8.0 Other Required Considerations

8.1 Unavoidable Adverse Environmental Impacts

Unavoidable adverse environmental impacts are those that will occur from constructing and operating the Project after implementing standard and additional mitigation measures. Based on impact analyses, impacts will occur for soils; vegetation; human settlement; land use; environmental justice; aesthetics; water resources and floodplains; wetlands; wildlife and rare and unique species; recreation and tourism; agricultural production; forestry; and mining. Mitigation measures associated with these resources have been provided in their respective sections in Section 6.0.

8.1.1 Soils

Soil disturbance will be minimal and will be concentrated at structure locations. Actual surface soil disturbance, primarily due to vehicle traffic on access paths, is expected to be approximately 12.5 percent of the anticipated right-of-way (ROW) for all Route Alternatives.

8.1.2 Vegetation

Construction of the Project will require areas to be cleared of vegetation and trees. Approximately 2,745 acres of forest will be converted permanently for the Orange Route and approximately 2,680 acres for the Blue Route. In some cases, the clearing of forest areas within the Route Alternatives may include clearing small areas of what may be considered old growth forest.

8.1.3 Human Settlement

No residences are located within the anticipated ROW for either the Route Alternatives or Segment Options, thus, no residences will have to be modified or otherwise directly impacted for the construction or operation of the Project.

8.1.4 Land Use

The primary land use impacts will be the result of forest clearing and limitations on future development within the anticipated ROW. Permanent impacts to privately owned lands total approximately 11 acres for the Orange Route and 12 acres for the Blue Route. Approximately 2,517 acres of state forest land will be converted permanently to non-forested land for the Orange Route and approximately 2,881 acres for the Orange Route. Neither Route Alternative will impact zoning districts.

8.1.5 Environmental Justice

Neither Route Alternative is anticipated to have a disproportionately high or adverse affect on minority or low-income individuals or households, or have a high impact on any individual or population. While there will be permanent visual effects, there are no adverse economic or human health impacts.

8.1.6 Aesthetics

Construction of the Project will result in long-term, new, or additive adverse visual impacts within the viewshed, particularly in areas where the Route Alternatives intersect or run near recreational opportunities and/or scenic highways.

8.1.7 Water Resources and Floodplains

Structures will be located outside of floodplains to the extent practicable. The Applicant will work with the jurisdictional agencies to determine the best ways to minimize impacts and create appropriate mitigation measures.

Spanning streams and rivers is not likely to cause unavoidable adverse environmental impacts.

8.1.8 Wetlands

Unavoidable adverse environmental impacts will occur where forested wetlands are converted to emergent wetlands and where structures are placed within wetlands. The Orange Route will require approximately 0.56 acres of total wetland fill for structure placement within wetlands and the Blue Route will require approximately 0.60 acres of total wetland fill. The substation will require an additional 5.3 acres of wetland fill. The Orange Route and the Blue Route will require permanently converting approximately 1,667 acres and 1,908 acres of forested wetland to emergent or shrub wetland types, respectively.

8.1.9 Wildlife and Rare and Unique Species

Unavoidable adverse environmental impacts on wildlife species will include the loss or alteration of breeding and foraging habitats and increased habitat fragmentation. Mortality could occur in less mobile or burrowing species. Abandonment of a nest site and the loss of eggs and/or young may occur and the Applicant will need to schedule activities to avoid harming nests and to otherwise comply with the Migratory Bird Treaty Act. Unavoidable adverse environmental impacts on migrating and foraging birds may result from the increased potential for collision with the Project's overhead wires. However, these impacts are not expected to have an overall effect on local populations.

During construction, indirect unavoidable adverse environmental impacts may include habitat disruption resulting from elevated noise, increased human presence, and dust deposition. These impacts may extend beyond the boundaries of the construction area. These effects may result in changes in habitat quality, habitat loss, animal displacement, and changes in species composition. Special status species or their habitats are present within the Route Alternatives. Surveys for special status species will be conducted once the final Route Alternative is selected. Implementing mitigation in accordance with the U.S. Fish and Wildlife Service (USFWS) Biological Opinion, if necessary, and Minnesota Department of Natural Resources (DNR) guidance will reduce impacts on special status species.

8.1.10 Recreation and Tourism

Unavoidable adverse environmental impacts on recreation and tourism resources might include changes to or loss of scenic resources; changes to hunting opportunities and other wildlife recreational opportunities; impacts on water and forest resources used for recreation; temporary

increase in noise levels; and increased off-highway vehicle (OHV) use following development of a new ROW. Indirect, irreversible adverse impacts will include visual impacts resulting from the Project crossing recreation trails. These effects may be relatively short term and only affect trail users as they are crossing under the transmission line.

8.1.11 Agricultural Production

Approximately 4 acres of agricultural land will be permanently impacted by each of the Orange and Blue Route Alternatives. Total permanent impacts on Prime Farmland will be approximately 16 acres and 14 acres for the Orange Route and the Blue Route, respectively.

8.1.12 Forestry

Construction of the Project will convert forestland within the anticipated ROW to shrub and grasslands. Potential direct impacts from the development of the Orange Route and Blue Route would require permanently converting approximately 2,745 and 2,680 acres of forestland, respectively.

8.1.13 Mining

The Orange Route and the Blue Route intersect active state non-ferrous metallic mineral leases. There are currently no active non-ferrous metallic mines on the leased land, although the potential exists for additional exploration and future mining in the Study Area.

8.2 Short-term Uses of the Environment

Construction of the Project will have short-term adverse impacts on environmental resources due to activities associated with installing the transmission line and substation. Short-term environmental impacts will be minimized through site restoration once construction is complete. Long-term productivity refers to the sustainability of the resources over a long period of time. Generally, the long-term impacts are localized to the anticipated ROW for most environmental resources. Restoration and mitigation practices minimize long-term impacts.

Impacts on physical, social, and biological resources by the Project are addressed in Section 6.0. The short-term uses of these resources by the Project will result in electricity generation and distribution for use in the areas serviced by the Applicant. The electricity will provide heating, cooling, lighting, and other residential and commercial benefits.

The Project and its associated substation will remain in operation for their given life, likely more than 50 years, as long as they are maintained and needed to transfer electricity through the region. The environmental resources within the Project Area generally will return to their long-term productivity with the following exceptions:

- → Wetlands will be unavoidably and adversely impacted by wetland type conversion and wetland loss due to the construction of the Project. These impacts will be mitigated through reclaiming, restoring, or permanently protecting other wetlands, resulting in an offset of wetland losses.
- → Construction of the Project permanently will alter the long-term productivity of impacted prime and unique farmlands within the final Route Alternative. Although

these sites may be reclaimed for productive farming, they may no longer have the characteristics required for classification as prime and unique.

→ Long-term losses in the productivity of vegetation will occur where trees are replaced by grassland and shrubland within the ROW of the Project. This land will not return to forest productivity until the transmission line is removed.

8.3 Irreversible and Irretrievable Commitments of Resources

Construction and operation of the Project may result in either the irreversible or the irretrievable commitment of certain resources. A commitment of resources is irreversible when the impacts limit the future options for a resource. An irretrievable commitment refers to the use or consumption of a resource that is neither renewable nor recoverable for use by future generations. Irretrievable commitment of resources applies to loss of nonrenewable resources such as minerals or cultural resources, or to those factors, such as soil productivity, that are renewable only over very long periods of time.

Cultural resources are non-renewable, and a loss of a site is an irretrievable impact on those resources. Preservation of archaeological and historical sites will be pursued through cultural resource site avoidance and recovery as part of the proposed programmatic agreement for these resources.

Construction of the Project will require the irretrievable commitment of some non-recyclable building materials and fuel for construction equipment. Many components of the Project will be recycled after their life, particularly metal components.