

**ENVIRONMENTAL
IMPACT SUMMARY**

CHAPTER 6

6.0 ENVIRONMENTAL IMPACT SUMMARY

Table 6-1 provides a summary of the environmental impacts that are expected to remain after Keystone's BMPs are applied. This impact summary addresses the entire project (Keystone Mainline, Cushing Extension, and ancillary facilities (pump stations, powerlines). These impacts include short-term uses of renewable resources, such as water withdrawn for hydrostatic testing and then discharged back to the land. These impacts also include long-term changes in land use, such as the prohibition of residential structures on the permanent pipeline ROW.

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Resource	Impact Summary
Air Quality	<ul style="list-style-type: none"> • Fugitive dust will be generated from ROW construction activities and traffic over the construction period regardless of the dust suppression measures applied. All regions crossed by the project are in attainment for particulate matter and no state-mandated dust control permits will be required. • Operational hydrocarbon emissions from 27 pump stations (23 initial [plus one future] on the Keystone Mainline and three on Cushing Extension) spaced 30 to 50 miles apart will be minimal since pumps will be electric and no new crude oil tanks will be required.
Geology, Minerals, and Paleontology	<ul style="list-style-type: none"> • Construction and operation of the Keystone pipeline system will limit access to underlying minerals (sand and gravel) for the project life. This limitation will be confined to the width of the permanent pipeline ROW that overlies glacial deposits, or approximately 800 miles. • The Keystone pipeline system will be located over approximately 40 miles of underlying coal seams between Wood River and Patoka, Illinois. This coal is currently being mined with underground methods. The Keystone pipeline will be located within an existing pipeline corridor and will not add a new limitation on access to underlying coal. • Any Pleistocene-era mammalian fossils excavated during construction will not be studied or retrieved.
Soils and Agricultural Production	<ul style="list-style-type: none"> • A small fraction of the excavated soils in areas with highly erodible soils (2,458 acres) will be lost to increased water and wind erosion acting on disturbed soil surfaces until grass and other herbaceous vegetation is restored (three to five years). • Agricultural cropland and rangeland (including hayland) production will be lost from the construction ROW for the season during construction on approximately 17,094 acres. During the next growing season, production on haylands and pasturelands may be reduced but not completely lost. Long-term productivity will not be impaired.
Water Resources	<ul style="list-style-type: none"> • Construction across waterbodies will cause local short-term increases in total suspended solids and deposited sediment in 270 perennial streams and rivers. Channel disturbance within the Missouri River (two crossings), Platte River, Chariton River, Cuivre River (two crossings), Mississippi River, Hurricane Creek, and Kaskaskia River will be avoided by using horizontal directional drills to install the pipeline. • Water used for hydrostatic testing of the pipeline will be obtained from surface water resources. The volume for a 50-mile test section of 30-inch pipeline is approximately nine million gallons. Withdrawals rates and volumes will be designed to avoid impacts to aquatic life and downstream water users. Hydrostatic test water will be discharged to the land surface at an approved location. Discharged water may evaporate or infiltrate into the soil or drainage where the water is released.

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	<ul style="list-style-type: none"> Pipeline construction will disturb a total of 981 acres of wetlands, river systems and open water. Of this total, approximately 837 acres are wetlands (701 acres palustrine emergent wetlands and 135 acres forested wetlands) and 144 acres are located in river systems and open water. It is estimated that vegetation cover in palustrine emergent wetlands will recover in three to five years; forested wetlands will require 20 to 50 years. No permanent loss of wetlands will occur as a result of this project; however, approximately 55 acres of forested wetland will be permanently converted to herbaceous wetland.
Vegetation	<ul style="list-style-type: none"> Pipeline construction will disturb a total of 21,221 acres including 4,024 acres of native and modified grassland and 1,053 acres of upland and forested wetlands. It is estimated that vegetation cover in native and modified grasslands will recover in three to five years, while forests and woodlands will require 20 to 50 years. Trees will not be able to grow on approximately 431 acres of currently forested woodlands during operation to allow aerial surveillance.
Wildlife	<ul style="list-style-type: none"> Approximately 1,754 acres of upland and wetland wildlife habitats will be cleared during pipeline construction and then will recover over short- and long-term time frames (see Wetlands and Vegetation above). Wildlife displacement from the construction ROW is expected to be short-term. No long-term displacement impacts from increased human activity are expected. There may be a potential loss of bird eggs and young from pipeline clearing activities or increased human presence if these activities occur during the breeding season along the entire length of the pipeline. Powerlines (ranging in length from one to 27 miles) will be constructed to serve the pump stations. The powerlines represent a collision hazard for waterfowl and other birds similar to existing electrical distribution lines.
Aquatic Resources	<ul style="list-style-type: none"> Short-term (one to 10 day) increases in total suspended solids and sediment deposition downstream from channel excavation at open-cut stream crossings will occur in 270 perennial rivers and streams (see Water Resources above).
Sensitive Species	<ul style="list-style-type: none"> There will be a potential reduction in sensitive wildlife and aquatic species habitats as the result of pipeline construction. These habitat changes are described for wildlife and aquatic resources above. Keystone received the USFWS and state wildlife agency lists of species to be evaluated for project effects. The primary listed species to be considered are those associated with the Missouri River and Mississippi River (e.g., Pallid Sturgeon, Least Tern, Piping Plover, Bald Eagle), smaller streams and rivers (e.g., Topeka Shiner, Scaleshell Mussel, Winged Mapleleaf), wetlands and moist prairie (e.g., Western Prairie Fringed Orchid, Prairie Bush Clover), and deciduous forests (e.g., Indiana Bat). In 2006, Keystone initiated habitat and occurrence surveys for several federally listed and state sensitive species, and will continue these surveys in 2007. Keystone will coordinate with the USFWS and state wildlife agencies to estimate direct and indirect impacts to federally listed and sensitive species, and to identify pipeline route adjustments, and construction procedures that will avoid, or minimize effects to these species. For example, horizontal directional drills of the Missouri and Mississippi rivers will avoid channel and river bank disturbance. Keystone has adjusted its proposed pipeline route at several locations in North and South Dakota to reduce the length of wetland and native prairie crossings.

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Resource	Impact Summary
<p>Land Use (including noise, transportation)</p>	<ul style="list-style-type: none"> • Approximately 8,384 acres will not be able to be occupied by residential or other structures within the permanent pipeline ROW and pump station sites over the life of the project. Agricultural uses (cropland) will be allowed to continue as before except at the pump station sites. • Approximately 37 acres of land owned by the USACE will be crossed by the pipeline at Carlyle Lake between Wood River and Patoka, Illinois. Approximately 33 acres of land administered by the NPS at the Missouri River crossing at Yankton, South Dakota, will be crossed by a horizontal directional drill under the river. Approximately 17 acres of land will be crossed by the pipeline at Edward “Ted” and Pat Jones-Confluence Point State Park in Missouri. Small parcels of state land (generally less than 10 acres of surface disturbance) will be crossed in North Dakota, South Dakota, and Missouri. The majority of these state lands are used for wildlife management purposes. Keystone will consult with the state and federal managers of these lands to develop site-specific crossing plans to maintain public access and existing land uses. • Construction noise will be heard to nearby (generally one-half mile or less) residences during daytime construction activities over a period of several weeks. • Long-term operational noise from pump stations will be maintained below community noise level thresholds. • Aboveground facilities (pump stations, powerlines, valves, densitometers) will exist for the life of the project. The majority of these facilities will be located in rural areas. Powerlines will be located along county roads and, therefore, will pass within the view of roadside residences. • Short-term obstruction or temporary disruption to local roads will occur during construction. Major highways will be bored. There would be no long-term impacts to transportation.
<p>Cultural Resources</p>	<ul style="list-style-type: none"> • Keystone developed study plans that were approved by the State Historic Preservation Office in each state crossed by the Keystone project. Keystone then initiated field surveys in 2006 to determine the locations of prehistoric and historic cultural resources that could be affected by surface disturbance caused by pipeline and ancillary facility construction. Cultural resource impacts could include physical disturbance of archaeological sites or architecturally significant structures and features, and introduce visual or audible elements (e.g., pump stations) that would alter the setting of a cultural resource feature. • Impacts to sites that are eligible for the National Register of Historic Places (NRHP) would be mitigated by one or more of the following measures: avoidance through use of pipeline realignments and facility relocations; approved data recovery from sites that cannot be avoided; and use of landscaping or other techniques to minimize or eliminate effects on the historic setting or ambience of standing structures. • Construction activities could adversely affect undiscovered archaeological sites. If previously undocumented sites are discovered within the construction corridor, work that could adversely affect the discovery would cease until consultation with appropriate cultural preservation agencies is completed. If the previously unidentified site is recommended as eligible to the NRHP, impacts will be mitigated through the procedures included in an Unanticipated Discovery Plan. • Treatment of any discovered human remains would be handled in accordance with the guidelines contained in the Native American Grave Protection and Repatriation Act (NAGPRA) or state laws, depending on the age and cultural affiliation of the remains.

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	Construction will not resume in an area where human remains are discovered until an authorized agency provides a notice to proceed.
Native American Consultation	<ul style="list-style-type: none"> • The DOS, as the lead federal agency, will consult with tribes that may have a past or current affiliation with the Keystone Pipeline project area and solicit input. These contacts will be maintained throughout the project permitting process.
Socioeconomic Conditions	<ul style="list-style-type: none"> • In exchange for monetary compensation, Keystone will acquire easements from landowners to place pipeline facilities on private lands. Keystone also will compensate landowners for property damage resulting from construction and make repairs as needed. • In the short term, construction of the pipeline will provide direct employment of up to 2,500 to 3,000 workers distributed across five to six states at once. Pipeline employees will increase retail sales in local areas along the pipeline route. Demands on local infrastructure will include temporary accommodations and, potentially, emergency services. It is anticipated that workers will commute from larger population centers to the pipeline work sites. • In the long term, operations will increase revenues to the states and counties crossed by the pipeline. It is estimated that the project will pay about \$30 million dollars in property taxes in the first year of operation.
Public Health and Safety	<ul style="list-style-type: none"> • The USDOT prescribes pipeline design and operational requirements that limit the risk of accidental crude oil releases (leaks or spills) from pipelines. Over the operational life of the Keystone Pipeline Project there will be a very low likelihood of a crude oil release from the pipeline that could injure people, drinking water supplies, and ecologically sensitive areas. Keystone submitted a preliminary risk assessment for the accidental release of crude oil from the pipeline. The assessment included the likelihood of crude oil releases and potential for environmental affects, depending upon release volumes and locations. Based on refinements of the route, hydraulic models, and additional engineering information, an updated risk assessment will be submitted to the Department of State in the first quarter of 2007.