

5.3 COMPARISON OF ALTERNATIVES

This section compares the proposed Project with other reasonable alternatives (Section 5.3.1) and the identified No Action scenarios (Section 5.3.2).

5.3.1 Proposed Project Versus Major Route Alternatives

Table 5.3-1 summarizes the impacts associated with the proposed Project, 2011 Steele City Alternative, and I-90 Corridor Alternative.

Table 5.3-1 Impacts Associated with Proposed Project and Alternatives

| | Proposed Project | 2011 Steele City Segment Alternative | I-90 Corridor Alternative |
|---|-------------------------|---|----------------------------------|
| New Pipeline Length (miles) | 875 | 854 | 927 |
| Number of Aboveground Facilities | 59 | 56 | 90 |
| Length Co-located with Existing Keystone Pipeline (miles) | 0 | 0 | 254 |
| NDEQ ^a -Identified Sand Hills Region Crossed (miles) | 0 | 90 | 0 |
| Highly Erodible Soil (Wind) Crossed (miles) | 66 | 116 | 36 |
| Perennial Waterbody Crossings | 56 | 48 | 61 |
| Wetland Affected during Construction (acres) | 262 | 544 | 223 |
| Average Annual Employment During Construction | 3,900 | 3,900 | 4,100 |
| State Tax Revenues (millions) | \$34.5 | \$34.1 | \$38.4 |
| Construction Land Area Affected (acres) | 11,667 | 11,387 | 12,360 |
| Operations (permanent) Land Area Required (acres) | 5,303 | 5,176 | 4,818 |

^a Nebraska Department of Environmental Quality (NDEQ).

The proposed Project would be approximately 21 miles longer than the 2011 Steele City Alternative and therefore would affect more acres of land during construction and operations. The proposed Project route, however, avoids the sensitive Nebraska Department of Environmental Quality (NDEQ)-identified Sand Hills Region, which includes extensive areas of soils susceptible to wind erosion and provides habitat for the American Burying Beetle, which is federally listed as threatened. The proposed Project would cross a few more perennial waterbodies, but would impact fewer wetlands than the 2011 Steele City Alternative.

The proposed Project would be approximately 52 miles shorter than the I-90 Corridor Alternative and therefore would disturb fewer acres of land during construction. Despite being longer, the I-90 Corridor Alternative would require fewer acres of land in permanent easements as it would share approximately 254 miles of the existing Keystone Pipeline right-of-way. Like the proposed Project, the I-90 Corridor Alternative would also avoid the NDEQ-identified Sand Hills Region and would disturb even fewer linear miles of soils susceptible to wind erosion than the proposed Project. The proposed Project would cross fewer perennial waterbodies, but would result in more wetland impacts than the I-90 Corridor Alternative. Most notably, the I-90 Corridor Alternative would require two major crossings of the Missouri River—at Lake Francis Case (an approximately 4,100-foot-long crossing) in South Dakota and at the Missouri National

Recreational River at the South Dakota/Nebraska border. This National Recreational River segment is a designated Important Bird Area by the National Audubon Society and provides U.S. Fish and Wildlife Service-designated critical habitat for the federally threatened piping plovers (*Charadrius melodus*) and habitat for the federally endangered least terns (*Sternula antillarum*).

5.3.2 Proposed Project Versus No Action Scenarios

The Rail/Pipeline and Rail/Tanker Scenarios are very different from the proposed Project in terms of the types of impacts that would result, so it is difficult to do a direct comparison. Crude oil transportation by the Rail/Pipeline and Rail/Tanker Scenarios would primarily differ from the proposed Project in the following ways:

- Releases associated with crude oil loading/unloading of rail cars at new facilities near Lloydminster, Canada; Epping, North Dakota; Stroud, Oklahoma; and Port Rupert, British Columbia, would typically occur within contained areas or to the ground surface, making the releases more readily identifiable and easier to respond to and clean up at the terminals themselves.
- Crude oil releases during rail transportation would be limited to the crude oil volume contained within individual railcars, which would limit the total volume of crude oil that could potentially impact groundwater relative to the proposed Project. This is offset to at least some extent by the increased statistical likelihood of spills associated with these alternative modes of crude oil transport relative to pipelines.
- In terms of total disturbance, the proposed Project would result in approximately 11,667 acres of primarily temporary impacts along a relatively narrow (approximately 110-foot-wide) 875-mile-long corridor. The Rail/Pipeline Scenario would result in more concentrated permanent impacts at the proposed rail loading and off-loading terminals in Lloydminster, Epping, and Stroud, totaling approximately 7,727 acres. The Rail/Tanker Scenario would result in more concentrated permanent impacts at the proposed rail loading and off-loading terminals in Lloydminster, Prince Rupert, Epping, and Stroud, totaling approximately 9,427 acres as the rail lines already exist and no construction would be required for the tanker transport along the Pacific Coast and Gulf of Mexico.

Refer to Section 5.1, No Action Alternatives, for a discussion of the costs associated with these oil transportation scenarios.