# SUMMARY

This Final Environmental Impact Statement (FEIS) has been prepared in response to a request for a special use authorization for construction and operation of a pressurized natural gas pipeline submitted to the Forest Service by Lower Valley Energy (LVE), a utility serving western Wyoming. The request includes information on LVE's technical and financial ability to construct and operate the pipeline. If approved, a pipeline would be constructed, operated, and maintained by LVE to bring natural gas service to the Jackson, Wyoming area from a location near Merna, Wyoming. The FEIS describes the purpose and need for the proposed project, considers public issues, identifies alternatives to address public concerns, and discloses the potential direct, indirect, and cumulative effects of implementing each alternative considered. The Forest Service has identified the Proposed Action as the preferred alternative.

The current gas supply for LVE's distribution system is a liquid natural gas (LNG) facility located adjacent to its Jackson, Wyoming office. Tanker trucks transport LNG from the Shute Creek facility, located south of La Barge, Wyoming, to LVE's facility. Delivery of LNG to the Jackson area requires that trucks travel approximately 120 miles (one way) on public highways on a daily basis.

Transportation of energy fuels by transmission pipelines is acknowledged to be safer than transportation by other modes, but direct safety comparisons are difficult. Statistics suggest that pipelines are associated with many fewer fatalities per ton-mile than truck, rail or waterborne transport.

Tanker trucks traveling on mountain or canyon highways in the western U.S. are frequently involved in crashes that cause injury, death, or damage to property and the environment. Some crashes have involved fires, and one crash in Spain in 2002 involving a tanker truck resulted in a serious boiling liquid expanding vapor explosion. A test involving 10,000 gallons of LNG, the amount of LNG transported in a tanker truck, generated a cone-shaped fire 60 feet in diameter and 250 feet high. Continued reliance on transport of LNG along public highways also could leave the Jackson area vulnerable to occasional interruptions in supply when rockfalls, slides, or avalanches make highways impassable. Protection of scenic, recreational, fisheries or wildlife values that make the Hoback River eligible for designation as a Recreation River would be enhanced by reducing the commercial hauling of LNG along public highways.

Although pipeline releases have caused relatively few fatalities in absolute numbers, a single pipeline incident can be catastrophic. The main risks associated with a natural gas transmission pipeline incident are a fireball or flash fire caused by the flow of flammable gas when pipe rupture occurs; and an explosion or the delayed ignition of a gas and air cloud in a semi-confined area. The principal pipeline failure mechanisms are external impact with the pipeline; corrosion of the pipe wall; a metal defect in the pipe wall; operation of the pipeline outside its design limits; and natural events, such as floods, landslides, or other earth movements. Older natural gas pipelines (installed in 1950 or earlier) have a significantly higher rate of incidents compared with pipelines installed since 1950.

The purpose of and need for the proposed pipeline is sixfold: 1) enhance the diversity of fuels available in Jackson by providing a steady supply of natural gas to the area; 2) use an economical supply of natural gas that has been developed nearby, in northern Sublette County, to meet the needs of LVE's customers; 3) modernize the energy supply infrastructure in western Wyoming by installing a natural gas pipeline which would eliminate 500 or more round trips per year by tanker trucks along public highways; 4) improve the environment by reducing the effects on air quality from tanker truck emissions; 5) improve the protection of the environment, including scenic, recreational, fisheries, and wildlife values in Hoback Canyon, by using a pipeline which is less likely than a tanker truck to have an incident that could cause environmental damage; and 6) potentially reduce the risk of a wildland fire start associated with an incident related to the delivery of natural gas to Jackson.

The Lower Valley Energy Natural Gas Pipeline Project responds directly to the goals and objectives identified in the 1990 Land and Resource Management Plan (Forest Plan) for the Bridger-Teton National Forest (BTNF). The goals and objectives of the Forest Plan guide all management of the BTNF. The purpose and need for the proposed pipeline responds to Forest Plan Goal 1.1 - Communities continue or gain greater prosperity, and directly supports Goal 1.1 (i) Help utilities provide services.

The FEIS was prepared under the direction of a Forest Service interdisciplinary team. The process complies with the National Environmental Policy Act (NEPA) and Forest Service policy for environmental analysis. The alternatives are compared in Chapter 2 of the FEIS. Regulations require that a No Action alternative be analyzed as a baseline against which the effects of any action alternatives can be measured or compared. In addition to the No Action and Proposed Action alternatives considered in detail in the FEIS, 15 alternative routes and route segments were identified and evaluated during the analysis. However, these additional alternatives and all except one potential reroute identified by the Wyoming Department of Transportation (WYDOT) were eliminated from detailed consideration based on the screening criteria for alternatives. Two alternate design criteria for the proposed project, boring river and stream crossings and boring the Camp Creek landslide area, were also eliminated from detailed consideration based on the screening criteria for alternatives.

## ALTERNATIVE A – NO ACTION

The No Action alternative would involve no change to the current gas supply for Jackson, Wyoming. The current gas supply for LVE's distribution system is an LNG facility located adjacent to its Jackson office. The Jackson area would continue to be supplied with LNG by tanker trucks and would not be supplied with a steady stream of natural gas by pipeline. Tanker trucks would transport LNG from the Shute Creek facility, located south of La Barge, Wyoming, to LVE's facility. An estimated 500 to 600 round trips by tanker trucks along public highways would occur annually over the next 5 years.

Under the No Action alternative, the application for a special use authorization for the construction, operation, and maintenance of a natural gas pipeline submitted to the Forest Service by LVE would not be approved. A natural gas pipeline would not be constructed to bring natural gas service to the Jackson, Wyoming area from a location near Merna, Wyoming. Long-term supplies of natural gas to meet the needs of LVE's customers in the Jackson area would not be supplied by currently producing gas fields near Merna or elsewhere in Sublette County, and would not be acquired by a connection to an existing gas pipeline in the Merna area.

Delivery of LNG to the Jackson area requires that trucks travel approximately 120 miles (one way) on public highways (U.S. highways 287/191/26 and 89/191) on a daily basis. Between 2000 and 2003, the number of round trips by tanker trucks steadily increased from 392 to 492 round trips per year. Approximately 665 round trips per year by tanker trucks are projected by 2010. Each tanker truck carries approximately 10,000 gallons of LNG, which is equivalent to approximately 830,000 standard cubic feet (cf) of natural gas.

In addition to LNG, residences and businesses in the Jackson area also rely on a variety of energy resources. The principal energy source for the Jackson area is hydropower from the Pacific northwest. Other energy sources include coal-burning power plants near Rock Springs and elsewhere, wind power from the Foote Creek Wind Project between Laramie and Rawlins, hydropower from the Strawberry Creek Reservoir in the Star Valley, liquid propane (LP), fuel oil, wood burning, and solar power. LP and fuel oil are also trucked into the Jackson area from other areas in Wyoming.

## ALTERNATIVE B – PROPOSED ACTION

LVE proposes to construct a natural gas pipeline that would provide a steady stream of natural gas to the Jackson area, greatly reducing the need for trucking LNG along public highways. The outside diameter of the new steel pipeline would be 6.625 inches and no larger. The anticipated operational pressure of the pipeline would range between 60 and 300 pounds per square inch (psi), with an average system pressure of around 200 psi. The existing LNG facility located adjacent to LVE's Jackson, Wyoming office would be maintained as a backup gas supply system, requiring fewer than 50 round trips per year by tanker trucks to maintain LNG storage bullets. Under the Proposed Action, the Forest Service would approve the application for a special use authorization submitted by LVE.

Long-term supplies of natural gas to meet the needs of LVE's customers in the Jackson area are available in northern Sublette County. A connection to an existing gas pipeline in the SW1/4NW1/4 of Section 34, T.36N. R.112W. would give LVE the ability to provide gas directly to the Jackson area economically, from currently producing fields near Merna or elsewhere in Sublette County. The proposed pipeline would tie directly into LVE's LNG facility in Jackson (NE1/4NE1/4 of Section 20, T.40N. R.116W.). The proposed project would deliver up to 3 million standard cubic feet per day (mmcfd) of processed and odorized natural gas to the Jackson area for distribution to LVE's customers.

The Proposed Action would involve the construction, operation, and maintenance of a pressurized natural gas pipeline and small gas processing facility. The proposed 49.7-mile pipeline would cross National Forest System (NFS) lands, State of Wyoming lands managed by the Wyoming Game and Fish Department (WGFD), and private lands located in Sublette and Teton Counties. About half of the pipeline route (25.4 miles) would be located on NFS lands administered by the Big Piney and Jackson Ranger Districts of the BTNF. Decisions related to the proposed project are limited to NFS lands. The 6-inch steel pipeline would be buried at all locations, except at five mainline block valves and for a distance of about 1,500 feet through the Camp Creek Saddle landslide area, where the pipeline would be installed on the ground surface, as recommended by a geotechnical investigation. The proposed mainline isolation valves (block valves) along the proposed route would include one location within Hoback Canyon.

The proposed pipeline would parallel existing roadways managed by the Wyoming Department of Transportation (WYDOT) and utility corridors for most of its proposed route. An independent engineering design review addressing the location of portions of the pipeline route within the highway corridor was conducted for WYDOT by PB Energy Storage Services, Inc. The results of this review are being addressed in the final design of the proposed action, in consultation with WYDOT.

In most places, the proposed pipeline is located along, but outside, the narrow highway corridor managed by WYDOT. However, the pipeline route would encroach on the highway corridor in many locations along Hoback Canyon and would be outside the highway corridor as it crosses Camp Creek Saddle east of Hoback Junction. The proposed pipeline route would not cross any designated wilderness, but would cross the Hoback River nine times, the Upper Hoback River once, and Cliff Creek once. Highways would be crossed 21 times during pipeline construction.

The pipeline would encroach on the highway corridor in constricted areas along Hoback Canyon and where it must cross the highway. Throughout half of Hoback Canyon, the pipeline would be located more than 28 feet away from the edge of the existing pavement. In the most constricted areas within Hoback Canyon (about half of the canyon), the pipeline would be located 12 to 28 feet away from the edge of the existing pavement. WYDOT requirements for burial of the pipeline 48 inches (4 feet) below the ground surface wherever the pipeline would be within 50 feet of the edge of the highway pavement would be met. Where there is a likelihood of increased WYDOT maintenance and construction activity with the potential to penetrate to the level of the pipe, WYDOT requirements for burial of the pipeline 72 inches (6

feet) below the ground surface would be met. Where the pipeline crosses beneath the highway, the elevation of the pipe for the crossing will match the elevation of the pipe at either end of the crossing. Any deviations from these requirements at specific locations would be determined in consultation with WYDOT and the Forest Service and documented in the Forest Service authorization for the pipeline.

A 75-foot-wide corridor and additional temporary work areas would be disturbed during construction activities and then reclaimed. About 370 acres could be affected over the short term during construction activities. Over the long term, 120 acres would be included in a pipeline maintenance corridor. Existing public roads and private roads would provide access to the pipeline construction corridor. No temporary or permanent roads would be constructed in association with the proposed pipeline. Construction traffic would be limited to designated existing access roads and the pipeline construction corridor. In locations where the pipeline route deviates from existing road corridors, personnel, equipment, and materials would be transported along the pipeline construction corridor. Any turnaround areas needed would be identified as temporary work areas.

Non-consumptive water use would be required for hydrostatic testing of the installed pipe. Consumptive water use would be required for dust abatement during construction. Approximately 4 acre-feet would be withdrawn from the Hoback River or obtained from another source within the Hoback River watershed for dust abatement, and 2 acre-feet would be withdrawn from the Hoback River or obtained from another source within the Hoback River watershed for hydrostatic testing. All water use would be authorized through a Water Use Agreement with the Wyoming State Engineer and negotiations with water rights owners.

A small gas processing facility (Rim Station) would be constructed on private lands in the vicinity of U.S. 189/191 near the southern end of the pipeline route in Section 24, T. 36 N., R. 112 W. This facility would occupy a small site, less than 1 acre in size. It would be designed using best available control technology (BACT). The facility would ready the gas for delivery to LVE customers. The proposed facility would include a glycol dehydration unit and a natural gas-fired air compressor to inject air into the gas stream. The gas also would be odorized at this location so that LVE customers along the pipeline route can receive gas that is ready for use. Once the gas is odorized, raw, unprocessed gas cannot be added to the pipeline directly from a well tie-in.

An estimated 150 to 200 workers would be needed to install the pipeline and ancillary facilities. The project would be implemented over a 6-month construction period from spring through fall. Normal expected progress for the mainline construction crew would be ½ mile per day. Progress of the Hoback Canyon crew and the crossing crew would vary. Pipeline construction within Hoback Canyon, a distance of 10.5 miles or about 55,000 feet, would progress at an average rate of about 800 feet per day, requiring a 70-day construction schedule. Each highway crossing would be completed in 2 to 3 days, on average. Each river crossing would be completed in about a week, on average, with instream construction activities typically completed within 24 to 48 hours. Construction through wildlife habitats would occur during periods when use of these areas is not restricted by the Forest Service or WGFD. Instream construction would not be conducted before August 1 to minimize impacts to spawning trout.

Reclamation would restore the area to the general appearance, including vegetative and hydrologic conditions, existing prior to the installation of the pipeline. Best management practices (BMPs) and Forest Plan standards and guidelines provide the basis for the reclamation plan for the project. Extensive project design criteria have been developed to meet reclamation objectives, including specific measures for recontouring, drainage and erosion control, revegetation, restoration of river and stream channels and banks at crossings, and restoration of wetland function in affected areas.

Revegetation would provide long-term sediment and erosion control by establishing a permanent vegetative cover over disturbed areas. Re-establishment of vegetation would also reduce the visual impacts of the pipeline corridor. All disturbed areas would be revegetated in accordance with federal and state specifications or as directed by the landowner. The initiation of revegetation activities would depend on seasonal constraints established by the Forest Service or landowners. Following seedbed preparation disturbed areas would be seeded and short-term sediment and erosion control measures would be used, as specified in the project design criteria.

The pipeline would be designed, constructed, and operated by LVE in accordance with U.S. Department of Transportation (DOT) Pipeline Safety Regulations contained in (Title) 49 of the Code of Federal Regulations (CFR). The Office of Pipeline Safety (OPS) regulations in 49 CFR Parts 190-199 contain federal pipeline safety regulations that assure safety in design, construction, inspection, testing, operation, and maintenance of natural gas pipeline facilities.

Pipeline inspections, pipeline leak surveys, and cathodic protection maintenance would be conducted in accordance with DOT requirements and guidelines and following LVE's internal requirements. Operation and maintenance of the pipeline would include periodic patrols of the pipeline corridor and corrosion/leak detection surveys to identify conditions that may endanger the integrity of the pipeline. DOT guidelines include visual inspection of the pipeline corridor every two weeks. All valves, regulators, meters, and corrosion control test stations would also be inspected regularly. LVE would maintain records of operation and maintenance activities, including any testing, replacements, repairs, and modifications performed. Pipeline markers and signs would be inspected and maintained or replaced, as necessary, to ensure that the pipeline location is visible from the ground.

The pipeline corridor will be visually inspected by ground or aerial patrol once every two weeks to identify potential problems, such as new landslide movement or gas leaks. Where human activity and disturbance are restricted or prohibited in crucial big game winter ranges from November 15 to April 30 (state feedgrounds) or December 1 to April 30 (NFS lands), aerial patrols will be used to inspect the pipeline, in accordance with the conditions specified in the special use authorization for the project.

Routine maintenance would be conducted to facilitate periodic surveys to detect leaks and monitor corrosion, to evaluate slope and soil stability and revegetation success, and to control noxious weeds and sedimentation. Generally, a 20-foot-wide permanent pipeline corridor would be maintained in an herbaceous state, without shrubs or trees. Roots of trees or shrubs could potentially damage the protective coating of the steel pipe.

## ISSUES

The FEIS addresses the effects of the project, considering several public issues and concerns.

- Effects of Pipeline Route on Wildlife and Wildlife Habitat
- Coordination of Pipeline Route, Specifications, and River Crossings with Other Agencies
- Disturbance of the Hoback River and Hoback Canyon
- Public Safety
- Slope Stability and Pipeline Integrity in Steep or Unstable Areas
- Roadless Areas and Roadless Characteristics
- Effects of Pipeline Activities on Wildlife and Wildlife Habitats
- Eligibility of Hoback River Segments for Inclusion in the Wild and Scenic Rivers System
- Wetlands and Riparian Areas
- Mitigation and Monitoring
- Cumulative Impacts

- Private Interests and Conservation Easements
- Purpose and Need
- Project Schedule
- Economic Factors
- Air Quality and Noise

## DECISION TO BE MADE

This FEIS is not a decision document. Its main purpose is to disclose the potential consequences of implementing a proposed action and alternatives to that action. However, the FEIS is prepared on the premise that certain decisions must be made and that they will be documented in a Record of Decision (ROD) that will be based on the FEIS for the Lower Valley Energy Natural Gas Pipeline Project. The ROD will document the selection of an alternative, which could be no action, the proposed action, another alternative, or a combination of alternatives.

The DEIS released for public review in June 2006. A Notice of Availability was published in the Federal Register on July 3, 2006 and an amended notice was published in the Federal Register on July 14, 2006, extending the end of the comment period to August 25, 2006. A total of 16 written comments were received on the DEIS, 3 from federal agencies, 4 from state agencies, 1 from local government, 3 from organizations, and 5 from individuals. Comments on the DEIS were used to prepare the FEIS and ROD.

Accordingly, this FEIS focuses on providing analysis sufficient to support the following decision that will be made by the Forest Service in the ROD:

- whether to approve LVE's application for a special use authorization to construct, operate, maintain, and monitor a pressurized natural gas pipeline and associated facilities on NFS lands in Sublette and Teton Counties, Wyoming, including temporary use during construction activities and continuing use along a pipeline maintenance corridor.

The FEIS documents the evaluation of only the project activities being considered. This FEIS will not be used to revisit previous decisions made in other NEPA documents. It will, to the extent appropriate for each resource or discipline, consider the combined (cumulative) effects of the proposed Lower Valley Energy Natural Gas Pipeline Project and other projects in close proximity to it.

The Deciding Officials for this project are the District Rangers for Big Piney and Jackson Ranger Districts of the Bridger-Teton National Forest. The Big Piney District Ranger is located in Big Piney, Wyoming and the Jackson District Ranger is located in Jackson, Wyoming.

## ENVIRONMENTAL EFFECTS

Major conclusions of the analysis are described below.

### Air

The effects on visual range and acid deposition at nearby Class I and sensitive Class II areas that could be attributed to tanker truck traffic from the transport of LNG to Jackson under the No Action alternative would not be noticeable. Long term effects on air quality under the Proposed Action are also unlikely to be noticeable or measurable.

## Streams and Watershed

Under the Proposed Action, temporary effects on streams and watersheds during construction activities, including crossing the Hoback River nine times, the Upper Hoback River once, and Cliff Creek once, would be minimized by using best management practices (BMPs) and design criteria. Hydrostatic testing of the pipeline using water from the Hoback River watershed would not be expected to cause noticeable impacts to water quality or quantity in the Hoback River. Stability of creeks with low geomorphic integrity ratings may be affected over the short term on less than 2 acres along Cliff Creek and less than 1 acre along Muddy Creek. Sedimentation may increase over the short term during construction activities. The results of monitoring studies conducted on similar projects indicate that open-cut stream crossings typically result in an elevation of downstream sediment loads and changes to streambed conditions during and shortly after the period of construction. Effects have been documented as typically non-residual, and recovery usually has been evident within a year. The potential for sediment to enter streams would be minimized by avoiding operations in the water influence zone (WIZ) and using sediment barriers. Design criteria would minimize effects.

## Soils and Geology

Short-term disturbance under the Proposed Action would affect 370 acres. About 250 acres would be reclaimed immediately following pipeline construction, and could be revegetated with tree and shrub species where appropriate. The remaining 120 acres would be reclaimed with herbaceous species immediately following pipeline construction, but would not be revegetated with tree and shrub species because these areas would be included in a long-term pipeline maintenance corridor. Roots of trees or shrubs could potentially damage the protective coating of the steel pipe. Disturbed areas would be seeded with Forest Service-recommended native species or species that would not prevent the eventual establishment of native vegetation. The range of estimates for soil loss in Year 5 following project implementation, compared with existing conditions, indicates Forest Plan guidance requiring a 95 percent reduction in soil loss within 5 years following project implementation would be met.

An estimated 6 acres with landslides and slope stability concerns would be affected in the short term under the Proposed Action. Long-term use associated with the pipeline maintenance corridor would affect 3 acres in areas with landslides and slope stability concerns. Affected areas have been evaluated in a geotechnical investigation and the recommendations of that investigation have been followed in designing the proposed pipeline. Special design criteria identified through geotechnical evaluation would be incorporated to comply with Forest Plan guidance on geotechnical design.

## Vegetation

Under the Proposed Action, the clearing of vegetation during the installation of the pipeline would involve the incidental removal of a small number of trees. The incidental removal of individual trees within the pipeline corridor would have no effect on habitat type and would not fragment existing habitats. Most of the disturbance to forested areas would occur within 125 feet of the existing highway. Species affected would include aspen, Douglas-fir, lodgepole pine, and Englemann spruce/Subalpine fir. Any fuels removed during construction and left in stacks for firewood would have little effect on the spread of potential wildland fires.

About 34 acres of forested habitat on NFS lands would be disturbed with 13 acres remaining in a non-forested cover type as part of the pipeline maintenance corridor. About 15 acres on NFS lands would be affected within riparian and wetland areas. Temporary fences would be used to reduce conflicts with livestock operations. Revegetation of a 20-foot wide strip that directly overlies the pipeline without trees or shrubs would have minimal impact on vegetation resources.

There would be no anticipated effects on Proposed, Threatened, or Endangered plant species under the Proposed Action. Three Forest Service Sensitive Species, soft aster, Payson's milkvetch (also a Management Indicator Species or MIS), and Payson's bladderpod, and one other MIS (boreal draba) are known to occur and could potentially be affected, however, there are no known occurrences within the construction corridor or temporary use areas. Habitat for soft aster is widespread within the Project Area, but known populations are located outside the construction corridor. Activities associated with pipeline installation could create new habitat for Payson's milkvetch, which is associated with disturbed areas. The pipeline route avoids habitats where Payson's bladderpod and boreal draba are found.

Aspen, an ecological indicator for aspen habitat, are at high risk of loss in the Project Area because older age classes of trees dominate with no stand renewal. Under the Proposed Action, cutting of aspen (MIS) on 9 acres of NFS lands could stimulate sucker growth. Regrowth of aspen on 3 acres would diversify stand structure by providing stand initiation (seedling/sapling).

The volume of tanker truck traffic under the No Action alternative could contribute to the spread of noxious weeds or invasive species along the highway corridor. Under the Proposed Action, weed populations could increase along existing roads and in remote areas along the pipeline route, however, design criteria would mitigate potential effects.

## Wildlife and Fisheries

Collisions between wildlife and tanker trucks transporting LNG could occur, injuring or killing those individuals involved in the accidents. There would be no other direct or indirect effects on wildlife and fisheries under the No Action alternative. Disturbance from tanker truck traffic and risk of collisions with tanker trucks would be reduced under the Proposed Action.

Construction disturbance (370 acres) could cause temporary displacement of wildlife and fish over a period of 6 months. Displacement would be in response to habitat disturbance or the bustle of nearby activity during pipeline installation. Displacement of big game could be up to 0.5 mile during construction activities, however, most disturbance would be confined to areas within about 125 feet of the existing U.S. highway, in an existing linear disturbance area. Therefore, displacement and avoidance of edge effects or cleared areas would not be expected to vary from existing conditions. State of Wyoming wildlife management areas and other wildlife habitats within the BTNF are restricted during designated times of the year when wildlife use these areas. Construction through wildlife habitats would be conducted during periods when use of these areas is not restricted.

Effects on fisheries anticipated under the Proposed Action would be localized in extent and short-term in duration. Recovery of streambed conditions and fisheries communities to pre-construction conditions would be expected within a year based on monitoring studies of similar projects.

Construction activities would be constrained to not affect the following species, habitats, and periods of use that are applicable to the Project Area.

- Crucial big game winter range from Nov 15 through Apr 30 (state feedgrounds)
- Crucial big game winter range from Dec 1 through Apr 30 (NFS lands)

- Elk calving areas from May15-Jun 30 (NFS lands)
- Management zones I or II of active bald eagle nest sites (Feb 1 through Aug 15)
- Active peregrine falcon eyries (Mar 1 through Jul 31) or hack sites (Jul 1 through Sep 15)
- No instream construction from Mar 15 through Jul 31 to protect spawning trout

Under the Proposed Action, there would be small reductions in available forage and habitats for wildlife and fisheries along the proposed pipeline route until construction and reclamation of the pipeline corridor is completed. A permanent pipeline corridor (120 acres) without shrubs or trees would have minimal effects on habitats of species that depend on these vegetation types. The pipeline would not act as a barrier to the movement of wildlife.

Operations, maintenance, and monitoring activities would consist of periodic inspection of the pipeline using aircraft, pickups or other vehicles, all-terrain vehicles (ATVs) or snowmobiles. These activities would be scheduled to adhere to applicable travel restrictions associated with the protection of wildlife habitats and would have no noticeable effect on wildlife behavior and fisheries. Monitoring patrols during operations and maintenance would be periodic and would not be expected to cause undue stress to wildlife or nest abandonments.

The FWS provided a listing of species of interest or concern to the Forest Service in an updated Forest-wide listing (ES-61411) for the BTNF in 2007. This information was consulted to determine which species might be present in the Project Area. The Canada lynx is a federally listed threatened species that may be present or have habitat in the Project Area. Additionally, the gray wolf is federally listed as an experimental nonessential population that may be present or have habitat in the Project Area.

The black-footed ferret is a listed species, but is not discussed further because no suitable habitat occurs within the Project Area and none of the sites selected for the reintroduction effort in Wyoming have been near the BTNF. Endangered Colorado River fishes, Humpback chub, Bonytail, Colorado pikeminnow, and Razorback sucker, and their critcal habitat downstream of the Project Area are not discussed further because no water depletions from the Upper Green River Basin are anticipated. One Candidate species, the yellow-billed cuckoo, is not discussed further because riparian habitats containing extensive stands of cottonwoods are limited and the likelihood of yellow-billed cuckoos being present is negligible. No impacts to these species are projected.

The effects of the Proposed Action on federally listed species and experimental populations would be limited to potential effects on individuals. As explained below, adverse effects on individuals are unlikely for Canada lynx and gray wolf. Project design criteria would mitigate potential effects.

The Proposed Action could alter Canada lynx movement by creating disturbance during construction, operation, maintenance, or monitoring. Existing conditions preclude anything other than a slight chance for an incidental occurrence of Canada lynx. No measurable change in potentially suitable habitat would result from project implementation. The workforce and machinery required for pipeline construction could temporarily affect any gray wolves present in the area; however, displacement is not likely to occur. The proposed pipeline is not expected to create a barrier to wolf movement or affect connectivity of wolf habitats. Wolves are highly mobile and occupy large home ranges and the addition of a pipeline corridor adjacent to the existing highway is not likely to affect wolves known to occur in the area.

Forest Service Sensitive species of wildlife and fish selected for analysis based on their habitat and known or potential occurrence in the Project Area include: grizzly bear, bald eagle, northern goshawk, boreal owl, great gray owl, flammulated owl, peregrine falcon, three-toed woodpecker, greater sage grouse, trumpeter swan, Snake River fine-spotted cutthroat trout, and Colorado River cutthroat trout. No impact on the trumpeter swan is anticipated. The Proposed Action may affect individuals of other Forest Service

Sensitive Species, but is not likely to result in a loss of viability or cause a trend toward federal listing or a loss of species viability range-wide. Effects are not expected to be measurable. Greater sage grouse, if present in the area, could be affected; however, there are no known occurrences of leks. If leks are identified, appropriate buffers and restrictions would be established.

Wildlife MIS selected for analysis include elk, mule deer, moose, pronghorn antelope, bighorn sheep, pine marten, Brewer's sparrow, cutthroat trout (all subspecies), and boreal toad and boreal chorus frog, based on the potential of the proposed project to affect individuals of these species or their habitats. Current trends for MIS habitats and populations would not be altered. Disturbance to riparian and wetland areas and potential erosion and siltation could potentially affect cutthroat trout (all subspecies), boreal toads, or boreal chorus frogs; however, design criteria would greatly reduce potential impacts to fisheries and wetland habitats. Habitat modification through surface-disturbing activities may indirectly impact cutthroat trout (all subspecies), boreal toads, or boreal chorus frogs by altering prey or food sources in riparian and wetland habitats. Design criteria would reduce impacts.

Although the proposed pipeline could potentially displace or adversely impact individuals and their nests, migratory birds would not be likely to be affected in a manner that would cause a trend toward federal listing or a loss of population viability for any species. Effects are not expected to be measurable. Construction activities could temporarily displace Brewer's sparrows if they occur in the area. However, most of the pipeline would be constructed adjacent to the highway in habitat unsuitable for Brewer's sparrow. No suitable habitat for mountain plover exists within the Project Area. A mixture of short vegetation and bare ground, and a flat topography are habitat defining characteristics of mountain plovers at both breeding and wintering locations. This species is not discussed further.

## Heritage Resources

The Proposed Action would have no direct adverse impacts on known eligible or potentially eligible sites (prehistoric and historic components). The setting and feeling of three eligible or unevaluated historic sites located close to the proposed construction corridor may be affected indirectly over the short term, however, the Proposed Action is unlikely to have a permanent impact on these sites.

Potential exists for a small number of unknown heritage resources in buried contexts or in areas of poor surface visibility along some portions of the Area of Potential Effects (APE), which could be affected by project activities. The potential for buried sites is low along most of the APE. Holocene and Pleistocene terrace settings near creeks, where unanticipated discoveries may occur, should be monitored during surface clearing and trenching activities. Other areas that should be monitored include a site located on a Pleistocene alluvial flat south of Fisherman Creek that yielded a Paleoindian point base, and sites located in the vicinity of Game Creek that have yielded buried cultural resources, including a Late Archaic point fragment. Project design criteria, including monitoring requirements, would mitigate potential impacts. If potential heritage resources are identified during project implementation, the Forest Service would immediately implement practices to avoid and protect them.

## Land Use

Construction activities under the Proposed Action could disrupt existing land uses. Bondurant and other residential areas along the pipeline route would be affected by delays and the bustle of activity. Operations and maintenance along the pipeline corridor and processing facility would not have a noticeable effect on existing land uses.

Mitigation measures would protect private interests and authorized uses affected by the Proposed Action. Authorized uses crossed by the pipeline route would be protected or moved to the pipeline trench by agreement of all parties involved. Private properties with conservation easements would be crossed in three areas: Melody Ranch (Teton County Scenic Preserve Trust); Poison Creek (Jackson Hole Land Trust); and River Bend Ranch (Jackson Hole Land Trust). These easements protect the subject properties from development and other activities or uses that are not consistent with the preservation of their scenic characteristics. Generally, the placement of utilities is not a prohibited use of conservation easement properties. During construction activities, less than 5 acres of new disturbance would occur over the short term in conservation easement areas outside the existing highway right-of-way. Over the long term, a permanent pipeline corridor 20 feet wide, containing pipeline markers and reclaimed with herbaceous species only (no shrubs or trees), would affect less than 4 acres in conservation easement areas for the foreseeable future. The permanent pipeline corridor across easements would be 8,000 feet (1.5 miles) long, containing pipeline markers but no shrubs or trees. Terms and conditions for the crossing of easements would be established by agreement of all parties involved.

## Recreation

Increased highway use by tanker trucks over time under the No Action alternative could affect scenic, recreational, fisheries or wildlife values that make the Hoback River eligible for designation under the Wild and Scenic Rivers Act. The likelihood of accidents or environmental damage that would affect these values would increase with the projected increase in tanker truck traffic on U.S. 189/191 through Hoback Canyon. Tanker trucks traveling on mountain or canyon highways in the western U.S. are frequently involved in crashes that cause injury, death, and damage to property and the environment. Potential effects associated with LNG transport by tanker trucks would be greatly reduced under the Proposed Action.

The Proposed Action would have little, if any, impact to recreation opportunities. Access would be temporarily impacted at times, however, access to National Forest developed sites and dispersed opportunities would not be precluded. There would be some short-term displacement of recreation users for up to 2 to 3 days at a time over a period of 6 months from May to October during construction. Noise, activity, and short-term access delays during construction may affect Kozy and Hoback Campgrounds and several trailheads. Recreational experiences of campers on west side of Kozy Campground, where Hoback River would be crossed, would be affected until work is completed.

The Proposed Action would have no direct impact on the Gros Ventre Wilderness or Shoal Creek Wilderness Study Area (WSA). Road access to some trailheads impacted for short periods and noise impacts from nearby construction activities would affect recreational experiences.

Roadless values would be minimally affected under the Proposed Action by the incidental cutting of trees during pipeline installation. Areas affected by construction would regain remoteness, solitude, and natural appearance following reclamation using project design criteria. Natural integrity would be unchanged over the long term; there would be a temporary effect on natural processes during installation of the pipeline. Apparent Naturalness would remain unchanged. Over most of the proposed pipeline route (about 42 miles), disturbance would be confined to areas within about 125 feet of the existing U.S. highway. The disturbance, including tree removal incidental to pipeline installation, would blend in with the existing linear disturbance area along the highway. The sights and sounds of the activity associated with pipeline installation would affect the sense of remoteness and solitude temporarily for anyone within sight or sound of the construction activity. The effects would be concentrated along the U.S.189/191 highway corridor through Hoback Canyon and in the Camp Creek saddle area where the pipeline route diverts from the highway corridor for about 8 miles. Over the long term there would be little, if any, impact on

primitive recreation opportunities. Pipeline installation could alter the physical setting and visual quality of the recreation experience temporarily.

The Proposed Action would have no noticeable effect on landscapes along Hoback River from installation and operation of the pipeline, once vegetation within pipeline corridor is re-established in accordance with project design criteria. There would be no effect on outstanding scenery values, as most disturbance would occur within 125 feet of the highway pavement. The Hoback Canyon section has the greatest potential for short-term impacts at river crossings. Design criteria would protect the integrity of the river and its eligibility for designation under the Wild and Scenic Rivers Act. A pipeline incident with environmental damage that could affect the scenic, recreational, fisheries, or wildlife values that make Hoback River eligible for designation would be unlikely to occur.

## Transportation

The Proposed Action would have low, short-term effects on traffic flow, public travel, and safety during construction. Traffic flow would be slowed down intermittently and the traveling public inconvenienced for 6 months or so during construction. Effects would include travel delays of up to 15 or 20 minutes along the highway.

Most of the pipeline corridor is within foreground views of travelers on the scenic byway. The pipeline corridor would not be a noticeable addition to existing landscapes, provided valves are screened by painting and vegetation according to design criteria. The pipeline corridor would not be visually evident once vegetation is established.

The potential for accidents and spills involving tanker trucks likely would increase over time under the No Action alternative. An accident involving a tanker truck loaded with LNG could result in a fire should leaking LNG ignite, causing environmental damage. Potential safety hazards associated with LNG transport by tanker trucks would be greatly reduced under the Proposed Action.

## Pipeline Safety

There would be minimal public safety risk during pipeline construction, operation, and maintenance under the Proposed Action. Inspections, leak surveys, and cathodic protection that meet the requirements of 49 CFR 192 would ensure structural integrity of pipeline and prevent damage by third parties. Project design criteria and use of One-Call would facilitate safe actions by third parties near the pipeline. Monitoring in Camp Creek area would track earth movement. Pipeline markers/signs would be inspected and maintained to ensure that the pipeline location is visible.

Recreationists using the Hoback River for boating or other activities during instream construction would be warned of the need to avoid crossing areas. Safe upstream take-out areas and downstream put-in areas would be identified.

Flagmen, barriers, warning signs, lights, and walkways would safeguard public at road crossings and construction areas adjacent to highway. Traffic control measures or suitable bypass roads would keep roads passable and traffic moving. Steel plates would be installed, as needed. Debris would be kept off road surfaces.

Accidental ignitions by construction crews or equipment could result in wildland fire. Project design criteria would reduce risk.

## Scenic Resources

The Proposed Action would meet established visual quality objectives and Forest Plan standards and guidelines for visual resources and the scenic byway. Over most of the proposed pipeline route, disturbance would be confined to areas within about 125 feet of the existing U.S. highway. The disturbance, including tree removal incidental to pipeline installation, would blend in with the existing linear disturbance area along the highway, which includes leveled shoulders, ditches, guard rails, and bridges. There would be no noticeable effect on the outstanding visual quality of landscapes along Hoback River from installation and operation of the pipeline with project design criteria once vegetation is re-established. Outstanding scenery values would not be affected by the project. The pipeline corridor would not be a noticeable addition to the existing landscape. Pipeline markers and the lack of shrubs or trees would be the only long-term visible effect of the 20-foot-wide maintenance corridor.

The pipeline would cross the Hoback River at nine locations, including five locations in Hoback Canyon. Cliff Creek and the Upper Hoback River would each be crossed at one location. The Hoback River crossings would utilize existing clearings on both sides of the highway to the extent feasible to minimize effects. Portions of the pipeline within the highway corridor would affect areas already disturbed to accommodate the highway, highway shoulder, and various turnouts. Valves along the pipeline route would not be visually evident provided project design criteria are used to obscure or screen them. Effects would be limited to viewers within foreground distance zones because the corridor is screened from distance views by terrain and intervening vegetation. Design criteria would reduce the effects on scenic resources.

## Social and Economic Resources

The local economy and social structure would not be noticeably or measurably affected under the No Action alternative or the Proposed Action. The Proposed Action would facilitate ongoing growth by meeting expanding public energy needs in the Jackson area and delivering gas to Jackson more efficiently.

Under the Proposed Action, required skills and services would be provided by current employees and local or regional contractors with no expected change in population. Although temporary housing is tight and in high demand, the 200 or so workers associated with the proposed project would be accommodated by a combination of resources, including short-term housing rentals, motels, RVs, and the potential establishment of a temporary man camp located on private lands.

An increased risk of tanker truck accidents, associated with an increase in tanker truck traffic over time under the No Action alternative, could increase the need for fire and emergency services. The Proposed Action would not measurably increase the need for fire or emergency services, as an incident associated with the proposed pipeline would, statistically, be unlikely to occur. Preparedness to provide fire and emergency services for potential tanker truck accidents involving LNG or incidents involving the rupture of the pressurized natural gas pipeline would require expenditures for specialized training and equipment. A serious incident involving a tanker truck accident or a pipeline rupture could have an effect on the local economy and social structure that would be measured in millions of dollars.

Employment and income from tourism activity is significant in Teton County and surrounding areas. No permanent displacement of recreational activity would occur under the Proposed Action, and any resulting economic effect would be minimal and short-term. Also, for any displaced activity, there would be several substitute sites and opportunities on nearby NFS lands.

The proposed pipeline providing gas to LVE's customers in the Jackson area would not affect or facilitate oil and gas development in northwestern Wyoming due to the limited capacity of the proposed six-inch pipe with an outside diameter of 6.625 inches and no larger, and its design to provide processed and odorized gas to LVE's customers. The anticipated operational pressure of the proposed pipeline would range between 60 and 300 pounds per square inch (psi), with an average system pressure of around 200 psi. However, the pipeline would be capable of operating under considerable pressures, with the maximum allowable operating pressure (MAOP) of the pipeline at 1,440 pound-force per square inch gauge (psig), a unit of measure to indicate the pressure on a surface. The design of pipeline materials to meet higher standards was selected for public safety. The use of pipeline materials of higher standards than would be required for the anticipated conditions provides a higher safety factor for a pipeline that will be installed near a highway.