operational during or after the time the Project would be constructed (as early as spring 2018, but more likely later in 2018):

- Line 67 Expansion Project, and
- Clearbrook Tanks Project.

12.4.6.1 Line 67 Expansion Project

Potential Cumulative Effects of Route Alternative RA-08 and Line 67 Expansion Project Are the Same as Those for the Applicant's Preferred Route

As indicated previously, Enbridge's Line 67 is located within the Enbridge Mainline corridor. Between Neche, North Dakota, and Clearbrook, Minnesota, RA-08 follows the same route as that proposed by the Applicant, running parallel to Line 67 within the Mainline corridor (Figure 12.2-1). The potential for cumulative effects is the same as described for the Applicant's preferred route in Section 12.3.1.1.

12.4.6.2 Koch Pipeline Company, Clearbrook Tanks Project

Potential Cumulative Effects of Route Alternative RA-08 and Clearbrook Tanks Project Are the Same as Those for the Applicant's Preferred Route

As noted above Koch Pipeline Company's Clearbrook terminal is located south of Enbridge's Clearbrook terminal. The Line 3 Project upgrades to the Enbridge Clearbrook terminal would occur in the immediate vicinity of the Clearbrook Tanks Project. The upgrades required for RA-08 are the same as those required for the Applicant's preferred route. Therefore, the potential for cumulative effects is the same as described for the Applicant's preferred route in Section 12.3.1.3.

12.4.6.3 Potential for Cumulative Spills – RA-08

There are two reasonably foreseeable actions identified in Section 12.2 that would potentially contribute to cumulative effects from inadvertent spills when combined with the Line 3 Project RA-03AM alternative during operations. These actions are:

- Line 67 Expansion Project, and
- Clearbrook Tanks Project.

Product pipeline spills can have adverse effects on various environmental resources, including: air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use. Specific impacts on these resources are discussed in greater detail in Chapter 10; similarly, potential cumulative effects as a result of spills is further discussed in Section 12.5.

12.4.7 Additional Pipeline in a New Route Corridor

Additional Pipeline Could Increase Spill Risk and Affect Vegetation, Wildlife, and Water Resources

If a new pipeline corridor outside of the existing Enbridge Mainline (such as the Applicant's preferred route, RA-03AM, or RA-06) were to be permitted for the proposed Project, the new corridor would create an opportunity for future corridor sharing that could ultimately result in accumulation of multiple pipelines within the corridor chosen for the Line 3 Project. To address the cumulative potential effects, the effects of an additional pipeline in a new Line 3 Project corridor generally are discussed below.

The addition of another pipeline within a new pipeline corridor would require widening of the right-of-way and would introduce additional spill risk. In general, the widening of the corridor would incrementally increase the effects on the resources described for each of the routes in Chapter 6 of this EIS. In the case of RA-06, for example, adding another pipeline in the corridor would result in additional clearing of forest in what is otherwise a densely forested, relatively undisturbed area with high-quality habitat and relatively pristine watersheds, but relatively few populated areas.

In the case of RA-03AM, adding another pipeline in the corridor would result in additional clearing in fairly forested areas with slightly more disturbed habitat and affected watersheds, but relatively more populated areas. In addition, adding an additional pipeline in any of these new corridors would increase the accidental release risk exposure of the same resources described along each of the routes in Chapter 10.

These types of general impacts are described in further detail below.

12.4.7.1 Planning and Zoning

Altering Land Use for New Pipeline Could Cumulatively Affect Planning and Zoning

Incrementally expanding right-of-way width within a new corridor could result in permanent minor cumulative potential effects on planning and zoning by alteration of existing (and in some areas protected) land uses to establish a new right-of-way.

12.4.7.2 Aesthetics

Expanding Right-of-Way for New Pipeline Could Cumulatively Affect Aesthetics

The addition of another pipeline within a new corridor would incrementally expand right-of-way width within the new corridor and could result in permanent minor cumulative potential effects on aesthetics, particularly if the new corridor passes through heavily forested and relatively undisturbed areas (e.g., RA-06).

12.4.7.3 Vegetation

Clearing Trees Now or in the Future Would Permanently Affect Forest Communities

Clearing trees within forest communities along new rights-of-way would result in long-term to permanent effects on these communities, which would be exacerbated if new pipelines were sited in new rights-of-way in the future.

12.4.7.4 Wildlife

Habitat Fragmentation Could Significantly Affect Wildlife in Some Areas

Clearing trees within forest communities along new rights-of-way would result in long-term to permanent effects on wildlife through habitat fragmentation. If new pipelines were sited within these new rights-of-way in the future, the cumulative potential effect would be minimal, because new fragmentation of habitat would not occur.

The cumulative permanent loss of wildlife habitats (including wetlands and forest lands) would affect wildlife inhabiting these areas. These cumulative potential effects could be major in areas where high-value wildlife habitat is altered.

12.4.7.5 Commodity Production

A New Corridor Could Cumulatively Affect Agriculture and Timber Production

Siting a future pipeline along a new corridor and expanding rights-of-way would incrementally affect land uses and opportunities for commodity production in agricultural and forested areas used for timber production.

12.4.7.6 Accidental Releases and Potential for Cumulative Spills Effects

Spill Risk Would Increase with Additional Pipelines but Would Still Be Low

The likelihood of multiple concurrent pipeline failures resulting in oil spills is low. However, the addition of multiple pipelines in a new corridor incrementally increases the risk of an incident occurring, so resources along the corridor are exposed to a higher probability of an incident occurring. Refer to Chapter 10 for a detailed discussion of oil spill risk and associated environmental impacts. Please refer to Section 12.5 for additional discussion on the potential for cumulative effects from spills that result from additional pipelines.

12.5 Cumulative Spills

Spilled oil will typically spread over land until it reaches a depression, a surface waterbody, or is absorbed into the ground. In addition to topography, migration of the oil can be affected by vegetation cover and seasonal conditions. Oil spilled into surface waterbodies generally floats initially and is transported by winds and currents, depending on the waterbody type and conditions during the spill. Spills tend to spread shorter distances in standing water such as lakes and ponds with minimal currents; however, wind can increase oil dispersal in those surface waters. Currents in streams and rivers transport oil downstream, and thus impacts are likely to occur over greater areas than in lakes or ponds.

In the human environment, crude oil can reach public and private lands used for commercial, agricultural, industrial, residential, and recreational purposes. Water intakes in shallow lakes and rivers

can be susceptible to contamination from an oil spill, and paved surfaces and conduits such as ditches/sewers can act as preferential pathways for spills, extending the spread of oil. If a crude oil spill occurs in a developed area, oil can migrate into stormwater and sewer collection systems, particularly during rain events, and result in contamination of the infrastructure and associated treatment systems.

Of the projects identified as reasonably foreseeable actions in Section 12.2, four would potentially contribute to cumulative effects from inadvertent spills when combined with the Line 3 Project. These projects are:

- Line 67 Expansion Project,
- MPL Reliability Project,
- Clearbrook Tanks Project, and
- The addition of pipeline in the same corridor.

Other reasonably foreseeable actions include a construction component that could result in minor spills, but these would not contribute to significant cumulative potential effects.

There is no way to identify precise cumulative impacts of spills from the Line 3 Project when taken into consideration with the previously identified past, present, and reasonably foreseeable future actions identified in Section 12.2. There are numerous variables, including location (near or far from Line 3), land use/cover (natural habitat, developed land, or water resource), spill quantity (amount of petroleum product released), and responsiveness of the pipeline operator, that determine the magnitude of the potential cumulative effect. Any analysis would be speculative at best, and the significance of spill-related cumulative effects could vary between negligible to significant, depending on specific parameters.

Section 10.3.2.4 in this EIS discusses the observed impacts of product pipeline spills on various resources, including: air quality; water resources (groundwater, surface water features, wetlands, etc.); soils; vegetation; wildlife; human health; and land/resource use. The adverse effects, both anticipated and observed in historic situations, would be exacerbated if more than one pipeline experienced a failure in a similar time period and in a nearby location. Both time period and geography would be defined differently from resource to resource, and by the response/containment/remediation actions required. While a quantified impact is impossible to determine, the potential cumulative effect could be significant.

However, it is important to recognize that the likelihood of spills (individual or multiple) is extremely low. Spill prevention is the most critical component to avoiding impacts from a crude oil release. If a release occurs, the most important actions to reduce environmental impacts are to minimize the size and spread of the release by implementing a rapid, coordinated, and effective spill response based on an established action plan. Sections 10.5 and 10.6 of this EIS contain comprehensive information pertaining to spill prevention, preparedness, and response; and clean-up, restoration, and recovery for the Line 3 Project (respectively). The other projects identified previously would also employ similar methods and plans to prevent ruptures and spills. Therefore, while the potential cumulative effects from spills could be significant, multiple factors would need to coincide for that to effectively occur. Additionally, stringent preventative planning procedures would be in place for all product pipeline projects in the area, which ensures that the likelihood of a significant cumulative effect would be extremely low.

12.6 CUMULATIVE POTENTIAL EFFECTS – CLIMATE CHANGE

Climate Change Is Not Attributable to Any Single Action, but to a Series of Actions

As noted in the Council on Environmental Quality's 2016 Final Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change (Executive Office of the President, Council on Environmental Quality 2016), all greenhouse gas emissions contribute to cumulative climate change impacts. Recognizing that the totality of climate change is not attributable to any single action, but is exacerbated by a series of actions, this analysis does not attempt to directly link the emissions from a single action to an incremental change in climate.

This Section Considers Direct and Indirect Effects of Greenhouse Gases on the Environment in Minnesota

Instead, this section considers that collectively the proposed Project and other reasonably foreseeable actions across the world would contribute to global climate change. This section describes the cumulative potential climate change effects of greenhouse gas emissions on the environment in Minnesota and identifies resources that could experience cumulative impacts due to both the effects of climate change as well as the direct and indirect impacts of the proposed Project and its alternatives.

Chapters 5 and 6 Address Greenhouse Gas Emissions of the Proposed Project and its Alternatives

While this section focuses on the cumulative potential effects of greenhouse gas emissions on climate, the specific greenhouse gas emissions associated with the proposed Project and its alternatives are discussed in Sections 5.2.7 and 6.3.7 of this EIS. The analysis in Sections 5.2.7 and 6.3.7 accounts for greenhouse gas emissions from the proposed Project and each of the alternatives, including:

- Direct effects: greenhouse gas emissions associated with construction (e.g., on and off road equipment combustion, burning) and operation (fugitive emissions, storage tank withdrawal losses, lost carbon sequestration) of the Project and its alternatives.
- Indirect effects: electricity generation, greenhouse gas emissions associated with any changes in upstream (oil production) or downstream (oil consumption) activities that may result from the Project or its alternatives.

In Sections 5.2.7 and 6.3.7 of this EIS, the social cost of carbon is used to relate the direct and indirect greenhouse gas emissions from the proposed Project and its alternatives to the costs to society that the climate change impacts described below may create (e.g., human health impacts, loss of tourism, agricultural losses). Please refer to Sections 5.2.7 and 6.3.7 for a comparison of the CN and route alternatives on this basis. As discussed above, this analysis does not attempt to directly link the emissions from a single action to an incremental change in climate and the impacts discussed below can potentially be exacerbated by a series of actions.

Furthermore, the lifecycle GHG intensity of various crude oils is discussed in Section 5.2.7.3. The average life cycle GHG emissions for heavy Western Canadian Sedimentary Basin crude are calculated based on higher value of carbon dioxide equivalent/bbl of crude oil. This provides conservative estimates of life cycle gas emissions in Table 5.27-11. It is expected that technological development has substantially reduced the energy intensity of extracting Alberta oil sands.

12.6.1 Midwest Climate Change Trends

Midwest climate change trends are discussed in detail in the National Climate Assessment (Pryor et al. 2014). That document is incorporated by reference here and key points from this assessment, as well as other regional climate assessments, are summarized below.

Warming in Minnesota Is More Pronounced in Winter and in Northern Portions of the State

Minnesota is undergoing rapid warming, especially during typically cold conditions. From 1895 to 2014, annual temperatures in Minnesota increased at an average rate of 0.2 degrees Fahrenheit (°F) per decade. Between 1895 and 1970, average Minnesota surface temperature increased at an average rate of about 0.13°F per decade. Subsequently, beginning in 1970 and extending to 2016, this accelerated to an average rate of warming of about 0.57°F per decade. Warming is occurring during all seasons, but is proceeding 10 times faster in winter than in summer: the 1970 to 2014 summer warming rate averaged 0.1°F per decade, compared to winter warming of 1.0°F per decade over the same interval (Minnesota DNR 2015).

All warming trends in all seasons are more pronounced in northern Minnesota than in southern Minnesota (Minnesota DNR 2015). Although there has been no increase in extreme heat events in Minnesota in recent decades, research summarized in the 2014 National Climate Assessment indicates that by mid-century, much of the state may see dramatic increases in the number of days reaching or exceeding 95°F (Pryor et al. 2014).

Water Temperatures Are Increasing Faster than Air Temperatures

Temperatures of surface waters in Lake Superior are increasing at a rate much greater than air temperature change, and are projected to rise by as much as 12.1°F by 2100 (Minnesota PCA 2013). An observed impact of increasing temperature is the decline in the number of days of ice cover in the Great Lakes, including Lake Superior (Minnesota PCA 2013).

Minnesota Is Becoming Wetter and the Likelihood of Extreme Rainfall Events Is Increasing

Minnesota is also becoming wetter, with increases in annual precipitation and greater rainfall extremes. From 1895 to 2014, statewide annual precipitation increased at an average rate of 0.25 inch per decade (Minnesota DNR 2015). Potentially disastrous events that produce 6 inches of rainfall or more over a 1,000-square-mile area have become more common as well, with 7 of the 10 instances documented since 1973 occurring after the year 2000 (Minnesota State Climatology Office 2016). Projections summarized in the Midwest chapter of the 2014 National Climate Assessment indicate that both annual precipitation and extreme events will continue to increase during the twenty-first century (Pryor et al. 2014). Even with these projected precipitation increases, the same models indicate more consecutive dry days between precipitation events as the twenty-first century progresses (Pryor et al. 2014).

Changes in Temperature and Precipitation Also Affect Forests, Water and Air Quality, and Agriculture

- In the next few decades, longer growing seasons and rising carbon dioxide levels will increase yields of some crops, though those benefits will be progressively offset by extreme weather events. Though adaptation options can reduce some of the detrimental effects, in the long term, the combined stresses associated with climate change are expected to decrease agricultural productivity.
- The composition of the region's forests is expected to change as rising temperatures drive suitable climates for many tree species northward. The role of the region's forests as a net

absorber of carbon is at risk from disruptions to forest ecosystems, in part due to climate change.

- Increased heat wave intensity and frequency, increased humidity, degraded air quality, and reduced water quality will increase public health risks related to heat and sensitivity to poor air quality. For example, increased humidity could lead to increased mold levels in homes, which may aggravate asthma or may cause allergic reactions.

12.6.2 Potential Impacts of Climate Change on the Project

Main Concerns Include Severe Weather, Freeze-Thaw Cycles, and Flooding, All of Which Could Damage Project Facilities

The proposed pipeline would be buried underground at a depth of 3 feet, which would protect it from most surface impacts of climate change, including higher surface temperatures and increased precipitation. However, severe weather conditions can affect the normal operation of pipelines. For example, tornadoes can damage or disrupt communications with the monitoring systems or directly damage aboveground elements such as tanks, pumps, sensors, small pipes, and support equipment (U.S. Department of State 2017). The continued trend of greater annual average precipitation and heavy precipitation in Minnesota has the potential to increase flooding and alter hydrological patterns from increased runoff and greater volumes of water in rivers. Flooding can cause inundation of equipment and facilities by floodwaters and streambank erosion from floods and channel migration. Streams with high sediment loads and active floodplains can migrate during floods or overflow into secondary channels, increasing the potential to damage Project facilities including the pipeline. Frequent major flood events could scour the streambed and expose the buried pipeline, or changes in hydrology can cause channels to migrate over time and expose the pipeline. In addition, heavy rains, snowfall, and high winds may produce conditions that would affect the pipeline system integrity over time. Lightning and wildfires would be unlikely to damage the system integrity directly, but could cause the loss of supervisory control and data acquisition (SCADA) (U.S. Department of State 2017).

The Minnesota State Climatology Office looked at three long-term Cooperative National Weather Service temperature observation sites near the Applicant's preferred route (Crookston, Park Rapids, and Cloquet, Minnesota), each with records dating back over 100 years. In the twenty-first century (through the 2016–2017 winter), the number of days between November 1 and March 31 where the low temperature was at or above the hard freeze criterion (28°F) and the high was at or above 36°F (to indicate a strong thaw) has increased over long-term twentieth and late-nineteenth century values by 26 percent (Crookston) to 70 percent (Park Rapids). This indicates significantly more thaw days during the traditional winter period in the Project region. The Minnesota State Climatology Office did not see a significant change in the number of days with highs at or above 36°F and lows at or below 28°F, indicating no increase in same-day freeze-thaw cycles. Frost depth, and whether and for how long frost reaches the proposed Project depth of 3 feet, will be controlled heavily by the absence or presence of snow cover, with soil frost responding much faster to warm or cold periods when no snow cover is present. Significant winter thaw periods are increasingly likely during the Project.

Climate Change Could Intensify Spill Impacts

Climate factors can impact the fate and trajectory of spilled oil and can also affect how spilled oil interacts with the environment. For example, higher ambient temperatures could increase the volatilization of air contaminants from an accidental release or flooding to cause spilled oil to be

transported farther downstream. In addition, heavy rain events could potentially have an adverse effect on spill response, including containment and cleanup actions.

12.6.3 Potential Impacts of the Project in Combination with Climate Change Impacts

Operation of the proposed Project may affect resources that are experiencing or may experience impacts as a result of climate change. Figure 12.5-1 identifies areas where the Project's operational impacts would overlap with the impacts of climate change. These overlapping impacts are discussed further below.

Warmer Water Temperatures and Loss of Shading and Habitat Features Could Affect Aquatic Species

Increased water temperatures in rivers due to climate change can have detrimental effects on aquatic species, which could be exacerbated by the permanent loss of shading, nutrients, and habitat features for fish at some waterbody crossings during pipeline operations from vegetation removal maintenance activities along the permanent right-of-way. The use of pesticides and herbicides for maintenance during pipeline operation could also add stress to aquatic species.

Higher Temperatures and Changes in Vegetation and Habitat Could Affect Wildlife

Changing composition of vegetation in the future could affect resident wildlife unable to adapt to changing conditions, which could be worsened by the permanent loss of trees and shrubs, habitat fragmentation, and changes in vegetation cover through large blocks of forest habitats within the pipeline right-of-way.

Habitat fragmentation can decrease species dispersal, increase mortality, and reduce genetic diversity, and may obstruct the free movement of species seeking new habitats in adaptation to climate change effects. The pipeline right-of-way could attract migratory waterfowl earlier in the year if it becomes snow free before surrounding habitats. Federally listed species with the potential to occur along the Applicant's preferred route include the gray wolf, northern long-eared bat, and whooping crane (see Section 6.3.5).

Gray Wolf Is Highly Adaptable but Northern Long-Eared Bat and Whooping Crane Are Less So

The gray wolf is highly adaptable to a wide variety of climates, habitats, and food sources. Prior to its near extinction in North America due to human predation, the gray wolf's territory ranged from the Pacific to Atlantic coasts and from Alaska to Mexico (USFWS 2011a). Therefore, this species is anticipated to be adaptable to the effects of climate change. A species, despite being adaptable, can face risks from human pressure on habitats and landscape-level changes from climate change.

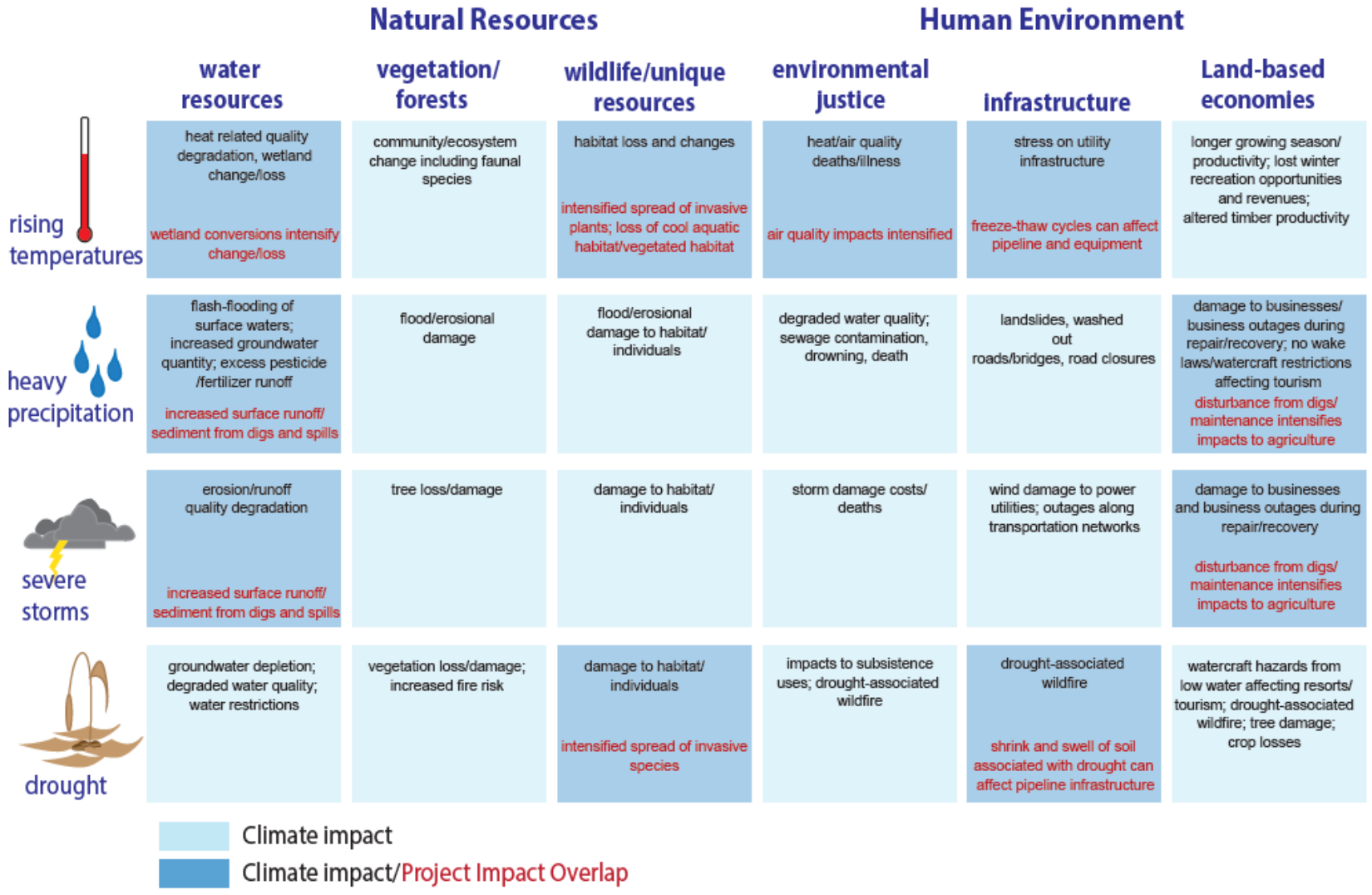

Figure 12.5-1. Potential for Overlapping Impacts from Climate Change and from Normal Operations of the Proposed Project

The northern long-eared bat is particularly sensitive to changes in temperature and humidity and is not anticipated to adapt well to climate change. The northern long-eared bat's winter habitat (e.g., caves and mines) and summer maternity habitat (e.g., tree cracks, crevices, or hollows) have specific thermal microclimates and physical features that are essential to the species' survival. As such, climate change could lead to shifts in the long-eared bat's range, which could indirectly affect the northern long-eared bat through changes in food availability, availability of habitat, the timing of hibernation/migration, and reproductive cycles (USFWS 2015). The northern long-eared bat population is more vulnerable to climate change due to their low population numbers, low annual birth rate (i.e., one individual per female per year), and long lifespan relative to body size.

The whooping crane is not anticipated to adapt well to climate change. Their vulnerability is due to their low population numbers (about 350 individuals in the wild) and their dependence on wintering habitat along the U.S. coast of the Gulf of Mexico (Audubon 2014a). Coastal habitat is being lost primarily due to human development, but its loss is also being exacerbated by climate change.

Most State-Listed Species Are Not Very Adaptable to the Effects of Climate Change

State-listed species along the Applicant's preferred route include the northern pocket gopher, Henslow's sparrow, Blanding's turtle, wood turtle, pugnose shiner fish, a caddisfly, and several mussel species including the elktoe, fluted-shell, mucket, and spike. The northern pocket gopher's range is widespread in western to mid-North America (with northwestern Minnesota being the eastern limit of its range), and it can live in a variety of open habitats throughout its range. It has a flexible diet of both aboveground and belowground plant parts (MacMahon 1999; Verts and Carraway 1999). Since this species' life requirements are not highly specific, it is anticipated to be able to adapt to climate change.

Henslow's sparrow requires large, undisturbed grasslands in the Midwestern United States during the summer breeding season, and it spends the winters along the U.S. coast of the Gulf of Mexico (Cornell University 2015). Climate change is expected to cause a significant loss of coastal habitat in the next several decades (Audubon 2014b). Although Henslow's sparrow could expand its range to adjust to climate change, due to an already dwindling population, it is not anticipated to be highly adaptable to climate change.

North American turtles, including the Blanding's turtle and the wood turtle, can be affected by climate change, primarily through climate-induced habitat alteration (Wisconsin Department of Natural Resources 2016a, b). Historically, turtles have adapted to climate change by shifting their geographic ranges. It is more difficult for turtles to shift ranges today, however, due to managed waterways, urbanization, and agriculture (National Institute for Mathematical and Biological Synthesis 2015). Due to these limitations, the Blanding's turtle and wood turtle are not anticipated to be highly adaptable to climate change.

The pugnose shiner has strict habitat requirements, which make it less adaptable to both direct and indirect effects of climate change. One study (Doka et al. 2006) ranked the pugnose shiner as highly vulnerable (ranked sixth most vulnerable of 99 species) to climate change as a result of the loss of wetlands due to climate change (Committee on the Status of Endangered Wildlife in Canada 2013).

Caddisflies were once widely distributed across most of the western half of the United States and Canada (NatureServe 2009). Sightings today, however, are extremely rare. This is likely due to habitat loss, as species of *Limnephilus* are very sensitive to changes in the riparian corridor. Climate change effects would likely exacerbate habitat loss that is already occurring due to agriculture and urban

development. A caddisfly is therefore not anticipated to be adaptable to climate change (Minnesota DNR 2012).

The elktoe, fluted-shell, mucket, and spike mussels are also not anticipated to be adaptable to climate change. Once widely distributed, elktoes, muckets, and spikes are now only found living in a small number of drainages due stream alteration/degradation, pollution, and the spread of invasive species (Minnesota DNR 2017a, b, c). The fluted-shell is more widespread than the other mussels, but its population numbers are very low (Minnesota DNR 2017d). This restricted distribution, along with specific habitat requirements (e.g., low turbidity waters, narrow thermal preference) and limited mobility, make all four species of mussels vulnerable to catastrophic events (e.g., drought, flood) (Minnesota DNR 2017a, b, c, d).

Environmental Justice Communities are Affected By Climate Change, As Well As the Proposed Project and Its Alternatives

Climate change impacts threaten tribal lands and resources, way of life, culture, and economies. As discussed in Chapters 9 and 11 in greater detail and incorporated here, RA-06, RA-07, and RA-08 would have direct impacts on tribal reservations (Leech Lake and Fond du Lac Reservations). The lands and resources affected by the Project are important to preserving the traditional ways of life, including fishing, hunting, wild ricing, maple sugar gathering, and collecting plants for medicines, spiritual and ceremonial purposes, shelter, and other needs. Project impacts on tribal resources would be further exacerbated by climate change impacts that affect native communities—for example, decreases in water quality and quantity in the Great Lakes region, threats to human health and safety, economic losses, and loss of culturally important species, medicinal plants, cultural sites, and traditional foods, such as wild rice.

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