

**7852.2600 PREFERRED ROUTE LOCATION; ENVIRONMENT DESCRIPTION**

**Subpart 1. Preferred route location.**

**The applicant must identify the preferred route for the proposed pipeline and associated facilities, on any of the following documents which must be submitted with the application:**

- A. United States Geological Survey topographical maps to the scale of 1:24,000, if available;**
- B. Minnesota Department of Transportation county highway maps; or**
- C. aerial photos or other appropriate maps of equal or greater detail in items A and B. The maps or photos may be reduced for inclusion in the application. One full-sized set shall be provided to the commission.**

U.S. Geological Survey ("USGS") topographical maps and aerial photo maps for the preferred pipeline route from the North Dakota state line in Polk County, Minnesota to the Wisconsin state line in Carlton County, Minnesota are included in Appendix G.5 of the EIR.

**Subpart 2. Other route locations.**

**All other route alternatives considered by the applicant must be identified on a separate map or aerial photos or set of maps and photos or identified in correspondence or other documents evidencing consideration of the route by the applicant.**

EPND studied a variety of routes for the preferred pipeline. The study consisted of the no-action alternative, system alternatives, and route alternatives. To be considered viable, an alternative had to meet three factors: ability to meet project objectives; technical and economic feasibility; and have significant land use compatibility and environmental advantage over the preferred route.

Section 2.0 of the EIR provides a detailed analysis of the alternatives considered and Section 7852.3100 of this application provides a summary of this analysis.

### Subpart 3. Description of environment.

**The applicant must provide a description of the existing environment along the preferred route.**

EPND prepared an Environmental Information Report for the Project that provides a description of the existing environment and socioeconomic conditions along the preferred route, an analysis of potential human and environmental impacts, and a discussion of measures that will be taken to minimize or mitigate adverse impacts and protect and restore the right-of-way. A summary of the existing environmental conditions along the preferred route is provided below. A summary of potential environmental impacts and mitigation measures is provided in Section 7852.2700 of this application.

#### Socioeconomics

County population levels within the project area range from 4,087 persons in Red Lake County to 62,882 persons in Crow Wing County. In general, population levels are low in these counties. Population densities (an indicator of the extent of development) in the counties affected by the project averages 22.9 people per square mile. All county-level population densities along the preferred route are lower than the Minnesota average of 66.6 people per square mile, reflecting the generally rural character of much of the preferred route. The April 2013 unemployment rates in the project area varied from 5.3 percent in Polk County to 15.2 percent in Clearwater County (compared to a statewide average of 5.4 percent). Employment in the project area is concentrated in the following sectors: education, health, and social services, retail trade, manufacturing, arts, entertainment, recreation, accommodation and food services, and construction industries. Education, health and social services, retail trade and manufacturing are the top employment industries in the counties crossed by the preferred route. Per capita income in 2011 ranged from \$22,408 in Red Lake County to \$25,645 in Crow Wing County. In general, per capita income is lowest in rural counties with low population densities and high unemployment rates, and highest in urban counties with high population densities and low unemployment rates. Five municipalities are located within approximately one mile of the preferred route and no municipal boundaries would be crossed by the preferred route (see Table 3.1-2 of the EIR).

Section 3.0 of the EIR provides additional details regarding socioeconomic conditions.

#### Land Use

Using the USGS Land Use and Land Cover Classification System, EPND identified land use along the preferred route (including the construction right-of-way and known additional temporary workspaces) and classified it into the following five categories based on prevalent land use and vegetation cover

types: agricultural lands, developed lands, forest lands, open lands, and wetlands/open water. The predominant land use identified along the preferred route is forested land, which accounts for 1,946 acres (or 38 percent) of the total construction area. Agricultural land accounts for 1,761 acres (or 34 percent) of the total construction area. Of the agricultural land affected, approximately 60 percent is cultivated and the remaining 40 percent is pasture land. Other land uses are wetland/open water (824 acres or 16 percent), open land (590 acres or 12 percent), and developed land (15 acres or less than 1 percent) (see section 4.2 of the EIR).

The land use categories that will be affected resulting from the siting of the new Clearbrook terminal facilities include agricultural land (78 acres or 85 percent), wetland (7 acres or 7 percent), forested land (4 acres or 4 percent), and open land (3 acres or 3 percent). The land use categories that will be affected resulting from the siting of the Pine River facility will be forest land (10 acres or 98 percent of the site) and open space (less than 1 acre or 2 percent of the site).

The preferred route predominantly crosses private land (229 miles or approximately 77 percent of the route). The preferred route also crosses state lands (26 miles or approximately 9 percent of the route) and county lands (44 miles or approximately 15 percent of the route) (see section 4.2.1 of the EIR).

Section 4.0 of the EIR provides details regarding land use.

#### Terrain and Geology

The Project primarily traverses the Interior Plain Physiographic Province, crossing into the Laurentian Upland Province—Superior Upland in the eastern portion of its route in Minnesota. The geologic terrain of both of these provinces is characterized by ancient pre-Cambrian igneous and metamorphic rocks that have been uplifted and eroded to a relatively low-relief plain, forming the stable geologic core of the North American continent, known as the craton. The North American craton, which is crossed by the Project, has been tectonically stable for over 500 million years. Therefore, there is a low probability of an earthquake of significant intensity or other seismic event in the Project area.

Maps of regional coverage of depth-to-bedrock generally are not of sufficient resolution to identify areas where bedrock occurs at specific depths; therefore, information on depth to bedrock in a specific location is difficult to determine without sampling. Generally, the depth to bedrock along the preferred route can exceed more than 450-feet. Less than 1 percent of the route (from approximate milepost (“MP”) 579.5 to MP 582.0 in Carlton County) crosses an area of more or less continuous bedrock exposure (see section 5.1 of the EIR). Blasting may be required if bedrock is encountered

within the depth of the trench.

Nineteen sand and gravel quarry operations are present within 1,500-feet of the construction workspace. Four areas of active metallic mineral leases on state lands are present within 1,500-feet of the construction workspace, and three active leases will be crossed by pipeline construction in Aitkin and Carlton counties (see section 5.1.1 of the EIR).

Section 5.0 of the EIR provides details regarding geological resources.

#### Soils

The preferred route will cross the following Major Land Resource Areas: Red River Valley of the North; Northern Minnesota Gray Drift; Rolling Till Prairie; Northern Minnesota Glacial Lake Basins; Superior Lake Plain; Central Minnesota Sandy Outwash; and Wisconsin and Minnesota Thin Loess and Till, Northern part. Soils in these areas range from somewhat poorly drained soils with loamy and clayey textures to sandy soils that are well or excessively drained. Soils have a frigid temperature regime, an aquic or udic soil moisture regime, and mixed, smectitic, or isotic mineralogy.

Approximately 59 percent of the soils within the Project area are considered prime farmland, 37 percent are hydric, 23 percent are compaction-prone, 15 percent are susceptible to water erosion, 71 percent are susceptible to wind erosion, 39 percent pose re-vegetative concern, and less than 1 percent of the route crosses shallow bedrock (see section 6.2.2 of the EIR).

Section 6.0 of the EIR provides details regarding soil resources.

#### Vegetation, Wildlife, and Fisheries

Sandpiper will be constructed through multiple biomes, including deciduous forest, conifer forest, and prairie. Wildlife habitats within these areas are diverse and include open areas, wetlands, and forested areas.

Within agricultural areas, wildlife habitat is limited and confined primarily to the undeveloped areas. Common mammalian species, including white-tailed deer, woodchucks, striped skunks, raccoons, weasels, Virginia opossum, and various mice and voles, use these areas for feeding and cover. Common bird species, such as European starlings, American crows, eastern meadowlarks, and house sparrows, are also typically found in agricultural areas.

Forested areas affected by the project are found primarily along the eastern portion of the preferred route. Mammalian species include eastern chipmunks, black bears, snowshoe hares, gray squirrels, gray fox, porcupines, pine martens, and several species of bats.

Wetlands affected by the project consist primarily of emergent herbaceous

wetlands, woody wetlands, and open water. The emergent wetlands and open water provide habitat for a variety of aquatic wildlife, including muskrats, beavers, mink, river otters, waterfowl, wading birds, and numerous species of reptiles and amphibians. The woody wetlands provide additional habitat for terrestrial wildlife, such as white-tailed deer, moose, gray wolves, black bears, and a variety of small mammals and songbirds.

Open land affected by the project consists primarily of shrub/scrub areas, grasslands, developed open space, and barren land. The undeveloped, vegetated open lands likely support several species of birds, numerous small rodents, and several species of snakes. Species such as coyote, red fox, and a variety of raptors typically hunt open areas for the varied prey. Other common wildlife species that may use open areas include thirteen-lined ground squirrels, eastern cottontail rabbits, and white-tailed jackrabbits.

The preferred route crosses 73 perennial and 76 intermittent streams in Minnesota (see table 9.2-1 of the EIR). A list of waterbodies crossed by the Project is included in Appendix E of the EIR. Most of these waterbodies contain warm water fisheries. The preferred route also will cross 13 Minnesota Department of Natural Resources (“MNDNR”)-designated trout streams (see section 7.3.1 of the EIR). Game fish that may occur in stream crossings in the project area include bass, bullhead, catfish, crappie, muskellunge, perch, pike, sunfish, walleye, and trout.

The preferred route crosses four Wildlife Management Areas (“WMAs”) and two Aquatic Management Areas (“AMAs”) (see section 11.1.2 of the EIR).

EPND initiated consultation with the U.S. Fish and Wildlife Service (“USFWS”) to understand the potential presence of threatened and endangered species in the vicinity of the Project and establish approved survey protocols. EPND discussed the USFWS initial recommendations with USFWS staff over the phone and received an email with information on federally listed species in Minnesota. At the request of USFWS and pursuant to the federal process, further consultations will not proceed until a lead federal agency has been identified and the subsequent designation of EPND as the non-federal representative for the federal agency under the Endangered Species Act occurs.

EPND also initiated consultation with the MNDNR Endangered Species Review Coordinator to understand the potential presence of threatened and endangered species in the vicinity of the Project. EPND conducted a review of the Minnesota Natural Heritage Information in cooperation with the MNDNR to determine if any federally or state-listed species are known to occur within a 2-mile-wide study area centered on the preferred route. Results of the review are presented in Table 7.4.1-1 of the EIR.

Section 7.0 of the EIR provides detailed information about vegetation, wildlife, fisheries, and threatened and endangered species.

#### Water Resources – Groundwater

Groundwater along the preferred route occurs in surficial aquifers and buried drift aquifers. Surficial aquifers occur above bedrock in unconsolidated sediments deposited by glaciers, streams, and lakes. Buried drift aquifers occur in well sorted sands and gravels deposited in bedrock valleys, alluvial channels, and outwash plains. Of the two types, surficial aquifers are most susceptible to impacts from construction because of the relatively shallow depth of the water table and coarse texture of the material overlying the aquifer.

EPND identified 12 domestic water supply wells within 200-feet of the preferred route; one well was for a test hole and another was for an irrigation well. No public water supply wells were identified in the vicinity of the Project (see section 8.2.3 of the EIR). Current Minnesota Department of Health (“MDH”) regulations require a well isolation distance of 100-feet for petroleum pipelines (Minnesota Rules, Chapter 4725). The preferred route will not cross any aquifers that are designated by the US Environmental Protection Agency (“EPA”) as sole-source aquifers. The Project will cross about 0.2 miles of a Drinking Water Supply Management Area (“DWSMA”) in the vicinity of Park Rapids (see section 8.2.2 of EIR). The MDH rates the sensitivity of the aquifer that supplies the well for that water supply as “high”. EPND has initiated consultation with the operators of the DWSMA and the MDH regarding this crossing.

EPND accessed a Minnesota Pollution Control Agency (“MPCA”) database to identify sites with known or potential contamination within 0.5 mile of the preferred route. EPND identified 16 sites, and all were determined to be more than 500-feet from the preferred pipeline route and are not anticipated to be impacted by or impact the Project (see section 8.3 of the EIR). Following final route selection and prior to construction, EPND will re-assess the potential for encountering contaminated groundwater near sites that are within 500-feet of the final pipeline route. If necessary, appropriate avoidance or mitigation measures will be developed and implemented at that time in accordance with applicable state or federal regulations.

Section 8.0 of the EIR provides details regarding groundwater resources.

#### Water Resources – Surface Water

Surface waters crossed by the preferred route are located within the Red River of the North, Mississippi Headwaters, St. Croix River, and Western Lake Superior Basins. The Project will cross the Red Lake and Wild Rice Watershed Districts. The primary purpose of these watershed districts is to conserve the natural resources of the state through land use planning, flood

control, and other conservation practices.

EPND reviewed hydrographic spatial data coverage provided by the MNDNR to identify waterbodies (lakes, streams, rivers, and drainage ditches) crossed by the preferred route. This review identified 149 waterbodies crossed by the preferred route including 73 perennial streams and 76 intermittent streams. Of these waterbodies, 64 are designated as Public Waters by MNDNR (see table 9.2-1 of the EIR). The Project will cross 11 impaired streams in 15 different places (see section 9.2.1 of the EIR). Calcareous fens are designated as Outstanding Resource Value Waters (“ORVWs”) and are given special protection by state regulations. EPND’s wetland delineation surveys will aid in the identification of calcareous fens and other rare plant communities that may indicate the presence of a calcareous fen. EPND will continue to work with MNDNR regarding calcareous fens in the vicinity of the Project.

For routing and planning purposes, EPND used National Wetland Inventory (“NWI”) data combined with field survey data through August 11, 2013 to estimate the number, size, and locations of wetlands along the preferred route. Through a combination of NWI and field data, EPND determined that the preferred route will cross a total of 1,565 wetlands. This number does not distinguish between those wetlands that will be crossed more than once and will be further refined pending review of additional field data. A total of approximately 60.4 linear miles of wetlands will be crossed by the preferred route (see section 9.3.1 of the EIR). Of the wetlands crossed by the preferred route, five wetlands are listed on the MNDNR Public Waters Inventory. In addition, seven basins listed on the MNDNR Public Waters Inventory are crossed by the preferred route (see section 9.3.2 of the EIR).

Section 9.0 of the EIR provides details regarding surface water resources.

#### Cultural Resources

EPND reviewed the Minnesota State Historic Preservation Office’s (“SHPO”) site files to identify previously recorded cultural resources within a survey area with a width ranging from 250- to 450-feet. This review identified six previously recorded sites, two of which have been determined not eligible for listing on the National Register of Historic Places (“NRHP”). The four remaining sites have not been evaluated for eligibility. EPND is currently conducting Phase 1 reconnaissance surveys and utilizing a statistically-based Geographic Information System (“GIS”) predictive sensitivity model to identify cultural resources within the survey area. As of August 11, 2013, 23 archaeological sites have been identified, 17 of which reflect Pre-Contact Period occupations and consist of various assemblages of stone tools and tool-making debris, faunal (animal) remains, and pottery. Six locations reflect Historic Period occupations from the 19th and 20th centuries. As of August 11, 2013, no historic structures have been recorded within the survey area (see section 10.2 of the EIR).

Section 10.0 in the EIR provides details regarding cultural resources.

#### Federal, State, and County Recreational Areas

The preferred route will not cross any national parks, national forests, national landmarks, wilderness areas, wildlife refuges, waterfowl production areas, or national wildlife management areas. However, the preferred route will cross a National Scenic Trail and four Minnesota rivers that are listed on the National Rivers Inventory. None of these are federally designated as National Wild and Scenic River (see section 11.1.1 of the EIR).

Sandpiper will not cross any state parks or state scientific natural areas. However, the Project will cross state and county forests, county parks, state WMAs and AMAs, state-designated trails, designated scenic byways, and state-designated water trails/canoe routes (see section 11.1.2, 11.1.3, and 11.1.4 of the EIR).

Section 11.0 of the EIR provides details regarding federal, state and county recreational areas.

#### Air Quality

The Project will include the construction of additional external floating roof storage tanks at a new Clearbrook terminal facility adjacent to the existing EEP Clearbrook Terminal. Once constructed, the new tanks will be subject to federal New Source Performance Standards under 40 C.F.R. 60 Subpart Kb. Tank emissions will be controlled by the floating roof, rim seals, and deck fitting controls (such as gaskets, sleeves, and wipers). EPND will not be required to obtain an air permit prior to commencing construction activities at the Clearbrook Terminal. The Clearbrook Terminal currently operates under an "Option A" registration permit and will remain eligible for this permit after the Project. EPND will complete the required New Source Performance Standards notifications and submittals for the new storage tanks. Project related emissions at the new Clearbrook Terminal will be predominantly Volatile Organic Compounds ("VOC") and are estimated to be 24 tons of VOC/year (see section 12.3 of the EIR).

Construction of the pipeline and associated aboveground facilities could result in intermittent and short-term fugitive emissions. These emissions would include dust from soil disruption and combustion emissions from the construction equipment.

Section 12.0 of the EIR provides additional details regarding air quality.