


Appendix H

Sand Hills Native Rangelands

Pipeline Construction in
Sand Hills
Native Rangelands





TransCanada is committed to restoring the productive capability of all lands disturbed by pipeline construction. We implement a comprehensive program from project planning, through construction, to reclamation and monitoring, in order to ensure that disturbances are reduced as much as possible, and to restore lands crossed by our projects to their pre-construction productivity.

Native rangelands are important ecosystems that support a variety of uses such as livestock grazing, wildlife habitat and recreational opportunities. With over 50 years of experience building and operating pipelines, TransCanada has successfully reclaimed thousands of acres of native rangeland on pipeline rights-of-way throughout North America. Included in these efforts are successful pipeline reclamation projects in the arid native prairie regions of southern Alberta and southwestern Saskatchewan, including areas such as the Great Sand Hills of Saskatchewan.

Although we are experienced at native rangeland reclamation, we recognize that native rangelands within the Sand Hills region of southern South Dakota and central Nebraska creates unique challenges.

The Sand Hills are an extensive and biologically significant ecoregion encompassing approximately 23,000 square miles in South Dakota and Nebraska. Soils are typically sandy and fragile, forming blowouts and bare dunes where vegetation is not properly managed. The Sand Hills are not a uniform landscape, but a collection of diverse habitats that vary from exposed wind-swept ridges and blow outs, to areas of soil deposition on the windward side of hills, with wet meadows and alkali lakes in valley bottoms.

During project scoping, TransCanada engaged in discussions with several regional experts on Sand Hills ecology and restoration at universities and government agencies, including experts at the University of Nebraska, the University of South Dakota, the Natural Resources Conservation Service (NRCS) and state road departments.



Best Management Practices

The following best management practices will be applied to the Keystone XL Project.

Right-of-Way Siting

- Incorporate minor route re-alignments through the Sand Hills region.
- Attempt to locate the right-of-way in areas of higher soil moisture and greater soil structure while avoiding wetlands to the maximum extent possible.
- Re-alignments will typically remain within the overall 300-foot study corridor.

Right-of-Way Construction

Note: The construction right-of-way will be 110-feet wide, with a 50-foot permanent easement and a 60-foot temporary construction easement.

- Provide training to construction crews and establish and apply an Access Control Plan in the Sand Hills to minimize impacts to this sensitive ecosystem. TransCanada will ensure that the plan considers: timing of construction, the reduction of traffic volumes, restriction of equipment and vehicle types, and alternative mitigation measures to address site-specific issues.
- Avoid disturbance of the fragile soils and native vegetation, to the extent practicable.
- Conduct topsoil salvage in all areas where grading and excavation occurs. Topsoil shall be conserved and stored separately from subsoil, typically in long windrows adjacent to the trench. Protect topsoil piles from erosion through the use of best management



practices such as applying water, matting, mulch or tackifier. Once the pipe has been laid, subsoil will be returned to the trench, and topsoil re-spread to the original contour of the land for reclamation.

Right-of-Way Reclamation

- Revegetate the right-of-way in areas of native rangeland by using native seed adapted to the Sand Hills. Use seed mixes that have been developed with input from the local NRCS offices and through collaboration with regional experts. Adjust seed application rates accordingly to complement the application methods, seed bed and terrain constraints.
- Ensure all seed is certified noxious weed free and calculated on a pure live seed (PLS) basis.
- Use straw or native prairie hay as mulch, applied to the right-of-way and crimped into the soil to prevent wind erosion. Ensure all mulch is documented as noxious weed free. Annual cover-crops may also be used to provide a vegetative cover to control erosion.
- Consider use of hodder gaugers or imprinters to create impressions in the soil, reducing erosion, improving moisture retention and creating microsites for seed germination.
- Use sediment logs (straw wattles) where appropriate to manage soil erosion issues in place of slope breakers (short terraces) that are constructed of soil.
- Apply photodegradable matting on steep slopes or areas prone to extreme wind exposure such as north- or west-facing slopes and ridge tops. Use biodegradable pins in place of metal staples to hold the matting in place.
- Take into consideration soil, vegetative and regional moisture constraints, and the landowner's livestock grazing management to evaluate the need to implement fencing of the right-of-way from livestock to hasten vegetation re-establishment. Incorporate management concerns such as livestock access to water or movement within a pasture into any decisions. Compensate landowners for any grazing restrictions experienced due to fencing.



Post Construction

- TransCanada is committed to post-construction monitoring and repair. Revegetation with native species typically requires several growing seasons to become fully established. We will monitor reclamation on the right-of-way for several years and repair areas of failure. During monitoring, we will make sure landowners are informed of our efforts and intentions.
- Noxious weeds are a concern for landowners and TransCanada. We have developed noxious weed management plans specific to each state crossed by our project. These plans have been developed in consultation with state and county experts. We are committed to preventing the spread of noxious weeds via the right-of-way. In areas such as the Sand Hills, we may implement alternative or less invasive control measures to reduce effects to the sensitive ecosystem.
- TransCanada will work with landowners to prevent unauthorized use of the right-of-way by ensuring that fences are adequately replaced and any new access roads established for construction are removed and reclaimed.

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About the Proponents

The Keystone Pipeline is a partnership between TransCanada and ConocoPhillips. TransCanada affiliates will construct and operate the pipeline.

ConocoPhillips is an international, integrated energy company with interests around the world. Headquartered in Houston, Texas, the company has approximately 32,600 employees and \$178 billion in assets. For more information, go to www.conocophillips.com.

TransCanada is a leader in the responsible development and reliable operation of North American energy infrastructure including natural gas pipelines, power generation and gas storage facilities. TransCanada's network of wholly owned pipelines extends more than 36,500 miles (59,000 kilometres), tapping into virtually all major gas supply basins in North America. TransCanada is one of the continent's largest providers of gas storage. TransCanada owns or has interests in approximately 10,900 megawatts of power generation in Canada and the United States. For more information, go to www.transcanada.com.

