

# Executive Summary

## Introduction

The Sabine Mining Company (Sabine), a wholly owned subsidiary of The North American Coal Corporation, proposes to construct, operate, and reclaim the Rusk Permit Area, which would be an expansion of the existing South Hallsville No. 1 Mine, an open-pit lignite mine located in Harrison County, Texas. The proposed Rusk Permit Area encompasses approximately 20,377 acres south of the existing South Hallsville No. 1 Mine and the Sabine River, in Rusk, Panola, and Harrison counties, Texas. The Rusk Permit Area would include the development of sequential mine pits through the removal of soil and rock in order to reach and extract the lignite seams that occur at depths of 30 to 180 feet below the surface. An average of 4.0 million tons of lignite would be mined per year. The lignite would be trucked to an existing central blending facility located at American Electric Power/Southwestern Electric Power Company's (SWEPCO's) Henry W. Pirkey Unit No. 1 (Pirkey) Power Plant, located approximately 6 miles north of the northern boundary of the proposed Rusk Permit Area. The project also would include construction of access and haul roads, a dragline walkway, sediment control ponds, transmission line, temporary lignite storage areas, non lignite storage areas, a truck fueling/parking area, and wells for pit dewatering. Several existing county roads (CRs), farm-to-market (FM) roads, state highways (SHs), oil and gas facilities, and utility lines would be relocated or temporarily closed.

SWEPCO, who owns and operates the Pirkey Power Plant, has contracted with Sabine to mine the lignite reserves within the proposed Rusk Permit Area. SWEPCO currently owns or has leased approximately 50 percent of the Rusk Permit Area; most of the remainder is in small private ownership parcels that would be purchased or leased by SWEPCO in advance of mining. Sabine or SWEPCO would obtain the rights-of-entry, and Sabine would obtain all required permits, prior to mining.

The proposed project requires a permit from the Railroad Commission of Texas (RCT) under Title 16, Part 1, Chapter 12 of the Texas Administrative Code. The RCT permit area for the proposed Rusk Permit Area consists of 20,377 acres; within the permit area, up to 14,392 acres would be disturbed within the mine area and transportation and utility corridor over the 30-year life of the mine for mining and ancillary facilities. Of this total, approximately 500 acres would be disturbed for surface mining at any one time, based on sequential backfilling and concurrent reclamation of the mine pits. Following receipt of all required permits and approvals, construction is projected to begin in 2011, and mining is proposed to begin in 2012.

The proposed project requires an Individual Permit from the United States (U.S.) Army Corps of Engineers (USACE) for the discharge of dredged and fill material into waters of the U.S. under Section 404 of the Clean Water Act. As the permit decision is a major federal action with the potential to significantly affect the quality of the human environment, the USACE has determined that an environmental impact statement (EIS) is necessary. The USACE is the federal agency preparing the EIS; the U.S. Fish and Wildlife Service and the Texas Parks and Wildlife Department are cooperating agencies.

The proposed Rusk Permit Area would involve a number of activities, which are described in detail in Chapter 2.0; these activities would result in various environmental impacts, which are identified and described in Chapter 3.0. The basic construction, operations, and reclamation activities include the following:

- Construction of surface water control structures;
- Clearing or vegetation removal;
- Construction of haul roads, public road reroutes, and utility reroutes;
- Excavation of a mine pit to access lignite seams, accompanied by selective overburden stockpiling;

- Groundwater pumping for pit dewatering;
- Lignite removal and transport to lignite stockpiles;
- Selective replacement of overburden and soil materials in the previously mined pits;
- Reshaping and recontouring of the previously mined area to the desired post-mine topography;
- Revegetation of the previously mined area; and
- Final closure and reclamation of ancillary facilities.

These activities, with the exception of the initial construction and final closure and reclamation, would continue repeatedly throughout the life of the mine until the lignite has been removed from the entire mine area. This is the same process that has been occurring at the existing South Hallsville No. 1 Mine since 1984.

The EIS analysis describes the proposed construction, operation, and reclamation of the Rusk Permit Area, including Sabine's proposed environmental protection measures; identifies alternatives to the Proposed Action; and describes the environmental consequences of implementing the Proposed Action and the No Action Alternative.

## Summary of Impacts

The following sections summarize the environmental impacts associated with the proposed Rusk Permit Area, as identified in this EIS. A table summarizing and comparing the impacts of the Proposed Action and the No Action Alternative is provided in **Table 2-13** in Chapter 2.0. Descriptions of the potential direct, indirect, and cumulative impacts of the Proposed Action and No Action Alternative, and the additional monitoring and mitigation measures that are being considered by the USACE, are provided in Chapter 3.0 of this EIS.

## Geology and Mineral Resources

Lignite mining at the Rusk Permit Area permanently would change the topography in the portion of the permit area directly impacted by mining and other disturbance. With reclamation, the disturbed area would be restored to topography similar to pre-mining conditions and appearance. Geologic hazards are not expected to affect the proposed mining, and no hazards would persist after the cessation of mining. Lignite resources would be permanently removed, and the existing geologic strata in overburden and interburden would be permanently altered. Access to oil and gas resources would be precluded during active mining; however, access would not be restricted at the cessation of mining.

Mining of the proposed Rusk Permit Area would have a negligible cumulative effect on total Texas lignite production since the mine essentially would replace production from the South Marshall Permit Area of the South Hallsville No. 1 Mine. No cumulative effects are anticipated to geology and other minerals.

## Water Resources

### Groundwater

The Rusk Permit Area is expected to pump a total of approximately 7,235 acre-feet of water over the life of the mine from the Carrizo-Wilcox aquifer using approximately 129 dewatering wells incrementally installed across the mine areas as needed to achieve the targeted groundwater drawdown. The maximum extent of the mine-related 5-foot groundwater drawdown area generally would be limited to the permit boundary. To the east of the permit boundary, the 5-foot drawdown would extend up to 2,000 feet into Panola County. To the south, the 5-foot drawdown would approach Tatum, Texas; however, it would terminate approximately 2,000 feet north of Tatum. Therefore, mine-related groundwater drawdown would not impact any of the Tatum water supply wells.

During mining, any wells within the boundaries of the proposed mine pits would be removed. Wells outside of the mine pits but within the projected 5-foot drawdown isopleths could experience a decline in water levels; some wells may go dry. Sabine is committed to replacing lost water sources or reduced water availability for all water well owners within the area impacted by groundwater pumpage. In addition to wells, seeps and springs within the projected 5-foot drawdown isopleths that are hydraulically connected to the Carrizo-Wilcox aquifer would be affected; seeps and springs and groundwater-fed perennial waterbodies outside of the projected 5-foot drawdown isopleths are not anticipated to be affected by mine-related groundwater drawdown. The groundwater level of the Carrizo-Wilcox aquifer is expected to recover to near pre-mining levels within 7 to 8 years after cessation of mining.

The proposed Rusk Permit Area is not anticipated to result in cumulative groundwater effects, as the projected groundwater drawdown area for the Rusk Permit Area primarily would be limited to within the permit boundary and, therefore, would not overlap with the projected groundwater drawdown areas associated with other projects in the vicinity.

### **Surface Water**

Construction impacts of the proposed transportation corridor across the Sabine River would include releases of sediments and organic matter into the river or to other surface water features. Short-term temporary increases in turbidity and sedimentation would occur downstream until construction ended and site stabilization completed. Scour and sediment transport would increase along the river channel and within smaller drainages on the floodplain associated with local flow conditions at culverts and at the proposed bridge and dragline walkway. There would be a minor increase in the potential for spills of fuel or other hazardous materials into the river or nearby waterbodies during construction and operations. If a spill should occur, surface water quality could be adversely affected, depending on the nature of a spill and the associated response. This potential impact would be minimized by implementation of Sabine's Spill Prevention, Control, and Countermeasure Plan.

During the life-of-mine, the proposed project would increase runoff and sediment yield as mining moves across the landscape. Watt Creek and unnamed streams temporarily would be eliminated, as would small impoundments within the mine area. Increased runoff and sediment yield would be managed by collection ditches, sediment control ponds, and monitoring in compliance with the RCT permit and Texas Commission on Environmental Quality water quality requirements. If needed, water would be treated prior to discharge. Runoff from undisturbed areas would be kept away from the mining activities. These water management programs would reduce surface water impacts during construction and operations.

Surface water impacts would be reduced with recontouring, growth media replacement, and revegetation. Reconstruction of streams, ponds, and wetlands would proceed with reclamation. Erosion controls, stream stabilization, and permanent drainage features would return runoff and sediment yield conditions to approximately their pre-mining levels or better.

Cumulative surface water effects would be negligible upstream of the confluence of Tatum Creek with Martin Creek. Downstream, contributions to cumulative effects on Martin Creek probably would be similar from all of the lands disturbed by surface mining and reclamation; only minimal contributions are anticipated from the Proposed Action since no disturbance would occur beyond SH 43. However, runoff from the Proposed Action would flow to Caney Branch (receiving stream), contributing to cumulative effects from other mining activity in the Martin Creek watershed. Following reclamation, cumulative runoff and sediment yield would be reduced. Cumulative water quality effects are anticipated to be minor.

### **Waters of the U.S., Including Wetlands**

Mine construction and operation directly would impact a total of 303.1 acres of waters of the U.S., including 151.2 acres of forested wetlands, 62.6 acres of non-forested wetlands, 22.1 acres of ephemeral streams, 13.5 acres of intermittent streams, 5.4 acres of perennial streams, and 48.3 acres of ponds. These impacts would occur incrementally over the 30-year life of the mine; the impacts would be minimized by limiting surface disturbance in mine areas to a maximum of approximately 500 acres at one

time, through implementation of the proposed reclamation program, and through implementation of Sabine's proposed Conceptual Mitigation Plan. Based on the proposed Conceptual Mitigation Plan, waters of the U.S. (including wetlands) that would be impacted by mining would be reconstructed within the reclaimed mine area in their approximate pre-mine locations through the use of creation, restoration, enhancement, or preservation techniques. The total proposed mitigation acreage for direct impacts would include restoration of approximately 485.6 total acres of waters of the U.S., including 41.0 acres of streams, 48.3 acres of ponds, 93.8 acres of non-forested wetlands, and 302.4 acres of forested wetlands within the Rusk Permit Area.

It is anticipated that projected mine-related groundwater drawdown would have minor impacts to surface water resources; therefore, it is anticipated that water quantity impacts to waters of the U.S., including wetlands, as a result of mine-related groundwater pumping would be minor.

The loss of 213.7 total acres of wetlands over the life of the mine would result in the loss of the functions associated with each area (e.g., runoff and sediment retention), affecting water quality. This loss would be mitigated through creation and restoration of wetlands incrementally during operations and during final closure and reclamation, resulting in a net increase of approximately 182.5 acres of wetlands following the completion of concurrent and final reclamation.

Past and present operations have resulted in 1,910.2 acres of disturbance to waters of the U.S., including wetlands, with a cumulative direct and compensatory mitigation of 3,464.2 acres. Two reasonably foreseeable future actions (proposed Marshall Lignite Mine and a potential conveyor for the Rusk Permit Area) also occur in the cumulative effects study area; however, specifics relative to the proposed disturbance areas in relation to waters of the U.S., including wetlands, are not available at this time. The proposed Rusk Permit Area incrementally would increase the cumulative disturbance to waters of the U.S., including wetlands, by 303.1 acres (HDR Engineering, Inc. [HDR] 2010a), all of which would be incrementally reclaimed over the life of the mine. Based on Sabine's proposed direct and compensatory mitigation (HDR 2010b), 485.6 acres of waters of the U.S., including wetlands, would be reclaimed. Therefore, the total cumulative disturbance and reclamation acreages for waters of the U.S., including wetlands, within the cumulative effects study area would be 2,213.3 and 3,949.8 acres, respectively. This would result in a net cumulative gain of 1,736.5 acres of waters of the U.S., including wetlands.

## **Soils**

Incremental surface disturbance of up to 14,392 acres would occur over the life of the mine as a result of mine construction and operations; impacts also may occur during reclamation when growth media is redistributed. Potential impacts would include an increase in soil erosion due to the removal of vegetation, alteration of soil structure, and reduction in soil productivity. Reclamation and installation of erosion control measures and devices would minimize erosion and the potential for sediment to leave the mine site. Based on implementation of proposed erosion control measures, the potential for soil erosion as a result of surface water discharge is anticipated to be low.

Due to the poor suitability characteristics associated with some of the native soil materials, Sabine has requested approval to use suitable oxidized overburden as a substitute for topsoil and subsoil. Sabine's investigation indicated that more than sufficient volumes of suitable alternative growth media from overburden sources exist within the proposed mine area.

Past, present, and reasonably foreseeable future actions have resulted, or would result, in approximately 78,316 total acres of disturbance to native soils. Of this total, the approximately 67,697 acres of lignite mining-related disturbance have been, or would be, incrementally reclaimed over the life of these operations. The majority of the remaining approximately 10,619 acres of disturbance represent a long-term loss or conversion of native non-hydric soils to hydric soils. The proposed Rusk Permit Area incrementally would increase the cumulative disturbance to native soils by approximately 14,390 acres, all of which would be incrementally reclaimed over the life of the mine.

## Vegetation

A total of 14,392 acres of vegetation would be directly affected as a result of surface disturbance associated with the Proposed Action. Vegetation would be removed incrementally in advance of mine development over the 30-year life of the mine. The majority of the disturbance would occur in upland forest and pasture areas. The proposed disturbance areas would be reclaimed to achieve RCT-designated post-mining land uses as determined by landowner agreements. Wetlands and aquatic habitats (streams and ponds) would be reclaimed in accordance with Sabine's proposed Conceptual Mitigation Plan. Based on total mitigation ratios in this plan for waters of the U.S., including wetlands, there would be a conversion of approximately 182.5 acres of upland vegetation to forested and non-forested wetland vegetation following the completion of reclamation.

Proposed disturbance areas would be prone to establishment of noxious weeds or invasive plant species from adjacent areas. Encroachment of noxious weeds or invasive plant species would be minimized to the extent possible through prompt revegetation of disturbance areas and pesticide (including herbicide) use.

The loss of commercially harvestable herbaceous vegetation and its associated use would be minimal, since reclaimed areas would provide forage for livestock and wildlife several years after reclamation. During reclamation, trees would be replanted in disturbance areas in accordance with the designated post-mining land use; however, commercial value would not be realized for a number of years.

Implementation of Sabine's water management plan for runoff, sediment control, and controlling discharges from the proposed disturbance area would reduce impacts to surface water resources to negligible levels. As a result, no related impacts to wetland vegetation are anticipated as a result of sedimentation.

Project construction and operation could result in direct removal of two state-designated rare plant species (Neches River rose-mallow and Texas trillium), if present in proposed disturbance areas.

Past, present, and reasonably foreseeable future actions have resulted, or would result, in approximately 78,316 total acres of disturbance, inclusive of approximately 1,910.2 acres of disturbance to waters of the U.S., including wetlands. Of this total, the approximately 67,697 acres of lignite mining-related disturbance have been, or would be, incrementally reclaimed. The remaining 10,619 acres of disturbance represent long-term disturbance areas. The proposed Rusk Permit Area incrementally would increase the cumulative disturbance by up to an additional 14,392 acres, inclusive of 303.1 acres of disturbance to waters of the U.S., including wetlands, all of which would be incrementally reclaimed over the life of the mine. Based on the estimated total cumulative disturbance, the compensatory mitigation acreages for past and present actions, and the proposed compensatory mitigation for the Rusk Permit Area, there would be an estimated cumulative net increase of 1,736.5 acres of waters of the U.S., including wetlands, in the cumulative effects study area; this would represent a conversion of upland vegetation to waters of the U.S., including wetlands.

## Fish and Wildlife Resources

Implementation of the proposed project would include the phased (over the 30-year life of the mine) direct disturbance of up to approximately 14,392 acres of vegetation and aquatic resources, most of which currently offers some value as wildlife habitat. Habitat incrementally would be recreated throughout the area as concurrent reclamation proceeds behind mining operations. Potential impacts to wildlife during project construction and operation would include direct mortalities from construction activities, incremental habitat fragmentation, animal displacement, transmission line collisions, increased noise, additional human presence, and the potential for increased vehicle-related mortalities. Incremental short-term habitat loss throughout the life of the mine could affect big game, small mammals, upland game birds, waterfowl, raptors, songbirds, reptiles, and amphibians. The limited amount of habitat affected, relative to that available in the surrounding area, is not expected to result in substantive population reductions of any local wildlife species. These populations would be expected to recover following mine reclamation.

The potential loss of available water and the associated habitats could alter the available habitat for species that depend on these areas resulting in: 1) a reduction of available water for consumption; 2) a reduction in riparian vegetation for breeding, foraging, and cover; 3) reduction in the regional carrying capacity; 4) displacement and loss of animals; and 5) reduction in prey availability. The extent of these effects would depend on the species' use of the affected area and their relative sensitivity, the extent of habitat reduction, and the availability of similar habitats in the area.

A total of 19 federal and/or state-listed terrestrial species, including 1 federal candidate species, potentially occur in the Rusk Permit Area. Project-related impacts for these species are anticipated to be low to minimal, with the following exceptions. The potential for future impacts to the state listed bald eagle are anticipated to be moderate. Impacts primarily would be related to the short-term, incremental loss of habitat as a result of mine construction and operation. Implementation of applicant-committed environmental protection measures would minimize these impacts. Potential impacts to three state listed mussel species as a result of the proposed haul road bridge and dragline walkway crossings of the Sabine River are anticipated to be moderate to high.

Surface disturbance would affect aquatic communities by incrementally removing approximately 151.2 acres of forested wetlands, 62.6 acres of non-forested wetlands, 48.3 acres of open water, and 41.0 acres of perennial, ephemeral, or intermittent streams. Aquatic communities affected by this habitat loss would include macroinvertebrates, periphyton, and fish species that occur in these habitats. Impacts to these areas would be mitigated in accordance with Sabine's proposed Conceptual Mitigation Plan for the proposed Rusk Permit Area.

No direct effect to aquatic, wetland, or riparian habitats outside of the projected mine-related 5-foot groundwater drawdown area, including the Sabine River, would be anticipated; effect to these habitats located within the mine-related 5-foot groundwater drawdown area and outside of the proposed disturbance area may occur where the surface waters are hydraulically connected to the Carrizo-Wilcox aquifer complex. Reduction or loss of riparian and wetland habitats associated with these water sources would impact terrestrial wildlife dependent on these sources, resulting in a possible reduction or loss of cover, breeding sites, foraging areas, and changes in both plant and animal community structure.

The drainages within and immediately around the active mine area would flow primarily in response to local precipitation events, attenuated in lower stream reaches by the presence of sediment control ponds. The Sabine River, the major perennial stream located immediately north of the mine areas, would be the receiving waterbody for water discharged from the mine's Texas Pollution Discharge Elimination System-regulated discharge points. Although runoff volumes would increase during the mining period, releases to the river would be attenuated by the water management system. Therefore, mine-related discharges effects on downstream flows in the river are anticipated to be minimal. As a result, impacts to downstream species are not anticipated.

Potential cumulative effects to wildlife and their habitats from surface disturbance from past, present, and reasonably foreseeable future actions have resulted, or would result, in approximately 78,316 total acres of habitat disturbance, inclusive of approximately 1,910.2 acres of disturbance to waters of the U.S., including wetland habitats. Of this total, the approximately 67,697 acres of lignite mining-related disturbance have been, or would be, incrementally reclaimed over the life of these operations. The remaining 10,619 acres of disturbance represent long-term to permanent loss of habitat. The proposed Rusk Permit Area incrementally would increase the cumulative disturbance by up to an additional 14,392 acres, inclusive of 303.1 acres of disturbance to waters of the U.S., including wetland habitats, all of which would be incrementally reclaimed over the life of the mine. There would be an estimated cumulative net increase of approximately 1,736.5 acres of wetland habitat associated with compensatory mitigation of waters of the U.S., including wetlands.

No cumulative impacts to wildlife are expected from the projected mine-related 5-foot groundwater drawdown area. Similarly, water discharges are not expected to have cumulative impacts to fish or wildlife due to the proposed mine's water management system.

## **Paleontological Resources**

Animal and plant fossils are widespread in the Wilcox Group and Carrizo Formation in Texas and the southeastern U.S. There is a low potential for the presence of unique or high scientific value fossils within the proposed Rusk Permit Area. Based on the prevalence of these resources in the region, the impact to the fossil resources of these geological units is considered minor.

Portions of the cumulative disturbance associated with past, present, and reasonably foreseeable future actions have occurred, or would occur, within the fossil-bearing Wilcox Group and Carrizo Formation with the resulting potential for cumulative impacts to fossil resources. However, the fossils in these geologic units are not anticipated to be unique or of high scientific value; therefore, cumulative impacts to paleontological resources are not anticipated.

## **Cultural Resources**

Impacts to cultural resources would include the loss of 126 identified archaeological sites and historic resources within the initial 6,925-acre cultural resources survey area. Of these sites, 18 are eligible or potentially eligible for listing on the National Register of Historic Places (NRHP), 11 of which are located in the life-of-mine disturbance boundary. Additional archaeological sites and historic resources in as yet unsurveyed portions of the Rusk Permit Area would be identified following future investigations of these areas. In consultation with the Texas Historical Commission (THC), the USACE will determine whether construction and operation of the proposed Rusk Permit Area would have an adverse effect on any properties eligible or potentially eligible for listing on the NRHP. If the USACE and THC determine that a property would be adversely affected, then avoidance would be recommended. If avoidance is not feasible, mitigation would be developed and implemented in accordance with a site protection or treatment plan developed in coordination with the USACE and THC. Potential indirect effects to NRHP-eligible sites as a result of runoff or water discharge are anticipated to be minor based on the proposed water management plan and implementation of erosion control measures.

Although difficult to quantify, cumulative impacts to archaeological sites would include natural impacts (e.g., erosion and dilapidation), as well as direct disturbance and removal of sites that have been, or would be, located within the cumulative effects study area. However, all NRHP-eligible sites located in the project area would be mitigated in accordance with site protection or treatment plans developed in coordination with the USACE and THC. In addition, any previously unknown NRHP-eligible sites that may be discovered during construction or operation would be mitigated in accordance with site protection or treatment plans. Therefore, the proposed project is not expected to contribute to direct cumulative effects to NRHP-eligible sites. Indirect effects, such as illegal artifact collection, have occurred and most likely would continue to occur in the cumulative effects study area.

## **Air Quality**

The primary air quality effects associated with construction and operations of the proposed Rusk Permit Area would be fugitive dust (total suspended particulates and particulate matter of less than 10 microns in diameter) concentrations generated by the draglines, loaders, haul trucks, and temporary stockpiles. Criteria pollutant emission rates from stationary sources (not fugitive sources) would be much less than 250 tons per year (HDR 2010e); therefore, the Rusk Permit Area would not be a "major stationary source" as defined by the U.S. Environmental Protection Agency. Adverse air quality effects would be limited spatially to distances up to approximately 7 kilometers (km) (4 miles) from the active mine disturbance and would not cause or contribute to violations of the National Ambient Air Quality Standards (NAAQS). There are no Class I areas within 100 km (approximately 60 miles) of the proposed Rusk Permit Area; therefore, there would be no measureable air quality impacts on Class I areas.

Due to the rural nature of the region around the Rusk Permit Area and the low density of fugitive dust and combustion sources (e.g., vehicles and other fuel-fired equipment), cumulative effects related to fugitive dust and gaseous air contaminants associated with the Rusk Permit Area and other past, present, and reasonably foreseeable future actions are anticipated to remain well below the NAAQS (levels determined to be detrimental to public health).

## **Land Use and Recreation**

There are no state or local land use plans or regulations that would apply to the Rusk Permit Area. Existing uses of the disturbance area, which are primarily forest and pasture lands, would be interrupted for the life of the mine, although all areas except the area of actual disturbance would remain rural in character. There are no public lands in the disturbance area except for road rights-of-way, which would be mined through and subsequently reconstructed after reclamation. Utilities in the proposed disturbance area would be relocated in advance of mining. Private property would be leased or purchased by SWEPCO for the duration of mining and reclamation.

It is not expected that the proposed project would appreciably restrict growth of Tatum. There are approximately 300 acres of mostly vacant and potentially developable land between developed areas of Tatum and the proposed Rusk Permit Area boundary, in addition to substantially larger vacant acreages to the east, south, and west of the community.

The proposed project would have minimal effects on recreation resources. There are no public recreation facilities in the permit area. The small amount of private recreation that may occur in the area would be precluded from the disturbance area through reclamation. It would be displaced to other public or private lands in the area; however, this would have minimal effect on other recreation resources in the region. Potential effects on the "ecologically significant" segment of the Sabine River would be minor. There is little, if any, recreation use of the river segment because it is bracketed by private land, and the project-related disturbance area would be a minimum of 1.5 miles from the river, except for the corridor where the dragline walkway and haul road would be constructed.

No cumulative effects on recreation or land use would be anticipated. The proposed Marshall Lignite Mine would be outside the land use and recreation study area, so it would have no cumulative effect on land use or recreation with the Rusk Permit Area. The potential future conveyor would be constructed on lands that would be slated for disturbance for development of the Rusk Permit Area.

## **Social and Economic Values**

The Proposed Action would continue direct employment for the existing 260 workers at the South Marshall Permit Area of the South Hallsville No. 1 Mine; it would add approximately 150 contract workers for 1 to 1.5 years of construction and approximately 40 contract operations workers for the life of the mine for the Rusk Permit Area. No measureable effects on study area population are expected. Project-generated personal income would track trends established at the existing mine and would have minimal effect on total study area income except for the fact that it would be continued for approximately 15 years beyond what would be anticipated under the currently permitted operation. The proposed project would increase mine-related tax revenues to Panola and Rusk counties and to Tatum Independent School District (ISD), while closure of the South Marshall Permit Area in approximately 2027 would diminish revenues to Harrison County and the Marshall and Hallsville ISDs. These changes would be accompanied by minimal, if any, changes in demand for public services as the size and location of the local population would not materially change. This would affect local county governments, positively for Panola and Rusk counties, and negatively for Harrison County, but it would have little or no effect on public schools as the changes in local tax revenue to local ISDs would be offset by changes in state financial support.

Current residents in an estimated 256 dwellings within the Rusk Permit Area would be displaced for the duration of disturbance and reclamation in their areas. Residential properties in close proximity to the mine disturbance area, but not acquired for the mine, may experience a short-term decline in value while active mining is taking place nearby; property values should rebound as the mining moves farther from them and reclamation is successfully implemented.

Cumulative effects of the proposed Rusk Permit Area and other reasonably foreseeable future projects would be minor. Employment increases at the proposed Marshall Permit Area Mine would modestly reduce the large number of unemployed persons in the study area. Tax revenue increases would offset to

some degree the anticipated loss of revenue to Harrison County and ISDs from completion of mining at the South Marshall Permit Area of the South Hallsville No. 1 Mine.

## **Transportation**

The Proposed Action would generate an increase in trips to and from the proposed Rusk Permit Area during construction and a smaller increase during the operation of the mine. Similar to existing operations at the South Marshall Permit Area of the South Hallsville No. 1 Mine, essentially all trips to and from the mine would be via FM 2625 to the current site headquarters. Any additional traffic to the Rusk Permit Area via other external routes would be minimal and would occur only on an occasional basis, as needed. The major roadways in the Rusk Permit Area would not experience regular increases in traffic, with the possible exception of some construction traffic during setup of new mining areas. Therefore, the additional light vehicle and truck trips would have only short-term, minimal effects on area roadways.

During construction and operation of the mine, 25 CRs and 1 FM road within the permit boundary would be closed, all of which are local access roads that do not provide effective shortcuts. Most roads that would be closed for the proposed project would be reopened within approximately 7 to 10 years following completion of mining in the affected areas.

The only road closure likely to notably affect public travel would be the closure of FM 782. Closure of this road would require the approximately 2,300 vehicles per day that currently use the route to detour around the mining area, adding approximately 7.5 miles to travel distance and over 8 minutes in time for through travelers. Detours for FM 782 would increase traffic on SH 149, FM 1716, and FM 1798; however, the level of service (LOS) would remain at or above LOS C. SH 149 would remain open throughout the mine life, except for a 24- to 48-hour closure to permit "walking" each dragline across the highway.

A minor increase in accident risk would be expected to occur from the increase in traffic on FM 2625, SH 149, and other roads used by detouring traffic from FM 782, but this expected increase would be offset elsewhere by a reduction in the number of intersections on SH 149 and FM 1797.

Fire and emergency service access to individual homes and businesses would not be affected by the roadway closures. Medical access to hospitals could be marginally affected by the additional travel distance due to the closure of FM 782.

Cumulative transportation effects would be minimal. The Marshall Lignite Mine would have little or no cumulative effect on project area traffic and transportation. Potential future construction of a conveyor system on the Rusk Permit Area would increase traffic modestly during conveyor construction.

## **Noise**

Project-related activities would cause or contribute to an increase in noise in the project area. The anticipated increase would depend on the distance between mining activities and sensitive receptors and on the nature of the intervening terrain. Based on expected maximum project-related noise levels, 54 noise-sensitive receptors, not owned or leased by Sabine, would experience noise levels 10 decibels on the A-weighted scale (dBA) or more above measured ambient levels. Of the 54 receptors experiencing an increase of noise level of 10 dBA or more, 45 also would be expected to experience noise levels exceeding 65 dBA day-night (average sound) level ( $L_{dn}$ ). Exterior noise levels exceeding 65 dBA  $L_{dn}$  are considered to be "normally unacceptable" for residential areas (U.S. Department of Housing and Urban Development 1996). Noise levels increasing by 10 dBA or more above existing noise levels would be perceived to be double the existing levels and generally are considered to be a likely indicator of community annoyance (Texas Department of Transportation 1997). The highest noise levels would likely occur for periods of a few days to a few months at any particular location and would continue for 24 hours per day. No cumulative noise effects would be anticipated from development of the proposed Rusk Permit Area.

## **Visual Resources**

The proposed project would change the visual character of the Rusk Permit Area for the life of the mine. The most noticeable effects primarily would involve changes in landforms, color, and texture. The pits and spoil piles would contrast strongly with the existing flat to gently rolling terrain. Exposed soil, which is a fairly vivid dark red in color, would contrast strongly with existing plant materials, which currently dominate the color palette. There also would be moderate textural contrasts as the generally smooth soil would be exposed in contrast to the more variable vegetative textures ranging from fine grasses to coarse forested areas. These visual impacts would be temporary, lasting until each mined area is progressively reclaimed and revegetated, which would occur over a period of from 2 to 12 years after initiating mining in any particular area. Landforms would be largely returned to pre-mining conditions within 2 years; initial revegetation would mute or eliminate strong color contrast within an additional 1 to 2 years. Final restoration of forested areas would occur as tree stands mature over a longer time frame. There may be cumulative visual effects with the existing Martin Lake Mine along both sides of SH 43, depending on whether Martin Lake is still active during mine years 10 through 15.

## **Hazardous Materials and Solid Waste**

Lignite mining would involve the transportation, storage, and use of hazardous material. Fuels and lubricants would present the largest quantities of hazardous material transported to the site. Other hazardous materials would be present in minor quantities. Fuel would be the material used in the largest quantity and would be expected to present the highest risk of a spill. An analysis of transportation risk indicates that there is a small probability of a spill during the lifetime of the project and a smaller probability of a spill at the proposed Sabine River crossing. Implementation of spill and emergency response plans would minimize potential impacts in the event of an accidental release of hazardous materials. Impacts resulting from the generation of solid wastes are expected to be minimal because handling of those wastes would be conducted in compliance with applicable federal and state regulations.

Cumulatively, the proposed Rusk Permit Area is not anticipated to result in an incremental increase in the amount of hazardous materials that would be transported over the identified transportation routes; the existing South Marshall Permit Area of the South Hallsville No. 1 Mine would be phased out as the Rusk Permit Area begins operating. The Rusk Permit Area would extend the transport and use of hazardous materials at the South Hallsville No. 1 Mine for an additional 15 years.

No cumulative impacts are expected with the storage and use of hazardous materials because of proper implementation of spill and emergency response plans. Cumulative impacts would be minimal regarding the generation and disposal of solid wastes.

## **Public Health**

The proposed Rusk Permit Area is not anticipated to adversely affect the health of local residents. Potential mine-related impacts associated with water quality, air quality, and noise and lighting effects were evaluated. Specifically, the impact assessment addressed the potential effects of chemicals used during mine reclamation, fugitive dust generated during construction and operations, and the effects of increased noise and night lighting from mine operations.

## **Environmental Justice**

Census data indicate that census tracts in close proximity to the proposed Rusk Permit Area have meaningfully higher percentages of Black/African American and/or Hispanic/Latino populations than the four-study area counties as a whole. However, analyses have not identified adverse environmental effects that would disproportionately affect these minority communities. None of the census tracts in close proximity to the proposed project have median family incomes below the poverty threshold; therefore, low-income populations would not be disproportionately affected. An extensive effort was made to disseminate information on the project and solicit public comments from all interested parties in a non-discriminatory manner.