7852.3100 EVIDENCE OF CONSIDERATION OF ALTERNATIVE ROUTES

If the applicant is applying for a pipeline routing permit under parts 7852.0800 to 7852.1900, the applicant shall provide a summary discussion of the environmental impact of pipeline construction along the alternative routes consistent with the requirements of parts 7852.2600 to 7852.2700 and the rationale for rejection of the routing alternatives.

NDPC studied a variety of alternatives for routing. The study consisted of the no-action alternative, system alternatives, and route alternatives. An alternative had to meet three factors to be considered viable: ability to meet the project objectives; technical and economic feasibility; and have significant environmental advantages over the preferred route.

The following sections describe NDPC's process for selecting the preferred route and provide an analysis of alternatives. A detailed discussion of route alternatives is provided in Section 2.0 of the EIR.

Initial Route Selection Process

NDPC determined that the Project should initiate at its Beaver Lodge station near Tioga, North Dakota, as this site provides an ideal location to efficiently gather and transport crude oil produced in the Bakken and Three Forks formations. NDPC determined that the Project should connect with existing facilities at Clearbrook, Minnesota so that up to 150,000 bpd from the existing Line 81 could be transported on the Sandpiper Pipeline. Finally, NDPC determined that the Project should terminate at its Superior, Wisconsin terminal, where crude oil shipped from the Bakken could be further transported to refineries and markets in the Midwest and East Coast.

NDPC owns and operates Line 81, an existing interstate pipeline transportation system that gathers crude oil from points near production wells in western North Dakota and transports the volumes to Clearbrook, Minnesota for delivery to Minnesota Pipe Line Company, which serves two Minnesota refineries, and the Enbridge Mainline System. From Clearbrook, Enbridge operates seven pipelines within the Enbridge Mainline System that provide connections with the Superior terminal and refineries throughout the Midwest and the East Coast. Once Sandpiper is constructed, the NDPC connection with the Enbridge Mainline System will be removed and Sandpiper will carry the existing NDPC Line 81 volumes to Superior, Wisconsin where they will enter the Enbridge Mainline System. NDPC sought to co-locate Sandpiper as much as possible with existing infrastructure.

NDPC assessed the route from Tioga, North Dakota to Superior, Wisconsin with the intent of following existing third-party rights-of-way to the extent practicable while identifying specific areas where co-location may not be practicable. The first step in the route selection process consisted of collecting publicly available environmental data to identify routing constraints. The sources of data consisted primarily of GIS digital information layers including: USGS topographic maps; USGS land use database; U.S. Department of Agriculture Farm Services Agency aerial photography and GIS data; NWI maps; MNDNR National Heritage Information System data; Minnesota Department of Transportation ("MNDOT") highway maps; U.S. Department of Agriculture state soil geographic (State Soil Geographic ["STATSGO2"] and Soil Survey Geographic ["SSURGO"]) databases; and other natural feature databases obtained from the MNDNR website and other state and federal sources. Existing major third-party rights-of-way also were identified for potential use in co-location.

The next step involved reviewing selected layers of the collected GIS data on digital USGS topographic maps and recent aerial photography to identify the locations of environmental constraints within the study area.

NDPC initially analyzed two routes, known as the Northern Route and the Southern Route, in Minnesota between Clearbrook and the Minnesota/Wisconsin Border. Both of these routes were included in NDPC's June 7, 2013 MPUC Notice Plan filing. NDPC chose to pursue the Southern Route between Clearbrook and the Minnesota/Wisconsin Border as its preferred route. The Northern Route is analyzed as a route alternative. Refer to Section 2.3.3 of the EIR for a detailed discussion of alternative routes that were examined.

NDPC conducted a number of route reconnaissance efforts to further examine specific areas of concern identified during the desktop review. During field reviews, the route was examined and adjustments were made to avoid or minimize potential impacts on sensitive environmental or cultural features, to adjust for preferred construction alignment, or to accommodate landowner concerns. Further refinement of the route was conducted as detailed engineering design efforts led to the identification of specific facility modifications or additions. NDPC's existing pipeline right-of-way west of Clearbrook, Minnesota generally provides the opportunity for co-location; however, in some locations east of Clearbrook it is not feasible to use existing Enbridge rights-of-way due to inability to acquire land (even through the exercise of eminent domain authority), congestion, poor crossing conditions, or other constraints. Co-location with third-party rights-of-way east of Clearbrook provides environmental advantage in that land disturbance will be generally located alongside areas that have been previously

disturbed.

NDPC continues to refine the route to address engineering, environmental, and landowner concerns.

Comparison of Route Alternatives

NDPC conducted a detailed quantitative analysis of environmental impacts along each route alternative. This analysis used the same sources of publicly available environmental data described above in the Initial Route Selection Process. NDPC identified and compared a variety of factors for each route, including: proximity to existing rights-of-way, wetlands, highly wind erodible soils, bedrock outcrops, prime farmland, perennial waterbodies, national forest land, tribal land, state forest land, WMAs, AMAs, railroads crossed, roads crossed, and other site-specific issues that may occur.

During its route selection process, NDPC identified and analyzed five route alternatives in addition to the preferred route in Minnesota for the Project. They were the Northern Route, the Aitkin County Powerline Route, the Allete Powerline Route, the Aitkin County Soo Line Route, and the Carlton County Route. None of these route alternatives were adopted as the Project's preferred route.

Refer to Section 2.3.3 of the EIR for a detailed discussion of the route alternatives considered for the Project.