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# DRAFT ENVIRONMENTAL IMPACT STATEMENT

# FINANCE DOCKET NO. 32530

# THE KANSAS CITY SOUTHERN RAILWAY COMPANY
# - Construction Exemption-
# Ascension Parish, Louisiana

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## CONCLUSION

This Draft Environmental Impact Statement (DEIS) considers the potential environmental impacts of construction and operation of an 8.62-mile rail line by the Kansas City Southern Railway (KCS). The proposed rail line would connect three industries at the Geismar Industrial Area to KCS' mainline near Sorrento, in Ascension Parish, Louisiana. The purpose of the proposed rail line is to provide these shippers new, competitive rail service.

The Section of Environmental Analysis (SEA) identified two feasible alternatives, construction Routes A and B. SEA also considered a No-Build alternative. Construction and operation of either Route A or B would have more negative environmental impacts in the project area than would the No-Build alternative. Construction of either of those routes would meet KCS' objective of providing expanded, competitive rail service for several major shippers. The No-Build alternative would not meet those objectives.

SEA is conscious of the public's concerns raised during the scoping process, particularly regarding potential safety impacts due to the proposed transportation of hazardous materials. However, SEA preliminarily concludes that construction and operation of either Route A or Route B would have no significant environmental impacts if the Board imposes and KCS implements the mitigation recommended in Chapter 6. There is little difference between Routes A and B in terms of environmental impacts.

SEA preliminarily recommends that the Board impose on any final decision approving construction of Route A or Route B conditions requiring KCS to implement the mitigation contained in Chapter 6. SEA will consider all comments received in response to the DEIS in making its final recommendations to the Board.

## EXECUTIVE SUMMARY

The Section of Environmental Analysis (SEA) of the Surface Transportation Board (Board) has prepared this draft Environmental Impact Statement (DEIS) in response to a petition filed by the Kansas City Southern Railroad Company (KCS) with the former Interstate Commerce Commission (ICC) for authority to construct and operate an 8.62-mile rail line in Ascension Parish, Louisiana.[1] SEA decided to do an EIS for this project was appropriate because of substantial comments received concerning environmental issues, mainly those related to health and safety. A major concern is the possible accidental release of hazardous materials. SEA identified two feasible construction alternatives, Routes A and B, either of which could be constructed without substantial adverse environmental impacts, provided certain mitigating conditions are imposed. SEA also considered a No-Build alternative, which would have fewer environmental impacts, but rejected this alternative because it did not meet the project objectives.

### ES.1 PURPOSE AND NEED FOR AGENCY ACTION

The proposed rail line would connect three industries (BASF, Borden, and Shell) at the Geismar Industrial Area (Geismar) to KCS' mainline near Sorrento, in Ascension Parish. The purpose of the proposed rail line is to provide these shippers new, competitive rail service. Direct rail service is now provided only by the Illinois Central Railroad Company (IC). The former ICC conditionally granted KCS' petition, subject to the completion of the agency's environmental review process and further decision, making the exemption effective at that time, if appropriate, with whatever environmental conditions are found to be required.

Based upon SEA's independent analysis of the project, the comments and mitigation requested by various federal, state, and local agencies as well as other concerned parties, and all the information available to date, SEA prepared the DEIS. The DEIS assesses the potential environmental effects of the proposed action, certain related actions, and feasible alternatives,

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[0] The ICC Termination Act of 1995, Pub. L. No. 104-88, 109 Stat. 803 abolished the Interstate Commerce Commission (ICC) and transferred certain rail functions and proceedings to the Board. This proceeding was pending with the ICC prior to January 1, 1996, and involves functions that are subject to the Board's jurisdiction.

including the "no-build" alternative. The DEIS has been served on the public, which has been invited to submit comments on the document.

## ES.2 THE SCOPING PROCESS

The ICC published in the Federal Register and in local newspapers a notice of intent to prepare an EIS for this proceeding and invited comments on environmental issues that should be addressed in the DEIS. In addition, SEA conducted a public scoping meeting to facilitate public participation. Several hundred parties provided written and/or oral comments. Based on its review of these comments, SEA developed a preliminary final scope of study. SEA published that preliminary scoping document in the Federal Register, and revised it based on further comments. SEA then published the final scope of study in the Federal Register, served it on all parties to this proceeding, and furnished it to anyone else who requested a copy.

## ES.3 OVERVIEW OF THE AFFECTED ENVIRONMENT (See Chapter 2 for details)

Ascension Parish, located approximately 30 miles south of Baton Rouge and 48 miles north of New Orleans, is one of the fastest growing parishes in Louisiana. The population of the parish is approximately 64,000. Over the past 25 years, Ascension Parish has had the third highest growth rate of any parish in Louisiana, with population growth fueled by an urban-to-suburban shift in residential housing.

Ascension Parish encompasses about 192,000 acres. Residential development is largely concentrated in the central and north central part of the parish and in the towns of Donaldsonville, Gonzales, and Sorrento. Industrial development consists primarily of petrochemical plants located mainly along the Mississippi River. Commercial and service areas are concentrated in the towns of the parish and along major transportation corridors near these towns. The largest expanses of cropland and pasture are along the more elevated and better drained portions of the Mississippi River's natural levees. Smaller expanses of cropland and pasture are interspersed among industrial, residential, and forested lands in the northern and central portion of the parish.

The project area is in the extreme southern portion of the lower Mississippi River Valley. Its most prominent physical feature is low-lying land adjacent to broad natural levees associated with the Mississippi River. There are abundant waterways in the project area, most of which lies within the 100-year floodplain and much of which is designated as wetlands. Fresh groundwater is available in moderate to large quantities in the project area. Groundwater in the major aquifers generally moves south toward Lake Pontchartrain. The project area contains several public wells and numerous private wells. The dominant biological resource community system within the project area is bottomland hardwood forest.

The eastern shore of the Mississippi River through Ascension Parish is principally occupied by chemical manufacturers who rely on the river to help move large quantities of raw materials and products. Dozens of pipelines along the river shore interconnect area industries. Railroads carry the greatest tonnage of materials moved to and from Geismar industries. Although KCS, IC, and Union Pacific/Southern Pacific (UP/SP) cross Ascension Parish, only IC serves the Geismar area directly. Major highways crossing the parish include Interstate 10 (I-10), which travels north-south through the area to connect Baton Rouge and New Orleans. The proposed new rail facilities would be in relatively sparsely populated residential areas. The primary noise sources currently affecting the area are traffic on I-10 and local roads.

SEA conducted a Phase I cultural resources survey of Routes A and B and associated facilities (such as set-out tracks, interchange yard, etc.) and concluded that there are no resources within the survey area which are eligible for the National Register of Historic Places. The Louisiana Department of Culture, Recreation and Tourism's Office of Cultural Development (also referred to as the State Historic Preservation Office, or SHPO) is currently reviewing the survey report.

## ES.4 DESCRIPTION OF ALTERNATIVES, INCLUDING KCS' PROPOSED ACTION (See Chapter 3 for details)

### ES.4.1 Route A (KCS' Proposed Action and Preferred Route) and Related Actions

Figure A-2 in Appendix A shows the location of KCS' proposed rail line construction and operation, which SEA has designated Route A (approximately 8.62 miles long), and planned industry connector lines. The industry connectors would connect Route A with industrial trackage located within the BASF, Borden, and

Shell plant sites.[2] The BASF/Borden connector would be 3.6 miles long, and the Shell connector would be 0.3 miles long. Although not included in KCS' proposal to the Board (because they do not require the Board's approval to be constructed), SEA considers these industry connectors as "related actions" to KCS' proposed rail construction and operation, because they would not be built were it not for KCS' proposed action. Therefore, SEA has assessed in this DEIS the anticipated environmental effects of constructing and operating these industry connectors.[3]

In addition to the proposed single-track rail line between Geismar and the KCS mainline, Route A would include the related construction of (1) a 7,000-foot long interchange yard with an access road, (2) tracks parallel to the proposed rail line, (3) a "wye" connector track onto the KCS main line and parallel track, and (4) set-out track along the existing KCS mainline [4]. SEA also evaluated in the DEIS the potential environmental impacts of these construction proposals. KCS states that, initially, the interchange yard would be two-tracked, but that it might expand the yard to a total of eight tracks by the year 2015. Therefore, this DEIS considers the possible expansion of the yard to a total of eight yard tracks by the year 2015. According to KCS, the interchange yard would not be used for long-term car storage. The western end of Route A would cross the IC railroad mainline at-grade (see Figure A-2).

The DEIS assesses environmental impacts from proposed rail operations for the proposed project completion year and also for the years 2000, 2005, 2010, and 2015, including potential environmental impacts for three possible levels of rail operations: low growth, most likely growth, and high growth

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[0] At this time, it is not certain who would actually build the industry connectors.

[0] KCS expects to provide rail service over the industry connector lines. Earlier discussions raised the possibility of a third party switching operator providing service; however, KCS has not officially proposed this mode of operation.

[0] A set-out track is an area adjacent to a through rail line where cars can be temporarily placed during switching operations or for pickup/deposit by a through train.

scenarios.[5]

The majority of loaded railcars that would move over Route A or Alternative Route B (discussed below) would contain chemicals classified as hazardous materials. In the most likely growth scenario, there would initially be two trains daily over the proposed rail line, possibly reaching three trains daily by the year 2010. Each train represents two train movements (one inbound and one outbound); therefore, two trains daily would represent four train movements, and three trains daily would represent six train movements. In the high growth scenario, there would initially be two trains daily, possibly reaching three trains daily by the year 2005. Train length in the high growth scenario would generally be longer than under the most likely growth scenario.

### ES.4.2 Alternate Feasible Route (Route B and Related Actions)

Figure A-2 also shows Alternative Route B, which would be approximately 8.5 miles long. As with Route A, Route B would involve construction of an interchange yard with access road, parallel track to Route B, wye branch and parallel track, and set-out track along the existing KCS main line. The figure shows that, from its western terminus to just west of LA 44, Route B would follow the same alignment as Route A. However, from that point, Route B would follow a somewhat more northerly course than Route A as it proceeds toward the KCS mainline, and would connect with the mainline approximately one mile northwest of the proposed Route A connection. The location of the proposed IC crossing and the industry connectors would be the same for Route B as for Route A. The location and functioning of the interchange yard would be the same for Route B as for Route A, and rail operations over Route B and associated facilities would be the same as for Route A. The following section describes how SEA selected Route B as the feasible alternative and eliminated infeasible alternatives to the proposed action.

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[0] The purpose of having low, most likely, and high growth scenarios is to allow the DEIS analysis to encompass a range of possibilities associated with the shippers' production and transportation plans. SEA expects that actual production growth would be bracketed by the low and high growth scenarios, and would generally follow the most likely growth scenario.

### ES.4.3 Selection of Feasible Alternatives and Elimination of Infeasible Alternatives

**Alternate Rail Construction Routes**

Figure A-58 in Appendix A shows the possible alternate rail construction routes (Routes A-G) that SEA identified for initial consideration. The following discussion summarizes the reasons for eliminating all but Route A (KCS' proposed route) and Route B as infeasible.

SEA retained Route B for detailed analysis, because it preliminarily appears to be a feasible alternative to proposed Route A. It would be slightly shorter than Route A (8.47 miles versus 8.62 miles for Route A. Route B would require slightly less total acreage than Route A (around 138 acres for Route B and 152 acres for Route A), and would affect slightly less forested wetland than the proposed route (around 42 acres for Route B and 49 acres for Route A). Route B would have more residences near the line than would Route A (2 residences within the ROW and 103 additional residences within 1,000 feet on each side for Route B, versus 2 residences within the ROW and an additional 72 residences within 1,000 feet on each side for Route A). Route B would have total ADT of 3,559 vehicles on public roads crossed at-grade, compared with 2,816 for Route A.

SEA eliminated Routes C and D due to the length of each line (over 13 miles), the total acreage required (approximately 200 acres for each route), and the amount of wetland acreage affected, particularly forested wetlands (approximately 130 acres of forested wetlands for each route). In contrast, Route A, the proposed route, would be approximately 8.6 miles long, require around 152 total acres, and would affect approximately 49 acres of forested wetlands. The U.S. Army Corps of Engineers (Corps) has indicated that it is unlikely that it would issue a permit for Routes C or D due to potential wetland impacts (Appendix C, Attachment 1). Also, both Routes C and D would go through an area of Sorrento that is experiencing active commercial development.

Route E would not differ much from Route A. It would be somewhat shorter than Route A (7.56 miles for Route E versus 8.62 miles for Route A). Route E would require substantially fewer total acres than Route A because it would not accommodate an interchange yard, which is an important feature of the proposed project. Route E would affect 54 forested wetland acres versus 49 acres for Route A. Route E would have slightly more residences near the line than would Route A (1 residence within the ROW and an additional 78 within 1,000' on each side for Route E and 2 residences within the ROW and an additional 72 within 1,000 feet

on each side for Route A). Route E would have total ADT of 3,559 vehicles on public roads crossed at-grade, compared with 2,816 for Route A. KCS states that it would not build a rail line on Route E because it would not accommodate an interchange yard and SEA eliminated Route E from further consideration because of this.

SEA eliminated Route F because of its proximity to developed areas. There are 10 residences within the ROW, and an additional 148 within 1,000' on each side. There could be impacts regarding environmental justice, as the portion of Route F which is near the KCS mainline could affect low-income residents. Also, the line would cross two public recreation facilities (parks). In addition, the Corps has indicated that it is unlikely that it would issue a permit for Route F due to potential impacts on residential areas (Appendix C, Attachment 1). Also, KCS states that the line would not accommodate an interchange yard and, as a result, it would not build a line on this route.

SEA eliminated Route G due to the length of the rail line (over 14 miles), total acres required (around 220 acres), and the amount of wetland acreage affected, particularly forested wetlands (approximately 126 acres of forested wetlands). The Corps has indicated that it is unlikely that it would issue a permit for Route G due to potential wetland impacts (Appendix C, Attachment 1). An additional factor is the amount of vehicular traffic on public roads that would be crossed at-grade [total average daily traffic (ADT) for all such roads on Route G is greater than 10,000 vehicles]. Also, this route has a higher potential than all the others for affecting cultural resources.

### ES.4.4 No-Build Alternative

BASF, Borden, and Shell indicate that shipments generated by future industrial growth at their facilities would probably move by truck if the proposed rail line is not built. However, they state that lack of competitive and sufficient freight rail service could artificially limit growth.

Because of public concern about the level and kind of traffic which could move over the proposed rail line, and also because BASF, Borden, and Shell had acknowledged that the availability of the proposed rail service could affect production at their Geismar facilities, SEA undertook transportation modeling for this project. This modeling forecasted future rail/barge/truck shipments to and from BASF, Borden, and Shell under scenarios which include building Route A or B and also not building either route. SEA developed projections based on shipper-provided production data and allocated shipments between rail, barge, and truck (Chapter 3 discusses the forecasting methodology in detail).

SEA's traffic forecasts generally project a higher rate of growth for both rail and truck shipments if the line is built than if it is not built (see Tables 3-6 and 3-7 in Chapter 3). This is because, based on information provided by the shippers, SEA expects the proposed rail line to allow the shippers to increase production and not all of this increase is expected move by rail. For example, under the most likely growth scenario, in the year 2015, rail shipments to/from the three industries are projected to be 3.8 million tons/year if the proposed rail line is not built, and 5.3 million tons/year if it is built. Likewise, under that scenario in 2015, truck shipments to/from the three industries would be 0.64 million tons/year if the rail line is not built, and 0.94 million tons/year if it is built.[6] However, it should be noted that forecasts of future industrial production and traffic levels are speculative and may be influenced by many variables.

IC currently provides rail service to BASF, Borden, and Shell. If neither Route A nor B were built, then these shippers would not receive the main benefit sought to be achieved by this project: competitive service from KCS. Although IC states that its line through Geismar could handle more than three times current traffic volumes, it appears that substantial improvements in IC's physical plant might be required to triple its volume capacity. IC states that it owns or could obtain additional land to expand its Geismar Yard, and that it could double track its main line and/or install Centralized Traffic Control to increase line capacity.

**Other Options**

For reasons detailed in Chapter 3, Section 3.4.2, it appears that neither barge, pipeline, transloading, nor intermodal are likely to be viable or feasible transportation options for BASF,

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[0] In 1994, BASF, Borden, and Shell generated an average of 35 outbound trucks per day. In the year 2015, the three industries are expected to generate an average of 47 outbound trucks per day under the no-build alternative, and 73 outbound trucks per day under the most likely growth scenario for the build alternative. In comparison to current truck traffic on local roads, the number of additional trucks under the build alternative would not represent a significant increase (see discussion of average daily traffic and truck percentages in Chapter 2, Section 2.6.1).

Borden, and Shell.

Other options (discussed in detail in Chapter 3) include the construction of additional rail car storage facilities, implementation of production and operating efficiencies (such as the IC/BASF "13-Point Plan"), and an IC/KCS shared track arrangement in the New Orleans-Baton Rouge rail corridor.

Although it might be possible for the three industries to find a solution to the problem of additional rail car storage and to achieve additional production and operating efficiencies, none of these options would address these shippers' stated need for competitive transportation sources and costs.[7]

## ES.5 SYNOPSIS OF ENVIRONMENTAL IMPACTS OF CONSTRUCTION AND OPERATION OF ROUTES A AND B AND THE NO-BUILD ALTERNATIVE (see Chapter 4 for details)

Table ES-1 is a summary comparison of environmental impacts of Routes A and B and the No-Build alternative.

### ES.5.1 Land Use

Both Routes A and B would have some negative impact on prime farmland, but this can be largely mitigated by imposing conditions to address these impacts. The Route A ROW would require 152 acres on 41 separate parcels of land. SEA estimates that 12 of these parcels would be rendered unusable for other than rail purposes by either severance of access or creation of lots that are too small to be useable. The Route B ROW would require 138 acres on 54 separate parcels of land, and SEA estimates that 25 of the parcels would be rendered unusable if Route B were constructed. KCS has indicated that it would offer to purchase parcels or portions of parcels rendered unusable by the proposed rail line. Both routes would require the purchase and/or relocation by KCS of two residences located within the ROW (see Recommended Condition No. 1).

Both Routes A and B would cross similar amounts of prime farmland: 107 acres for Route A and 103 acres for Route B. However, much of the prime farmland is presently forested, and

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[0] There is no indication that IC would enter into a shared track arrangement with KCS in the New Orleans-Baton Rouge corridor, and it is not required to do so under the Act, 49 U.S.C. 10101 et seq.

what has been cleared is used for pasture or growing hay.[8] This suggests that there is currently little interest in using the existing prime farmland for more intensive agricultural purposes. Nevertheless, construction and operation of either Route A or B would most likely prevent future use of this prime farmland for agricultural purposes.

The Ascension Parish Sheriff's Department owns and operates a firing range near the proposed interchange yard. Sheriff's Department officers use the firing range daily and the public may also use the facility two days a week. The range includes a 300-yard range for rifles. All firing is from north to south; the interchange yard would be south of the range. Although the range is constructed to contain all rounds fired and has been operated safely in the past, a stray round could leave the range, particularly the 300-yard range. As rail cars containing hazardous materials and flammable liquids and gases could be present in the interchange yard, SEA recommends that, if either Route A or Route B is approved, KCS be required to consult with the Sheriff's Department to determine what steps can be taken to prevent stray rounds from leaving the range (see Recommended Condition No. 3).

Most of the industry connector trackage would be on property owned by BASF, Borden, or Shell, with the exception of a short segment of track which would be on Uniroyal property. The connector lines would not affect land use within these industry sites. The BASF/Borden industry connector lines would not cross any known inactive, abandoned hazardous waste sites identified by the LDEQ. The Shell connector line would be about 650 feet northwest of a potentially contaminated site within the Shell property. The site has not yet been confirmed as being contaminated). SEA recommends that the Board require KCS to execute a Memorandum of Understanding (MOU) with the three shippers regarding appropriate handling of any hazardous waste encountered during construction of the connector lines (see Recommended Condition No. 22a)[SEA recommends imposition of certain mitigating conditions; however, the Board makes the final decision on whether to impose the conditions].

Under the No-Build alternative, SEA expects none of the above land use impacts to occur. However, the No-Build

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[0] Because some landowners have expressed concern regarding potential impacts of rail operations on their livestock, SEA recommends a condition requiring KCS to establish and implement procedures to address this issue (see Recommended Condition No. 2).

alternative could ultimately result in additional construction by IC to meet the growing demand for rail service. Such construction would likely not be subject to the Board's jurisdiction or related environmental review.

### ES.5.2 Socio-economic

The socio-economic impacts of either Route A or Route B would be primarily positive. KCS states that most of the rail construction jobs would probably be filled by residents of Ascension and surrounding parishes. Also, this would have a beneficial effect on local businesses. The proposed construction could result in long-term increases in employment at BASF, Borden, and Shell due to expansion of those facilities. This would increase property and business tax revenues and income tax revenues. Support industries that provide goods and services to the chemical plants would also benefit from plant expansion.

### ES.5.3 Water Resources

One of the main concerns voiced by local citizens during the DEIS process is the potential impact of rail operations on water quality. KCS would be carrying hazardous chemicals through an area with extensive surface and groundwater systems. This has raised numerous concerns about the containment of chemical spills. However, SEA believes that these problems can be mitigated to acceptable levels.

Leaks and accidental spills during rail line operations could affect surface water quality (see Chapter 4, Section 4.4.1). Although the risk is small, spills along the rail line could occur as a result of accidents. In a small spill, drainage ditches along the rail line could be blocked near the source with sorbent or other appropriate barriers and the spill cleaned up. KCS would contain potential larger spills by placing sorbent or curtain booms across downstream channels at road crossings to contain the spread of contaminants. KCS would require thorough inspections of the rail cars both before and during transport, which would reduce the risk of a leak from the rail cars. If a leak were detected, KCS would not allow the train to continue until the leak is stopped. Measures taken by KCS and other emergency responders in response to a leak or a spill would follow the existing KCS Emergency Response Plan. SEA recommends that the Board require KCS to update its existing Emergency Response Plan to prepare for site-specific emergencies along the approved route (see Recommended Condition No. 8).

The interchange yard would be surrounded by a two-foot high levee as a spill control measure. Water would drain from the yard into a retention basin, which would be designed to

simultaneously accommodate rainfall from a 100-year storm and a spill from 15 100-ton rail cars. In the final design stage, KCS would conduct additional studies to determine whether a liner would be needed under the interchange yard and retention basins. At issue is the permeability of the soil, and the response time for damage control. SEA recommends that the Board require KCS to design the retention basin to accommodate a catastrophic spill (see Recommended Condition No. 9). SEA also recommends that the Board require KCS to implement a water quality monitoring plan that would facilitate emergency response and also assessment of spill impacts (see Recommended Condition No. 7).

A leak or spill could also affect groundwater. There are no known wells within the proposed Route A ROW; there is one well within the proposed Route B ROW. Louisiana law requires that potable water wells must be located a minimum distance of 50 feet from drainage ditches. Soils in proximity to both Routes A and B have slow permeability that, in most cases, would permit containment of any accidental spills associated with construction and operation of the rail line before groundwater could be contaminated. SEA recommends that the Board require KCS to: (1) conduct a field survey to identify all wells within 100 feet of the approved rail line and to take steps to repair all such wells that could allow contaminants into groundwater [see Recommended Condition No. 11 and No. 12]; (2) drill a replacement well for all active wells in the approved ROW or within 50 feet of drainage ditches for the approved ROW [see Recommended Condition No. 11]; and (3) implement a groundwater monitoring plan for representative wells near the approved route [see Recommended Condition No. 13]. Such a plan would facilitate assessment of spill impacts.

Either Route A or B would cross numerous drainageways. Rail line construction could affect drainage and water quality as a result of soil erosion, improperly designed drainage structures, and leaks and spills from construction equipment. However, KCS proposes a number of steps to prevent this. KCS would implement the Best Management Practices (BMPs) listed in Table ES-2, including a site-specific erosion and sedimentation control plan. KCS proposes to construct all stream crossings so as not to impede floodwaters. KCS would also conduct construction equipment refueling and maintenance at locations with an impervious surface.

SEA recommends that the Board require KCS to consult with the Louisiana Department of Transportation and Development (LDOTD), the Louisiana Department of Environmental Quality (LDEQ), and the Natural Resources Conservation Service (NRCS) in finalizing its BMPs (see Recommended Condition No. 4). SEA also recommends that the Board require KCS to consult with appropriate

agencies regarding the adequacy of its rail design for accommodating surface drainage. Specifically, SEA recommends that KCS consult with: Ascension Parish officials to coordinate with planning for the proposed Sorrento levee (see Recommended Condition No. 5), and to avoid conflicts with the parish waterway maintenance program (see Recommended Condition No. 6) and water supply and water pollution control programs (see Recommended Condition No. 14); the Federal Emergency Management Agency (FEMA) regarding the adequacy of planned rail drainage structures (see Recommended Condition No. 10); and LDEQ regarding water quality monitoring for waterways the approved rail route would cross (see Recommended Condition No. 7). Even with these measures, there could be some minor, short term, unavoidable impacts on waterways due to sedimentation during construction.

Water quality could also be affected by ROW maintenance procedures if herbicides applied during vegetation control were to enter a waterway. SEA recommends that the Board require KCS to include in its BMPs a site-specific herbicide application plan and consult with LDOTD, LDEQ, and NRCS in developing the plan (see Recommended Condition No. 4e).

Route A would cross about 94 acres of wetlands and Route B about 83 acres. About half of these wetlands are forested; the other half are on cleared land, much of it used as pasture. If the Board approves Route A, KCS states that it would purchase, but not clear, the bottomland hardwood forest that would be surrounded by the Route A wye connection with the KCS mainline. SEA recommends that the Board require KCS to consult with the Corps, the U.S. Fish and Wildlife Service (FWS), the Louisiana Department of Wildlife and Fisheries (LDWF), and Ascension Parish officials to develop and implement a wetland mitigation plan and to monitor newly created wetlands (see Recommended Condition No. 15). SEA also recommends that the Board require KCS to consult with the Corps, LDWF, and FWS to develop and implement monitoring of existing wetlands adjacent to the approved route to document that the construction of any route that is approved does not alter the prevailing hydrology so as to impair the wetlands' functions and values (see Recommended Condition No. 16).

The industry connectors would cross additional intermittent streams and affect around 8.2 acres of wetlands. SEA recommends that the Board require KCS to execute an MOU with BASF, Borden, and Shell in which those industries agree to: (1) update emergency response plans to account for site-specific emergencies along the connector routes; (2) establish a water well identification, inspection, and replacement program as described above for Routes A and B; (3) establish a groundwater monitoring program as described above for Routes A and B; and (4) establish a wetland mitigation and monitoring program as described above

for Routes A and B (see Recommended Condition No. 22b-h).

Under the No-Build alternative, SEA expects none of the above water resource impacts to occur.

### ES.5.4 Biological Resources

The impact of the proposed construction and operation on biological resources would be relatively slight and can be mitigated to insignificant levels. Construction of Route A or B would result in removal of some vegetation and associated wildlife habitat, although it would not affect threatened or endangered species. SEA recommends that KCS' final design for the proposed rail line specifically address measures to minimize the clearing of vegetation, especially bottomland forests (see Recommended Condition No. 17). Certain species of wildlife, including birds such as the pileated woodpecker, red-eyed vireo, northern parula warbler, and summer tanager, depend upon large tracts of continuous forest for the maintenance of self-sustaining populations. Fragmentation of large tracts of forests could adversely influence local populations of such wildlife. Route A would bisect two large tracts of forest, while Route B would bisect one large tract. As those forested tracts could contain species that could be adversely affected by forest fragmentation, SEA recommends that the Board require KCS, during consultations with the Corps, FWS, LDWF, and Ascension Parish officials regarding the wetland mitigation plan, to reach agreement with these agencies on steps KCS would take to reestablish large tracts of forested land in conjunction with replacing wetlands that would be lost (see Recommended Condition No. 15). Construction of Route A or B through forested areas could benefit some species of wildlife by increasing habitat diversity and providing a source of herbaceous vegetation that could serve as a food source for many herbivores. Train operations could result in the displacement of some wildlife to quieter habitat.

Under the No-Build alternative, SEA expects none of the above biological resource impacts to occur.

### ES.5.5 Transportation/Safety

The construction process for Route A or B would affect those parts of the transportation infrastructure the rail line would cross, while operations over either route would affect transportation mainly in the area of safety. A major concern voiced by local citizens during the DEIS process is the potential impact on public safety of transporting hazardous materials over the proposed rail line. However, as discussed in this section, SEA believes these impacts could be successfully mitigated and

would not be significant.

**Effects of Construction on Transportation Infrastructure**

Route A would cross I-10 and LA 44 on grade-separations, and cross Brittany Road, LA 941, St. Landry Road, and Ashland Road at-grade. Route B would make the same grade-separated crossings, and would cross LA 941, South Hodgeson Road, St. Landry Road, and Ashland Road at-grade. Both routes would cross the IC mainline at-grade. SEA recommends that the Board require KCS to consult with the U.S. Department of Transportation regarding design requirements for the I-10 crossing and with LDOTD regarding its requirements for the LA 44 crossing (see Recommended Conditions No. 18a&b). SEA also recommends that KCS implement a plan to ensure that traffic flow is maintained on all public roads while crossing construction is underway (see Recommended Condition No. 19). As agreed to by KCS, SEA recommends that the Board require KCS to install gates and flashing lights at the at-grade public road crossings on the approved route (see Recommended Condition No. 18c). SEA also recommends that, prior to constructing the Brittany Road and St. Landry Rd. Crossings, KCS obtain the required permit from the Ascension Parish Department of Public Works (see Recommended Condition No. 18f). In addition, SEA recommends that KCS, in consultation with LDOTD, review the timing and phasing of signals at certain at-grade crossings along the KCS mainline (see Recommended Condition No. 18g).

Both routes would also cross over or under numerous transmission lines, pipelines, and communication system lines. SEA recommends that the Board require KCS to consult with the affected utilities regarding steps necessary to maintain service or minimize its disruption (see Recommended Condition No. 19). As construction of the industry connectors could also affect certain utilities, SEA recommends that the builder of those lines agree to a similar condition (see Recommended Condition No. 22h).

**Effects of Operations on Delay and Safety**

**Delay**. The proposed construction and operation of four at-grade crossings along Route A or Route B would result in vehicular traffic delays at those crossings. The proposed action would also increase vehicular traffic delay at some crossings on the KCS mainline. If the proposed rail line were built, diverting rail traffic from the IC, there would still be an increase in vehicular delay at some crossings on the IC in Ascension Parish, due to expected industry growth and resulting growth in commodity transport by rail. If Route A were built, in 2015, under the most likely growth scenario, there would be total daily vehicular delay of 45.35 minutes at all grade crossings on

Route A and affected grade crossings on the KCS and IC mainlines (in comparison to 37.5 minutes if the line is not built) [see Table ES-1]. If Route B were built, there would be total daily vehicular delay of 44.07 minutes.

**Safety**. If Route A or Route B were built, in 2015, under the most likely growth scenario, there would be a total of 1.65 rail/highway accidents per year at all at-grade crossings on Route A or B and affected grade crossings on the KCS and IC mainlines (in comparison to 1.54 accidents per year if the line is not built) [see Table ES-1]. This is a relatively insignificant difference.

There is some risk of a hazardous material release from operation of either route; however, the likely effects of such a release probably would not cause anything more than slight and temporary discomfort to persons in the immediate vicinity. The proposed action could result in a release of hazardous materials along Route A or B or existing rail lines, in the interchange yard, or at BASF, Borden, or Shell. As part of its evaluation of the potential environmental effects of a hazardous material release (see Chapter 4, Section 4.6.1), SEA conducted a computer simulation of a chlorine gas release, and investigated "most likely case" and "worst case" scenarios. The “most likely” release location would be the proposed interchange yard; the “worst case” release location would be the proposed wye connector to the KCS mainline.

For the most likely release, at the interchange yard, SEA used a chlorine release of 50 lb. (this quantity is almost 17 times the maximum release reported in Louisiana in the past 27 years). The model indicated that a 50 lb. release of chlorine gas would have minimal effect on the public and environment. The highest concentration that would be observed is 0.368 parts per million (ppm), at a distance of approximately 350 feet downwind. An individual exposed to this concentration for 15 minutes would experience itching and stinging of the nose and throat and burning of the eyes. These symptoms would probably be temporary and would not cause irreversible damage. At distances greater than 350 feet there would be no noticeable effect on human life or the environment other than a pungent odor and tickling of the nose. Such a release would cause no significant or permanent ecological damage.

For the worst case release, at the wye connection of Route A or B, SEA used a chlorine release of 500 lb., which would have a temporary impact on the environment. The IDLH (Immediately Dangerous to Life and Health) value for chlorine is 10 ppm. This is the maximum level a healthy person can be exposed to for 30

minutes without suffering irreversible health effects. If a 500-lb. release of chlorine gas were to occur, the highest concentration that would be observed (at a distance of approximately 350 feet downwind) is 3.68 ppm. Exposures to this concentration can cause irritation to the nose and throat, followed by headache and coughing. However, the nearest likely affected person would be approximately 1,000 feet from the expected release point. The maximum concentration at that distance is expected to be 0.57 ppm. An individual exposed to a concentration of 0.57 ppm for 15 minutes would experience itching and stinging of the nose and throat, and burning in the eyes. These symptoms should be temporary and should not cause irreversible damage.

Under the No-Build alternative, there would be somewhat fewer rail gross ton-miles travelled in the project area and also fewer truck vehicle-miles travelled in the project area (see Table ES-1). Therefore, there would probably be fewer rail and truck accidents in the project area as a result.

### ES.5.6 Energy and Air

To minimize air quality impacts during rail line construction, SEA recommends that KCS consult with LDEQ regarding how to minimize fugitive dust and emissions from idling construction equipment (see Recommended Conditions No. 20 a&b)

The proposed rail operations would result in an insignificant increase in air pollution in the area. Table ES-1 shows that, if Route A or Route B were built, under the most likely growth scenario, railroad fuel consumption (by KCS and IC) for shipping the three industries' products would be 206,721 gallons by 2015, in comparison to 102,897 gallons (by IC) in 2015 if the line were not built. If either line were built, truck fuel consumption for shipping the three industries' products would be 224,952 gallons in 2015, compared to 165,804 if the line were not built. The table also shows that nitrogen oxide and volatile organic compounds emitted during shipment of the three industries' products would be higher under both Routes A and B than under the No-Build.

### ES.5.7 Noise, Cultural Resources, and Recreation

Construction and operation of neither Route A nor B would have significant noise or vibration impacts. SEA estimates that six daily train movements over Route A (expected under the most likely scenario to continue from approximately 2010 through at least 2015) would have adverse noise impacts on 22 residences, and 4 daily train movements over Route B (expected under the most likely scenario to continue through approximately 2009) would

have adverse noise impacts on 11 residences. Most of these locations would be affected because proposed train operations would cause noise levels to rise by 3 dBA or more. Mandatory use of audible warning for at-grade crossings would generate the loudest operating noise levels. Use of the train horn as a warning to motorists or pedestrians is an important safety measure, and, therefore, it would not be feasible to try to reduce projected train noise impacts by banning use of the train horn along Routes A or B.

Based on its analysis to date, SEA believes that construction and operation of Route A or B would not significantly affect cultural resources, but is awaiting a final determination on this issue from the SHPO. SEA recommends that, if either Route A or B is approved, KCS consult with the SHPO regarding the need for further cultural resource field investigations on that part of the route not yet surveyed due to lack of access (see Recommended Condition No. 21). Neither route would affect use of public recreational resources, although it could remove some private land from use by hunters.

### ES.5.8 Conclusion and Recommendation

Construction and operation of either Route A or B would have more negative environmental impacts in the project area than would the No-Build alternative. Construction of either of those routes would meet KCS' objective of providing expanded, competitive rail service for several major shippers. The No-Build alternative, although it would be more environmentally benign, would not meet those objectives.

SEA is conscious of the public's concerns raised during the scoping process, particularly regarding potential safety impacts due to the proposed transportation of hazardous materials. However, based on the information provided from all sources to date and its independent analysis, SEA preliminarily concludes that construction and operation of either Route A or Route B would have no significant environmental impacts if the Board imposes and KCS implements the mitigation recommended in Section ES.6. There is little difference between Routes A and B in terms of environmental impacts (see Table 3-20 in Chapter 3 for a summary comparison of the routes). Subject to imposition of the conditions detailed below, SEA recommends approval of KCS' proposed Route A as the preferred route, but also recommends Route B as an environmentally acceptable alternative.

## ES.6 SECTION OF ENVIRONMENTAL ANALYSIS RECOMMENDATIONS FOR MITIGATION

**Recommended Mitigation**

Based on SEA's review of all information available to date and its independent analysis of the proposed rail line construction and operation, all the comments and mitigation requested by various federal, state, and local agencies, as well as other concerned parties, and the mitigation offered by KCS, the SEA recommends that, if the Board approves construction and operation of either Route A or Route B, such approval be subject to the following mitigation measures:

**Land Use**

1. KCS shall offer to purchase at fair market value any parcel or portions of parcels rendered unusable due to severance of access or creation of lots that are too small to be usable. KCS shall offer to purchase or relocate any structures within the approved right-of-way.

2. KCS shall consult with the Louisiana Department of Agriculture and Forestry to develop and implement procedures for livestock owners to document, report, and obtain compensation for, alleged livestock losses due to operation of the approved rail line. KCS shall distribute the plan to all landowners who currently use land crossed by the approved alignment for livestock grazing.

3. Prior to constructing the interchange yard, KCS shall consult with the Ascension Parish Sheriff's Department to determine whether berming around the firing range can be improved sufficiently or other measures can be taken to prevent stray rounds from leaving the range and entering the interchange yard. KCS shall report the results of these consultations to SEA.

**Water Resources**

4. Before beginning construction, KCS shall consult with LDOTD, LDEQ, and the NRCS to develop and implement final design Best Management Practices (BMPs). KCS shall submit to SEA the final BMPs, including:
   (a) the preliminary BMPs proposed by KCS in Table ES-2;

   (b) a detailed, site-specific Storm Water Pollution Prevention Plan;

   (c) a detailed, site-specific erosion and sedimentation control plan for construction activities, including water quality monitoring to

ensure that construction does not impair prevailing water quality. To establish baseline surface water quality data, KCS shall begin monitoring before beginning construction;

(d) provisions for ensuring that refueling and, to the extent possible, maintenance, of construction equipment occurs in areas with an impervious surface to allow capture of any spilled fluids;

(e) a site-specific herbicide application plan and map for the proposed rail construction route specifying type and location of proposed herbicide use, and specifying sensitive locations where only manual vegetation control would be used, as well as environmental conditions that would preclude herbicide application (e.g., high winds). The herbicides used shall be those registered with EPA for use in aquatic sites;

(f) provisions for ensuring the protection of the wetland within the wye connector to the KCS mainline, including the erection of fences around the wetland during construction;

(g) provisions for establishing all construction staging areas, obtaining any needed fill material, and disposing of excavated material on non-wetland sites to the extent possible, and for disposing of waste material generated during construction in an environmentally sensitive manner.

5. Prior to undertaking any construction activities, KCS shall coordinate the final design of the rail line project with Ascension Parish officials to incorporate, as practicable, flood control elements that would be achieved by the proposed Sorrento flood control levee. KCS shall provide the results of this consultation to SEA.

6. KCS shall consult with Ascension Parish officials prior to finalizing all waterway channel crossing designs to ensure that the approved construction would not compromise the parish’s waterway maintenance program. Where the rail line would block traditional access points for channel maintenance, KCS shall provide appropriate alternative access sites.

7. KCS shall consult with LDEQ to develop and implement a water quality monitoring plan for waterways that the approved route would cross. This plan shall include:

(a) periodic monitoring for those chemicals most likely to be transported by the proposed rail line (e.g., volatile organics). To establish baseline data, KCS shall begin monitoring before initiating construction. The plan shall specify the parameters to be monitored;

(b) provisions for measuring flow velocity, volume, and direction at all rail line crossings of major waterways in the project area. Because most of these waterways are intermittent, KCS shall schedule hydrologic data collection during periods when there is flow in the channels. Documentation of this monitoring shall include current rainfall records, if available;

(c) the frequency of water quality monitoring; and

(d) the location and nature of any National Pollutant Discharge Elimination System point source discharges to waterways crossed by the proposed route.

8. KCS shall update its existing Emergency Response Plan to account for possible site-specific emergencies along the approved rail route.

9. KCS shall consult with LDEQ in developing the final design for the retention basin at the interchange yard. The final design shall include measures to ensure that the accumulation of water from normal runoff would not compromise the ability of the basin to contain a catastrophic spill. The final design shall also address the possibility of a major spill of chemicals that mix with water and how release of these liquids into Bayou Conway through the elbow pipe outfall would be prevented if the retention basin is filled with liquids.

10. After conducting detailed topographic surveys and final design of the approved route, KCS shall consult with FEMA regarding the issues listed below. KCS shall submit the results of the consultation to SEA.

(a) whether KCS' proposed flood protection measures are adequate; and

(b) whether the approved rail line construction would diminish flood storage capacity so as to warrant an update of the Ascension Parish Flood Insurance Study.

11. KCS shall conduct a thorough field review to identify all wells (including abandoned wells) within 100 feet of the approved ROW and establish their coordinates. If any wells are within the ROW or within 50 feet of a proposed rail line drainage ditch, KCS shall offer to drill a replacement well providing the same functions (including comparable or greater yield) as the well that would be lost.

12. KCS shall retain a certified well contractor to inspect all wells within 100 feet of the approved ROW to assure that they are within current construction standards. If wells are found that could allow entry of contaminants released during a spill resulting in potential contamination of the aquifer, KCS shall repair the well as necessary.

13. KCS shall consult and reach agreement with LDEQ to develop and implement a groundwater monitoring plan to test existing representative wells for those chemicals most likely to be spilled. The plan shall identify those wells most appropriate for testing and to which KCS has access.

14. Before beginning construction, KCS shall consult with Ascension Parish officials to avoid conflict with local water supply programs and water pollution control programs and take appropriate measures to avoid any such conflict. KCS shall report the results of this consultation to SEA before beginning construction.

15. Prior to construction, KCS shall obtain any required Dredge and Fill permit from the Corps. KCS shall develop and implement a final wetland mitigation plan in consultation with the Corps, FWS, LDWF, and Ascension Parish officials. The objective of the plan shall be to replace, to the extent possible, the functions and values of wetlands that would be unavoidably lost due to the approved rail line construction. The wetland mitigation plan shall specifically consider re-establishing large tracts of forested land as a function of replacement wetlands. KCS shall submit the final plan to SEA.

16. KCS shall consult with the Corps, FWS, and LDWF to develop and implement a monitoring plan for existing wetlands adjacent to the approved rail route to ensure that the new rail line would not alter the hydrology of wetlands, impairing existing functions and values. The plan shall specify monitoring techniques, frequency of monitoring, and reporting requirements. KCS shall submit the plan to SEA.

**Biological Resources**

17. KCS shall consult with the Louisiana Department of Wildlife and Fisheries on measures to minimize clearing of vegetation within the ROW, especially in bottomland forests, and shall incorporate those measures in the final design of the rail line.

**Transportation/Safety**

18. (a) KCS shall construct a grade-separated crossing over Interstate 10, after consulting with the Federal Highway Administration to comply with its design requirements for this crossing.

(b) KCS shall construct a grade-separation at LA 44 by constructing a highway bridge for LA 44 over the approved rail alignment, after consulting with LDOTD to comply with state highway requirements for this crossing.

(c) KCS shall install gates and lights at the four at-grade public road crossings (for Route A: Ashland Rd., St. Landry Rd., LA 941, and Brittany Rd.; for Route B: Ashland Rd., St. Landry Rd., LA 941, and So. Hodgeson Rd.)

(d) To minimize the potential for an accident at the wye connector, KCS shall extend the 25 mph speed limit from Gonzales south through the wye junction area.

(e) Before beginning operations over the approved rail line, and in consultation with local and state transportation and safety officials, KCS shall develop and implement a program to educate the Ascension Parish population regarding highway-rail safety. KCS shall submit plans for this program to SEA.

(f) Prior to constructing crossings at Brittany Rd. And St. Landry Rd., KCS shall obtain the required permit from the Ascension Parish Department of Public Works.

(g) KCS shall consult with LDOTD to review the timing and phasing of the signals along the KCS mainline at the crossings of LA 44, LA 73, LA 429, LA 30, and LA 22, along with the warning devices, to be sure that they provide the most appropriate protection at each crossing.

19. During final project design, KCS shall develop a traffic management plan, in consultation with LDOTD, to ensure that

traffic flow is maintained on LA 44 and all other public roads during the period of rail line construction, and that disruption of utility service is minimized.

**Air Quality**

20. (a) KCS shall consult with LDEQ on specific measures to minimize the release of fugitive dust during construction, and shall include those measures in its BMPs. The BMPs shall also indicate specific locations where specific dust control measures such as application of oil or other chemicals would not be appropriate because of other environmental considerations, such as proximity to open water, wetlands, wells, livestock, etc.

(b) In consultation with LDEQ, KCS shall also include in its BMPs specific measures to ensure that construction equipment would be well maintained and not allowed to idle unnecessarily.

**Cultural Resources**

21. KCS shall consult with the Louisiana SHPO concerning the need for archaeological and architectural field investigations along those portions of the approved rail line route that have not been examined due to lack of access.

**Industry Connector Lines**

22. KCS shall execute a Memorundum of Understanding with BASF, Borden, and Shell to require whichever **entity** is responsible for constructing the industry connector lines to:

(a) develop and implement a plan in consultation with LDEQ to evaluate for contamination any soils that could require excavation. The plan should specify procedures for safe excavation and disposal of contaminated soil, including the potential hazardous waste site at the Shell property;

(b) consult with LDOTD, LDEQ, and the NRCS to develop final design BMPs patterned, as appropriate, after those developed by KCS for the proposed rail line construction, and limit construction activities near the BASF retention basin to periods when there is no flow from the basin;

(c) develop and implement an herbicide application plan and water quality monitoring plan;

(d) develop an emergency response plan;

(e) develop and implement a well identification and replacement plan and a well inspection plan;

(f) consult with LDEQ to develop and implement a groundwater monitoring plan;

(g) consult with the Corps, FWS, and LDWF to develop and implement a wetland mitigation plan;

(h) consult with the Corps, FWS, and LDWF to develop and implement a monitoring plan for existing wetlands to ensure that those lines would not alter the hydrology of wetlands, impairing existing functions and values. The plan shall specify monitoring techniques, frequency of monitoring, and reporting requirements;

(i) include in the final project design details for maintaining service and relocating utilities during construction.

**Request for Comments**

We specifically invite comments on all aspects of this DEIS, including suggestions for additional mitigation measures. We will consider all comments received in making our final recommendations to the Board. The Board will consider our final recommendations and the environmental comments in making its final decision in this proceeding.

If you wish to file comments and any questions regarding this DEIS, send an original and 10 copies to the Office of the Secretary, Attn: Michael Dalton, Environmental Review (FD 32530), Surface Transportation Board, 1925 K St. NW, Washington, D.C. 20423. Comments should refer to the docket number of this proceeding: Finance Docket No. 32530.

Date made available to the public and delivered to EPA: July 16, 1997
Date Notice published in the Federal Register: July 25, 1997
Comment due date: September 8, 1997

# CHAPTER 1.0

## 1.1 PURPOSE AND NEED FOR AGENCY ACTION

The Section of Environmental Analysis (SEA) has prepared this draft Environmental Impact Statement (EIS) in response to a petition filed by the Kansas City Southern Railroad Company (KCS, or Petitioner) with the former Interstate Commerce Commission (ICC or Commission) for an exemption under 49 U.S.C. 10505 from the prior approval requirements of 49 U.S.C. 10901 to permit the construction and operation of an 8.62-mile rail line in Ascension Parish, Louisiana.[9] The petition was filed on February 24, 1995, and designated as Finance Docket No. 32530.

The proposed rail line would connect three chemical manufacturing facilities located within the Geismar Industrial Area (GIA) to the KCS mainline near Sorrento, in Ascension Parish. The three shippers are the BASF Corporation (BASF), Borden Chemical and Plastics, Ltd. (Borden), and Shell Corporation (Shell). The purpose of the proposed rail line is to provide these shippers an alternative means of rail transport for their products and feedstocks. On June 27, 1995, the ICC preliminarily concluded that KCS' proposal met the standards of Section 10505 and conditionally granted this exemption petition, subject to the completion of the agency's environmental review process and further decision, making the exemption effective at that time, if appropriate, with whatever environmental conditions are found to be required.

SEA decided to do an EIS for this project because of the substantial comment received concerning environmental issues, chiefly those related to health and safety. Chief among these

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[0]The ICC Termination Act of 1995, Pub. L. No. 104-88, 109 Stat. 803 (the Act), which was enacted on December 29, 1995, and took effect on January 1, 1996, abolished the Interstate Commerce Commission (ICC) and transferred certain rail functions and proceedings to the Surface Transportation Board (Board). Section 204(b)(1) of the Act provides, in general, that proceedings pending before the ICC on the effective date of that legislation shall be decided under the law in effect prior to January 1, 1996, insofar as they involve functions retained by the Act. This proceeding was pending with the ICC prior to January 1, 1996, and involves functions that are subject to Board jurisdiction pursuant to 49 U.S.C. 10901 and 10502. Therefore, the Board will apply the law in effect prior to the Act, and citations are to the former section of the statute, unless otherwise indicated.

concerns is the possible accidental release of hazardous materials. SEA prepared this DEIS in accordance with the National Environmental Policy Act (NEPA) and with the Board's regulations implementing NEPA and other environmental laws at 49 CFR 1105. This DEIS assesses the environmental effects of the proposed action and feasible alternatives, certain related actions, and the "no-build" alternative. The DEIS has been served on the public, which has been invited to submit comments on the document.

Figure A-1 in Appendix A shows the project area location within the State of Louisiana and also within Ascension Parish. Figure A-2 shows in more detail the location of the proposed rail construction route (Route A), a feasible alternate route (Route B), and planned industry trackage to connect Route A or B with the industries to be served. Both Routes A and B would involve construction of an interchange yard with access road, parallel track to the new line, wye branch and parallel track, set-out track along the existing KCS main line, and an overpass of Interstate 10, all of which are discussed in more detail in Chapter 3.

## 1.2 FRAMEWORK FOR THE DEIS PREPARATION

On October 30, 1995, the ICC published in the Federal Register a notice of intent to prepare an environmental impact statement for this proceeding. The notice was also published in local newspapers. The notice requested comments on environmental issues which should be addressed in the DEIS, to be submitted in writing or orally at a public scoping meeting held in Gonzales, Louisiana, on November 30, 1995. Several hundred parties provided comments and/or attended the scoping meeting. Appendix B is the final scoping notice which SEA published in the Federal Register to inform the public of the environmental issues which this EIS would address. Based on the comments received during scoping, SEA developed a preliminary final scope of study and published it in the Federal Register on April 8, 1996. SEA made certain revisions in the scope of study based on comments received on the preliminary final scope, and published the revised final scope of study in the Federal Register on November 5, 1996. The complete scope of study was served on all parties to this proceeding and furnished to anyone else who requested a copy.

Also, in the process of preparing this EIS, SEA consulted with a number of governmental organizations to solicit their comments on the proposed project and environmental issues which should be addressed in this document. Appendix C contains the responses to this consultation process. The DEIS addresses the issues raised by the respondents, as well as requested

mitigation.

A "third-party" contractor and subcontractor prepared this document. Third-party contractors and subcontractors work on behalf of the Board, working under SEA's direction to collect the needed environmental information and compile it into a draft EA or EIS, which is then submitted to SEA for its review, verification, and approval. Petitioner retains these contractors subject to SEA approval. SEA approved the third-party contractor in this proceeding on July 12, 1994, and the third-party subcontractor on September 8, 1995.

# CHAPTER 2.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

## 2.1 LAND USE

### 2.1.1 General Land Use

Ascension Parish is located approximately 30 miles southeast of Louisiana's capital, Baton Rouge, and 48 miles northwest of its largest city, New Orleans. The parish straddles the Mississippi River, with approximately 80 percent of its acreage on the east side of the river. Ascension Parish is one of the fastest growing parishes in Louisiana, with its three largest municipalities being Gonzales, Sorrento, and Donaldsonville (Figure A-1).

Table 2-1 shows existing land use in Ascension Parish, which encompasses about 192,000 acres. Residential development is largely concentrated in the central and north central part of the parish along major transportation routes and in the towns of Donaldsonville and Sorrento. Industrial development consists primarily of petrochemical plants which are concentrated largely along the Mississippi River. Commercial and service areas are concentrated in the towns of the parish and along major transportation corridors near these towns and the interchanges of I-10. The largest expanses of cropland and pasture are along the more elevated and better-drained portions of the Mississippi River's natural levees. Smaller expanses of cropland and pasture are interspersed among industrial, residential, and forested lands in the northern and central portion of the parish. Section 2.6, Transportation, discusses area infrastructure.

According to the 1988 National Wetlands Inventory (NWI), most of the forested areas of Ascension Parish are either bottomland forest (41 percent) or forested swamp (38 percent), while the remaining 21 percent of forested land is considered to be upland. The largest areas of forested land are located on the north central border of the parish (Bluff Swamp near Spanish Lake) and the southeastern part of the parish (Maurepas Swamp).

### 2.1.2 Land Use Along Routes A and B, and the Industry Connector Lines

Figure A-3 shows general land use in the proposed project vicinity, while Table 2-2 shows how land within the Routes A and B and industry connector rights-of-way is allocated among the land use types.

Figures A-4 and A-5, respectively, show development areas in Ascension Parish and structures and development near the proposed Route A ROW. For this study, development areas are defined as tracts of land which are subdivided into units of six lots or

less. There are no non-industrial structures, residential subdivisions, or proposed development areas near the industry connectors. Routes A and B each have six subdivisions (i.e. Development areas) within their study corridors (Table 2-3). Two of the subdivisions, the Southern Mobile Home park and St. Landry Community, east and west of St. Landry Road, share the same route. Although neither of the communities is within the proposed ROW, the eastern end of the recently developed Southern Mobile Home Park is almost tangent to the southwest corner of the proposed interchange yard.

The Alfa Acres subdivision, along LA 941, straddles the proposed location of Route B. The Joe Lee subdivision, also along LA 941, is south of Route B, outside the rail ROW. There are a few houses along both sides of Brittany Road, east of the Joe Lee subdivision, on the southern edge of the Route B study corridor. A new subdivision (Hodgeson) extends east of Hodgeson Road in the Route B vicinity. The new Brittany Place Subdivision is located immediately north of Route B, along the west side of LA 941. Some of the recently constructed houses are located within the Route B study corridor.

The proposed Delatte Place subdivision would be located north of Brittany Road, on the southern edge of the Route A study corridor. Since 1995, Delatte has created two new development areas: one (six lots and a mobile home) is centered on the Route A ROW and the second (five lots with two mobile homes and one house) is located south of Route A but within the study corridor. East of Delatte Place, the Sorrento Terrace subdivision lies between the Route A ROW and the southern edge of the study corridor. Six houses on the south side of Robert Waugespack Road (which extends west of LA 941) are about 1,000 feet south of the Route A ROW. Several houses along Brittany Road are near the northern edge of the Route A study corridor.

### 2.1.3 Special Land Use Designations

Figure A-6 shows the location within the project area of sites designated by the parish as Industrial Areas. This designation is granted as a result of a petition to the parish by the particular industry, and confers certain tax advantages on the industry.

Neither Routes A, B, nor the industry connectors would cross government owned or controlled lands, except for highway rights-of-way and possibly selected water bodies. The State Land Office, in response to the Section 404 Public Notice for Route A, indicated that the alignment appears to cross state-owned lands (e.g., Bayou Smith and Bayou Conway), which could require ROW easements from that office. The issue of whether an easement would be required from the state to cross these waterbodies would have to be resolved prior to construction.

There are no designated natural, recreational, or scenic areas within the ROW of Routes A or B or the industry connectors. There are no scenic streams within or near the project site. The nearest scenic stream is Blind River, located over 10 miles southeast of the existing KCS rail line near Sorrento. Section 2.10, Recreation, discusses the distribution of parks and recreational areas within the project area.

### 2.1.4 Zoning

Ascension Parish currently has no zoning ordinance for unincorporated areas of the parish, although it does have subdivision regulations for such areas. The parish is currently formulating a proposed land use plan and zoning ordinance for unincorporated areas of the parish. The time frame for adoption of such an ordinance is not certain at present; however, the plan/ordinance may be formally submitted to the Ascension Parish Council in 1997, after a series of public hearings and possible revisions to the plan. The Parish Council may vote to approve a final zoning ordinance/land use plan or decide to allow the voters of the parish to decide the issue by referendum (C. Becnel, Ascension Parish planner, per. Comm., April 1, 1997).

The parish does not have planning guideline jurisdiction over incorporated areas of the parish. Figure A-2 shows that Gonzales and Sorrento are the only two incorporated areas near Routes A or B or the industry connectors. The figure shows that the only portion of any of these alignments to be within an incorporated area would be the eastern end of Route A. Sorrento’s zoning ordinance does not specifically refer to railroad construction or operations. The area in Sorrento closest to proposed Route A also includes the existing KCS line, and is zoned Light Industry. One of the permitted uses within this zone is a "train terminal".

### 2.1.5 Hazardous Waste Sites

Table 2-4 shows the Louisiana Department of Environmental Quality’s (LDEQ) listing of both potential and confirmed abandoned hazardous waste sites in Ascension Parish, while Figure A-7 shows their location. There are eight potential or confirmed sites in the project area; however, only one site is near Routes A or B or the industry connectors: The Louisiana Gas Marketing Shell Sales Point 1, which is located on the Shell Chemical Company complex, approximately 1,000 ft from the western end of Routes A and B, west of the Illinois Central Railroad's (IC) mainline. LDEQ lists the facility as a potential, not a confirmed, hazardous waste site. LDEQ has not placed a high priority on investigating the site, and will investigate it as time and personnel become available (Halk pers. comm. 1996).

### 2.1.6 Prime Farmland

Prime farmland is defined as "...land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion..." (Public Law 97-98:Dec.22, 1981 [95 Stat. 1342]). The latest edition of the Important Farmlands map for Ascension Parish (USDA, SCS, 1980) indicates that approximately 78,014 acres (40.6 percent of the parish) are classified as prime farmland. Land classified as prime farmland is not necessarily currently being used for agricultural production.

Land development in recent years has considerably reduced the amount of prime farmland available for farming. Figure A-8 shows prime farmland within the project area. All of the undeveloped land within the Routes A and B corridors is comprised of soils classified as prime farmland, except for the extreme eastern ends of the corridors, near the connection with the KCS mainline.

### 2.1.7 Other Facilities

The Ascension Parish Sheriff’s Department owns and operates a firing range located off St. Landry Road, less than 300 feet north of the proposed interchange yard. The range, which is used by the Department for weapons qualification and training, is open to the public, under the supervision of appropriate Department personnel. The range accommodates both hand gun and rifle firing.

### 2.1.8 Proposed Land Use and Public Plans

The Louisiana Department of Transportation and Development (LDOTD) officially adopted the *Statewide Transportation Plan for Louisiana* on March 22, 1996. This plan includes a comprehensive intermodal element as well as recommended transportation improvements. The Secretary of the LDOTD approved the funding of the plan's implementation with a high priority on a substantial expansion of the state's freeway system in 1998 (Kalivoda, pers. comm. 1996). Scheduled highway improvements in Ascension Parish include increasing the size of LA 44 to four lanes.

With the exception of cleaning out the portion of the Hachett Canal located north of I-10, the Department of Public Works for Ascension Parish has no immediate plans to conduct improvement and/or maintenance activities on drainage canals and waterways within the project area (Laiche, per. comm. 1996).

The Town of Sorrento is presently served by a partially implemented forced drainage system designed to reduce the impacts of local flooding. Ascension Parish obtained a Department of Army

Section 404 Permit to complete the flood protection project. The permit authorizes a portion of the flood protection levee to be along the east-west corporate limits boundary, north of Brittany Road (DeBosier, pers. comm. 1996). This present alignment of the proposed levee bisects the existing, residential subdivision located north of Brittany Road. If constructed as proposed, the levee would leave residences located north of the town limits outside of the flood protection system. Local officials would like to revise the Section 404 Permit to include these residences to the north of the corporate limits in the flood protection system (DeBosier, pers. comm. 1996). Construction of the proposed levee in the vicinity of Brittany Road is presently on hold because of higher priority flood protection projects elsewhere in the Parish (DeBosier and Frederic, pers. comm. 1996). The nature of the flooding in the vicinity of the proposed levee near Brittany road is confined to yards and streets. There have been no reports of flood damage to homes in this area. The Parish expressed an interest in the concept of using the proposed KCS rail embankment for the corresponding portion of the flood protection levee instead of building two parallel embankments in the same general area (Frederic, pers. comm. 1995 and 1996).

Concerns about the availability and quality of potable water available to meet the demands associated with rapid growth and development have prompted the Ascension Parish Council to study the feasibility of implementing potable water and wastewater systems in five areas of Ascension Parish (Shaheen & Assoc., Inc., 1995). The U.S. Army Corps of Engineers (Corps) participated with the Parish in the feasibility study by providing technical and funding assistance through the Partners for Environmental Progress Program. Two reports identify the problems, possible alternative solutions, and viable funding options for construction, operation, and maintenance.[10] Parish officials are currently evaluating development and implementation of a plan for parish water supply and wastewater system (T. Martinez, Parish President, pers. comm., April 2, 1997).

## 2.2 SOCIO-ECONOMIC SETTING

### 2.2.1 Introduction

The majority of project-related socio-economic impacts are expected to occur in Ascension Parish. Therefore, this section

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[0] *Market Feasibility Study for the Establishment and Privatization of Water and Wastewater Infrastructure, Ascension Parish, Louisiana* (Shaheen & Assoc., Inc., 1995) and *Market Feasibility Study for Ascension Parish* (Apogee Research, Inc., 1995).

focuses on the socio-economic setting of Ascension Parish.

### 2.2.2 Demography

The population of Ascension Parish was 63,900 in 1994. Over the past 25 years, the parish has had the third fastest growing population in Louisiana. The population for the entire state increased by 19.2 percent between 1969 and 1994, while Ascension Parish population increased by 75 percent. The projected population of the parish in the year 2000 is 67,410, and in the year 2010 is 74,440.

The population growth of Ascension Parish has been fueled by an urban-to-suburban shift in residential housing that has been occurring for the past two or three decades. Ascension Parish, like nearby Livingston Parish, has many residents who commute to Baton Rouge. Specifically, there are more Ascension Parish residents working outside the parish than there are outside residents working in Ascension Parish. Furthermore, this trend appears to be growing.

One-quarter of the population of Ascension Parish was concentrated in the three urban areas of Donaldsonville, Gonzales, and Sorrento in 1990 (see Figure A-1). The area around Routes A and B and the industry connectors is sparsely populated. The 1990 Census population data was sorted into five density groupings (less than 20, 20-39, 40-79, 80-119, and 120 or more persons) for the census blocks crossed by the routes. This analysis shows that over 70 percent of both routes traverse census blocks with populations fewer than 80 people. Even for those census blocks where residential concentrations are greater than 80 people, the alignments cross portions of the blocks that contain very few houses. For example, at the eastern terminus of Route A near Sorrento, where a census block contains over 120 people, the alignment crosses an uninhabited area along the northern portion of the block. A similar sparsely populated area occurs along the eastern end of Route B where it falls between two small residential areas, both with populations of over 80 individuals. There are no people living in the census blocks where the industry connector lines would be located.

The population of Ascension Parish is primarily white (76.4 percent in 1990) with blacks making up the most significant minority group (23.6 percent in 1990). The percentage of minorities in the parish has not changed significantly since 1980 (CRPC, 1992). The majority of the white people in Ascension Parish live in the northern half of the Parish, and the black people live in concentrated pockets scattered throughout the southern half of the parish. Figure A-9 shows racial composition by census block in the parish. The census data show that the only significant non-white residential area located near Routes A or B is the St. Landry Road/Pierce Road neighborhood where the

population is over 75 percent black.

### 2.2.3 Neighborhoods and Community Resources

Routes A and B and the industry connectors would be located almost entirely within undeveloped areas. The neighborhoods or residential concentrations closest to Route A are those located along: (1) Brittany Road near Conway Bayou, (2) Brittany Road at the west end of Sorrento (Sorrento Terrace Subdivision), (3) the Waguespack development off LA 941, and (4) St. Landry Community off St. Landry Road near St. Landry Church, and (5) Southern Mobile Home Park along St. Landry Road. Figure A-6 shows the location of these areas.

The neighborhoods or residential concentrations closest to Route B are those along: (1) LA 941, also known as Hodgeson Road (Alfa Acres) near Rose Avenue, (2) LA 941 near the intersection with Brittany Road, (3) Rose Avenue, (4) South Hodgeson Avenue near Conway Bayou, (5) St. Landry Community (near St. Landry Church at the intersection of Pierce Road and St. Landry Road), and (6) Southern Mobile Home Park along St. Landry Road [These neighborhoods are also discussed in Section 2.1.1 of this chapter].

The recent increase in Ascension Parish population has strained available public resources and caused overcrowding at some Ascension Parish schools. In the short term, the school system is addressing the overcrowding at some of the schools by using temporary buildings for classrooms. The school system has plans to begin construction of a new grade school and a new high school in the next few years to address the parish's need for more classroom space (*The Advocate*, May 31, 1996).

Table 2-4 lists facilities in Ascension Parish which serve a public or quasi-public function (such as schools, churches, hospital/health care facilities, day care facilities, government office buildings, libraries, police stations, and fire stations), based on 1990 census data.[11] Figure A-10 shows the approximate location of these facilities. With the exception of churches and, to a lesser extent, schools, most of these facilities are concentrated in urban areas.

Sorrento and Gonzales are the communities located closest to Routes A and B. Table 2-5 shows that Sorrento has one school, one government office building, and two churches (although recent USGS topographic maps show three churches within Sorrento). The table also shows that Gonzales has seven schools, eleven

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[0] Due to census compilation error, the table may not include every such facility in the parish.

churches, four hospitals/health care facilities, three government office buildings, one library, and two day care centers (the USGS map of the Gonzales area shows 21 public/quasi-public facilities within or immediately outside the town limits).

Table 2-6 gives the number of residences and community-oriented facilities within the Routes A and B rights-of-way, which vary in width from 100 to 260 feet, and within progressively wider bands extending from the edges of the ROW to 200 feet from the ROW edges, from 200 to 500 feet from the ROW edges, and from 500 to 1,000 feet from the ROW edges. The table lists separately the number of structures located within a band extending from the eastern edge of the existing KCS ROW to 1,000 feet east of that ROW edge, because the incremental influence of the proposed rail line over the existing KCS line would be less than that of a new rail line.

Table 2-6 shows that there are 2 structures within the Route A ROW, 1 structure within the bands from the ROW edges to 200 feet from the ROW edges, 19 structures within the bands from 200 to 500 feet from the ROW edges, and 59 structures within the bands from 500 to 1,000 feet from the ROW edges. Thus, there are a total of 81 structures, including 74 residences, within this Route A study zone west of the KCS mainline. There are 10 structures within the study zone east of the KCS mainline ROW. The 2 residences within the Route A ROW are a newly constructed house west of LA 941 and a mobile home east of Brittany Road.

There are 2 structures within the Route B ROW, 3 structures within the bands from the ROW edges to 200 feet from the ROW edges, 28 structures within the bands from 200 to 500 feet from the ROW edges, and 75 structures within the bands from 500 to 1,000 feet from the ROW edges. Thus, there are a total of 108 structures, including 105 residences, within this Route B study zone west of the KCS mainline. There are 17 structures within the study zone east of the KCS mainline ROW. One of the 2 residences within the Route B ROW is located along Hodgeson Avenue and the other is at the east end of Rose Avenue.

The Do-Right Church is located within the study corridor of this analysis; it is approximately 1,000 feet north of Routes A and B. A second church is located about 1,000 feet east of the Route A parallel track and the Route B wye (east of US Hwy 61). A vocational school is located about 300 feet east of the Route A wye and the Route B parallel track. No medical facilities are located within one mile of the alignments.

No structures are located within the industry connector rights-of-way, or within 1,000 feet of the edges of those rights-of-way.

### 2.2.4 Housing

Ascension Parish is less urban than neighboring East Baton Rouge Paris. Of the homes in Ascension Parish for which the "Homestead Exemption" is claimed, 89 percent are valued at less than $75,000, a rate comparable to other adjoining rural parishes. In East Baton Rouge Parish, however, only 65 percent of the homes for which the Homestead Exemption is claimed are valued at less than $75,000 (see Table 2-7).

### 2.2.5 Business and Industrial Activities

Ascension Parish is an attractive area for industry because of its location on the Mississippi River. Manufacturing employment in the parish grew by 135 percent since 1969, and 25 percent since 1987. The biggest declines in employment in the parish in recent years have been in the farming and mining sectors. Manufacturing, which accounts for over 35 percent of total parish income, is dominated by chemical production. Ninety-two percent of Ascension Parish manufacturing earnings in 1994 came from the chemical industry.

The Greater Baton Rouge Business Report indicates that at least one new chemical plant is slated for construction in Ascension Parish within the next year, and representatives of the three largest chemical plants in the Geismar area have indicated the possibility of plant expansion, particularly if KCS' proposed rail construction occurs. (Guay, 1995; Jelly, 1995; Moran, 1995). The Louisiana Department of Labor projects that statewide chemical industry growth will be about three percent annually between 1994 and 2005, with a 2.9 percent annual increase in chemical industry employment within State Planning District No. 2, which includes Ascension Parish.

### 2.2.6 Tax Revenues

Due to its large industrial and manufacturing base, Ascension Parish has had a stable and relatively strong tax base. The parish has used Louisiana's 10-Year Industrial Tax Exemption to attract industry. However, the early development and growth of the chemical industry and other industries in Ascension Parish have resulted in a succession of tax-exempt expirations, with the result that the chemical industry now pays the major share of taxes collected in Ascension Parish. In 1995, 3.2 percent of property taxes collected were paid by individual homeowners, with the other 97 percent paid by business and industry. Over 52 percent of sales taxes collected in the county are paid by businesses (Scott, 1996).

### 2.2.7 Income, Employment, and Labor

Ascension Parish is one of Louisiana's wealthier parishes. Per capita income in the parish has risen steadily over the past

25 years, and the growth rate has exceeded that of the state as a whole. In 1994, per capita income for the parish was $17,785, which placed it tenth among the state's 64 parishes (Scott, 1996). About 18 percent of persons, and 15 percent of all families, live below the poverty level. The number of families with incomes below the poverty level increased about three percent between 1980 and 1990 (CRPC, 1992).

An analysis of spatial distribution of median family income in Ascension Parish, based on 1990 census data, shows that the higher income areas tend to be clustered toward the center and northeastern corner of the Parish. Routes A and B and the industry connectors cross census block groups with median family income ranging between $26,974 and $38,043, which is considered intermediate-to-high. The highest income area reflects the inclusion of suburbs located along the south side of Gonzales. The industry connector lines are located entirely within an intermediate income range area, although, as Table 2-6 shows, there are no residences within 1,000 feet of the industry connector rights-of-way.

Between 1969 and 1994, Ascension Parish employment grew by 217 percent, while state employment grew by 65 percent. The unemployment rate has declined from a high of 15.9 percent in 1986 to 5.5 percent in 1995 and 6.8 percent in 1996. Table 2-8 shows that, in 1994, the four most important employment sectors in the parish ranked by the number of people employed were services, construction, retail trade, and manufacturing. Table 2-9 lists the largest manufacturing employers in the parish, most of which are chemical companies. The yearly manufacturing labor salary rates in Ascension Parish are among the highest in the state, due to the fact that wages among Chemical and Allied Products workers are the highest of any subsector of manufacturing (Scott,1996).

## 2.3 PHYSIOGRAPHY

### 2.3.1 Physical Setting and Geology

The project area is located in the extreme southern portion of the lower Mississippi River Valley. It lies within the Gulf Coastal Plain Physiographic Province, on the emerged deltaic and coastwise plain segment within the Mississippi embayment. Figure A-11 shows Routes A and B and the industry connector lines with respect to the area's geology and physiography.

The most prominent physiographic features in the project area are broad natural levees associated with the Mississippi River, low Pleistocene terrace deposits, and backswamp areas (Figure A-11). Exposed fluvial terrace deposits dating to the late Pleistocene era dominate the landscape in the northern and

central portions of Ascension Parish (Fisk, 1944). The modern deltaic plain was built during the Recent geologic period, through processes of Mississippi River sedimentation. However, construction and maintenance of large levees by the U.S. Army Corps of Engineers (Corps) over the past 70 years has essentially eliminated any present-day influx of sediments into the project area from the Mississippi River. Also during the Recent geologic period, the Pleistocene Prairie Terrace was subjected to increased uplift. The uplift-subsidence fulcrum parallels the approximate southeastern limits of the Prairie formation, which is the southernmost Pleistocene Terrace in Ascension Parish.

The Pleistocene Prairie Terrace, composed of coarse sediments, slopes downward from an elevation of approximately 23 feet National Geodetic Vertical Datum (NGVD) in the northwestern portion of Ascension Parish to slightly less than 5 feet NGVD as it grades into the swampy recent alluvium in the southeastern portion of the parish and project area (Howe et al., 1938). These alluvial lowlands form the easternmost extension of the Mississippi embayment, within which Lake Maurepas and Lake Pontchartrain lie (Saucier, 1962) and dominate the physiography in the southern and southeastern portion of the project area. The lowlands constitute a backswamp drainage system consisting of numerous wetlands and bayous which drain eastward from the base of the Mississippi River natural levee.

The Pleistocene terrace deposits represent ancient, former deltaic plains of the Mississippi River and consist generally of clays, sands, and silts, most of which have become oxidized and geotechnically consolidated (Kolb & van Lopik, 1962). The backswamp clays represent sediments deposited in the low backwater areas away from the river by historic overbank flows from the Mississippi River. The natural levee deposits consist of interfingering layers of clays and sandy silt (Kolb & van Lopik, 1962) and vary in thickness in the project area from about 20 feet immediately adjacent to the Mississippi River to less than 1 foot about 1.5 miles away from the river.

The Holocene natural levee deposits are relatively thin (less than 20 ft) and are not considered to experience any appreciable subsidence, because of their lenticular nature, with varying amounts of silt and sandy silt. The Pleistocene deposits also are not subject to any appreciable subsidence. Recent studies conducted by the Corps determined that a subsidence rate of 0.5 ft or less per century may be experienced in this area based on a limited number of test borings (Britsch, 1995). As a result of medium-to-high cohesive strengths, both the Holocene natural levee deposits and the Pleistocene deposits are considered to be very good foundation material.

Surface topography within the project area is largely dictated by the geological history of the area. Elevation ranges

from approximately 30 feet above mean sea level (msl) in the northern and central portions of the parish to less than 1 foot msl in the southern backswamp area (Spicer et al., 1976). The topography is predominantly level or near-level both in the terrace upland and backswamp areas. Steeper slopes occur in the southwestern part of the parish along the Mississippi River (Spicer et al., 1976).

Faulting within the Lower Mississippi Valley and the adjacent deltaic plain has been extensively documented. Most of the documented faulting that occurs within the project area is related either to much older faults occurring in deep-seated bedrock or to down-step faulting towards coastal Louisiana. The surface expressions of faulting in the area are inferred rather than precisely located.

The Darrow Dome, which is an intrusive or piercement dome, has undoubtedly caused some faulting near its cap in the vicinity of the project area (Figure A-12) (Dunbar & Torrey, 1991). In addition, the Sorrento Dome, also a piercement dome, is located near Sorrento at the eastern end of the project area (Howe et al., 1938). However, in both locations, there is no measurable relief or visible displacement, nor is there any evidence of faulting on topographic maps or aerial photographs.

Surface topography along Routes A and B is generally of low relief with surface elevations ranging from about 12 to 15 feet msl at the western end of the main spur near Humpheries, to about 5 feet msl at the eastern end of Routes A and B.. Both routes cross the flat Pleistocene terrace deposits in the project area. Topography is also of low relief along the industry connector line, with surface elevations ranging from about 20 feet msl at the western end of the line to about 10 feet msl near the point where the connector line joins Routes A and B.

### 2.3.2 Soils

Table 2-10 shows the physical characteristics of the soil series that occur in Ascension Parish. One measure of soil productivity is the ability to support different types of plant growth that could form key components of wildlife habitat. Table 2-11 shows the suitability of Ascension Parish soils to support various types of wildlife habitat.

All soils associations in Ascension Parish can be grouped into three physiographic units: (1) loamy soils on terrace uplands; (2) loamy and clayey soils on natural levees; and (3) loamy and clayey soils on the Mississippi River alluvial plain (Spicer et al., 1976). Figure A-13 shows the spatial distribution of these physiographic units, the soils associations characteristic of each unit, and the location of Routes A and B and the industry connector line with regard to the major soil

associations.

**Loamy Soils on Upland Terraces**

Loamy soils on terrace uplands include the Olivier - Calhoun association (covering 9 percent of the Parish), the Acy - Essen - Jeanerette association (covering 8 percent of the Parish), and the Deerford - Verdun - Frost association (covering 9 percent of the Parish)(Spicer et al., 1976).

The two major soils that make up the Olivier - Calhoun association in the Parish are Olivier silt loam and the Calhoun silt loam. The Olivier series is located along ridgetops and side slopes on terrace ridges. The series has a surface layer of silt loam and a subsoil layer of silt loam or silty clay loam. The Calhoun series is located in depressed areas and small drainageways on terrace uplands. The series has a surface and subsurface layer of silt loam and a subsoil of silty clay loam.

Three major soils comprise the Acy - Essen - Jeanerette association including Acy silt loam, Essen silt loam, and Jeanerette silt loam. The Acy series is located on broad flats at intermediate levels on terrace uplands. The Essen series is located at the highest elevation on broad flats of terrace uplands. The Jeanerette series is located in depressions of upland terraces. The soils in this association all have a surface layer of silt loam and a subsoil of silty clay loam.

The Deerford - Patoutville complex, Deerford - Verdun complex, Verdun silt loam, and Frost silt loam are the four major soils that represent the Deerford - Verdun - Frost association in Ascension Parish. The Deerford series and Verdun series are located on broad flats of upland terraces. The Deerford series have a surface layer of silt loam and a subsoil of silty clay loam. The Verdun series consists of a surface layer of silt loam, a subsoil layer of silty clay loam, and an underlying layer of silt loam. The Frost series is located in drainageways, level areas, and depressed areas on terrace uplands.

**Loamy and Clayey Soils on Natural Levees**

The category of loamy and clayey soils on natural levees include: the Commerce association, the Galvez - Commerce association, and the Sharkey association. These associations collectively cover 41 percent of the Parish.

Natural drainageways hardly exist in the Commerce association, though these soils have been substantially altered by manmade drainage ditches which divert surface runoff away from the river into the backswamp. The two soils that represent the majority of the soils in the Commerce association in Ascension Parish include Commerce silt loam and Commerce silty clay loam.

This series is located on the natural levees of the Mississippi River and its tributaries. Commerce soils have a surface layer of silt loam or silty clay loam and a subsoil of stratified silt loam and silty clay loam. This association covers 16 percent of the Parish.

The Galvez-Commerce association is drained by natural and manmade drainage ditches mainly into Bayou Manchac and New River. Galvez silty loam, Galvez silty clay loam, Commerce silt loam, and Commerce silty clay loam comprise the four major soils that represent the Galvez - Commerce association. Both the Galvez and Commerce series are located in the higher and intermediate areas along Bayou Manchac and the New River and its tributaries with the Commerce series occurring typically adjacent to stream channels. Both of the series have a surface layer silt loam or silty clay loam with the Galvez series having a subsoil of silty clay loam, and the Commerce having a stratified subsoil of silt loam and silty clay loam. This association covers 8 percent of the Parish.

The Sharkey association has few natural drainageways, but instead is drained mainly by manmade ditches and canals into the backswamp areas. Sharkey silty clay loam, Sharkey clay, and Sharkey clay, frequently flooded comprise the three major soils in the Sharkey association. The Sharkey series is located at moderately low or intermediate elevations on natural levees of the Mississippi River and its tributaries. The surface soil layer is comprised of silty clay loam, and the subsoil is clay. This association covers 16 percent of the Parish.

**Loamy and Clayey Soils on the Alluvial Plain**

The Parish's remaining association grouping consists of loamy and clayey soils on the alluvial plain, and includes the Convent association, Sharkey - Fausse association, and the Barbary association. Comprising 33 percent of the Parish's soils, these associations are subject to flooding.

The Convent association consists of loamy soils in a narrow band on each side of the Mississippi River, between the flood protection levees and the river. There is no defined drainage pattern in this association because scouring and deposition by floodwater have left a series of ridges and swales. The Convent association mainly consists of Convent silt loam and Convent soils that are frequently flooded. This series is located along ridges of the alluvial plain. The surface layer is composed of silt loam, and the subsoil is composed of very fine sandy loam. This association covers about 2 percent of the Parish.

The Sharkey - Fausse association consists of frequently flooded to nearly continuously flooded, clayey soils with no distinct drainage patterns. This association is composed of the

Fausse Association, Fausse - Galvez association, Sharkey silty clay loam, Sharkey clay, and Sharkey clay, frequently flooded soils. The Fausse series occurs in the lowest depressed areas of the backswamps and on the natural levee of the alluvial plain. The Sharkey series is located in the highest areas of the depressions in the backswamps and on the natural levees on the alluvial plain. Both the Sharkey and Galvez series have clay layers on the surface and in the subsoil. This association covers 12 percent of the parish.

The Barbary association also shows no distinct drainage patterns. This association occurs in swamps on the alluvial plain. Barbary soils have a thin surface layer of muck that overlies a semi-fluid layer of mucky clay and clay underlain by semi-fluid clay. This association covers approximately 17 percent of the parish.

**Soils Along Routes A and B, and the Industry Connector Lines**

Figure A-14 shows the location of soils within the Routes A and B study corridors. These corridors include the rights-of-way themselves and 1,000 feet on each side of the rights-of-way. Figure A-15 shows the same for the industry connectors. Table 2-12 lists the soils present within the rights-of-way and associated facilities, and shows which soils are classified as hydric.

Soil capability limits represent the ability to support the production of field crops, the risk of soil-related damage when crops are planted, and the ability of soil conservation measures to prevent damage. The capability limit is measured by a relative scale, with Class I soil having the fewest limitations to crop selection and Class VIII the most limitations. The predominance of soils in the project area are rated as Class II (i.e., soils in the Acy-Essen-Jeanerette associations) and Class III (i.e., the majority of soils in the Sharkey associations). The only exception are areas in which soils consist of Sharkey clay-frequently flooded. In those areas the capability limit is Class V, which includes soils which are not likely to erode but have other limitations, i.e., they are impractical to remove, which limits their use largely to pasture, woodland, or wildlife habitat. In addition, all soils within the project area have a subclass of "w," denoting that the capability limitations are related to wetness rather than dryness or erosion.

### 2.3.3 Mineral Extraction

Oil and gas production is the only recorded mineral extraction in the project area, although there may be some salt extraction occurring in the Sorrento salt dome. These wells are concentrated in hydrocarbon-producing fields often concentrated around salt domes (Figure A-12). The most notable fields are

those associated with the Darrow Dome and Sorrento Dome, which are located south of the project site.

Figure A-16 shows the location of project area oil and gas wells. There are no oil or gas wells recorded within the footprint of Routes A, B, or the industry connectors (LDNR, OC, GD 1996). The three wells numbered on Figure A-16 have been plugged and abandoned. SEA derived Figure A-16 from preliminary data provided by LDNR, OC, and GD, and has not verified the data. As a result, the existing location of some of the wells may not be as shown on the map. However, the salient fact is that only three wells are in proximity to the potential rail routes, and all three have been plugged and abandoned.

### 2.3.4 Climate

The climate of Ascension Parish is warm, humid, and subtropical with hot and humid summers and mild winters. Weather patterns in the area are influenced to a large degree by the close proximity of the Gulf of Mexico and the many lakes and streams in the area. Throughout the year, these waters influence the relative humidity and temperature regime by decreasing the range between the extremes. During the summer months, prevailing southerly winds produce conditions favorable for almost daily sporadic afternoon thunderstorms. During the winter months, the area is subjected alternately to the southerly flow of warm tropical air and the northerly flow of cold continental air, in periods of varying lengths. The resulting frontal movements produce squalls and sudden drops in temperature. In addition, the Mississippi River water and nearby lakes and marshes tend to be colder than the surrounding air temperatures thus, promoting the formation of river fog.

The long-term (1961-1990) temperature record for Carville (5 miles west of the Geismar project area) shows the mean average temperature in the area to be 67.2 degrees Fahrenheit (°F). The mean maximum and minimum temperatures are 77.5°F and 57.0°F, respectively. The temperature average for the period of record indicates a clear annual cycle with the monthly average temperature varying from a minimum of 49.6°F in January to a maximum of 81.9°F and 81.6°F in July and August, respectively (Figure A-17). Figure A-17 also shows the comparability of the average temperature from the Carville weather station to that of the Baton Rouge weather station. More extensive meteorological records are available from the Baton Rouge weather station, such as extreme temperature values (Table 2-13). The highest and lowest temperature on record in nearby Baton Rouge is 103°F and 8°F, recorded in June 1954 and December 1989, respectively. The warm temperatures contribute to an annual mean freeze-free period of approximately 277 days in the project area. The average first occurrence of temperatures below 32°F in the Parish is November 27 and average last occurrence is February 23; the average number

of frost days per year is 17 (Spicer et al., 1976).

Average annual precipitation in Carville is 60.16 inches and varies slightly around a mean of 4.98 inches per month. Summer showers occur frequently and the highest average monthly precipitation usually occurs in July and August (Figure A-18). However, winter rains associated with frontal passages occur from mid-December to mid-March and create an additional seasonal peak in precipitation. The maximum monthly rainfall on record in the project area was measured in June 1989, at 23.18 inches. The minimum monthly precipitation was recorded in October 1978, when only traces of rainfall were measured. Table 2-14 gives the estimated storm magnitudes of various durations and recurrence intervals at the Baton Rouge weather station, near the project area. Table 2-13 shows maximum recorded daily precipitation data at Baton Rouge for each month. These data indicate that the highest amount of rainfall measured in a 24-hour period was recorded in April 1967, at 12.08 inches. This event approximated the 100-year storm magnitude for the project area (Table 2-14). Hail, sleet or snow are infrequent occurrences within the project area.

Prevailing winds in the area are from the south to southeast during the months of March to June and primarily from the east and northeast from August to February (Figure A-19). Sustained wind velocities are highest in the winter and spring months. The average annual wind speed is of 7.6 miles per hour (mph). Monthly mean wind speeds tend to increase with the passage of winter cold fronts through the area. As cold fronts pass, the prevailing winds from the southeast shift to a northerly direction, and favor the development of strong gusty winds. After the front passes, winds are generally calm and from the north to northeast. During the summer months prevailing winds carry moist air favorable to the development of sporadic and localized thunderstorms. Table 2-13 shows maximum recorded wind velocities in the project area. The highest wind speed within a 1-minute timeframe was recorded in September 1965 at 58 mph during a northeast wind. The highest peak gust on record was associated with a southeast wind in August 1992 (70 mph). Additionally, during the summer and fall, extreme storm events associated with hurricanes and tropical depressions can have sustained wind velocities exceeding 100 mph. The mean recurrence interval for hurricanes making landfall in southern Louisiana is estimated to be at 1.3 years (Penland et al., 1989).

Tornadoes are reported nearly every year in Louisiana. The state has an average of eight tornadoes a year. Every parish has had a least one tornado. There are 16 parishes in Louisiana that have had more than 10 tornadoes from 1916 to 1970; however, Ascension Parish is not among these tornado-prone parishes (NEWTON, 1987).

## 2.4 WATER RESOURCES

### 2.4.1 Surface Water

**Surface Water Bodies**

The surface water resources in the project area are all located within the Lake Pontchartrain Basin (Figure A-20). Surface waterways in the project area consist of streams, ditches, and canals, which are part of three drainage areas: 1) New River headwaters; 2) Smith Bayou; and 3) Bayou Conway (Figure A-21).

The headwaters of the waterways in the project area originate near the base of the natural levee along the east bank of the Mississippi River. (The natural levee is the topographically elevated zone parallel to the river that formed through historical sediment deposition during periods of river overflow.) The waterways are freshwater systems that eventually drain into Blind River, which flows into Lake Maurepas (Figure A-20). Lake Maurepas is located west of Lake Pontchartrain and is hydraulically connected to it. The average salinity of Lake Maurepas, measured between 1951 and 1968, was 0.8 parts per thousand (ppt), with a range between 0.14 and 1.5 ppt (LDOTD, 1991). Based on these values, SEA considers the waterways in the project area to be freshwater habitats.

Table 2-15 lists all streams crossed by Routes A, B, or the industry connectors. These waterways were previously dredged to better drain floodwater from low-lying areas, and are included in the Parish's on-going debris removal and maintenance program for flood control purposes (pers. Comm., Mr. Frank Frederick, Director of the Ascension Parish Department of Public Works, October 21, 1996). Most of these streams pass under area roads through culverts, although wider sections of Bayou Conway are spanned by bridges. The following paragraphs describe the primary waterways crossed:

**Smith Bayou**. The bayou originates near the base of the Mississippi River levee and flows into Bayou Francois. The bayou has a channel width of approximately 12 feet and a top bank width of 25 feet at the Ashland Road and LA 30 crossing which is located near the common crossing of Routes A and B. The water depth was recorded as 0.75 feet on October 25, 1996 (during the wetlands survey); the flow velocity was zero. No water was observed in the channel during the interagency site visit on September 12, 1995, indicating that the stream is intermittent at the proposed crossing site. The west bank of the bayou at the crossing site is forested but the east bank has been cleared of vegetation to provide access for machinery to remove debris from the channel. The industry connector lines to BASF and Borden cross several tributaries of Smith Bayou which also have

intermittent flow characteristics.

**Bayou Conway**. This bayou serves as a major drainage conduit in Ascension Parish. The common alignment of Routes A and B would cross Bayou Conway about 0.5 miles west of the LA 44 bridge (see Figures A-2 and A-20). At the bridge, the channel width of the bayou is about 40 feet (at average water level) and the top bank width is about 70 feet. During field observations on October 25, 1996, the water depth was 3 feet, and there was no measurable flow velocity (the water was stagnant). Aerial photographs of the bayou from different dates indicate that the flow at this location is intermittent (i.e., it dries up periodically).

Route A would cross Bayou Conway a second time near Brittany Road, about one mile northwest of the Town of Sorrento. At this location, the bayou has a width of 50 feet (at average water level); the top bank width is about 60 feet. Both sides of the proposed crossing site are forested. The bayou at this location drains a considerably larger area than it does at the crossing noted in the preceding paragraph, and aerial photographs provide evidence that, at this location, it carries water at all times of the year.

Route B would cross Bayou Conway a second time near the confluence of the bayou and Hachett Canal. At the nearby Hodgeson Road bridge, the top bank of Bayou Conway is 50 feet wide. On October 25, 1996, the water depth was 5 feet and the flow velocity was 0.25 feet/sec. Both sides of the Bayou at the proposed Route B crossing site are forested. Aerial photographs indicate that Bayou Conway was straightened in the vicinity of the crossing to improve drainage and provide evidence that, at this location, the channel carries water throughout the year.

**Hachett Canal**. Hachett Canal (crossed only by Route A) is a straight, narrow, manmade canal that drains the cleared areas along the backslopes of the east bank of the Mississippi River levee. The canal drains into the Bayou Conway approximately 0.7 miles west of LA 941. The canal at the north side of I-10 has an estimated width of 25 feet at average water level and a top bank width of 33 feet. On October 25, 1996, the water depth was 2.5 feet with no measurable flow velocity. Aerial photographs of the canal indicate that the water flow in Hachett Canal is intermittent and that the Route A crossing is in a cleared field.

**Tributary of Bayou Francois**. This tributary originates west of Hodgeson Road in the southeast part of Gonzales. It flows eastward into Bayou Francois, crossing US 61 and the existing KCS rail line approximately 1 mile southeast of Brittany. Route B would cross this tributary near LA 941, where its width is approximately five feet. The October 1996 field survey showed water depth at this location to be 0.5 feet, with zero flow

velocity. Aerial photographs at this location indicate that the water flow is intermittent.

The set out track for Routes A and B (parallel to the existing KCS line) would also cross Bayou Francois. Water is expected to be in the channel at this location throughout the year, given the high water table and the proximity to Bayou Francois. The existing KCS line crosses this tributary on a 70-foot long bridge.

**Surface Water Hydrology**

Figures A-22 and A-23 show hydrologic infrastructure and flow direction near Routes A and B and the industry connectors, respectively. The figures show that surface water in the project area generally flows eastward. Topography in the area is relatively flat, ranging between approximately 3.5 and 20 feet NGVD. As a result, drainage divides are frequently poorly defined, and, in some cases, road and rail beds are a primary factor in determining local drainage patterns. There are no published field measurements of stream discharge or stage data for any of the reaches which Routes A, B, or the industry connectors would cross. Table 2-16 shows predicted and design discharge values for other locations in the project area.

Project area waterways near the proposed rail crossings may be influenced by periodic flow reversals, although available information is inconclusive. Tide-induced water level changes are known to occur farther to the east at Lake Maurepas and Blind River (pers. Comm., J. Miller, Corps, New Orleans District, Hydraulics Branch, October 1996); however, the maximum extent of inundation is unknown. Ascension Parish officials indicated that easterly winds combined with high water levels in the Pontchartrain Basin could result in locally elevated water levels to at least the Bayou Francois pumping station located about 2.6 miles east of US 61 (pers. comm., F. Frederick and M. DeBosier, Department of Public Works, October 21, 1996). These high water levels could result in local flooding when combined with high-intensity rainfall. Under worst case conditions, it seems reasonable to assume that the tide can back water up in waterways crossed by the proposed rail line to the point where the flow direction could reverse from its normal easterly flow pattern.

**Surface Water Quality**

The waterbodies in the project area are part of the Blind River drainage area, labeled in Figure A-20 as subsegment 040401. Designated uses for waterways in this drainage area, west of the existing KCS line, are as follows:

**Primary contact recreation**. Activities which include prolonged body contact with the water, such as swimming or

diving.

**Secondary contact recreation**. Recreational or other water use with only incidental body contact with the water. Such activities include fishing, boating, and wading.

**Propagation of fish and wildlife**. This includes the use of aquatic ecosystem by organisms for food supply, habitat, and propagation. It further includes the maintenance of the water quality at a level that prevents human health risks from the consumption of fish and other aquatic organisms.

None of the water bodies in the project area are designated for drinking water supply or as outstanding natural resources according to the most recent version of the Louisiana Environmental Quality Regulations (amended in 1996). The absence of boat launches also suggests that there is limited use of the water bodies for recreation.

Water quality criteria for the three designated uses are promulgated by the LDEQ in the Environmental Quality Regulations, Title 33, Part IX Water Quality (amended in 1996). For the subsegment in which the proposed project is located, the following numerical water quality criteria apply: chlorine- no greater than 250 milligrams per liter (mg/l); sulphate- no greater than 75 mg/l; dissolved oxygen- no less than 4.0 mg/l; pH- between 6.0 and 8.5 pH units; temperature- no greater than 30 degrees Centigrade; and total dissolved solids- no greater than 500 mg/l. Water quality standards for toxic substances are primarily derived from standards established by the U.S. Environmental Protection Agency.

There are no water quality monitoring stations along the waterways in the project area (pers. comm., LDEQ, Dugan Sabins, January 3, 1997). The closest location for which water quality data are available is the Blind River. The sampling location (considered by LDEQ as representative of the subsegment) is within the same subsegment as the proposed project but about 15 miles directly east of the crossing between LA 44 and Bayou Conway. These data indicate that this subsegment of Blind River partially supports its designated uses. Specifically, it partially supports primary contact recreation, fully supports secondary recreation, and does not support fish and wildlife propagation. Existing water quality problems in the subsegment consist of elevated concentrations of nutrients, pathogens, and oil and grease; siltation; organic enrichment; low dissolved oxygen concentrations; and habitat alterations. Non-point sources are identified as the major contributors to water quality problems in the area, mainly due to petroleum-related and industrial activities, septic tanks, recreational activities, and

upstream sources (LDEQ, 1994).

SEA does not know the extent to which non-point sources affect water quality in Smith Bayou, Bayou Conway, and Hachett Canal. There are no available water quality data for waterways in the project area (pers. comm., M. Fleming and J. Holmes, LDEQ, and A. Schertz, Terra Consulting, December 27, 1996) and no project-specific sampling program has been established. A review of LDEQ files indicates that there are four NPDES discharges in the Routes A and B vicinity: (1) Air Products, discharging into Smith Bayou (permit number LA 006613); (2) Vulcan Chemical, discharging into Smith Bayou (permit LA0002933); (3) Uniroyal, discharging into New River (permit number LA0000752); and (4)Borden, discharging into New River (permit number LA0000281). Three of the four discharges are associated with non-process stormwater runoff; the fourth (Uniroyal) is associated with treated process wastewater. These point source discharges are located near the western end of Routes A and B and the industry connector lines (see Figure A-6 for the location of these properties).In view of the fact that project area waterways drain industrial and residential areas as well as pastureland, it is possible that these waterways have elevated contaminant levels.

### 2.4.2 Floodplains

Figure A-24 shows that most of the project area lies within the 100-year floodplain. Although levees along the Mississippi River prevent flooding from the river in the project area, there may still be flooding from local waterways. Slope from the Mississippi River levee to the swamps east and south of the project area is 1 percent or less. Although project area flooding from local waterways may occur any time during the year, most floods have occurred from severe rainfall events in the spring and during hurricanes in the summer and fall. There was major flooding in the Gonzales area in 1926, 1961, 1966, and 1977.

Table 2-17 shows that about 70 percent of the ROW of both Routes A and B is within the 100-year floodplain. The interchange yard is entirely within the floodplain. Only 3 percent of the industry connector rights-of-way is within the 100-year floodplain.

The 100-year flood elevation is over 13 feet NGVD at Smith Bayou, near where Routes A and B would cross, and also at a tributary of Smith Bayou near where the industry connector would cross. Further east along Routes A and B the 100-year flood elevation is lower, ranging between 6.5 and 7.0 feet NGVD. The elevations of a flood with an estimated 50-year recurrence interval on Bayou Conway are about 0.2 feet below the 100-year

flood elevation. The elevations of the 10-year flood are approximately 0.4 feet below the 100-year flood elevation, or approximately at an elevation of 6.1 to 6.5 feet NGVD. As some land in the eastern part of the project area is below this elevation, these areas are flooded at least once every 10 years on average. However, locating all areas below the 10-year flood elevation would require a topographic survey (the need for, and timing of, such a topographic survey are discussed in Chapter 4, Section 4.4.1).

The Federal Emergency Management Agency (FEMA) indicates that, although the elevated KCS railbed and US 61 roadbed do affect flood levels in Gonzales, the impact is relatively minor because flood velocities in Gonzales are typically low. The low velocities are largely a result of the comparatively flat topography.

As discussed in greater detail in Section 2.1.8 of this chapter, the Town of Sorrento plans to build a flood control levee near where Route A would cross Brittany Road. This would alleviate local flooding of yards and streets by Bayou Conway and its tributaries (there have been no reports of flood damage to homes in this area). Construction of this levee is presently on hold because of higher priority flood protection projects elsewhere in the Parish.

### 2.4.3 Groundwater

**Groundwater Aquifers**

Fresh groundwater is available in moderate to large quantities in the project area (Long, 1965). Aquifers in the project area are part of two regional systems: the Chicot Equivalent Aquifer System and the Mississippi River Alluvial Aquifer System (Lovelace and Lovelace, 1995; see Figure A-25):

**Chicot Equivalent Aquifer System**. Freshwater from this aquifer system is generally of excellent drinking water quality (Stuart, 1994). The system typically yields 500 to 1,000 gallons per minute for regular wells and 3,500 gallons per minute for large capacity wells. The system consists of two freshwater aquifers: the Gonzales-New Orleans Aquifer and the shallow Norco Aquifer (Stuart, 1994). Deeper aquifers (such as the "400-Foot Sand of the Baton Rouge Area") contain brackish water (Figure A-26).

- **Gonzales-New Orleans Aquifer**: The Gonzales-New Orleans Aquifer is the largest freshwater aquifer of the Chicot Equivalent Aquifer System. The aquifer consists of sand and gravel ranging in thickness from 150 to 300 feet (Figure A-26). The depth of the aquifer horizon varies, but most wells in the area that rely on this

aquifer are drilled to a depth of about 400 feet. The aquifer is continuous, interrupted only by discontinuous, thin clay beds.

Freshwater is found throughout the full thickness of the Gonzales-New Orleans Aquifer. Aquifer recharge occurs primarily from surficial sands in parishes north of the project area (Figure A-27). Water levels within the aquifer, particularly in wells located near the Mississippi River, fluctuate in response to rising and falling river stages. These fluctuations indicate a hydraulic connection, and therefore, some limited recharge from the river. In addition, there is some recharge into the Gonzales-New Orleans Aquifer from the overlying Norco Aquifer which is also hydraulically connected to the river (Long, 1965; Stuart, 1994). The aquifer has a permeability of 890 to 1,070 gallons per day (gpd) and a transmissivity of approximately 235,000 gpd/ft (Long, 1965; Tomaszewski, pers. comm., USGS, October 1996).

Limited discharge from the Gonzales-New Orleans Aquifer occurs upward into the overlying Norco Aquifer, particularly when river stages are low and piezometric levels are low in the Norco Aquifer. There is also some limited discharge into the deeper underlying sands (Long, 1965).

- **Norco Aquifer**: This shallow aquifer extends between approximately 150 and 350 feet below the land surface. The portion of the Norco Aquifer that exists in the project area represents the northwestern extent of the aquifer; the main portion of the aquifer is located further east and south ( pers. comm., D.C. Dial, Capital Area Water Association, October 1996). Although the aquifer is continuous beneath the entire project area, it gradually becomes thinner in the north (Long, 1965).
  The aquifer consists mostly of sand and gravel. There have been no specific tests on permeability and transmissivity on the deposits of the Norco Aquifer. However, the similarity in physical parameters (e.g., grain size, size distribution, and pore-space ratio) suggest that these two measures of yield are similar to those in the underlying Gonzales-New Orleans Aquifer (Long, 1965). The aquifer contains freshwater throughout its entire vertical strata in the eastern part of the project area (eastward from the site of the proposed interchange yard). Between the interchange yard and the Mississippi River, brackish waters have invaded the aquifer (Long, 1965). The brackish water intrusion may originate from the Darrow Salt Dome (see

Figure A-12).
The Norco Aquifer in the vicinity of the project area is recharged through surficial sands north of the project area, by the Mississippi River, and from the underlying Gonzales- New Orleans Aquifer. Limited recharge also occurs via rainfall (Stuart, 1994). The Norco Aquifer discharges primarily into the Mississippi River and its shallow surrounding alluvial sand deposits.

**Mississippi River Alluvial Aquifer System**. This aquifer system extends along the banks of the Mississippi River, and its deposits consist of silty sands and fine sands. This system is not a significant water supply source in the project area. Although there is limited use of this aquifer system for agricultural purposes (i.e., irrigation), it is more important in the project area as a source for recharge of the Norco and Gonzales-New Orleans Aquifers (Long, 1965). Recharge of this system is from the Mississippi River and rainfall (Long, 1965; Stuart, 1994).

## Groundwater Hydrology

Groundwater in the major aquifers of the area generally moves south toward Lake Pontchartrain (Figure A-28). During the annual low river stage of the Mississippi River, which typically occurs during the fall, groundwater in the project area moves to the southwest towards the river (Long, 1965; Figure A-30, Part A). During the annual high water stage, which typically occurs during the spring, groundwater movement is away from the river toward the east and northeast (Figure A-30, Part B).

## Groundwater Supply

The project area contains several public wells and numerous private wells. The public supply wells serve comparatively small communities. Specifically, a drinking water well is classified as a public supply well if it serves more than one house.

Figure A-31 shows water wells within one mile of the project site. Appendix D, Attachment 1, lists the water wells within one mile of the project site.

Figure A-32 shows water wells within a 2,000 foot wide corridor along Routes A and B, while Figure A-33 shows the same for the industry connectors. Most of these wells are used for domestic and public water supply purposes, although some supply water for irrigation and industrial use (see Table 2-18). These wells can be summarized as follows:

- **Route A**: 24 wells with depths

ranging between 108 to 495 feet.

- **Route B**: 30 wells with depths ranging between 260 and 510 feet.
- **Industry connectors**: 10 wells with depths ranging between 271 and 508 feet

**Uncapped Wells**

Improperly abandoned wells can allow the movement of contaminants from the surface into the aquifer. Contaminants can move through the casing or uncapped well piping. Table 2-18 lists three abandoned wells within the study corridor (Well Nos. 202, 203, and 5043). There is no available information as to whether these wells are properly capped (pers. comm., B. Bolourchi, LDOTD, September 1996).

**Groundwater Quality**

Groundwater quality data for project area wells are very limited. There is no requirement for water quality testing of private wells. The only recent groundwater quality data provided by LDEQ were 1994 data on two wells on the BASF and the Vulcan Chemical property. The BASF well is 459 feet and draws water from the Gonzales-New Orleans Aquifer; the depth of the Vulcan Chemical well is not known. The well samples were analyzed for a wide variety of industrial chemicals, including many of the compounds that could potentially be shipped along the proposed rail line. These chemicals include heavy metals, volatile and semi-volatile organic compounds, pesticides, and PCBs.

Table 2-19 summarizes groundwater data from the above two wells (Appendix D, Attachment 2, presents the data in detail). Based on these limited data, groundwater quality is very good. All compounds with regulatory standards were either below the detection limit or below regulatory standards. The only exceptions were dissolved solids, chloride, and iron in the Vulcan Chemical well; however, these parameters were elevated due to natural conditions in the subsurface, specifically, higher salinity. The Vulcan well is in proximity to the Darrow Salt Dome (see Figure A-6 for the location of the Vulcan property and Figure A-12 for the location of the salt dome).

### 2.4.4 Wetlands

Wetlands were delineated in the field by Coastal Environments, Inc. (CEI) in October and November 1996, on those portions of Routes A and B and the industry connectors for which access was granted by landowners. When permission to conduct on-site wetland surveys was denied, CEI assessed the presence of

wetlands by reviewing existing data, observing from nearby public access points, and comparing site investigation data for adjacent or comparable sites. Existing data utilized during this delineation included USGS quadrangle maps, aerial photographs (Ammann International, Corp. 1955/56, National Aeronautic and Space Administration [NASA] 1988, 1995), 1972 soil survey maps (Spicer *et al*., 1976), and soil data bases (*Soil Mapping Units and Hydric Soils Designations, Louisiana* [USDA-SCS, 1990]). Figure A-34 shows those areas for which wetland delineations were based on field survey results.

The presence of wetlands during field surveys was determined based on the methodology described in the *Corps of Engineers Wetlands Delineation Manual* (Corps, 1987). Positioning was done with the Global Positioning System (GPS). Use of this methodology is required to define wetlands for the purposes of Section 404 of the Clean Water Act, which requires a permit to be issued by the Corps for any dredging or filling in wetlands. Three parameters must be present before designating areas as wetlands under Corps jurisdiction: (1) hydrophytic vegetation, (2) hydric soils, and (3) indicators of wetland hydrology.

CEI conducted the field survey along parallel transects to the proposed rights-of-way and collected soil cores every 25 to 50 feet. As appropriate, CEI collected additional samples to determine the location of the wetland/non-wetland boundary. The location of wetland boundaries was documented with the aid of a GPS. Observations were made on the vegetative composition, soil characteristics, and local hydrology. A wetland delineation report was prepared for submittal to the Corps, New Orleans District, the agency responsible for final determination of jurisdictional wetlands and issuing a Section 404 permit.

Table 2-20 lists the wetland areas associated with Routes A, B, and the industry connectors, while Figures A-35 and A-36 show the general location of those wetlands (Appendix D, Attachment 3, shows a more detailed view of those wetlands). The site limits of Route A and its ancillary features include an estimated total of 94 acres of wetlands, which is about 62 percent of the total required acreage (152 acres). Route B and its associated features include about 83 acres of wetland, out of 138 total acres required. The industry connector lines would include about 6 acres of wetlands, out of around 46 total acres required.

Two predominant wetland habitat types were noted during field inspection, in roughly equal proportions: forested wetlands and cleared pastures. The forested wetlands consist of typical bottomland hardwoods characterized by hydrophytic vegetation which has adapted to varying periods of flooding or water-saturated soils. Species found on various sites included: several oak species, green ash, sweetgum, American elm, bald cypress, and tupelo gum. Even though the pastures observed in the

field were channelized to reduce the occurrence of standing water, their hydrology was often not sufficiently altered to eliminate these areas as regulated wetlands.

## 2.5 BIOLOGICAL RESOURCES

### 2.5.1 Flora

Undisturbed areas are rare in Louisiana; essentially no virgin habitat remains (Smith 1988). However, a rich array of native vegetation thrives in the state, with more than 70 habitat divisions identified by the Louisiana Department of Wildlife and Fisheries (LDWF) and its Natural Heritage Program (NHP). Two primary natural community systems are found in the project vicinity. Both are palustrine forest systems; they are: forested swamps and bottomland hardwood forest.

Vegetative habitats are often very diverse ecosystems with complex vertical species zonation. The following discussion indicates only the dominant species of the habitat type. Table 2-21 lists those species actually observed along the Routes A and B and industry connector rights-of-way during field surveys as well as species which may be expected to occur in the project vicinity.

**Forested Swamps**

Tupelo-blackgum swamps, of limited size and distribution, are the only type of forested swamp found within the project area. These swamps occur along drainageways and are backwater swamps of the Mississippi River. Dominant species in the overstory include both blackgum and tupelo gum; bald cypress is also occasionally present. Understory species often include red maple, black willow, pumpkin ash, green ash, water elm, water locust, Virginia willow, and buttonbush, as well as saplings of the overstory species. A tupelo-blackgum swamp may also include swamp privit, laurel oak, and swamp dogwood.

**Bottomland Hardwood Forests**

The dominant community system identified within the project area is bottomland hardwood forest. There are four bottomland hardwood habitats within this community system, identified by the dominant species in each: (1) sugarberry, American elm, green ash; (2) sycamore, sweet gum, American elm; (3) sweet gum, water oak; and (4) live oak forest.

The “sugarberry, American elm, green ash” habitat occurs in the floodplains of rivers and along drainage sloughs. This habitat is typically considered wetland due to the preference of these species for saturated soil conditions. Associated species

in the mid-story include water hickory, Nuttall oak, willow oak, water oak, overcup oak, sweet gum, box elder, winged elm, red maple, water locust, sycamore, swamp dogwood, hawthorns, and red mulberry.

The “sycamore, sweet gum, American elm” habitat occurs in the overflow areas of streams and rivers of the alluvial valley, and is often inundated for one or two months a year. Although this habitat type is extremely diverse, associated species could include: pecan, black gum, sugarberry, cottonwood, box elder, black willow, water oak, giant cane, deciduous holly, green hawthorn, and pokeweed.

“Sweet gum-water oak”-dominated habitat is also located in alluvial floodplains, but on land with slightly better drainage. Other common species in the overstory often include sugarberry, green ash, American elm, and Nuttall oak. Species present in the mid-story include red maple, red mulberry, greenbriars, dwarf palmetto, deciduous holly, green hawthorn, pepper vine, trumpet-creeper, and poison ivy.

“Live oak forest” habitat is typically found along natural levees on well-drained non-wetland soils within the alluvial valley. In addition to the dominant live oaks, important co-dominants include water oak, American elm, sugarberry, red maple, and green ash. Other overstory species may include cherrybark oak, Nuttall oak, honey locust, sweet gum, box elder. Shrubby, mid-story species often include: sabal palm, deciduous holly, green hawthorn, swamp dogwood, water elm, wax-myrtle, elderberry, and red bay.

**Habitats Along Routes A and B and the Industry Connector Lines**

Figure A-37 shows the habitats present within the Routes A and B rights-of-way and within 1,000 feet on each side of those rights-of-way, while Figure A-38 shows the same for the industry connectors. These habitat maps were based on interpretation of recent, low altitude black and white and color infrared aerial photography (Gulf Coast Aerial Mapping, Inc., 1994, and NASA, 1990 and 1995). The maps were refined based on field observations.

Table 2-22 lists the amount of each habitat type within the site boundaries of Routes A and B and the industry connectors. Approximately 51 percent of Route A and 55 percent of Route B are forested, primarily by Hackberry-American elm-green ash habitat. Pasture/cleared land habitat comprises 45 percent of Route A and 42 percent of Route B. Developed land accounts for around 4 percent of Route A and 5 percent of Route B. The industry connector rights-of-way are approximately 30 percent forested, 41 percent pasture/cleared area, 26 percent developed, and 3 percent water.

### 2.5.2 Fauna

**Mammals**

Most mammals which would be found on the project site tolerate human presence, and are likely to be found in or near all of the habitats shown in Figures A-37 and A-38. Species which can live in urban environments include Virginia opossum, raccoon, and striped skunk. Table 2-23 is a comprehensive listing of mammals expected to occur in the project area. This table also identifies the species most likely to be found in specific habitats (e.g., water, wetlands, and pasture/cleared land).

Louisiana is the nation's top producer of fur pelts. Fur bearing mammals which may be found in the project corridor include: beaver, bobcat, mink, long-tailed weasel, river otter, muskrat, nutria, opossum, raccoon, spotted skunk, and striped skunk. However, the prevailing decline in demand for fur coats has resulted in a substantial decrease in the price that trappers can expect for pelts. Many traditional fur buyers are getting out of the business. Consequently, trapping in the entire state is presently at very low intensity. In Ascension Parish, a total of 2,626 animals (valued at a total of $9,612) were trapped in 1994. Known trapping sites in Ascension Parish are confined to the swamps and marshes south and east of the project area.

Game species found at the project location include: white-tailed deer, eastern cottontail, gray fox, eastern fox squirrel, and the eastern gray squirrel. Louisiana does not have a tag and validation program, which makes it difficult to quantify game harvested in the state as a whole or in specific areas. LDWF considers the game harvest in Ascension Parish to be low. For example, LDWF indicates that only an estimated 0.5 to 0.9 percent of the 1995-96 state deer harvest was taken in Ascension Parish. No data is available on whether land which Routes A and B would cross is leased for hunting purposes. However, the gross farm value for hunting leases in Ascension Parish was reported as $30,000 for 1994 (Flint, 1994). During field surveys along the routes, SEA did not observe any "posted" signs indicating that the land was a private or public hunting preserve. The prevalence of horse and cattle grazing along the project corridors (including in forested areas) makes it unlikely that large scale hunting occurs in the area due to the risk of injury to livestock. There is probably a limited amount of hunting by private landowners along the project corridors.

**Birds**

Bird species found in the project area include song birds, raptors, and waterfowl. Louisiana is on the main flyway for migratory birds, and avian species vary according to the season. During the fall and spring months, there is an increase in the

number of songbirds, including: ruby-throated hummingbirds, vireos, and warblers. The close proximity of many wetlands and bayous increases the number of bird species which may occur in the project area because of the increased foraging and nesting opportunities afforded by this habitat. Table 2-24 lists project area bird species. Most of these species are likely to be found in or near all of the habitats shown on Figures A-37 and A-38, at least on a seasonal basis. The table also lists the species known to have specific habitat requirements (e.g., water, wetlands, and forested areas).

Many duck and other waterfowl species also winter in Louisiana' s waters near the project area, including mallards, wood ducks and gadwalls.

No information is available regarding the harvest of upland game bird species in the project area. Routes A and B and the industry connectors would not cross grain fields, which often attract game birds such as mourning doves. They may cross some hay fields, which do provide dove hunting opportunities in the early part of the season. There is also no information available regarding the waterfowl harvest in the project area. Waterfowl hunting is concentrated in the swamps and marshes to the south and east of the area.

**Reptiles and Amphibians**

The headwaters of the Blind River provide habitat for a variety of amphibian and reptile species (Table 2-25). Species expected to be common in the project area include the eastern and Gulf Coast box turtle, southern leopard frog, bronze frog, bullfrog, cricket frog, and green tree frog. Snake species such as the copperhead and cottonmouth are also common in the area. Table 2-25 shows that many species of reptiles and amphibians occur in or near water or wetland habitats during most of their lives.

Field reconnaissance indicates that project area habitat is not suitable for the American alligator, which, statewide, is an important species, with economic value. Alligators thrive in areas with extensive emergent wetlands (over 12 acres)(Newsom et al., 1987). Recent harvest data indicates the lack of suitable alligator habitat in the project area; only 100 of the 26,343 individuals harvested in the state came from Ascension Parish (Flint, 1994).[12]

**Fish**

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[0] However, the Corps indicates that alligators are probably regularly found in Bayou Conway and other waterways.

Many of the small bayous in the project area that contain water throughout the year are popular for recreational fishing. However, most drainageways which would be crossed by Routes A and B and the industry connectors are intermittent. This limits the potential for reproduction and growth among most game fish expected to occur in the parish, such as largemouth bass and black crappie. Water quality elsewhere in the Blind River subbasin (where the project area is located) is known to be degraded (LDEQ, 1994). If degraded water quality exists in those project area channels which do not run dry during dry periods, this could further limit the fish species that would be expected in the area. Such conditions would favor fish species able to thrive in organically rich, low oxygen environments, such as yellow bullhead and channel catfish. Other species which may survive in water with marginal water quality include black buffalo, common carp, bluegill, longear sunfish, and green sunfish. Table 2-26 lists fish species which occur or may occur in the project area.

### 2.5.3 Areas of Special Concern

There are no public or private wildlife refuges or wildlife management areas within the project vicinity.[13]

### 2.5.4 Threatened and Endangered Species

SEA consulted the U.S. Fish and Wildlife Service (USFWS) regarding the possible presence of threatened and endangered species in the project area. USFWS indicated that no federally listed threatened or endangered species were known to occur in the vicinity of the proposed project and that the project would not significantly affect listed or proposed threatened or endangered species (see Appendix C, Attachment 2).

LDWF was also consulted regarding the presence of threatened and endangered species in the area, as well as critical habitat. No area was identified as being a critical habitat (LDWF, NHP, letter dated September 16, 1994). In addition, SEA observed no flora or fauna listed as a species of concern during field investigations.

The project area, as well as much of the rest of Louisiana, provides nesting sites for many neotropical migratory bird

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[0] Based on a review of published documents and personal communications with the Ascension Chamber of Commerce, 1996; Evans 1996; Louisiana Department of Culture, Recreation and Tourism, 1994; Louisiana Department of Transportation and Development, 1996; Watson 1997, Swan 1997.

species which are protected under the Migratory Bird Act. These birds use Louisiana as a resting and feeding ground before proceeding south. Although all vegetative types in Louisiana, natural and urban included, are considered potential habitat for these birds, there is no unique habitat for any neotropical species of concern migrating through the state. There is a national trend of decline in migratory song birds which cannot be attributed to any one specific cause but which is thought to include habitat destruction and fragmentation at various points along the migratory routes used by these birds.

The only neotropical bird on the federal or state threatened or endangered lists which could potentially occur in Louisiana is Bachman's Warbler, which winters in Cuba (USFWS, 1995; LDWF, 1995). Although this bird could conceivably occur in the project area, it is extremely rare, and, as of 1974, no nests had been identified in Louisiana (Lowery). In addition, SEA observed no evidence of this bird during field investigations.

## 2.6 TRANSPORTATION

KCS' proposed rail construction would be located entirely within Ascension Parish, which is located in the heart of the Mississippi River petrochemical industry. The eastern shore of the river through the parish is principally occupied by chemical manufacturers who rely on the river to help move large quantities of raw materials and products. The larger chemical manufacturers include Arcadian, BASF, Borden, Rubicon, and Shell (shown in Figure A-6). The Mississippi River is heavily traveled by barges and smaller tankers. Figure A-39 shows the regional transportation system.

Dozens of pipelines along the river shore interconnect area industries. In the Geismar area these pipelines are mainly used to provide needed raw materials (gases and liquid) to support the manufacturing process. Many of these raw materials are products of other plants along the corridor. Pipelines also cross the Mississippi River carrying both products and raw materials. Pipelines are an important part of the transportation system. LDOTD's recent report on intermodal freight activities indicated that Louisiana has a large imbalance between import and export volumes and that this difference is due to the large volumes of petrochemical products which leave the state in pipelines.

Railroads are also a critical component of the state and regional transportation system. Railroads carry the greatest tonnage of materials moved to and from Geismar industries. Three Class I railroads cross Ascension Parish: KCS, IC, and Union Pacific/Southern Pacific (UP/SP). However, only IC serves the Geismar area.

Many major highways cross the parish, including I-10, which travels north-south through the parish to connect Baton Rouge and New Orleans. Other major State Routes include 30, 42, 44, 61, 73, 74, and 75.

The following subsections discuss each of these components of the motorized transportation infrastructure, reviewing their regional significance and then their local characteristics.

KCS indicates that its proposed rail construction would affect only three of the area petrochemical companies: BASF, Borden, and Shell (see Figure A-2). Each of these companies has access to water, pipeline, rail, and truck transportation modes. Each uses raw materials which are considered hazardous, and some of the companies' products are also classified as hazardous. To facilitate the review process, these materials have been summarized in the discussions below and in future analysis and review; however more detailed data does exist and this data was used in the analysis process prior to the preparation of these summaries.

- **Borden** is the most northern of the three affected plants. Borden's Geismar plant is one of two Borden plastic producing plants, which in total produce over 4.6 billion pounds of product annually in pelletized, granulated and liquid form. The plant's products include adhesives and PVC plastic. PVC plastic is produced from raw materials such as chlorine, ethylene, steam and natural gas. Inbound materials needed for production come mainly from area pipelines, although nearly 0.5 million pounds of raw materials are brought in by rail. Outbound products are shipped mainly by rail.

- **BASF** is located about 1.5 miles south of Borden. It produces over 2.5 billion pounds of product, including urethane products, morpholine, amines, and poly-THF. Principal inbound materials include ethylene, oxygen, natural gas, aniline, benzene, and nitric acid. Ethylene, oxygen, and natural gas are supplied by pipeline. Additionally, rail is used to supply over 1 billion pounds of raw materials. Outbound products are shipped mainly by rail.

- **Shell** is located 0.25 miles south of BASF. Shell produces over 1 billion pounds of product, including linear alcohols (use in shampoo and plasticizers), ethoxylates, glycol ether (solvents) and ethylene glycol (antifreeze). Input materials are synthesis gas, ethylene, oxygen and air, most of which are brought in by pipeline. Outbound products move approximately 50% by barge and 50% by rail.

### 2.6.1 Highways

**Highway Descriptions**

I-10, which is a major east-west route between California and Florida, crosses southern Louisiana, connecting Lake Charles, Lafayette, Baton Rouge and New Orleans. Between Baton Rouge and New Orleans, I-10 has nine interchanges, five of which provide full access to Ascension Parish. The five interchanges in the parish are located, from north to south, at the following locations: (1) LA 73, (2) LA 30, (3) LA 44, (4) LA 22, and (5) US 61. Both rail Routes A and B would cross I-10 between LA 44 and LA 22.

US 61, which also connects Baton Route with New Orleans, runs north-south parallel to the KCS mainline. Several state highways cross US 61 within the parish, most notably LA 73, LA 934, LA 429, LA 431/LA 30, and LA 22.

West of the Mississippi River, LA 1 connects Baton Rouge with Donaldsonville, and LA 18 connects Donaldsonville with New Orleans. LA 308 provides access to Donaldsonville from the west. LA 70 enters Ascension along its southern border with St. James Parish, crosses the Mississippi River over the Sunshine Bridge, and then turns north, terminating at LA 75 near I-10. The Sunshine Bridge, located approximately 18 miles downstream of Geismar, is one of three river crossings between Baton Rouge and New Orleans (the others are at Gramercy in St. James Parish, and at Destrehan, in St. Charles Parish). Figure A-39 shows regional roadways.

East of the Mississippi River, several state highways serve the Geismar industrial area and the cities of Gonzales, Sorrento (see Figure A-39). LA 75, or Leon Geismar Road, runs north-south along the Mississippi River through most of the parish, ending at LA 22. At Geismar, LA 75 runs between the industrial sites and the Mississippi River. LA 73, or Railroad Avenue, runs roughly east-west from the Geismar site to LA 61 in East Baton Rouge. LA 30 runs south from Baton Rouge to US 61, just south of Gonzales. LA 30, west of LA 73, is the designated truck route for hazardous materials transported in and out of Geismar.

LA 44 is the major north-south roadway through Gonzales. LA 44 and LA 30 connect Gonzales with I-10 and US 61. LA 22 is the major east-west roadway through Sorrento; it connects Sorrento to I-10 and US 61.

**Average Daily Traffic**

Average Daily Traffic (ADT) is the term used to describe the average total number of vehicles carried by a roadway. Volumes are average to reflect both weekday and weekend conditions. Multiplying the ADT by 365 would give the total annual volume on

the road. Total annual volume is used to calculate pavement wearing and bridge loading fatigue. The relationship between roadway capacity and volume served is calculated based on hourly volumes. Consequently there are factors to convert ADT to weekday peak hour or weekend peak hour conditions. The LDOTD maintains a program of traffic counting which allows for the preparation of Parish level ADT maps. Figure A-40 shows this map for Ascension Parish.

**Truck Percentages**

LDOTD also collects vehicle classification counts at several locations where ADT is monitored. These counts are available for the following five locations in Ascension Parish (see Figure A-40):

(1) Station No. 120: I-10 at the East Baton Rouge Parish Line;
(2) Station No. 426: I-10, north of LA 73;
(3) Station No. 400: I-10, north of LA 30;
(4) Station No. 438: LA 3089, north of LA 70; and
(5) Station No. 125: LA 70, west of LA 3098.

Table 2-27 shows the breakdown by vehicle percentages for each station.

For the interstate highway system, heavy vehicle percentages are typically in the 8-12% range. Higher percentages usually indicate heavy industrialized areas. On lower functionally classified roads such as U.S. or State routes, vehicle classifications vary widely, depending more heavily on local land use.

**School Buses**

There are 17 schools in Ascension Parish: nine in Donaldsonville, four in Gonzales, two in Prairieville, one in Saint Amant, and one in Sorrento (listed in Table 2-5). Table 2-28 lists the roads traveled by school buses between the KCS main line and the Geismar industrial area (based on data from the Ascension Parish School Board).

### 2.6.2 Existing Freight Rail Systems and Operations

Freight rail service is provided in the project area by three rail carriers with significant capabilities and a substantial investment in plant and operational support (see Figure A-41). KCS, IC, and UP/SP all serve the lower Midwest and Gulf States area of the United States, and, through interchange connections with other railroads, transport goods and commodities to the entire nation.

**Kansas City Southern**

Figure A-42 is a map of the KCS rail system. KCS provides freight rail service between Kansas City (Missouri) and New Orleans, and from Dallas (Texas) to Meridian (Mississippi) and Birmingham (Alabama).

The KCS line through the project area is part of its mainline between Latanier, LA (near Alexandria) and New Orleans, designated as the New Orleans Subdivision. The line runs from Latanier through Baton Rouge and Gonzales, and joins the IC line just north of New Orleans. The KCS line between Baton Rouge and New Orleans is predominantly single track maintained to Federal Railroad Administration (FRA) Track Safety Standards Class 4, which allows for freight train speeds up to 60 miles per hour (MPH). The maximum operating speed set by KCS operating policy is 49 MPH, with lower authorized speed limits on certain sections of the line due to curves, bridges, track conditions, or arrangements. In the project vicinity there is a short siding in Prairieville, passing sidings and industry spurs in the Gonzales area and a short siding south of Sorrento.

KCS' New Orleans Subdivision handles from 10 to 20 million gross ton-miles (MGT) annually. Current KCS operations over the line are:

- four trains per day southbound between Baton Rouge and New Orleans, seven days per week;
- four trains per day northbound, with three trains operating seven days per week and one operating six days per week;
- local switching operations as required to set out or pick up rail cars at industry sidings along the mainline.

The 1995 rail volume on the New Orleans Subdivision was approximately 78,000 units and nearly 71,000 empty units, with a car, trailer or intermodal container each counted as a unit. Less than 20% of this volume would be classified as hazardous material under the U.S. Department of Transportation's (DOT) regulations governing the transportation of hazardous materials.

**Illinois Central**

The IC line through Geismar is part of its Baton Rouge to New Orleans (Orleans Junction) main line. The line is predominantly single track with Automatic Block Signals (ABS) and passing sidings at St. Gabriel, Convent, and Mt. Airy, and additional passing tracks adjacent to the major yard facilities at Geismar and Destrehan. The line includes extensive industry sidings and spurs. The Geismar Yard is a rail car classification and storage yard with a capacity of 900-1000 cars, with a third

of the yard available for storage of empties.

This IC line is maintained to FRA Class 3 Standards, allowing for 40 MPH freight train operations. IC operates the line at a maximum speed of 40 MPH, with lower authorized speed limits established in certain segments for curves, bridges, track conditions and arrangements.

IC's New Orleans District carries a traffic density of between 10 and 20 MGT on the line north of Geismar and between 4 and 10 MGT on the segment between Geismar and New Orleans. IC's current freight rail operations over the line include:

- four scheduled trains per day north of Geismar Yard. This consists of one train per day each way between Geismar and Memphis (TN), and one train which makes one trip per day from Baton Rouge to Geismar Yard and returns to Baton Rouge.
- two scheduled trains per day south of Geismar Yard. This consists of one train which makes one round trip per day between Geismar and Mays Yard outside New Orleans.
- significant local switching operations in the Geismar area to serve the industries located there.

Train operations are conducted seven days per week. The trains handle 59,000 carloads of traffic and 60,000 empties to and from Geismar on an annual basis. A significant portion of the carloads contain hazardous materials as classified by US DOT.

**Union Pacific/Southern Pacific**

UP/SP is a class I railroad with service exclusively on the west side of the Mississippi River. The line is single track main line, with industrial sidings in the Donaldsonville area. UP/SP operates a rail line on the east bank of the Mississippi River between Libonia Yard (west of Baton Rouge) and New Orleans through Donaldsonville. Although its line crosses Ascension Parish, UP/SP does not have any service capability in Gonzales or Sorrento and is not affected by any decision regarding local rail traffic in Geismar.

**Railroad/Highway Grade Crossings**

Table 2-29 lists the 19 roads which the single main track of the existing KCS line crosses at grade in Ascension Parish, as well as the 4 roads crossed by the single main track of the IC line in the parish. The following discussion deals with establishing baseline conditions at those crossings against which impacts could be measured from changes in rail traffic expected as a result of the proposed project (Routes A and B and the industry connectors would also cross roads at grade; however, as

these crossings are not yet in existence, the issue of baseline conditions does not apply). Two measures were used to establish baseline conditions at the crossings listed in Table 2-29: predicted annual accidents and delay to motorists each time a train passes.

**Predicted Annual Accidents**. Safety at each rail-highway crossing was determined using the accident prediction formula developed by the US Department of Transportation (USDOT), and published in the *Rail-Highway Resource Allocation Procedure User's Guide, Third Edition, US Department of Transportation, Federal Railroad Administration, August 1987.* The function of the DOT accident prediction formula is to provide a means of calculating the expected annual number of accidents at a crossing on the basis of: (1) the crossing's characteristics (e.g., highway ADT, number of highway lanes, number of trains per day, maximum timetable speed, etc.) and (2) the crossing's historical accident experience.

Using USDOT's accident prediction formula, Table 2-29 gives the predicted number of accidents for each of the 19 existing KCS crossings and 4 existing IC crossings under baseline conditions. Appendix D, Attachment 4, presents details of this analysis.

**Delay to Motorists**. Delays at rail-highway grade crossings are a function of: the number of trains per day; the time it takes for a train to pass the crossing (i.e., the length and speed of the train); the type of crossing warning device; and the availability of alternate crossings. Grade crossing delay was determined using the delay equation from The *Guidebook for Planning to Alleviate Urban Railroad Problems*, prepared by the Standford Research Institute, Railroad and Highway Administration, August 1974.

Using this delay equation, Table 2-29 presents delay to motorists for each train pass-by at each of the 19 existing KCS crossings and 4 existing IC crossings, under baseline conditions. Appendix D, Attachment 5, presents details of this analysis.

### 2.6.3 Navigable Waterways

**Mississippi River**

The Mississippi River is the largest navigable waterway in the United States. This river system is augmented by the Gulf Intercoastal Waterway, linking Texas, Louisiana, Mississippi, Alabama, and Florida. Geismar industries use barges and tanker vessels to both receive and dispatch goods over this waterway system.

Typical commodities transported to and from Geismar by ship

or barge include petroleum, petroleum products, chemicals, related chemical products, crude materials and farm products. Table 2-30 shows tonnage for these commodity groups on the Mississippi River for the river miles in the Geismar area for 1994 and 1995 (Source: US Army Corp of Engineers' Waterborne Commerce Statistics Center). Short tons are units of 2000 lbs. The data in Table 2-30 show the following trends:

- Total tonnage transported by barge for the Geismar area increased 21 percent from 1994 to 1995.
- Geismar's outbound waterborne tonnage is four to five times its inbound tonnage.
- Chemicals and chemical products account for around 70 percent of the waterborne commodities shipped to/from Geismar.
- Local intra-Geismar traffic increased considerably between 1994 and 1995: petroleum and petroleum products being transported by ship/barge increased from 600 short tons to 8000 short tons; chemicals and chemical-related products increased from 0 short tons to 3000 short tons.
- In 1995, 59 distinct operators transported commodities into and out of the Geismar area.

It has been reported that Shell, Borden and BASF all ship by barge, although details of such movement have not been made available.[14] Shell reports that it generally uses the Gulf Intercoastal Waterway for barge movement to Houston, where the goods are transferred to rail cars for land side distribution (*B.F. Felker, Shell, Petition by KCS Co. for the Proposed Rail Line).*

**Other Navigable Waterways**

Other significant waterways within the project area are the Bayou Conway, Bayou Francois, Smith Bayou, Boyle Bayou and the Hackett Canal. The Coast Guard is currently making a determination of navigability of Bayou Conway and Smith Bayou. Hachett Canal is not navigable.

### 2.6.4 Transmission Lines

The Entergy Corporation, and its subsidiaries, Gulf States Utilities and Louisiana Power and Light, own and maintain

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[0] Source: *(J.A. Noll, BASF, Petition by KCS Co. for the Proposed Rail Line; B.P. Felker, Shell, Petition by KCS Co. for the Proposed Rail Line,; W.A. Talmage, Borden, Petition by KCS Co. for the Proposed Rail Line; E.G. Kammerer, IC RR Co., Comments of IC Railroad Co. on Scope of EIS)*.

electrical distribution facilities within the project area. Transmission lines include a 500 Kilovolt (kV) line paralleling I-10; and 230 kV and 115 kV lines in the Geismar area. Overhead distribution power lines generally run within the right-of-way of most roads and streets in the area. Figure A-43 shows project area utilities and communications facilities.

### 2.6.5 Pipelines

Numerous pipelines conveying a variety of chemical and petroleum products cross the project area. The several pipeline owners, the Louisiana Geological Survey and other agencies compile and maintain pipeline maps. Active pipelines are marked at various points on the ground with signs listing pipeline product, ownership, warning information, and similar data.

Significant identified pipelines include:

- 18-inch diameter high pressure natural gas transmission pipeline owned by Bridgeline Gas Distribution, LCC.
- 16-inch diameter refined products pipeline owned by Texaco Pipeline, Inc.
- 24-inch diameter underground (UG) Gas pipeline
- 12-inch diameter liquefied petroleum gas (LPG) pipeline owned by Exxon
- two 6-inch diameter pipelines owned by Enterprise carrying propane and butane
- 8-inch diameter hydrogen pipeline owned by Air Products
- 20-inch diameter Louisiana Gas Pipeline Company (LGPL) gas pipeline

Pipelines running parallel to the IC mainline include the following:

- 8-inch diameter Shell process gas line
- 8-inch diameter Ucar ethylene line
- 16-inch diameter Arcadian Gas line
- 6-inch diameter Exxon ethylene line
- two 4-inch diameter and one 8-inch diameter Exxon LPG lines
- 6-inch diameter Exxon propylene line
- two 12-inch diameter BT lines carrying oxygen and nitrogen gases

Additional pipelines in the Geismar area include:

- 20-inch diameter LGPL gas pipeline
- two 30-inch diameter UG gas pipelines
- 4-inch diameter UTP ethylene pipeline

### 2.6.6 Water and Sewer Lines

There are municipally owned and operated water supply and wastewater collection and treatment systems in certain areas of Gonzales and Sorrento. Ascension Parish does not presently own or operate water or sewer systems. Several individual development communities are served by their own water supply and sewage treatment facilities.

### 2.6.7 Communication Systems

Project area telecommunication facilities include telephone, cable television, and microwave systems.

EATEL (East Ascension Telephone Co., Inc.) provides telephone service, and has overhead and underground (buried) cables on several local roads.

TCI of Louisiana provides cable television service in the project area. The cable system generally parallels Entergy Corporation’s overhead electric distribution system.

AT&T and Sprint have buried fiber optics cables paralleling the IC mainline through Geismar.

Microwave towers are located adjacent to the Airline Highway and the KCS mainline (see Figure A-43).

### 2.6.8 Airport Approaches

The Louisiana Regional Airport is a general aviation facility jointly owned by Ascension and St. James Parishes, and operated by the Ascension St. James Airport and Transportation Authority. The airport is located approximately 1.5 miles southwest of the intersection of I-10 and LA 44 (see Figure A-44). The facility consists of a paved runway 100 feet wide by 4000 feet long, taxiways, hangars, administration offices, and other Fixed Base Operator (FBO) support facilities. The airport has an expansion program under consideration which includes a total potential increase in runway length of 1,400 feet. The expansion would occur in a southerly direction, south of the Panama Canal. The timing of this proposed expansion is presently unknown. Recently, the Airport Board has received a plan to develop currently vacant land to the east of the airport, with a residential development project featuring private plane hangars and access to the airport.

The privately owned Double H Ranch Landing Strip is located northwest of Gonzales, in Cornerview. The landing strip is located approximately 2.3 miles northwest of the proposed interchange yard and 1.6 miles from proposed Route A and Route B, at its closest location.

## 2.7 AIR QUALITY

### 2.7.1 Introduction

EPA defines ambient air in 40 CFR, Part 50, as "that portion of the atmosphere, external to buildings, to which the general public has access." In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 Amendments (CAAA), EPA has promulgated ambient air quality standards and regulations. The National Ambient Air Quality Standards (NAAQS) were enacted for the protection of public health and welfare, allowing for an adequate margin of safety. To date, EPA has issued NAAQS for six criteria pollutants: carbon monoxide (CO); sulfur dioxide ($SO_2$); particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers ($PM_{10}$); ozone ($O_3$); nitrogen dioxide ($NO_2$); and lead (Pb).

There are two types of standards: primary and secondary. Primary standards are designed to protect sensitive segments of the public from adverse health effects which may result from exposure to criteria pollutants. Secondary standards are designed to protect the public welfare from any known or anticipated adverse effects of a pollutant. Public welfare is considered to include the natural environment (vegetation) and the man made environment (physical structures). In some cases the secondary standards are more stringent than the primary standards.

Under the CAA and CAAA, state and local air pollution control agencies have the authority to adopt and enforce ambient air quality standards more stringent than the NAAQS. The State of Louisiana has adopted all of the NAAQS. Table 2-31 shows the applicable NAAQS.

Although EPA has the ultimate responsibility for protecting ambient air quality, each state and local government has the primary responsibility for air pollution prevention and control. Areas that do not meet NAAQS are called nonattainment areas. The CAA requires that each state submit a State Implementation Plan (SIP) which describes how the state will attain and maintain air quality standards in nonattainment areas. The SIP must be approved by EPA for each nonattainment criteria pollutant. The State of Louisiana has adopted a SIP for ozone. In order to comply with the CAA and CAAA, projects in Louisiana must conform with attainment plans documented in the SIP for ozone.

### 2.7.2 Existing Conditions

LDEQ monitors ambient air quality in Louisiana by a network of stations meeting EPA's design criteria for State and Local Air Monitoring Stations (SLAMS) and National Air Monitoring Stations (NAMS). Monitoring data from these stations is used to establish compliance with the NAAQS and to identify nonattainment areas.

Ascension Parish is designated by the EPA as a nonattainment area for ozone, with a classification of serious. Serious ozone areas are required to demonstrate compliance with the standard by November 15, 1999. All of Louisiana, including Ascension Parish, is in attainment for the remaining five criteria pollutants.

LDEQ has a single monitoring station in Ascension Parish to provide the basis for compliance demonstration. This monitoring station is located in the town of Dutchtown about ten miles east of Geismar. This station only monitors ozone and there are no other criteria pollutant monitoring stations in operation in Ascension Parish. Table 2-32 shows the highest one-hour ozone reading recorded at the Dutchtown station during each year for the period 1992 through 1995. Review of the data indicates that ozone concentrations remain at elevated levels.

The CAAA established the Prevention of Significant Deterioration (PSD) program to protect the quality of the air in regions of the United States in which air is cleaner than that required by the NAAQS. This protection is achieved by controlling the potential increase in air pollution in designated regions. Class I areas are afforded the greatest degree of air quality protection. Generally, the local permitting authority should notify the federal land manager of all proposed major facilities within 62 miles (100 kilometers) of a Class I area. The nearest Class I area to the proposed KCS rail line is the Bogue Chitto National Wildlife Refuge, in Slidell, Louisiana (NPS, 1993). This refuge is located over 62 miles east of the proposed project.

Louisiana Air Control Law (LAC) 33:III Chapter 9 requires all facilities located in serious ozone nonattainment areas, which emit or have the potential to emit more than a threshold quantity of certain ozone precursor pollutants, to file emission statements to the LDEQ on a yearly basis. These pollutants and their associated threshold values are: volatile organic compounds (VOC), 10 tons per year (tpy); and oxides of nitrogen (NOx), 25 tpy. Table 2-33 is a summary of data reported by these facilities to LDEQ for Ascension Parish for 1995.

Documented VOC and $NO_x$ emissions within Ascension Parish occur from many types of industrial sources, including: gasoline and chemical storage tanks; fugitive emission losses from pumps, valves, and compressors; loading of gasoline and chemicals onto ships and barges; and waste gas venting. During 1995, the three largest reported emitters of $NO_x$ in Ascension Parish were: CF Industries, Inc. (3,422 tpy); Borden Chemical & Plastics (2,345 tpy); and Arcadian Fertilizer (1,879 tpy). The Uniroyal Chemical Co. was the largest reporting source of VOC emissions in the parish during 1995 (1,040 tpy) [LDEQ, 1996].

LDEQ has estimates of non-industrial emissions of VOC and $NO_x$ for all non-road mobile sources (including trains and airplanes) for 1993. It also has projections of emissions from vehicles traveling on paved surfaces for 1999. Although not directly applicable to the reported industrial emissions for 1995, these values provide a general perspective of the sources of ozone precursors that originate from non-industrial sources. In 1993, non-road mobile sources emitted an estimated 1,003 tpy of VOC and 1,486 tpy of $No_x$ in Ascension Parish. In 1999, on-road mobile sources may emit an estimated 1,408 tpy of VOC and 2,965 tpy of $No_x$ (T. Lunai, LDEQ, pers. Comm., April 3, 1997). These data suggest that industrial sources are the primary sources of ozone precursor emissions in Ascension Parish.

In addition to criteria pollutants, LAC 33:III, Chapter 51, contains reporting requirements for all major sources of toxic air pollutants. Regulated sources are required to submit to LDEQ annual reports of actual emissions for each listed toxic air pollutant. LDEQ compiles these reports by compound, company, and parish in the Louisiana Toxic Emissions Data Inventory (TEDI). Table 2-34 summarizes Ascension Parish TEDI data from 1991 through 1994.

## 2.8 NOISE

### 2.8.1 Introduction

Sound is the result of a pressure disturbance traveling in an elastic medium that is detectable by the human ear. Sound waves in air are caused by variations in pressure above and below the static atmospheric pressure. The traditional definition of noise is that it is any unwanted sound present in the environment; therefore, it is a subjective part of hearing. The words "sound" and "noise" are often used interchangeably in discussions on the subject. Environmental noise is typically associated with annoyance and therefore noise level criteria are based on the highest acceptable sound levels.

Real life sound pressure levels vary greatly, and, therefore, are best handled by using a logarithmic scale which compresses the range of numbers. The standard measurement unit of sound is the decibel (dB). On the decibel scale humans can hear sounds ranging from 0 to approximately 130 dB, which is the threshold of pain. Using the dB scale, an increase or decrease of 3 dB of mixed sounds is barely perceptible to the human ear and an increase or decrease of 10 dB is perceived as a doubling or halving of the sound level.

Humans are capable of hearing only a limited range of frequencies of sound. The human ear is not equally sensitive to all frequencies. To represent the sensitivity level of average hearing, a correction known as 'A' weighting is commonly applied

to sound pressure levels. 'A' weighted sound pressure levels approximate the response of the human ear by placing most emphasis on sounds in the frequency range of 1,000 to 5,000 Hertz. Because the 'A' weighted scale closely describes the subjective response of the human ear, it is the most commonly used unit in noise measurements. Sound level measurements using 'A' weighting are expressed in units of dBA. Figure A-45 shows a sample of common sounds expressed in dBA units.

Development of noise level guidelines considers the viewpoints and location of sensitive receptors. Sensitive receptors are defined as those for which exposure to excessive sound levels would create a land use detriment. Typically, the type of land use and the time of day determines the highest averaged sound level considered acceptable. Guidelines for receptor noise levels consider mostly outdoor land uses of many types of sensitive receptors, such as residential properties, parks, schoolyards, recreational areas, hospitals, churches etc., where excessive noise levels would interfere with the intended use of the land.

How much sound a listener hears and how much the sound resembles its original character depends on how strong the sound source is and what happens to the sound waves during their travel from source to destination. Distance, solid structures, meteorological conditions, and ground cover all have a modifying effect on the original sound emitted. In general, sound travels better over calm water surfaces than ground because of the lack of obstacles in its path and the reflective nature of the water surface.

The sound level at any particular instant does not provide a good representation of a sound which varies over a wide range with time. A better assessment of time-varying sound levels is provided by using time averaged descriptors of noise levels. The three most common noise descriptors used in community noise surveys are the equivalent sound level ($L_{eq}$), percentile distributions of sound levels ($L_{\%}$), and the day-night average sound level ($L_{dn}$).

$L_{eq}$ is an energy-averaged sound level that represents the fluctuating sound levels encountered over a specified time span, usually one hour. The $L_{eq}$ is commonly used to describe transportation related noise levels from various types of transportation modes which are characterized by constantly varying sound levels.

$L_{\%}$ indicates the sound level exceeded for a percentage of the measurement time period. For example, the $L_{90}$ is the sound level exceeded for 90 percent of the measurement period and is commonly used to represent background sound levels. The $L_{10}$ is the sound level exceeded for 10 percent of the measurement period

and represents the high end of sound levels present in the environment.

$L_{dn}$ is another descriptor that can be used to evaluate community noise levels. It is also commonly used to describe rail and aviation noise levels when impact determination is required. The $L_{dn}$ metric is defined as the 24-hour averaged sound level, which includes a 10 dB penalty added to sound levels occurring between 10:00 PM and 7:00 AM, to account for the added sensitivity of nighttime.

The introduction of additional noise into a community due to implementation of a project may have two kinds of unwanted effects: a "relative" noise impact and an "absolute" noise impact. The "relative" impact would be caused by a significant amount of increase over the existing noise levels in the community. The new noise levels would be much higher than what residents were used to hearing before. Evaluation of this effect is relative to existing noise levels, hence the "relative" criteria are based on a fixed amount of increase above the existing noise levels. By contrast, an "absolute" impact occurs when the newly introduced noise level is so high that it interferes with community activities, conversation, sleep, listening to TV/radio and other noise sensitive activities. The limit for an "absolute" noise level is expressed as a fixed threshold not to be exceeded and it is independent of existing levels. Most noise studies consider both the relative and the absolute criteria in determining impacts.

### 2.8.2 Criteria

The proposed project would include construction and operation of a new rail line between the KCS main line east of Gonzales and IC’s existing line through Geismar, as well as a switchyard and industry connector tracks. Rail traffic on these new rail facilities could occur any time during day or night. The new rail facilities would be located in relatively sparsely populated residential areas. The primary noise sources currently affecting the study area are traffic on I-10 and local roads.

One applicable criteria or guideline for evaluating noise levels is the Ascension Parish noise ordinance. The State of Louisiana has no such ordinance. Article III Section 14-43 of the Parish Code limits noise levels at residential properties to 85 dBA during daytime and to 65 dBA at nighttime. Maximum permissible noise levels for motor vehicles, which includes trains by inference, is 85 dBA at the curb of the street. These limits are meant to be operational noise levels, because another paragraph in the same section discusses the use of horns and signaling devices. The use of auditory signaling devices, such as horns or whistles, is permitted as a warning of danger. The Code exempts governmental activities from compliance with provisions

of the Code.

On the federal level, Section 6 of the Board's environmental regulations at 49 CFR 1105.7, "Environmental Reports", requires the applicant to state whether the proposed action would cause an incremental increase of 3 or more dB or reach an absolute threshold of 65 or more dB, both values expressed using the $L_{dn}$ measure. The regulation requires identification of affected sensitive receptors in the project area and, if thresholds are to be equaled or exceeded, quantification of the increase.

### 2.8.3 Sound Level Measurements

**Methodology**

This section discusses the methodology used in establishing existing noise levels for sensitive receptors in potentially affected residential areas. It also discusses data collection regarding noise which the proposed rail line and yard operations may generate.

**Residential Areas**. SEA's methodology concentrates on selected individual receptors which are representative of a larger number of sensitive receptors of the same category and area and analyzes the selected receptors in detail. The results of any findings are then applied to all similar receptors in that area to provide a measure of impact according to the adapted criteria.

SEA reviewed maps showing Routes A and B and the industry connectors, along with other information, to identify potential noise impact areas. Impact areas were selected if they included sensitive receptors, e.g. residences, churches, schools, hotels, hospitals, parks, etc. where an increase in noise levels due to the proposed rail operations could create a difference. Grade crossings were considered prime impact areas because of the requirement to sound an audible warning before reaching any crossing. The area around the proposed yard was also viewed as a potential impact area because of the intermittent nature of expected yard operations.

Noise measurement personnel visited each of 13 potential impact areas and identified sensitive receptors by a windshield survey (observations from an automobile). The windshield survey yielded eight sites where detailed measurements would be made (listed in Table 2-35). All of these sites represented residential properties potentially affected by the proposed project. SEA's contractor inspected the sites to identify representative locations suitable for noise monitoring and to find the exact location for taking measurements. When the best location for measurements was on a homeowner's lot rather than at the property line, the homeowner's permission was obtained before

entry. SEA then used the measured noise levels to establish baseline noise levels representative of that area.

All noise level measurements in residential areas were conducted from November 20-23, 1996. Existing noise levels at the measurement sites were defined in $L_{dn}$ (day/night A-weighted average noise levels) to afford direct comparison with the Board's criteria. Round-the-clock noise measurement over several days at each location was not warranted. Therefore, the survey used methodology outlined in the Federal Transit Administration's handbook, *Transit Noise and Vibration Assessment,* April 1995. This approach suggests two measurements during daytime and one during night to sample existing noise levels. Daytime sampling was one hour long on each occasion and night measurements half an hour long. The daytime samples were taken on two separate days at each location to record more representative data. Data collection was suspended when, in the judgment of the field operator, a non-typical sound was influencing the data. Examples of non-typical sounds were curious onlookers asking questions within the range of the microphone, the sounds of emergency vehicles, or other sounds clearly not a regular component of the neighbourhood.[15] All measurement locations were fully attended, photographed, and notes taken to record primary noise sources present, relevant events, distances, the instrument setup, and other pertinent information characteristic of that site. $L_{dn}$ for each location was calculated from the three samples collected at that location.

**Rail Operations**. In addition to measuring existing noise levels at sensitive receptors, it was also necessary to determine how much noise the proposed rail operations would generate. The two types of expected rail operations would be freight trains operating on open tracks through rural residential areas and switchyard activities confined to approximately the center of the study area. Noise study personnel conducted limited field measurements to collect representative data for each type of operation.

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[0] At each residential receptor site monitored, SEA measured ambient noise for two one-hour periods during the day and one 0.5-hour during the night. If SEA had included emergency vehicle noise as part of the ambient sound measurement, it would have artificially inflated the average ambient noise level [because extrapolating that value to the entire day would assume that emergency vehicle noise occurred at least every half hour (if the measurement was made at night) or at least once every two hours (if the measurement was made during the day)]. Using artificially high ambient noise levels would reduce the estimated noise impacts of proposed rail operations.

On November 24, 1996, the pass-by noise levels of two separate freight trains operating on KCS' main line were measured in order to document the effect of trains passing through the open sections of Routes A and B and the industry connector. The pass-by measurements were made at the golf course in the Baton Rouge City Park, and in an open sugar cane field west of the Mississippi River, near Lobdell. Two sound level meters were positioned at 50 feet from the rail center line. The meters were tripod mounted on level ground and in free field. Sound level data was collected separately for the locomotives and the cars. Data recorded at each location included noise levels, the speed and length of the train, time taken to pass, and throttle setting. Some of this data was obtained directly from the lead locomotive during pass-by, while some was taken from company records. Train speed and length, number of cars, and throttle settings were obtained from the engineers via radio contact as each train passed the measurement locations. The locomotives, rated at 3000 HP and Diesel Electric, were the same for both trains.

SEA measured yard noise at KCS’ switchyard in Baton Rouge, on November 23, 1996. The yard operations documented at that yard are very similar to those expected at the proposed rail yard. The primary activity expected to occur at the proposed railyard would be rearrangement of freight cars according to destination. Noise would be generated by the idling and working phases of a switching locomotive and by moving cars hitting stationary cars during train assembly. Noise measurements were made of a switching locomotive when idle, working with a simulated load of 10 cars, and sounding its warning bell. The locomotive was a 1500 HP Diesel Electric. The high pitched, metallic sound of car impacts was also captured during assembly of trains. All measurements were made at 50 feet from the center line of the track or at 50 feet along the track when the locomotive was stationary.

**Instruments Used**. All noise level measurements were made using Bruel &Kjaer (B&K) statistical sound level analyzer Types 2231 and 2236. Each analyzer conforms with ANSI S1.4-1983 standard for Type 1 (Precision) grade instrument. The instruments were calibrated before and after measurements using a Type 4230 or 4231 field calibrator. Microphones were tripod mounted approximately 5 feet above ground level and in free field to exclude the effect of reflections. All analyzers used one-half inch B&K made condenser microphones with preamplifiers and foam windscreens. Winds did not exceed 10 mph during measurements.

**Measurement Results**

Most of the sounds encountered during baseline site measurements originated from distant and local roadway traffic. Less frequent sounds included those of natural origin (birds,

insects, dog barks), signals due to trains at grade crossings, and aircraft overflying the area.

**Residential Areas**. Table 2-35 shows the results of baseline residential noise monitoring (noise levels were rounded to the nearest whole number for inclusion in this table, as fractions of a dB are insignificant). Figure A-46 shows the eight monitoring locations, which are briefly described below. The numbering sequence of sites is from west to east. All the sites are in Ascension Parish. No traffic counts were done at any of the sites.

- Site No. 1. End of Williams Road., at the property line of the last residence on this road. Measurements were made on the south side of this property where the proposed industry connector would be at its closest to any sensitive receptor. Existing sound sources were traffic on LA 30, crickets, frogs, train locomotive horns from a distance, bird calls and local street traffic. Access to Williams Road is from LA 30.

- Site No. 2. Pierce Road, at the property line of a residence located at the bend of this road. This residential property would be the closest to the proposed rail line, among the cluster of homes in this neighborhood. Noise sources were distant traffic, train horn in the distance, domestic animals, gunfire from a distant firing range, airplane overflights, local street traffic and bird calls. Access to Pierce Road is from St. Landry Road, past the St. Landry Church.

- Site No. 3. Southern Mobile Home Park, at the last trailer of the north side of this development. This trailer park would be close to the north end of the proposed switchyard where, in addition to through trains, cars may be sorted at all times of the day. Existing noise sources observed were distant train horns, gunfire from the nearby firing range, local vehicles, people's voices, airplanes, dumping refuse into metal container, dogs, bird calls from nearby woods, metallic sounds from a propane tank and air conditioner units. Access to this trailer park is from St. Landry Rd.

- Site No. 4. Residence on LA 44, opposite the Do Right Baptist Church. This receptor was preferred over the church because being a residence, it is normally in use day and night. It is also one of the two residences in this area closest to the proposed rail route. The dominant noise affecting this neighborhood is roadway traffic on LA 44. Insects and airplanes had a much smaller influence.

- Site No. 5. End of Hodgeson Road, at the property line of a residence closest to Route B only. Audible noise sources in this area of residential homes were traffic from I-10 to the south, crickets, frogs, neighborhood children, bird calls, school bus, local vehicle traffic, aircraft overflight, and train horns at a distance.

- Site No. 6. Residence at #8246 LA 941, just south of proposed Route A. Traffic noise from the highway was the dominant noise source at this location. Other sounds originated from the concrete precast plant next door, bird calls, traffic on I-10, dog barks and distant train horn. The highway traffic included school buses.

- Site No. 7. Residence at #8427 Brittany Road. This is one of two residences closest to Route A in this area. Existing noise sources were traffic on Brittany Road, bird calls, gunfire from the firing range, dogs, tree frogs, and freight train on KCS' main line.

- Site No. 8. Residence at #43153 Rose Road, near KCS' main line. This residence is at the edge of a wooded area which Route B would cross. Current sound sources include bird calls, distant traffic from US 61, KCS' trains and crickets.

**Rail Operations**. Table 2-36 shows the results of noise monitoring during rail yard and line operations.

## 2.9 CULTURAL RESOURCES

### 2.9.1 Introduction

Section 106 of the National Historic Preservation Act of 1966 (as amended) requires Federal agencies to take into account effects of their undertakings on historic properties, i.e. buildings, structures, sites, objects or districts listed in or eligible for the National Register of Historic Places. SEA contacted the State Historic Preservation Office (SHPO), which in Louisiana is the Louisiana Department of Culture, Recreation and Tourism's Office of Cultural Development, regarding potential impacts of the proposed project on cultural resources. The SHPO responded that a Phase I cultural resource survey should be done of Route A and of any alternate route selected for detailed consideration (see Appendix C, Attachment ?). SEA selected a firm qualified in conducting such surveys to perform a Phase I survey of Routes A and B and the industry connectors. The purpose of the survey was to locate and identify cultural resources which could

be affected by the proposed project.

### 2.9.2 Summary of Cultural History

Scholars divide the prehistory of southern Louisiana into four major time periods: Paleoindian (10,000 to 6000 BC); Archaic (6000-1500 BC); Neo-Indian (1500 BC-1500 AD), and Mississippi (1200 AD-1700 AD). These periods are based partially on events of varying duration and partially on the characteristics of tools and other physical evidence of occupation. To date, evidence of Paleoindian occupation has derived largely from the northern portion of the state, and from finds in parishes adjacent to Ascension Parish.

The Archaic Period was characterized by heavy exploitation of wild plant foods and small game, illustrating adaptation to an expanding boreal environment. The initial part of this period, the Early Archaic (6000-5000BC) is defined by a series of distinctive projectile points; society is believed to have been organized at the band level and focused on a seasonal round of hunting and gathering. The succeeding Middle Archaic (5000-3000BC) was characterized by widespread regional differentiation of cultures and development of ground stone technology. During the Late Archaic (3000-1500 BC), populations experienced significant increase, and extensive trade networks were developed.

During the Neo-Indian Period, ceramics were introduced, use of cultigens became widespread, and the bow-and-arrow achieved prominence. The construction of earthen mounds, apparently practiced to some extent during the Late Archaic, became highly developed during the Neo-Indian period, and the focus of ceremonial, mortuary and political activity. A number of cultures flourished during this time span, including Poverty Point, Tchefuncte, Marksville, Baytown, and Coles Creek.

The Mississippi Period is characterized by increasing cultural influences from the Central Mississippi Valley on the indigenous cultures of the region. Mississippian cultural sites were often fortified. Social and political organization is believed to have centered on a chiefdom, and subsistence was based on maize, beans and squash.

Protohistoric cultures present at the time of the first European explorations in the lower Mississippi River region included the Quinapissa, Bayogoula, Houma and Mugulasha. The Houma, initially centered in the area of West Feliciana Parish, Louisiana, and Wilkinson County, Mississippi, were, by 1709, located in Ascension Parish, where they built at least two villages. The Houma, with whom elements of the Bayogoula merged by the 1730s, lived in Ascension Parish until the late 18th century, at which time they removed to Terrebonne Parish.

Despite early Spanish claims to Louisiana, the French were more active claimants, establishing settlements along the Mississippi, Red, and Ouachita Rivers during the early 18th century. France ceded Louisiana to Spain in 1762. The following year, Spain traded the West Florida region to Great Britain in exchange for Havana. Spain regained West Florida in 1779, and initiated a concerted program of settlement. Under the 1800 Treaty of San Ildefonso, control of most of Louisiana (excepting the Florida Parishes) returned to France. Three years later, France ceded its Louisiana holdings to the United States. West Florida remained in dispute between Great Britain and the United States until the Adams-Onis Treaty of 1819 gave all of Florida to the U.S.

Agriculture served as the primary economic base for Ascension and surrounding parishes from the time of initial permanent settlement in the mid-17th century. During the colonial period, the region's major export crop was indigo. By the early 19th century, however, cane sugar had become an important cash crop throughout the south, facilitated by development of a commercial granulation process. Because it required both a large capital investment and intensive labor, the sugar industry was dominated by planters with large landholdings and numerous slaves.

Ascension Parish was established as a political unit in 1807, with Donaldsonville, a community founded on the Mississippi River at the head of Bayou Lafourche, as the parish seat. By 1860 Ascension was the fourth largest sugar-producing parish in Louisiana, with 20,000 acres planted in cane, and a population of 15,000, nearly one-half of whom were slaves. In the later 19th century, a number of small municipalities emerged in East Ascension, including New River Landing (later renamed Geismar after a prominent local entrepreneurial family), Gonzales, and Sorrento. A timber industry centered around local cypress flourished through much of the 19th century and into the early decades of the 20th century. Since World War II, manufacture of petrochemicals has become a keystone of the local economy.

### 2.9.3 Survey Methodology

The Phase I cultural resource survey included background literature search, archaeological and architectural fieldwork, and report writing.

The background literature search involved several data sources. Project files, site files, and maps at the Louisiana Division of Archaeology were reviewed to determine: (1) what previous archaeological projects have been conducted in or near the project area, and (2) what archaeological sites, standing structures, and cemeteries have been reported within or in the vicinity of, the project area. Available maps and files were

reviewed to determine what portions of the survey area were likely to contain historic and/or prehistoric materials, based on previous investigations. In addition, interviews were conducted, as necessary, with persons having particular knowledge of cultural resources in the project area.

Archaeological fieldwork consisted of a pedestrian survey along those portions of Routes A and B and the industry connector lines for which right-of-entry could be obtained (see Figure A-34). Field work was not undertaken in the areas where right-of-entry could not be obtained. The surveyed ROW was 100 feet wide, except in those places where switching facilities were planned; in those locations, the ROW expands to 200 feet. The accessible survey area was divided into eight segments, containing 111.7 acres. Shovel tests were excavated at 100-foot intervals except in areas that were submerged or obviously disturbed. All shovel tests were screened using 0.25-inch mesh screens, except in cases where there was standing water or the soil was of such a composition that screening was impossible. In the latter case, an attempt was made to break up excavated soil by hand or with a trowel. In areas where the corridor expanded to 200 feet, an additional transect was made. A total of 446 shovel tests were excavated during the field investigation.

Any archaeological location found was subjected to a site definition procedure, which involved additional shovel tests in a cruciform pattern from the initial positive shovel test. These site definition shovel tests were made at 30-foot intervals for sites less than 150 feet in length or width and at 60-foot intervals for sites that were more than 150 feet in length or width. Site definition was terminated when two successive negative shovel tests or the boundary of the right-of-way were reached on any one axis, whichever occurred first. Each site was mapped using a compass and tape. In the event that a site were to have surface expressions of artifacts, a reasonable percentage of the surface artifacts would have been collected. Finally, photographs were made of all archaeological resources encountered in the surveyed right-of- way.

Prior to architectural fieldwork for cultural resource structures, SEA examined topographic and aerial survey maps to determine if there were any standing structures within the proposed ROW itself or within about 1,640 feet of the ROW. Those standing structures appearing over 50 years of age along portions of the ROW for which access was granted were photographed, and physical characteristics were noted for subsequent completion of an inventory form.

The final task of this project consisted of artifact analysis and report writing. All artifacts collected were processed and curated according to Louisiana Division of Archaeology standards. The SHPO is in the process of reviewing

the Phase I survey report.

### 2.9.4 Results

According to files of the Louisiana Division of Archaeology, the proposed project area contains no previously identified archaeological or other cultural resources. Eighteen resources have been recorded within the general project vicinity (Figure A-47; Table 2-37). These consist of five prehistoric and eight historic sites; four sites with both historic and prehistoric components; and one historic cemetery (although two of the sites with historic and prehistoric components and one historic plantation also contain historic cemeteries). Of these 18 recorded resources, only one (Ashland-Belle Helene Plantation, 16AN26) is listed in the National Register of Historic Places. This resource, which includes a Classical Revival main house and four outbuildings, and which has been the subject of several important archaeological investigations, is situated adjacent to the Shell Chemical Company complex at Geismar, some 2,000 feet south of the western end of Route A. This location places this resource well outside the present project's area of potential effect.

The Phase I archaeological field effort identified two locations containing cultural material. One location, in Survey Segment 3 (industry connector line to Borden) consisted of a bulldozed pile of bricks and cement blocks. This feature was estimated as dating from the 1940s at the earliest, or being the result of a recent dumping episode. Due to its lack of integrity, this feature was not reported as an archaeological site. The other location, on the BASF plant property (industry connector line to BASF) contained fragments of slag, apparently related to a nearby pipeline. These slag deposits lacked integrity, from an archaeological point of view, and were not reported as an archaeological site. Neither cultural resource meets National Register Criteria.

In addition, a series of augur probes and shovel tests were conducted on BASF property in Survey Segment 7 in order to verify the presence of a slave cemetery reported by BASF management to exist near the point where Route A would cross St. Landry Road. These subsurface investigations, which were confined to the proposed right-of-way, found no evidence of burials or other historic occupation.

The architectural resource survey for this project identified two buildings over 50 years of age within or near the proposed project’s potential impact area. The Alexander House, situated about 656 feet north of the project corridor at 8326 LA 941, is a one and a half-story, side-gabled, vernacular frame dwelling built in 1908. The J. Hodgeson House, situated on the road of the same name about 2300 feet north of the project

corridor, is a one-story frame dwelling with metal-clad gable roof, supported on brick piers. The survey concluded that neither resource meets National Register Criteria.

## 2.10 RECREATIONAL RESOURCES

Figure A-48 shows existing project area park and recreation facilities. As the figure shows, there are a number of private and public recreational facilities in the area. There are no state parks (other than roadside areas), state commemorative areas, scenic areas, Wildlife Management Areas, or National Forests located in the project area (Louisiana Department of Culture, Recreation, and Tourism. 1993). The Ascension Parish Recreation Commission (APRC) plans to enhance existing project area recreation facilities, rather than construct new ones, and is seeking funding to implement the improvements described in the *Master Plan for Recreation, Ascension Parish, Louisiana* (Evans per. comm. 1996). Although hunting occurs on private land in the project area, there are no available data quantifying such activity (see Section 2.5.2 for a discussion of game species likely to occur in the project area).

Shell and Vulcan maintain company parks for use of their employees, south of the Routes A and B rights-of-way. BASF maintains a park for its employees on its property east of the proposed industry connector.

# CHAPTER 3.0DESCRIPTION OF ALTERNATIVES, INCLUDING THE PROPOSED ACTION

## 3.1 ROUTE A (PROPOSED ACTION) AND RELATED ACTIONS

### 3.1.1 Introduction

KCS proposes to build and operate a rail line (Route A) to connect its main line near Sorrento with the BASF, Borden, and Shell industrial facilities at Geismar. The proposal would also involve construction of an interchange yard with access road, parallel track to the new line, wye branch and parallel track, and set-out track[16] along the existing KCS main line (see Figure A-49).

Directly related to KCS' proposed construction and operation, although not included in its proposal to the Board, are plans by BASF, Borden, and Shell to build industry connector lines from KCS' proposed line to industrial trackage located within their plant sites.[17]

### 3.1.2 Construction

**Layout and Design**

Route A would begin at a point on the KCS mainline in the northwestern part of Sorrento, approximately at mile post (MP) 814.5.[18] It would run southerly and westerly for a total distance of approximately 8.6 miles, crossing Brittany Road, LA 941, I-10, LA 44, St. Landry Rd., and Ashland Rd. (See Figure A-2). The I-10 and LA 44 crossings would be grade separated, while all other crossings would be at-grade. Route A would also make an at-grade crossing of the IC mainline (at approximate MP 388.7) and the IC north and south industry lead tracks (see Figures A-2 and A-

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[0] A set-out track is an area adjacent to a through rail line where cars can be temporarily placed during switching operations or for pickup/deposit by a through train.

[0] At this time, it is not certain who would actually build the industry connectors.

[0] This is the MP number at the center of the wye.

50).[19] Route A would end on the west side of the IC, at the property line between Shell and the IC ROW.

Figure A-2 shows the approximate location of the BASF/Borden and also the Shell industry connector lines. The BASF/Borden industry connector would begin a short distance to the west of the Route A crossing of Smith Bayou and would run northwesterly across BASF property to connect with industry trackage within the BASF and Borden plant sites. The BASF/Borden industry connector would be approximately 3.6 miles long. The Shell industry connector would begin at the western end of Route A, at the IC-Shell property line, and would be approximately 0.3 miles long. As Figure A-50 shows, KCS would install a wye connector for a possible future connection to the IC.

If the proposed construction is approved, KCS would proceed with construction of Route A, two sidings at the interchange yard; and wye tracks and a siding parallel to the KCS mainline near Sorrento. KCS may add sidings at the interchange yard in the future as traffic levels grow or the need for more complex train assembly (blocking) becomes necessary. KCS may construct parallel tracks on both legs of the wye as future need requires.

Figures A-51 through A-53 show typical cross sections along Route A, while Figure A-54 gives a more detailed view of the proposed interchange yard. Figure A-55 shows a profile view of Routes A and B.

Construction of Route A and associated facilities would last approximately twenty months and would involve the following steps:

(1) Clear and grub those parts of the ROW to be occupied by track embankment.
(2) Excavate topsoil and other subsoils to provide a base for the track embankment filling. Material removed during construction would be stacked and air dried within the cleared ROW for subsequent removal offsite to approved non-wetland disposal sites. Following embankment construction, the ROW would be restored to original conditions, to the extent practicable.
(3) Embankment construction would include the placement, compaction, and grading of imported, contaminant-free fill material. KCS has not yet identified the borrow pits from which the imported fill would come; however,

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[19] KCS will file a separate application with the Board for the IC crossing.

the pits would be developed in accordance with all environmental regulations and local practices.

(4) After embankment construction, at least one foot of stabilized base material would be placed as sub-ballast.

(5) Ballast placement consisting of the initial lifts would precede track construction.

(6) Track construction would include placing and spacing ties, placement of continuous welded rail sections, installation of other track materials including tie plates, spikes or fasteners, rail anchors, etc.

(7) Final ballast placement would be done in conjunction with tamping, surfacing and alignment of the track surface.

(8) Ancillary features such as drainage cross culverts, would be installed during embankment construction. Track features such as switches and turnouts, rail highway grade crossings, signal devices and other components would be constructed and/or installed as track construction proceeds. The construction of at-grade crossings would be done in coordination with local authorities and emergency management services. The construction contractor would try to minimize delay of local traffic caused by construction of the at-grade crossings. The grade separated crossings at LA 44 and I-10 would be constructed in coordination with LDOTD. The erection of structures over LA 44 and I-10 would follow State and Federal construction requirements as appropriate.

(9) Construction completion would involve testing of highway crossing warning devices, final inspection, and clean-up.

Segment lengths for Route A and associated facilities are as follows (see Figure A-49):

- Route A 45,568 feet
- Interchange yard 7,037 feet
- Access Road to interchange yard 1,250 feet
- Wye branch and parallel tracks 6,094 feet
- Set-out track along existing KCS mainline 5,139 feet

The Shell industry connector would be 1,594 feet long, and the BASF/Borden industry connector would be 18,814 feet long.

ROW widths for Route A and associated facilities are as follows:

- Route A 100 feet
- Interchange yard [width in addition to Route A trackage (would accommodate the possible eventual total of 8 yard tracks)] 160

feet
- Access Road to interchange yard 30 feet
- Parallel Track to Route A 50 feet
- Wye branch and parallel track 150 feet
- Set-out track along existing KCS mainline 40 feet

Track work and track material characteristics would be:

- Weight of Rail 115 lb. RE
- Maximum Curvature of Track 6%
- Maximum Grade 1%
- Length of Ties 8' 6"
- Size of Tie 7" x 9"
- Grade of Ties New
- Number of Ties per Mile 3,250
- Top Ballast Depth 2' 0"
- Sub-ballast Depth 1' 0"
- Subgrade Width 24'
- Minimum Depth of Drainage Ditch 2'
- Cut Slope 2:1
- Fill Slope 3:1
- Depth of Maximum Cut No Cuts
- Height of Maximum Fill 6' above natural ground

New track construction would meet Federal Rail Administration (FRA) Class 4 Track Safety Standards. Although maximum speed for freight trains on Class 4 track is 60 mph, maximum operating speed over the proposed rail line would be 15 to 20 mph.

**Interchange Yard**

As currently proposed and designed, the interchange yard would not be used as an industry railcar storage yard. KCS states that BASF, Borden, and Shell have all redesigned their on-site trackage to allow for additional on-site car storage. KCS is also considering having switching locomotives place cars from BASF, Borden, or Shell in the interchange yard for removal by mainline locomotives. Mainline locomotives would take cars bound for BASF, Borden, or Shell to the yard for delivery to those industries by the switching locomotive.

During the initial layout of Route A, KCS considered alternate, non-wetland, locations for the interchange yard. However, KCS considered the currently proposed location the most feasible from an operational perspective and also from the perspective of impacts to the surrounding neighborhoods and adjacent land uses. KCS' criteria for location of the yard include: (1) a tangent section of Route A more than 7,000 feet in

length; (2) a location not crossed by a highway or local road; and (3) a location close to the industries being served, which would imply a consistent land use pattern.

The interchange yard would initially consist of two yard tracks; however, KCS would acquire sufficient ROW to accommodate a total of eight yard tracks to allow for possible future expansion.

### 3.1.3 Operation and Maintenance

**Operations**

In order to define Route A operating characteristics, SEA first determined commodity flows and volumes for existing and future conditions. Operating characteristics can be defined from these flows and volumes.

**Sources of information on Route A flow, volume, and directional characteristics**. Although flow, volume and directional characteristics associated with Route A are not readily available from a single source, they can be interpolated and cross-checked using a variety of sources. The most important source of this information is the industries themselves. Borden, BASF, and Shell, have provided data to the Board regarding inbound and outbound volumes and mode of shipment. Rail waybill data is also another source, although waybill data is based on a sample and only reflects data for Geismar as a whole. Waybill data differentiates between hazardous and non-hazardous materials and defines the initial direction of outbound travel (north to Baton Rouge or south to New Orleans). Barge traffic data is available from the Waterborne Commerce Statistics Center for the Department of the Army; and industry growth and trend analysis is available from the LDOTD as referenced in the Statewide Intermodal Transportation Plan. Industry growth rates and forecasts for Ascension Parish are available from the Bureau of Economic Analysis within the U. S. Commerce Department.

Using the above data sources, Table 3-1 shows 1994 inbound/outbound volumes for BASF, Borden, and Shell for combined rail, truck, and barge movement. The table, which does not include shipments by pipeline, shows that outbound volumes for the three industries substantially exceed inbound volumes. This is because a large portion of inbound materials are shipped by pipeline, which is not practical and not used for outbound products.

**Forecasts of future production volumes**. This EIS assesses project impacts for the project completion year and also for horizon years. Forecasts of future production volumes by BASF, Borden, and Shell are needed in order to assess future project

impacts. The EIS includes horizon year analysis because it facilitates the assessment of construction staging and construction build-out scenarios. Based on the proposed project schedule, a completion date for the project would be 1998. Consequently, the EIS uses forecast years of 1998, 2000, 2005, 2010, and 2015. Typically, horizon years are selected by adding 5, 10, and 15 years to the project completion date. However, as most economic forecasts follow five year increments and align to U.S. Census-taking years, the project horizon years were shifted to align with standard forecast intervals.

To estimate opening year rail volumes on KCS' proposed line, SEA first forecast commodity rail, truck, and barge shipments by the three industries to 1998 conditions. Using the reference data defined above, SEA defined low, most likely, and high commodity growth scenarios.[20] Based on various data sources, chemical industry growth rates for 1994 to 1998 range from 0.8% to 2.6% per year, with a likely growth rate of 1.4% per year. The reference data also shows a small increase in the high growth rate in 1996. Prior to 1996 the high growth rate was projected to be approximately 2% per year. (Note, all rates are compound rates).

The reference data also suggests that commodity growth rates for the three industries would vary depending on whether KCS' proposed rail line is constructed. For example, BASF indicated in a 1995 Board hearing that outbound traffic from its plant could increase by five times current levels if KCS constructs the proposed line. Otherwise, BASF's growth would be constrained by the capacity limitations of the existing transportation providers, and its growth rate could be minimal. Consequently, the forecast process distinguishes between build and no build scenarios, with the build scenario having a higher growth rate for BASF.[21] Table 3-2 shows the three industries commodity flow

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[0] The purpose of having low, most likely, and high growth scenarios is to allow the DEIS analysis to encompass a range of possibilities associated with the shippers' production and transportation plans. SEA expects that actual production growth would be bracketed by the low and high growth scenarios, and would generally follow the most likely growth scenario.

[0] The verified statement of John A. Noll (BASF Manager of Bulk Transportation) indicates that production could increase by five times current levels due to the increase in transportation capacity (build vs. no-build). However, without improvements in the transportation system, this growth would not occur. Borden and Shell did not make a statement directly linking plant output to transportation infrastructure.

volumes with and without the proposed project, for low, most likely, and high growth scenarios for 1998. These figures reflect total inbound and outbound rail, truck, and barge traffic flows.[22]

Table 3-3 shows commodity volumes of rail, truck, and barge shipments for BASF, Borden, and Shell for the years 2000, 2005, 2010, and 2115, under no-build scenarios; Table 3-4 shows similar data under build scenarios. These forecasts reflect the continuation of the trends shown above.

**Projected rail traffic volumes on the proposed KCS rail line and interchange yard**. SEA forecast loaded rail cars likely to use the proposed KCS line and interchange yard by considering the diversion of traffic from other rail carriers as well as the diversion of commodity tonnage from other modes (truck and barge).[23]

SEA calculated the 1994 mode split based on existing industry data. Table 3-5 shows mode split for the total rail, truck, and barge tonnage shipped in 1994 by BASF, Borden, and Shell. Mode share percentage changes over time. Therefore, the mode share percentage applied to shipments in the different horizon years varied by horizon year.

The model used to calculate diversion of traffic from other

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[0] Table 3-2 shows that, in the most likely and high growth scenarios, BASF would have higher production in 1998 under the build scenario than under the no-build scenario, whereas that would not happen with Borden and Shell. SEA assumed that operations would begin over the proposed rail line in 1998 and that BASF would increase its output and move toward the fivefold production increase as the proposed rail construction begins. However, SEA assumed that there would be no difference in build and no-build production levels at either Borden or Shell in 1998, as the additional capacity and market accessibility would not change until after the project opens.

[0] This involved: (1) applying mode share percentages to the forecasted total rail, truck, and barge shipments shown in Tables 3-2 through 3-4;(2) next, using a diversion model to predict the likely diversion of rail traffic from existing carriers to the proposed line; (3) then, using a mode split model to identify the diversion of traffic from truck and barge to rail; and (4) finally, using the diversion model to identify the rail carrier expected to receive the traffic diverted from barge and truck.

rail carriers to the proposed rail line reviewed the entire rail network (all carriers) and calculated likely traffic diversion. This diversion model considers: carrier service area; inter-carrier relationships and interchange characteristics; shipping rates; and travel time. The model used the 1995 waybill sample and a post-Union Pacific/Southern Pacific merger network as a database. The diversion model predicted that 20% of the outbound traffic from BASF/Borden/Shell, and 25% of the inbound traffic, would be diverted to the proposed line. These percentages were then applied to the forecasted 1998 traffic volumes. As the traffic volume forecasts differentiated between low, most likely and high growth scenarios, it appeared probable that, under the most likely and high growth scenarios, the KCS share of total rail traffic would increase beyond the 20% and 25% levels discussed above. SEA based these assumptions partly on the fact that existing rail carriers (as supported by testimony to the Board) are near capacity and there has already been a considerable shift in shipping mode from rail to truck or barge. Consequently, it appeared reasonable to assume that the KCS share of rail traffic would increase as production levels increase. The KCS outbound share was assumed to incrementally increase from 20% in 1998 to 50% in 2015 under the high growth scenario.

It was also reasonable to assume that, with the increase in rail capacity due to the construction of the proposed KCS line, there would be traffic diversion from the truck and barge modes, and that these modes' share would decline. This is supported in testimony submitted to the Board. Several shippers claimed that rail is the preferred mode and that current truck and barge mode share was a function of railroad delays and capacity constraints which could be addressed by the proposed line.

The mode split model assumed that in the base year (1998) railroads would recapture 10% of the traffic diverted to truck and barge. In 2015 under the high growth scenario, rail would recapture as much as 18% of truck and barge traffic.

Table 3-6 shows the growth of BASF/Borden/Shell commodity shipments (in tons) for the horizon years, under both the most likely and high growth scenario, and allocates that growth among rail, truck, and barge. The table shows that, not only rail volumes, but also truck volumes, would be higher under the build scenario than under the no-build scenario, throughout the forecast period.[24] Tables 3-7 through 3-11 show the projected

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[0] According to verified statements from area industries, only rail has serious capacity problems. The traffic forecasts considered both plant output and mode share. As plant production levels increased, rail share also increased. However, it would not be a reasonable assumption to place all plant production increases into the rail mode. There are many customers and

number of loaded railcars on the proposed KCS line for the horizon years under low, most likely, and high growth scenarios. Table 3-12 shows from which mode the loaded railcars expected to move over the proposed rail line would be diverted.

Table 3-7 indicates that, in 1998 (the initial year), under the most likely growth scenario, a daily total of 27 loaded railcars would move over the proposed rail line, representing traffic diverted from other rail carriers and other modes (18 carloads of traffic originating at Geismar would be diverted and 9 carloads of traffic terminating at Geismar would be diverted). This would amount to approximately 10,000 annual carloads.

The diversion analysis deals only with loaded cars. Empty cars returning for loading and or leaving the plants would approximately equal the number of loaded cars handled annually. Table 3-13 shows the expected total number of railcars (loaded and empty) over the proposed line for the horizon years under the most likely growth scenario. Table 3-14 shows the expected total number of train movements over the proposed line for the horizon years under the most likely growth scenario.

Results of the diversion analysis under the most likely growth scenario agree closely with KCS' expectations for traffic over its proposed rail line. KCS furnished its projections of initial year traffic volumes, 5 year growth, and a range of annual growth thereafter. KCS expected at least 9,240 carloads per year at start-up, with maximum growth during the first five years of doubling carload volume to approximately 18,000 cars per year, and annual growth of between 4 and 6 percent thereafter. Table 3-15 shows KCS' projections of total railcars shipped over the proposed line.

As further indication of the reasonableness of the most likely case projections, these projections have been validated against economic forecasts produced by the U.S. Department of Commerce and other sources related to the expansion of industry in the petrochemical area, expected diversions from other modes of transportation, and the desire of the shippers to keep IC a viable carrier to foster rate and service competition in the future.

Tables 3-16 and 3-17 show traffic projections under the high

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products (both inbound and outbound) which are inaccessible by rail. If plant production increases as dramatically as proposed by BASF, then the forecasts must consider that other modes would increase as well. Generally, the numbers show that truck mode share would decrease by as much as 43%; however, output increases so dramatically that truck volume increases as well.

growth scenario. Table 3-16 shows the expected total number of railcars (loaded and empty) over the proposed line for the horizon years under the high growth scenario. Table 3-17 shows the expected total number of train movements over the proposed line for the horizon years under high growth. The high growth scenario is based on more optimistic rates of diversion from truck and barge to rail, as well as more optimistic rates of industrial expansion, as projected by the industries.

If the proposed rail line is approved, and if rail service over the line provides an increased level of service and lower rates, then other industries, especially those near the proposed line, would likely seek a rail connection and service from KCS. The most likely candidates would appear to be Big Three, Liquid Carbonics, Rubicon, Uniroyal, Vulcan, and the proposed new Shell facility south of the proposed rail line. Analysis of the Waybill Sample shows that Shell, BASF, and Borden account for 76 percent of all carloads originating from the Geismar area.

**Operating characteristics**. Figure A-56 is a schematic of existing and proposed KCS train movements in the project area. Characteristics of rail operations over the proposed rail line and interchange yard are expected to be as follows:

(a) KCS indicates that initial operations over the proposed line would be one train per day delivering and removing cars from the interchange yard. It further states that inbound traffic has the possibility of being delivered to the yard from two directions - south from New Orleans, or north from Baton Rouge. A more likely operation, at least during the initial years, would be for the existing Baton Rouge to New Orleans train and the New Orleans to Baton Rouge train to serve the interchange yard on a daily basis. This would result in two trains per day. Each train would deliver inbound loaded or empty cars and pickup outbound loaded and empty cars. The inbound cars may have a final destination of any one of the three shippers — Shell, BASF or Borden. Once the train arrives in the yard, the blocked cars (cars assembled for one particular shipper) would be switched according to industry destination. The cars may be switched additionally according to specific locations (spots) within the industrial facility. Following this activity, the blocks of cars would be delivered to the industries.

Outbound traffic from the shippers would be gathered from each of the industry plants and delivered to the interchange yard. The cars would be switched in the yard and blocked according to destination and/or interchange rail carrier. For example, cars may be destined for interchange with CSX Transportation at New

Orleans, the Burlington Northern Santa Fe in Dallas, or the Union Pacific in Kansas City. The blocks of cars would then be assembled into trains and depart to either Baton Rouge or New Orleans.

KCS states that operations over the proposed line would be designed to fit the shippers' needs. Frequency of service would depend upon the number of cars to be delivered or removed from each of the industries. At a minimum, initial operations would consist of one train servicing each of the three industries once per day. Over time, as traffic increases, more frequent switching operations may be necessary to pull cars and spot cars at the three industries.

(b) Under the most likely scenario, the proposed method of operation evaluated for this study would not cause trains to be added to the KCS mainline during the initial period. Instead, KCS would add Geismar traffic to existing trains operating over its mainline (mainline trains would stop at the wye connection with the proposed line to take on or drop off blocks of cars from or to Geismar. The north - south split would vary over time: approximately 62 percent would originate or terminate in Baton Rouge initially, while by 2015 approximately 66 percent would originate or terminate in Baton Rouge. KCS would increase the length of trains operating on its main line north of the proposed rail line and generally decrease train lengths on the main line south of the proposed rail line.

At some point in the future, when daily traffic volumes terminating or originating in Geismar result in train lengths which exceed operating limits and lengths; an additional train or trains would be added to handle through corridor traffic between Baton Rouge and New Orleans. The need for additional through trains may occur as early as the year 2005. One additional train each way on the main line would probably be sufficient through the planning period. The recent mergers of UP/SP and BN/SF, which have their own routes to New Orleans, could affect KCS significantly; however, KCS states that this effect has not yet occurred.

There is a potential during the outer years of the high growth scenario to add a new train which would operate from Baton Rouge to the interchange yard and back to Baton Rouge. This train would handle traffic volumes exceeding the approximate maximum of 70 cars (loaded and empty) which locomotives are expected to be able to pull while traversing the grades at the I-10 overpass.

(c) The general origin of traffic inbound to the three shippers is from Texas, Alabama, West Virginia, Louisiana, and Quebec (Canada). The general outbound destinations are to locations such as New Jersey, Ohio, Pennsylvania, North and South Carolina, Tennessee, Illinois, Michigan, Missouri, Mississippi, California, and other locations within Louisiana. The general routing of commodities destined for these locations would be primarily north through Baton Rouge to Shreveport, then westerly, northerly or easterly from there. Destinations in Mississippi, South and North Carolina, and some Louisiana locations would go south to New Orleans for interchange with CSXT or NS.

(d) Commodities which would be shipped over the proposed line during the initial years are currently being shipped by rail. The current general routings over the IC line are similar to those described above, except that the majority of the traffic from Geismar would be sent north to Baton Rouge then east to Hammond for westerly and northerly destinations. The remainder of the traffic (approximately 30%) would go south to New Orleans for final destinations in the Southeast or Louisiana.

(e) Table 3-12 shows that all of the rail traffic which would be moved over the proposed line would be diverted from other rail carriers or from other shipping modes. This diversion is a byproduct of the traffic forecasting process, which used a top down methodology. The forecasting process first predicted total commodity volumes by industry. Then a mode split based on historical data was applied. The KCS share of the rail mode volumes was then computed. Shift in mode shares (truck, barge and rail ) from the base condition were then predicted. The KCS share of the shifted mode shares was then computed. For example, Table 3-12 shows that, in 1998, 6,613 carloads of KCS traffic would be diverted from other rail carriers, while 1,090 carloads would be diverted from other modes. As shippers state that truck and barge volumes represent diversion from rail due to poor rail performance, it was assumed that the north or southbound destination of the diverted traffic would not change regardless of shipping mode.

(f) KCS expects to provide rail service over the proposed rail line, the set-out and parallel tracks, the interchange yard and the industry connector lines. Earlier discussions raised the possibility of a third party switching operator providing service; however, KCS has not officially proposed this mode of operation.

(g) KCS would use two locomotives on the trains arriving from Baton Rouge and New Orleans, and a single locomotive to move cars to and from the industries. The locomotives on the through trains would be GP-38 or SD-40 models, while a GP-38 would switch the rail yard and industries. Each locomotive would be approximately 55 to 60 feet long.

(h) In the initial years of operation, KCS expects trains to include between 12 and 25 cars. Rail cars would be predominantly tank cars, with some covered hopper cars. Table 3-18 shows expected capacities and sizes of the tank and hopper cars. Typical car lengths are nominally 65 feet. Tables 3-14 and 3-17 give expected train lengths under the most likely and highest traffic level scenarios. Jumbo tankers, with capacities of 33,500 gallons, are commonly used to transport commodities such as liquefied petroleum gas (LPG), and anhydrous ammonia, both of which are used or produced at the three industries to be served. Total jumbo tanker use on an annual basis approaches 1,000 cars, or 3 cars per day. Each train may contain one jumbo tanker, increasing train length only negligibly.

(i) Train service over the proposed line would be seven days per week. Expected time of day of train operations is not available at this time.

(j) Maximum speed limit on KCS' mainline south of the proposed line is 45 mph, with reductions in speed established by timetables and operating rules.

(k) Maximum operating speed over the proposed rail line would be 15 to 20 mph, with lower speeds in the yard, on set-out and parallel tracks, and over the industry connector line. KCS expects train speed at at-grade crossings would be less than 15 mph.

(l) On the KCS mainline immediately downline of the proposed line, there are currently four daily through trains northbound from New Orleans and four daily trains southbound to New Orleans. One-half of these trains are reported to operate during nighttime hours. Except for one northbound train which operates 6 days per week, all others operate 7 days per week.

(m) Operations over the set-out and parallel track would be the same as described for the proposed rail line during the initial periods; i.e., one train each way each day, to Baton Rouge from New Orleans and to New Orleans from Baton Rouge. Operations over the set-out track would include the following:

- Trains would arrive from Baton Rouge made up of cars destined for Geismar and New Orleans blocked, with Geismar cars at the head end of the train. New Orleans-bound cars would be left on the set-out track and the train would proceed to the interchange yard. Inbound cars would be dropped at the yard and outbound cars destined for New Orleans would be pulled to the KCS mainline. The cars on the set-out track would be joined to the cars pulled from the yard and the train would proceed to New Orleans.
- North bound trains would carry out the same operation.

At some time in the future, in order to more efficiently handle increased traffic volumes, the proposed parallel tracks, if and when constructed, could be used to block cars for pick up by through trains.

0 (n) Initially, the interchange yard would consist of two yard tracks paralleling the proposed line. Track 1 would be approximately 7,000 feet long, with a car capacity of 100 65-foot long cars. Track 2 would be approximately 6,700 feet long, with a 96 car capacity. Sufficient right-of-way would be acquired to allow for an additional 6 tracks in the future (for a total of 8 yard tracks) as traffic levels increase or the need for more complex blocking develops. Yard expansion would generally occur in two-track increments. Initial yard operations would probably have one track designated for arriving traffic (inbound) and the other track designated for departing traffic (outbound). The first incremental expansion would probably result in designation of two departure tracks (one for traffic destined to points served through Baton Rouge, and one for traffic bound for New Orleans) and two arrival tracks. At some point, additional trackage would be constructed to improve efficiency within the yard, by possibly adding one or more outbound classification tracks, an internal run-around track, tracks for temporary storage of inbound and outbound cars, and possibly a “rip” track for storage of cars needing minor running repairs.

Initial interchange yard operations were described above. In later years yard operations would become more frequent and complex as traffic levels grow. Each train movement between the KCS mainline and the proposed interchange yard would generate three train movements between the yard and BASF/Borden/Shell (one train movement to each industry). Additional runs may be

needed to adequately service the largest shipper, BASF, with projections of up to 200 BASF rail cars daily. In later years (2010-2015), operations at the yard would increase to 12 to 16 hours per day at least 5 days per week. There could be 6 trains per day in years 5 and 10 (2 trains to each of the 3 industries), and possibly 9 trains per day in year 15 (3 trains to each of the 3 industries). Each train would involve an out and back movement. Train consists would vary but would average 10 to 15 cars during year 5, 15 to 25 cars in year 10, and up to 30 cars in year 15.[25] Table 3-19 shows expected train lengths for such trains.

**Right-of-Way and Track Maintenance**

FRA's Track Safety Standards (49 CFR 213) prescribe the method and frequency of track inspection. Those track safety standards are minimum standards, and individual railroad policies and practices often prescribe more stringent standards. Although the proposed line and ancillary trackage would be constructed to FRA's Class 4 level of standard, KCS' proposed maximum operating speed limit of 25 mph over the line would allow maintenance to be at the Class 2 level. However, in the interests of safety and protection of investment, KCS has indicated that it would meet Class 4 inspection requirements for the proposed line and ancillary track facilities. These inspection requirements include:

- Track inspections must be done twice weekly, with at least 1 calendar day interval between inspections. Inspections must be made on foot or by riding over the track in a vehicle at a speed that allows visual inspection and no more than 5 MPH over track crossings, highway crossings or switches.

- Switch and track crossings must be inspected on foot at least monthly.

- Rails must be inspected at least once per year by a continuous search for internal defects for all jointed and welded rails in Class 4. The inspection equipment must be capable of detecting defects between joint bars and in areas enclosed by joint bars.

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[0] Under the high growth scenario, projected BASF car loadings in 2015 (15-year projection) would approach 106 loaded cars daily. Assuming that loads equal empty cars, there would be 212 total BASF cars per day. Borden and Shell are projected to add approximately 43 loaded cars daily. Thus, total daily volume would approach 298 cars in 2015.

- Special inspections of the track must be made as soon as possible in the event of fire, flood, severe storm, or other occurrence which might have damaged the track structure.

KCS currently operates an ultrasonic rail defect detecting unit (Sperry car) over its system four times per year. KCS would survey the proposed line at this same frequency, beginning within 6 months of the line's completion. KCS current inspection practice includes more frequent inspections than required by FRA, and all lines are inspected from vehicles (Hi-railer) 5 to 7 times per week. The FRA/Ensco T-10 Track Geometry Car is used to survey all lines twice per year.

Derailment potentials related to track structure include rail joints, switches, broken or defective rails, crossings, and washouts, etc. The proposed high standard of construction, including the use of continuous welded rail (CWR), would provide the initial track structure with a high degree of reliability and low potential for derailment. An inspection program exceeding FRA requirements would provide adequate maintenance procedures to substantially reduce the potential for track-related derailments.

KCS currently contracts out vegetation control on its lines to contractors experienced in the procedures. Control procedures consist of brush and weed cutting and weed spraying with herbicides. Brush cutting is performed by a track-mounted vehicle with cutters on booms which extend out 24 feet on each side of the track. Herbicides utilized in weed-spraying include: Roundup, Arsenal, Diuron 4L, Formula 40(R), Transline, Tordon K, Garland 3A, and Oust. All of these herbicides are registered with EPA.

KCS has not provided data as to which herbicide would be applied at which location, at what rate, whether in pellet or liquid form, and the method of application. It also has not given information on measures which might be used to mitigate potential drift of herbicide spray on adjacent vegetation and/or residences.

## 3.2 ROUTE B AND RELATED ACTIONS

### 3.2.1 Introduction

Route B is the designation of an alternate rail construction route which SEA considers a feasible alternative for KCS to use to connect its main line near Sorrento with the BASF, Borden, and Shell industrial facilities at Geismar. As with Route A, Route B would involve construction of an interchange yard with access road, parallel track to the new line, wye branch and parallel track, and set-out track along the existing KCS main line (see

Figure A-57).

Directly related to a Route B construction and operation are plans by BASF, Borden, and Shell to build industry connector lines from Route B to industrial trackage located within their plant sites.

### 3.2.2 Construction

**Layout and Design**

Route B would begin at a point on the KCS mainline between Gonzales and Sorrento, approximately at MP 813.5.[26] It would run southerly and westerly for a total distance of approximately 8.5 miles, crossing LA 941, So. Hodgeson Rd., I-10, and LA 44 before joining the Route A alignment at a point a short distance west of the LA 44 crossing (see Figure A-2). From that point to its western terminus, Route B would follow the same alignment as Route A. The I-10 and LA 44 crossings would be grade separated, while all other crossings would be at-grade. The location of the proposed IC crossing and the industry connectors would be the same as for Route A.

If the Board were to approve Route B, KCS would proceed with construction of Route B, two sidings at the interchange yard; and wye tracks and a siding parallel to the KCS mainline near Sorrento. KCS would add sidings at the interchange yard in the future as traffic levels grow or the need for more complex train assembly (blocking) becomes necessary. KCS would construct parallel tracks on both legs of the wye as future need requires. Figures A-51 through A-53 show typical cross sections along Route B, while Figure A-54 gives a more detailed view of the proposed interchange yard. Figure A-55 shows a profile view of Route B.

Construction of Route B and associated facilities would take approximately 20 months and would involve the same steps as those described in Section 3.1.2 for Route A.

Segment lengths for Route B and associated facilities are as follows (see Figure A-57):

- Route B 44,711 feet
- Interchange yard 7,037 feet
- Access Road to interchange yard 1,250 feet
- Wye branch and parallel tracks 3,500 feet
- Set-out track along KCS mainline 5,161 feet

The Shell industry connector would be 1,594 feet long, and the

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[0] This is the MP number at the center of the wye.

BASF/Borden industry connector would be 18,814 feet long.

ROW widths for Route B and associated facilities are the same as those given in Section 3.1.2 for Route A. Track work and track material characteristics are also the same as for Route A.

**Interchange Yard**

The location and functioning of the interchange yard would be the same for Route B as for Route A.

### 3.2.3 Operation and Maintenance

Rail operations over Route B and associated facilities would be the same as those described in Section 3.1.3 for Route A. Likewise, ROW and track maintenance practices for Route B would be the same as those described for Route A.

## 3.3 SELECTION OF ALTERNATIVES FOR DETAILED DISCUSSION

### 3.3.1 Alternate Rail Construction Routes

Figure A-58 shows the alternate rail construction routes between the Geismar Industrial Area and the KCS mainline which were identified for initial consideration in the EIS. These routes are designated as Routes A through G. The following sections briefly describe each route (see Table 3-20) and then present the reasons for eliminating those routes not selected for detailed discussion in the EIS.

**Description of the Alternate Routes**

**Route A**. This is the route proposed by KCS. It would begin at a point on the KCS mainline in the northwestern part of Sorrento and proceed southerly and westerly for a total distance of approximately 8.62 miles, crossing the following public roads: Brittany Road, LA 941, I-10, LA 44, St. Landry Rd., and Ashland Rd. The I-10 and LA 44 crossings would be grade-separated, while all other crossings would be at-grade. Route A would also cross the IC mainline and north and south industry lead tracks at-grade.

Route A would require a total of 152.00 acres of land (109.8 acres for the ROW itself and 42.2 acres for associated

facilities). Approximately 10 of those acres would be located within the incorporated area of Sorrento. Route A would cross the following waterbodies: Smith Bayou, Bayou Conway (twice), one unnamed tributary of Bayou Conway, one unnamed tributary of Hachett Canal, Hachett Canal, and one unnamed tributary of Bayou Francois.

The Route A ROW and associated facilities would encompass 48.9 acres of forested wetland and 45.1 acres of other wetland. The route would cross four public roads at grade, which have a total ADT of 2,816 vehicles. There are two residences within the ROW itself and a total of 74 residences within the ROW and 1,000 feet each side. There are no known sensitive species within the Route A impact area. There is a low potential for cultural resource impacts. There are no hazardous waste Superfund sites within one mile of Route A. The Corps indicated that it considers Route A to be a practicable alternative (see Appendix C, Attachment 1).

**Route B**. This route would begin at a point on the KCS approximately midway between Sorrento and Gonzales. It would proceed southerly and westerly for a total distance of approximately 8.47 miles, crossing the following public roads: LA 941, South Hodgeson Road, I-10, LA 44, St. Landry Rd., and Ashland Rd. The I-10 and LA 44 crossings would be grade-separated, while all other crossings would be at-grade. Route B would also cross the IC mainline and north and south industry lead tracks at-grade.

Route B would require a total of 138.4 acres of land (100.8 acres for the ROW itself and 37.6 acres for associated facilities). Around 1.9 acres of Route B (a portion of the set-out track) would be located within the Sorrento incorporated area. Route B would cross the following waterbodies: Smith Bayou, Bayou Conway (twice), two unnamed tributaries of Bayou Francois, and three unnamed tributaries of Hachett Canal.

The Route B ROW and associated facilities would encompass 41.7 acres of forested wetland and 41.3 acres of other wetland. The route would cross four public roads at grade, which have a total ADT of 3,559 vehicles. There are two residences within the ROW itself and a total of 105 residences within the ROW or 1,000 feet each side. There are no sensitive species within the Route B impact area. There is a low potential for cultural resource impacts. There are no hazardous waste Superfund sites within one mile of Route B. The Corps indicated that it considers Route B to be a practicable alternative (see Appendix C, Attachment 1).

**Route C**. This route would begin at a point on the KCS mainline approximately 4.3 miles southeast of Sorrento, near McElroy. It would proceed northerly and westerly for a total

distance of approximately 13.23 miles, crossing the following public roads: LA 22, LA 941, I-10, LA 44, St. Landry Rd., and Ashland Rd. The I-10, LA 44, and LA 22 crossings would be grade-separated, while all other crossings would be at-grade. Route C would also cross the IC mainline and north and south industry lead tracks at-grade.

Route C would require a total of 201.8 acres of land (160.23 acres for the ROW itself and 41.57 acres for associated facilities). Approximately 7.28 acres of this route would be located within the Sorrento incorporated area. Route C would cross the following waterbodies: Smith Bayou, Bayou Conway (twice), nine unnamed tributaries of Bayou Conway, Hachett Canal, and Panama Canal.

The Route C ROW and associated facilities would encompass 132.23 acres of forested wetland and 51.7 acres of other wetland. The route would cross 3 public roads at-grade, which have a total ADT of 1,984 vehicles. There are two residences within the ROW itself and a total of 26 residences within the ROW and 1,000 feet each side. The eastern end of the route is within 0.5 mile of an active bald eagle range; otherwise, there are no sensitive species with the Route C impact area. There is a low to moderate potential for cultural resource impacts. There are one hazardous waste Superfund site within one mile of this route.

An additional factor is that the Corps has indicated that it would find it difficult to defend issuance of a Section 404 permit for construction of this route, due to potential aquatic resource impacts (see Appendix C, Attachment 1).

**Route D**. This route would begin at a point on the KCS mainline approximately 4.3 miles southeast of Sorrento, near McElroy. It would proceed northerly and westerly for a total distance of approximately 13.25 miles, crossing the following public roads: LA 22, LA 941, I-10, LA 44, St. Landry Rd., and Ashland Rd. The I-10, LA 44, and LA 22 crossings would be grade separated, while all other crossings would be at-grade. Route D would also cross the IC mainline and north and south industry lead tracks at-grade.

Route D would require a total of 201.94 acres of land (160.50 acres for the ROW itself and 41.44 acres for associated facilities). Approximately 7.44 acres of this route would be located within the Sorrento incorporated area. Route D would cross the following waterbodies: Smith Bayou, Bayou Conway (twice), seven unnamed tributaries of Bayou Conway, Hachett Canal, and Panama Canal.

The Route D ROW and associated facilities would encompass 129.18 acres of forested wetland and 52.58 acres of other wetland. The route would cross 3 public roads at-grade, which

have a total ADT of 1,984 vehicles. There are two residences within the ROW itself and a total of 35 residences within the ROW or 1,000 feet each side. The eastern end of the route is within 0.5 mile of an active bald eagle range; otherwise, there are no sensitive species with the Route D impact area. There is a moderate potential for cultural resource impacts. There are one hazardous waste Superfund site within one mile of this route.

The Corps has also indicated that it would find it difficult to defend issuance of a Section 404 permit for construction of Route D, due to potential aquatic resource impacts (see Appendix C, Attachment 1).

**Route E**. This route would begin at a point on the KCS mainline approximately midway between Sorrento and Gonzales. It would proceed in a generally westerly direction for a total distance of approximately 7.56 miles, crossing the following public roads: LA 941, Kundler Rd., So. Hodgeson Rd., I-10, LA 44, St. Landry Rd., and Ashland Rd. The I-10 and LA 44 crossings would be grade-separated, while all other crossings would be at-grade. Route E would also cross the IC mainline and north and south industry lead tracks at-grade.

Route E would not accommodate construction of an interchange yard. The route would require a total of 109.94 acres of land (98.37 acres for the ROW itself and 11.57 acres for associated facilities). Approximately 25.12 acres of this route would be located within the Gonzales incorporated area, and 1.91 acres within the Sorrento incorporated area (set-out track). Route E would cross the following waterbodies: Smith Bayou, Boyle Bayou, and two unnamed tributaries of Boyle Bayou.

The Route E ROW and associated facilities would encompass 53.8 acres of forested wetland and 28.14 acres of other wetland. The route would cross 5 public roads at-grade, which have a total ADT of 3,559 vehicles (ADT is not available for Kundler Rd.). There is one residence within the ROW itself and a total of 79 residences within the ROW or 1,000 feet each side. There are no known sensitive species with the Route E impact area. There is a low to moderate potential for cultural resource impacts. There are no hazardous waste Superfund sites within one mile of this route. The Corps indicated that it considers Route E to be a practicable alternative (see Appendix C, Attachment 1).

**Route F**. This route would begin at a point on the KCS mainline in the northwestern corner of the town of Gonzales. It would proceed in a southerly and westerly direction for a total distance of approximately 6.83 miles, crossing the following public roads: LA 938, Coon Trap Rd., Griffith Rd., LA 429, I-10, Kling Rd., No. Robert Wilson Rd., and LA 30. The I-10 and LA 30 crossings would be grade-separated, while all other crossings would be at-grade. Route F would also cross the IC mainline and

north and south industry lead tracks at-grade.

Route F would not accommodate construction of an interchange yard, parallel tracks along Route F, or set-out tracks on the existing KCS line. The route would require a total of 92.35 acres of land (89.65 acres for the ROW itself and 2.7 acres for associated facilities). Approximately 0.11 acres of this route would be located within the Gonzales incorporated area. Route F would cross the following waterbodies: Smith Bayou (twice), two unnamed tributaries of Smith Bayou, New River, Grand Goudine Bayou, and one unnamed tributary of Bayou Narcisse.

The Route F ROW and associated facilities would encompass 20.57 acres of forested wetland and 43.26 acres of other wetland. The route would cross 6 public roads at-grade, which have a total ADT of 3,712 vehicles (ADT is not available for Kling, Griffith, or Coon Trap Roads). There are 10 residences within the ROW itself and a total of 158 residences within the ROW or 1,000 feet each side. There are no known sensitive species with the Route F impact area. There is a low to moderate potential for cultural resource impacts. There are no hazardous waste Superfund sites within one mile of this route.

An additional factor is that the Corps has indicated that it would find it difficult to defend issuance of a Section 404 permit for construction of this route, due to potentially significant impacts on existing residential areas (see Appendix C, Attachment 1).

**Route G**. This route would begin at a point on the KCS mainline approximately 4.6 miles southeast of Sorrento, near McElroy. It would proceed westerly and northerly for a total distance of approximately 14.37 miles, crossing the following public roads: LA 70, LA 22, LA 44, and Ashland Rd. The Highway 70 crossing would be grade-separated, while all other crossings would be at-grade. Route G would also cross the IC mainline and north and south industry lead tracks at-grade.

Route G would require a total of 219.65 acres of land (174.35 acres for the ROW itself and 45.3 acres for associated facilities). This route would not be located within any municipal incorporated areas. The only waterbody which Route G would cross is Bayou Conway.

The Route G ROW and associated facilities would encompass 126.32 acres of forested wetland and 52.31 acres of other wetland. The route would cross 3 public roads at grade, which have a total ADT of 10,422 vehicles. There are no residences within the ROW itself nor within 1,000 feet either side of the ROW. The eastern end of the route is within 0.5 mile of an active bald eagle range; otherwise, there are no sensitive species with

the Route G impact area. There is a high potential for cultural resource impacts. There are no hazardous waste Superfund sites within one mile of this route.

The Corps has indicated that it would find it difficult to defend issuance of a Section 404 permit for construction of this route, due to potential aquatic resource impacts (see Appendix C, Attachment 1).

**Comparison of the Alternate Routes**

SEA eliminated from further consideration those routes that clearly seemed infeasible or objectionable.

Review of the evaluation factors shows the following:

- Factors in favor of eliminating Routes C and D from detailed analysis include the length of each line (over 13 miles), the total acreage required for the project (approximately 200 acres for each route), and the amount of wetland acreage affected, particularly forested wetlands (approximately 130 acres of forested wetlands for each route). By contrast, Route A, the proposed route, would be approximately 8.6 miles long, require around 152 total acres, and would affect approximately 49 acres of forested wetlands. The Corps has indicated that it would be unlikely to issue a permit for Routes C or D, due to potential wetland impacts. Also, both Routes C and D would go through an area of Sorrento which is experiencing active commercial development.

  Factors in favor of selecting Routes C or D for detailed analysis are that there are substantially fewer residences near the ROW than for KCS' proposed route. Routes C and D have 26 and 35 residences, respectively, within the ROW or 1,000 feet each side of the ROW, compared to 74 residences within the Route A ROW or 1,000 feet each side.

- Factors in favor of eliminating Route G from detailed analysis are similar to those noted above for Routes C and D: the length of the line (over 14 miles), total acres required (around 220 acres), and the amount of wetland acreage affected, particularly forested wetlands (approximately 126 acres of forested wetlands). The Corps has indicated that it would be unlikely to issue a permit for Route G, due to potential wetland impacts.

  An additional factor is the amount of traffic on public roads which would be crossed at-grade (total ADT for

all such roads on Route G is greater than 10,000 vehicles). Also, this route has a higher potential than all the others for affecting cultural resources.

The primary factor in favor of selecting Route G is the absence of potentially affected residences and other structures near the route. There are no structures within the ROW and no residences, churches, schools or hospitals within 1,000’ of the ROW.

Although Routes C, D, and G would have fewer impacts upon built-up areas than would Route A, all three routes would have substantially worse wetland impacts than Route A. SEA believes that the wetland impacts, along with the likelihood that none of the three routes would be permitted by the Corps, justifies eliminating them from detailed analysis in the EIS.

- The primary factor in favor of eliminating Route F from detailed analysis is its greater proximity to built-up areas. There are 10 residences within the ROW, and a total of 158 residences within the ROW or 1,000’ each side. The environmental justice issue may be a concern, as Route F near the KCS mainline could affect low-income residents. The line would cross two public recreation facilities (parks). The Corps has indicated that it would be unlikely to issue a permit for Route F, due to potential impacts on residential areas.

  KCS states that the line would not accommodate an interchange yard and that it would not build a line on this route because of that.

  The primary factor in favor of selecting Route F for detailed analysis is that it would affect substantially fewer wetlands than the other routes, especially forested wetlands (approximately 21 acres of forested wetlands).

SEA eliminated Route F from detailed analysis in the EIS because it is clearly worse than the other routes in terms of impacts upon developed areas.

- That leaves Routes B and E. They do not differ much from Route A. Both routes would be slightly shorter than Route A (8.62 miles for Route A, 8.47 miles for Route B, and 7.56 miles for Route E). Route B would require slightly less total acreage than Route A (around 138 acres for Route B and 152 acres for Route A). Route E would require substantially fewer total acres, as KCS states that this route would not accommodate an interchange yard.

Route B would affect slightly less forested wetland than the proposed route (around 42 acres for Route B and 49 acres for Route A. Route E would affect slightly more forested wetland acres (around 54). Route E would have slightly more residences near the line than would Route A and substantially fewer than would Route B. Route E would have 79 residences within the ROW or 1,000' each side; Route A would have 74 residences within the ROW or 1,000 feet each side; and Route B would have 105 residences within the ROW or 1,000 feet each side. Routes B and E would each have total ADT of 3,559 vehicles on public roads crossed at-grade, compared with 2,816 for Route A.

KCS states that it would not build a rail line on Route E because it would not accommodate an interchange yard.

SEA retained Route B for detailed analysis, because it preliminarily appears to be a feasible alternative to the proposed route. SEA eliminated Route E from further consideration because it would not accommodate the interchange yard.

## 3.4 NO-BUILD ALTERNATIVE

### 3.4.1 No-Build, With No Other Action

BASF, Borden, and Shell indicate that shipments generated by future industrial growth at their facilities would probably move by truck if the proposed rail line is not built. However, they state that lack of freight rail service could artificially limit growth. SEA's transportation modeling supports this expectation. As noted earlier, SEA's forecasting of future rail/barge/truck shipments to and from BASF, Borden, and Shell generally projects a higher rate of growth for both rail and truck shipments if the line is built than if it is not (see Tables 3-6 and 3-7). This is because SEA expects the proposed rail line to allow the three industries to increase production and not all of this increase is expected to move by rail. For example, under the most likely growth scenario, in the year 2015, rail shipments to/from the three industries are projected to be 3.8 million tons/year if the proposed rail line is not built, and 5.3 million tons/year if it is built. Likewise, under that scenario in 2015, truck shipments to/from the three industries would be 0.64 million tons/year if

the rail line is not built, and 0.94 million tons/year if it is built.[27] However, it should be noted that forecasts of future industrial production and traffic levels are speculative and may be influenced by many variables.

BASF, Borden, and Shell have all indicated that future plans include expansion of existing facilities and in some cases, addition of new plants producing new products. All state that their proposed growth is affected to some degree by the current limitations of freight rail service and all express concern that further growth would continue to affect service levels. In the extreme, the industries fear that lack of freight rail service could limit or cap growth artificially. Each of the industries is also constrained in its ability and/or desire to shift transportation mode, i.e. convert to barge, pipeline or truck to handle expanded transportation needs.

During a public meeting on the proposed project, a BASF representative stated that “Under the present transportation options available to us, we believe that BASF’s ability to continue to expand at the Geismar site.....would be severely limited. If the Geismar site is to grow, then so must our available transportation modes. We do not perceive being able to expand our shipments by pipeline, barge or ship. It’s simply not appropriate”.

Shell’s representative stated that “At the present time, we’ve developed about one third of our plant site area....Development of the remaining two thirds of the site requires rail access to the east portion which could be most easily accessed by the proposed KCS spur”.

The IC, on the other hand, has testified that the “line through Geismar could handle more than three times current traffic volumes”. IC indicates that 1995 traffic volumes on the Baton Rouge to New Orleans corridor are 4.79 million gross tons (MGT) northerly and 4.84 MGT southerly.

For IC to handle triple the capacity on a through basis

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[0] In 1994, BASF, Borden, and Shell generated an average of 35 outbound trucks per day. In the year 2015, the three industries are expected to generate an average of 47 outbound trucks per day under the no-build alternative, and 73 outbound trucks per day under the most likely growth scenario for the build alternative. In comparison to current truck traffic on local roads, the number of additional trucks under the build alternative would not represent a significant increase (see discussion of average daily traffic and truck percentages in Chapter 2, Section 2.6.1).

would require the capability to move nearly 12 MGT each direction. This is equivalent to a capability to handle 10 additional trains per day. IC has not provided analysis regarding capacity of its Geismar Yard to handle such a traffic volume. Based on testimony offered by shippers regarding the current level of service quality and the lack of car storage capacity at Geismar, SEA expects that substantial improvements in physical plant might be required to meet the tripling of volume capacity claimed. IC has stated that it either owns or could obtain additional real estate to expand the Geismar Yard beyond the 1996 expansion.

IC also suggests that it has the ability to double track its main line and/or to install Centralized Traffic Control (CTC) to increase line capacity. Beyond its Baton Rouge to New Orleans corridor, IC completed, in 1995, an upgrading of its Hammond District line between Baton Rouge and Hammond, Louisiana, which raised track speeds from 35 mph to 49 mph. This upgrading allowed a change in operating strategy on traffic to and from Geismar. Except for local traffic and traffic to be interchanged with other carriers at New Orleans, all Geismar traffic destined to Jackson and beyond (approximately 70 percent of all Geismar traffic) currently operates north from Geismar to Baton Rouge and then via the Hammond District to Hammond and northward over IC's north-south mainline (See Figure A-59). Southbound moves to Geismar are handled over the same routing. This change in operating strategy bypasses congestion problems at New Orleans and is shorter than the route previously used through New Orleans.

Other future actions by IC in the Baton Rouge to New Orleans corridor include the proposed construction of a rail/water terminal near Burnside, approximately four miles south of Geismar Yard, and installation of 15 miles of heavier, continuous welded rail south of Burnside. IC expects additional traffic from the Burnside terminal would generally be directed southward towards New Orleans and not absorb line capacity north of Geismar Yard.

Table 3-21 summarizes the quantifiable environmental impacts of the no-build alternative and Routes A and B.

### 3.4.2 No-Build, With Implementation of One or More of the Following Options

**Other Transportation Modes**

**Barge**. Geismar's location on the Mississippi River offers shippers ready access to shipment by barge of raw materials into the plants and finished or intermediate product out of the plants. Choice of transport mode is not influenced solely by transportation rates, but also by customer location. If customers are not in barge accessible locations, then barge transport is

not a viable option.

The vast majority of customers for products from Geismar are located in the industrialized states more adequately served by rail than barge. Shell is an exception, as it presently ships an estimated fifty percent of its production by barge. This amounts to nearly 1 billion pounds of product annually. With infrastructure (barge-loading facilities at Geismar and barge-unloading facilities at customer locations) and transport systems (routes, rates, vessels and equipment) in place, Shell is in a position to expand its barge use, if the proposed line is not built. While this approach might meet Shell's transport needs, it could reduce the rate competitiveness of rail versus barge, affecting pricing and possibly future markets for products produced at Geismar.

BASF has testified that shipping by barge is "not appropriate" as a transport mode. BASF currently ships less than five percent of its production by barge. While the lack of new rail service probably would not stop future expansion plans, rail is the mode of choice, and BASF probably would not ship the goods it hopes to ship over the proposed line by barge.

Borden is in a similar situation to BASF. It does not rely on barge transport and does not look to barge as a viable transport option to solve future needs.

As discussed in Chapter 2, significant increases in barge shipments occurred in 1995. It is not known whether this is a result of quality of rail service, rates, or other factors.

**Pipelines**. Pipelines are used extensively to carry materials and products to, from, and between industrial facilities in Geismar. The presence of the proposed rail line probably would not affect the current use of pipelines for such purposes as transport of natural gases to plants (Shell) for refining and processing or the interplant transport of one plant's production for use by another plant in its manufacturing processes. If the proposed line were to induce any diversion of goods from shipment by pipeline it would probably be in the the transport of manufactured products from Geismar plants to customers. Pipelines generally are feasible as a transport mode where large volumes are to be delivered to a single customer or groups of customers along the route or at the pipeline terminus. Review of product destination for goods currently shipped from Geismar indicates a wide geographic distribution, to areas not currently served by dedicated product pipelines. Without existing infrastructure, pipelines would not adequately serve as a transport alternative to rail except in a few specific instances where one plant in or near Geismar can utilize product from another plant located in or near Geismar, and the installation of a new dedicated pipeline is economically feasible.

A specific pipeline transport option was part of the IC/BASF “13 Point Plan”, a joint undertaking to improve service level and reduce rail car storage and utilization requirements. The proposal described maximizing sales of anhydrous ammonia via pipelines versus current transport by rail car. BASF would be responsible for implementation of this proposal, and current status of such implementation is not known.

**Transloading** An alternative approach would be construction of new pipelines to reach the existing KCS rail system for “transloading” product from pipeline to rail. Pipelines conveying specific products could be extended to the KCS mainline, perhaps in the vicinity of the present KCS petroleum loading facility south of Sorrento, for transloading to tank cars. The feasibility of such pipeline construction from an economic and environmental perspective is beyond the scope of this EIS. Shell might be able to build new loading facilities north of the IC mainline on property adjacent to the proposed KCS rail line and load rail cars there. Although this approach would eliminate the need for the proposed IC crossing, it would limit the transport options and benefits available to Shell by offering less complete and flexible rail service. Construction of such a pipeline would require IC’s approval; however, overall impact on IC would be less than that associated with a rail-to-rail grade crossing because there would be no blockage of tracks, and so no interference or delay of train operations. Shell would need to construct rail car storage tracks to support the loading racks, and this land use would reduce land available for future plant expansion.

In addition to the transloading possibility described above; the transloading by tank truck from the plants to some location on the KCS mainline does not appear to offer significant benefits. Such an approach would exacerbate traffic congestion on area roadways and would tend to concentrate the congestion within the Baton Rouge to New Orleans corridor or the Baton Rouge to Shreveport area. Also, transloading involves increased chances of accidental spills and environmental damages. The economics associated with a transloading scheme may not achieve the results desired by the shippers.

**Intermodal**. The transport of liquids in intermodal equipment is much less common than the transport of general purpose merchandise in so-called “dry van” containers. Present day tank containers are typically 20 foot units consisting of tanks with a capacity of 4,800 to 6,600 gallons, enclosed within a structural steel framework that meets standard dimensions established by the International Standards Organization (ISO). Intermodal transport is actually a variation of transloading in which the container vessels are transloaded instead of the contents. Under an intermodal option at Geismar, tank containers would be trucked from the plants to an intermodal yard for loading on speciality

rail cars for transport by rail to another intermodal yard near the customer's location. At that point the tank containers would be unloaded from rail and reloaded onto truck chassis for final delivery to the customer's facility, where the containers would be unloaded or left for unloading. The empty containers would ultimately be returned to Geismar, through the same intermodal process. The economics of TOFC (Trailer on Flat Car), especially, with "double stack" availability, might prove attractive for some shipments. However, the multi-handling of the container in intermodal transport may produce higher transportation costs than conventional rail freight movements in tank cars. KCS has intermodal facilities at several locations in the Baton Rouge to New Orleans corridor.

## Other Options

**Possible Industry Solutions**. BASF, Borden, and Shell initiated the request for KCS to construct and operate the proposed rail line and provide additional freight rail service to that currently being provided by the IC. They indicate that they did so only after several years of facing a variety of transportation and logistics related problems at their respective facilities. The petrochemical business is subject to cyclic swings in production and product demand. This, as well as the potential for future growth in the Geismar area, has created, and would create, demand for safe, efficient and cost-effective freight rail service at Geismar.

The three industries each analyzed its own particular challenges with regard to improving current rail service and its ability to obtain adequate expanded services to match future growth in production. This analysis crystallized around the following four issues:

- Additional Rail Car Storage Facilities
- Production and Operating Efficiencies
- Competitive Transportation Sources
- Competitive Transportation Costs

Although it might be possible for the three industries to find a solution to the problem of additional rail car storage and to achieve additional production and operating efficiencies, none of these options would address the need for competitive transportation sources and costs.

Possible solutions to the rail car storage and production/operating efficiencies questions are discussed below.

**(1) Additional Rail Car Storage Facilities**. BASF, Borden, and Shell have looked at the possibility of providing additional rail car storage tracks on their own property rather than having the railroad provide additional rail car storage.

BASF indicates that IC does not currently provide off-site storage and that this contributes to congestion at its plant. Regarding on-site storage, BASF states that it has a considerable amount of existing on-site car-storage (600 cars) and would expand this in the future. However, BASF contends that rail carriers need to provide adequate storage to efficiently handle rail traffic (W.C. Moran, Director, Process Optimization for BASF, 1995). In 1996 IC implemented a partial solution to the rail car storage problem by expanding the capacity of its Geismar Yard by approximately 250 cars (an increase of approximately 25%). IC indicates that it owns enough property for an additional 8 or 9 tracks at Geismar Yard, although it has no present plans for expansion beyond the 1996 project.

Borden states that it has little to no on-site rail car storage and that its ability to provide such storage is limited by: (a) internal plant architecture (layout); (b) lack of access to the IC mainline from certain areas of the Borden complex; and (c) difficulty in successfully switching the plant in its current configuration. Borden says that what car storage it has is not accessible to the entire plant site in terms of in-plant switching. Additional storage would mean additional moves within the plant and would place more demand on a switch operation that is already currently inadequate at times. The company says it must rely on the rail carrier to store and handle returning empty cars and to provide lease storage for off-site non-hazardous loads.

Shell states that it has substantial trackage within its plant site and does store a significant number of Shell cars on its property. However, the company says that, from time to time, it needs the ability to have additional cars stored nearby to meet business needs. It also says that congestion and inadequate storage facilities affect the availability of empty cars for loading to meet customer requirements (F.F. Felker, Manager Products Traffic, Land Transportation Department, 1995).

KCS' proposed rail line construction and operation would not directly address the issue of additional rail car storage. KCS states that it has no present plans to use the proposed interchange yard for rail car storage, other than the temporary storage of cars between arrival and departure and delivery to the three industries.

**(2) Production and Operating Efficiencies**. Industry is constantly seeking improvements in production and operating efficiencies. Plant personnel have testified to the amount of

capital expenditures made to relieve bottlenecks on production lines. Operational problems are also addressed with capital investments, where applicable. Some operational problems are outside of direct industry control; in those situations solutions are sought by cooperative actions with others. The IC/BASF "13 Point Plan" is an example of such cooperative efforts and is discussed in the following section.

**Possible Industry/Rail Carrier Solutions**. In June 1995, BASF and IC initiated a cooperative effort to identify and eliminate problems with rail service previously identified by BASF. They started a Joint Quality Team Project. The project team developed 13 specific action items, which, if implemented, could be expected to improve rail-related operations, increase capacity, and reduce potential delays and congestion at BASF. The 13 items are described below:

(1) Improved handling of inbound chlorine cars. Benefits: Reduce number of cars at the plant, provide better control of tank cars in inventory, reduce in-plant switching time and operations, and reduce transit times. Implementation responsibility: BASF.

(2) "Kanban". "Kanban" is a program to reduce the use of rail cars as storage vessels. Benefits: Improved utilization of rail cars, reduce number of cars at the plant, improved operations and switching, provides cost savings, and provides better customer service. Implementation responsibility: BASF.

(3) Reduced Raw Material Inventory in Plant. Benefits: Reduce supply of chlorine stored on-site from 20 days to 8 days. Will relieve congestion and reduce number of cars on site. Implementation responsibility: BASF.

(4) Modifications to Existing Track. The proposal is to extend the length of several existing industry tracks. Benefits: Gain of approximately 147 car spaces, improve switching efficiencies, and allow more flexibility. Implementation responsibility: BASF.

(5) Linwood Storage Yard. The proposal is to add approximately 235 car lengths to existing track within the Linwood Rail Corridor. Benefits: Increased on-site rail car storage for empties and hazardous raw materials. Implementation: BASF (committing engineering funds for design).

(6) Track Utilization Management. The proposal is to vest responsibility for monitoring and control of storage tracks in a single position. Benefits: Improved utilization of existing track, possible reduction in

fleet size or growth, improved switching effectiveness, and improved communication between BASF and IC. Implementation responsibility: BASF.

(7) Switch Acid Sales to Anhydrous Pipelines. The proposal is to maximize sales of anhydrous ammonia via pipelines. Benefits: Reduced handling of acid cars on-site, reduced cost of labor to load cars, reduced pre-blocking requirements, reduced cost of fleet leasing and maintenance, and reduced liability associated with pipeline sales. Implementation responsibility: BASF.

(8) Relocate Hydrochloric Acid (HCl) Loading. The proposal is to consolidate HCl loading from the current 3 locations. Benefits: Lessen switching requirements, improved efficiencies, and improved billing/shipping procedures. Implementation responsibility: BASF.

(9) Centralized Tracing and Tracing of Rail Cars. The proposal is to establish a position for tracking and expediting of rail cars (currently, no single individual coordinates car tracing, which is apparently done by several people on an ad-hoc basis). Benefits: Improved utilization of rail fleet and better communication internally and externally. Implementation responsibility: BASF.

(10) New Work Hours for IC Crews. The proposal is to provide three switching crews and adjust crew work areas and schedules. Benefits: Improved crew time effectiveness, additional daily switching time, 7 day per week switching at the plant, and improved quality of life to crew. Concerns: Labor issues, crew turnover ,and implementation cost. Implementation responsibility: IC.

(11) IC to Provide Empty Tank Car Storage. In 1996 IC implemented a partial solution to the rail car storage problem by expanding the capacity of its Geismar Yard by approximately 250 cars, with plans to lease that area to BASF. Benefits: Reduced congestion at BASF, improved switching efficiency and safety, reduced violation of DOT regulations on holding empty placarded cars, and generation of additional revenues for IC.

(12) Improvement to Harvey, LA Transit Time. The proposal is to provide regular service to and from BASF’s Harvey plant. Benefits: Improved utilization of rail car fleet, increased rail shipments from truck, reduced loading times, reduced transportation costs, and minimization of truck congestion. Concerns: Requires

participation and cooperation of other carriers and may affect existing rail capacity and operations. Implementation responsibility: IC.

(13) Install Electronic Data Interchange (EDI) Star At All Shipping Areas. The proposal is to install EDI software at BASF. Benefits: Improved accuracy in preparation of daily switch list, and reduced errors, changes, and administrative costs. Implementation responsibility: IC.

In summary, the Joint Team determined that implementation of the thirteen proposals could eliminate nearly 270 rail cars from the BASF plant site, increase rail car storage capacity by nearly 400 cars, potentially reduce fleet size, and increase switching efficiency. The proposals were presented to management in November 1995. Only one of the 13 items had been implemented as of November 1996: the increase in IC's storage track capacity at Geismar Yard.

**IC/KCS shared track arrangement in the Baton Rouge to New Orleans corridor**. IC and KCS both own and operate existing rail lines in the Baton Rouge to New Orleans corridor. These lines are essentially parallel to each other and connect with each other in Baton Rouge and outside of New Orleans (see Figure A-60).

The IC and KCS lines cross each other in Scotlandville, approximately 5 miles north of Baton Rouge (30 miles north of the Geismar Industrial area), connect in yards at North Baton Rouge, Reserve, and NORCO, and join at Orleans Jct., just west of New Orleans.

The majority of traffic originating in Geismar is expected to move north to Baton Rouge for destinations further north, easterly or westerly. IC estimates that 70% of its current traffic moves in this direction. KCS expects that traffic diverted from IC by KCS' proposed line would have similar destinations, and, therefore, the majority of carloads would move in a northerly direction. The remainder of traffic from Geismar currently moves south to New Orleans. KCS expects a similar portion of traffic diverted by its proposed line to move south, to be interchanged with IC at New Orleans Jct., west of New Orleans, for delivery to further destinations.

Although it has not been offered by IC, nor is it known to be acceptable to KCS, the No-Build alternative with IC granting trackage rights to KCS from Baton Rouge to Geismar Yard to New Orleans Jct.(Mays Yard) would satisfy several of the objectives which BASF, Borden, and Shell hope to accomplish through the proposed rail line construction:

- Production and Operating Efficiencies

- Competitive Transportation Sources
- Competitive Transportation Costs

Distances involved on the IC mainline would be approximately 25 miles between Baton Rouge and Geismar Yard and 55 miles between Geismar Yard and KCS Junction or Mays Yard (New Orleans). Trackage improvements might need to be made in Baton Rouge to allow for a higher level class trackage connection between the IC and KCS lines. These distances are comparable to those involved following construction of the proposed rail line, i.e., 9 miles on the proposed rail line and 26 miles on the KCS mainline, for a total of 35 miles to reach Baton Rouge, and 9 miles on the proposed rail line and 46.5 miles on the KCS mainline, for a total of 55.5 miles to reach New Orleans. The majority of traffic would be handled over the shorter northerly routing.

Figure A-61 is a schematic of the trackage rights/shared track scenario. Train movements under this scenario would include the following:

1) KCS would add one train per day round trip between Baton Rouge and Geismar Yard, where cars would be interchanged with IC for delivery to shippers, and outbound cars picked up and returned to Baton Rouge.

2) Between Orleans Jct. and Geismar yard, KCS would add one train per day which would deliver cars to Geismar, and return outbounds to New Orleans destinations.

3) A more efficient operation might envision a southbound train from Baton Rouge interchanging cars at Geismar Yard and continuing to New Orleans, with a reverse move from New Orleans to Baton Rouge through Geismar yard. This could be a single train making a round trip in one day, as track speeds should allow for the turn to be completed within the hours of service law.

The foregoing scenarios address rail car movements to and from Geismar Yard. The switching operations serving each industry can be handled in one of several ways:

1) Reciprocal switching agreements could be negotiated as part of the trackage rights agreement. Under reciprocal switching, the carrier delivering the car places the car at the shipper’s location or storage siding. Cars would be pulled by the carrier of choice for the particular industry. This arrangement would require close coordination between IC and KCS, as both carriers could be operating simultaneously on an industry’s track.

2) All switching could remain the responsibility of IC.

KCS trackage rights allow delivery and removal from Geismar Yard under standard interchange agreements between the two carriers.

3) Establish a switching terminal “district” to be operated by a third party switching service provider, by a joint-venture between IC and KCS, or by a joint venture between IC, KCS, Shell, Borden, and BASF. Adequate operating rules and agreements could be written to insure safe and efficient operations within the district. The pooling or acquisition of resources such as locomotives and train-service employees, and the management by a third party under control of the stakeholders in the venture should adequately address shippers’ concerns with quality and level of service. The railway labor issues involved in this approach would also require resolution.

# CHAPTER 4.0ENVIRONMENTAL IMPACTS OF ROUTE A, ROUTE B, AND RELATED ACTIONS

## 4.1 INTRODUCTION

This chapter addresses environmental impacts of constructing and operating over KCS' proposed rail line (Route A), an alternate rail construction route (Route B), and industry connector lines which are related to, but not part of, KCS' petition to the Board. This DEIS addresses numerous areas of environmental concern raised by the public and various organizations, including issues of health and safety related to the possible accidental release of hazardous materials.[28] As appropriate, this chapter also discusses potential impacts of traffic from Route A or B being added to KCS' existing rail system.

The following sections also address proposed mitigation of the various environmental impacts associated with this proposal. To facilitate review of mitigation, SEA's recommended mitigation is also listed in Chapter 5.

This chapter also discusses potential environmental impacts of the no-build alternative.

## 4.2 LAND USE

The potential for land use impacts from construction and operation of a rail line generally arises from acquisition of land for the right-of-way (ROW) and associated uses. Property adjacent to the ROW can also be affected by changes in access and impacts arising from train operations. The extent to which such impacts actually occur depends on the circumstances of the particular case.

### 4.2.1 Route A

**Property Acquisition**

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[0] SEA also considered comments recently submitted by the Concerned Citizens of Ascension Parish, KCS' response to those comments, and IC's response to KCS' response. SEA evaluated the information contained in these comments and incorporated that information, as appropriate, into this DEIS. The comments themselves are reproduced in Appendix E.

Table 4-1 shows that Route A and associated facilities would require approximately 152 acres of land. Most of this land is either forested or cleared, although around four acres has been developed (see Chapter 2, Table 2-2). KCS would purchase the needed land from individual property owners at fair market value.

Route A would cross 41 separate parcels of land between the IC line and the KCS main line (see Figure A-62). Some of the parcels are owned by more than one entity and some of the entities own more than one parcel of land. The parcels include grazing, residential and forested land in small, multiple ownerships, as well as industrial land owned by petrochemical companies in the Geismar Industrial Area (the boundaries of three parcels owned by BASF and Shell are not shown on the figure). Route A would divide about 10 parcels in half, traverse an edge of 28 parcels, and occupy nearly all the land associated with 3 parcels. The proposed set-out tracks beside the existing KCS line would cross an additional 8 land parcels.

KCS would purchase any parcel rendered uneconomic to own. In the event ROW acquisition were to leave part of a parcel usable and part unusable, KCS would acquire only the unusable portion. The presence of the proposed rail line would adversely affect current or future use of 12 parcels, either through severance of access or creation of lots too small to be usable. These parcels are designated on Figure A-62 as: 4, 15, 16, 17, 18, 20, 23, 24, 25, 26, 27, and 33. Five of the parcels (23, 24, 25, 26, and 27) are associated with the proposed Delatte Tract subdivision near Brittany Road. Therefore, construction of Route A would limit development of this subdivision. In order to accommodate the wye connection to KCS' mainline, KCS would purchase Parcel 33, owned (but not yet developed) by the Ascension Parish School Board. The existing KCS rail line restricts public access to parcel 33. The remaining 29 affected parcels would retain viable access to public roads and be of sufficient size to permit continued use by the landowner.

Figure A-5 and Table 2-6 (in Chapter 2) show structures within or near the proposed Route A ROW. KCS would purchase and/or relocate two existing structures located within the proposed ROW (a house west of LA 941 and a mobile home east of Brittany Road).

**Special Land Use Designations**

There are no designated public lands, recreational or scenic areas, scenic streams, or Native American sites within or adjacent to the proposed Route A ROW. KCS may need to obtain an easement from the Louisiana State Land Office for the rail line to cross waterbodies (which may be considered state-owned property). KCS must obtain approval from LDOTD or the Federal

Highway Administration (FHWA) before crossing any public roads.

**Hazardous Waste Sites**

Construction and operation of Route A would not affect any known inactive, abandoned hazardous waste sites.

**Prime Farmlands and Farming Operations**

Except for the cypress-tupelo swamp lands that are common in the southern and eastern portion of the Parish, almost all of the land in Ascension Parish is classified as prime farmland. Nearly all of Route A would be located on land designated as prime farmland soils (Chapter 2, Figure A-8). However, only about 107 acres of this is considered to be prime farmland (i.e., not within designated industrial or incorporated areas). Within the proposed Route A ROW, the prime farmlands that are not forested are being used for animal pasture and grass/hay production; no row crops or grain production occurs. This current usage pattern suggests that there is not a substantial amount of pressure to maximize the use of the existing prime farmlands for agricultural purposes. However, construction and operation of Route A would prevent future use of this prime farmland for agricultural purposes. If Route A is constructed, about 0.2 percent of Ascension Parish's prime farmland would be lost.

Where the proposed alignment would pass through an area fenced for grazing livestock, KCS would negotiate with the landowner to construct and maintain an appropriate fence to contain the animals. KCS normally reimburses the landowner for the cost of fence construction, while the cost of fence maintenance is the landowner's responsibility. A cattle guard crossing or gate would also be constructed, if appropriate, to provide farmers access to portions of their property that may be severed by the proposed rail line, if there would be no other access to the severed property and the property is to be retained by the landowner.

Proposed rail operations is not expected to affect grazing livestock. Several veterinarians at the Louisiana State University School of Veterinary Medicine were informally polled about the potential effects of a new train operations on livestock. The general consensus was that, although horses tend to be more skittish than cattle, both would acclimate to periodic train activity and move away from approaching trains. The veterinarians were not aware of any reports that trains could cause adverse health effects or miscarriages among livestock (personal communication, Dr. Margery Gill, January 1997). Maximum train speed on the proposed rail line would be 25 miles per hour, which should be slow enough to allow livestock to sense and avoid approaching trains.

SEA recommends that, if the proposed construction and operation is approved, KCS develop and implement a plan that establishes clearly defined procedures for livestock owners to document and report alleged livestock losses due to operation of the proposed rail line. If losses are proven to be attributable to the rail line, KCS should be required to replace the livestock or provide appropriate compensation to the livestock owner. SEA should review this plan prior to its dissemination. KCS should distribute the plan to all landowners who currently graze livestock within the proposed Route A ROW.

**Other Facilities**

The Ascension Parish Sheriff's Department owns and operates a firing range located off St. Landry Road near the proposed interchange yard. Sheriff's Department officers use the firing range daily for qualification and familiarity with side arms. Members of the public may also use the facility two days a week. Qualified range officers from the department closely monitor and supervise all range activity.

The range consists of bermed, close-range shooting areas for handguns and a long (300 yard) range for rifles. All firing is from north to south direction. The interchange yard would be south of the range. The range is constructed to contain all rounds fired and has been operated safely in the past. However, a stray round could leave the range, particularly the 300 yard range. As rail cars containing hazardous materials and flammable liquids and gases would be present in the interchange yard, SEA recommends that KCS consult with the Sheriff's Department to determine what steps can be taken to prevent stray bullet rounds from leaving the range.

**Effects on Public Plans**

LDOTD plans to expand LA 44 to four lanes near the proposed Route A crossing. KCS would construct a grade separated crossing of LA 44, with the railroad at grade and the expanded four-lane roadway on a bridge structure. Construction of this crossing would cause short term traffic delays at peak periods.

SEA recommends that KCS consult with LDOTD during final project design to develop a traffic management plan. This plan should ensure maintenance of an equivalent level of service on LA 44 and all other public roads during rail line construction.

Ascension Parish proposes to construct a flood control levee along the western and northern side of Sorrento. As presently proposed, the northern border of this levee would intersect Brittany Road immediately south of the point where Route A would cross Brittany Road. From that point the levee would extend about 0.8 miles east before turning northward to intersect the

embankment of the existing KCS line. There are no plans to construct this levee in the near future.

If Route A is approved, SEA recommends that KCS consult with Ascension Parish officials and incorporate, to the extent practicable, the design of the proposed flood control levee into the final design of the rail line from Brittany Road to the intersection of the existing KCS rail line. KCS should provide SEA with documentation of the consultation with local officials (including any agreed upon design changes to the rail line or proposed levee.

Nearly all of Route A would be located within the unincorporated areas of Ascension Parish. Although there is currently no zoning within the unincorporated part of the parish, a land use plan and zoning ordinance is being developed and may be implemented during 1997. There is no evidence that existing land use patterns have been altered substantially because of the presence of the existing KCS rail line in Ascension Parish. Current land use adjacent to the existing KCS line includes industrial, commercial, residential, churches, schools, and recreational. SEA does not expect construction and operation of Route A to substantially influence proposed land use and zoning regulations in the unincorporated portions of the Parish.

The Route A wye would be within the corporate limits of Sorrento and thus subject to its zoning ordinance. The wye would be located on land zoned for “light industry”. Construction and operation of the wye would be consistent with this zoning designation.

### 4.2.2 Route B

Table 4-1 shows that Route B and associated facilities would require approximately 139 acres of land. Like Route A, most of this land is either forested or cleared, although around six acres has been developed (see Chapter 2, Table 2-2). KCS would purchase the needed land from individual property owners at fair market value.

Route B would cross around 54 separate parcels of land between the IC line and the KCS main line (see Figure A-62). Some of the parcels are owned by more than one entity and some of the entities own more than one parcel of land. The parcels include grazing, residential and forested land in small, multiple ownerships, as well as industrial land owned by petrochemical companies in the Geismar Industrial Area (the boundaries of three parcels owned by BASF and Shell are not shown on the figure). Route A would divide about 19 parcels in half, traverse an edge of 33 parcels, and occupy nearly all the land associated with 4 parcels. The proposed set-out tracks beside the existing KCS line would cross an additional 8 land parcels.

KCS would purchase any parcel rendered uneconomic to own. In the event ROW acquisition were to leave part of a parcel usable and part unusable, KCS would acquire only the unusable portion. The presence of the proposed rail line would adversely affect current or future use of 25 parcels, either through severance of access or creation of lots too small to be usable. These parcels are designated on Figure A-62 as: 4, 15, 16, 17, 18, 42, 44-48, 51, 53, 57, 58, and 60-69. Seven of the parcels (42, 44, 45, 46, 47, 48, and 51) are in or near the Alfa Acres subdivision. Ten parcels (60, 61, 62, 63, 64, 65, 66, 67, 68, and 69) are in or near the Hodgeson subdivision. There are existing houses and mobile homes in both the Alfa Acres and Hodgeson subdivisions. Both continue to expand on lands formerly in pasture. Construction and operation of Route B would adversely affect parcels with existing residences as well as future development in both of these subdivisions. The remaining 29 affected parcels would retain viable access to public roads and be of sufficient size to permit continued use by the landowner.

Figure A-5 and Table 2-6 (in Chapter 2) show structures within or near the proposed Route B ROW. KCS would purchase and/or relocate two existing structures located within the Route B ROW (a house in the Hodgeson subdivision and a house in the Alfa Acres subdivision).

**Special Land Use Designations**

There are no designated public lands, recreational or scenic areas, scenic streams, or Native American sites within or adjacent to the proposed Route B ROW. KCS may need to obtain an easement from the Louisiana State Land Office for the rail line to cross waterbodies (which may be considered state-owned property). KCS must obtain approval from LDOTD or the FHWA before crossing any public roads.

**Hazardous Waste Sites**

Construction and operation of Route B would not affect any known inactive, abandoned hazardous waste sites.

**Prime Farmlands and Farming Operations**

Except for the cypress-tupelo swamp lands that are common in the southern and eastern portion of the Parish, almost all of the land in Ascension Parish is classified as prime farmland. Except for the wye connection with the KCS main line and a small segment near LA 941, all of Route B would be located on land designated as prime farmland soils (Figure A-8). However, only about 103 acres of this is considered to be prime farmland (i.e., not within designated industrial or incorporated areas). Within the proposed Route B ROW, the prime farmlands that are not forested are being used for animal pasture and grass/hay production; no

row crops or grain production occurs. This current usage pattern suggests that there is not a substantial amount of pressure to maximize the use of the existing prime farmlands for agricultural purposes. However, construction and operation of Route B would prevent future use of this prime farmland for agricultural purposes. If Route B is constructed, about 0.2 percent of Ascension Parish's prime farmland would be lost.

Construction and operation of Route B would have the same effect on farming operations as would Route A (Section 4.2.1). SEA's recommendations regarding development of a plan to deal with rail-caused livestock loss would also apply to Route B.

**Other Facilities**

The earlier discussion regarding Route A impacts on the firing range would also apply to Route B.

**Effects on Public Plans**

Route B would cross LA 44 at very nearly the same point as would Route A, and like the proposed route, would have a grade-separated crossing of the road, which is to be upgraded to four lanes in this area. The discussion in Section 4.2.1 regarding the need for a traffic management plan during construction also applies to Route B.

Nearly all of Route B would be located within the unincorporated areas of Ascension Parish. A portion of the set-out track that would run parallel to the KCS main line would be located within the corporate limits of Sorrento and thus subject to its zoning ordinance. That part of the set-out track would be within an area zoned for "light industry", construction and operation of the track would be consistent with this zoning designation. The discussion of zoning for Route A also applies to Route B.

### 4.2.3 Industry Connector Lines

**Property Acquisition**

BASF/Borden/Shell would enter into a third-party agreement with another entity to build, operate, and maintain the industry connector lines. Although KCS expects to provide rail service over the industry connectors, it would not acquire, own or otherwise control the ROW of those lines. Most of the industry connector trackage would be located on property owned by BASF, Borden, or Shell. However, a short segment of the trackage would be on Uniroyal property. The use of Uniroyal land, either through purchase or lease, would be part of the third-party agreement governing the construction, operation, and maintenance of the industry connectors. The routing of the industry connectors was

established with the coordination and cooperation of the respective industries in the Geismar Industrial Area. The industry connectors would not have a negative impact on the operation or future use of the industrial facilities through which they pass.

**Special Land Use Designations**

There are no government-owned or controlled lands within the industry connector rights-of-way. The connector lines would not cross any public roads. There are no designated natural, recreational, or scenic areas within or adjacent to the industry connector lines. The connector lines would cross several intermittent streams, which might require an easement from the Louisiana State Land Office.

**Hazardous Waste Sites**

The BASF/Borden industry connector lines would not cross any known inactive, abandoned hazardous waste sites identified by the LDEQ. The Shell connector line would be about 650 feet northwest of the potentially contaminated site designated as Louisiana Gas Marketing Shell Sales Point 1. This site is located within the Shell Chemical Company property (see Figure A-7). The site has not yet been confirmed as being contaminated. Therefore, the effects of constructing and operating the Shell connector line are presently unknown.

SEA recommends that the Board require KCS to enter into an MOU with BASF, Borden, and Shell to require the builder of the industry connectors to develop and implement a plan to determine whether soils which may require excavation are contaminated. If soils are found to be contaminated, the plan should address how the contaminated soil would be safely excavated and disposed. The plan should also address how construction of the proposed rail line could influence proposed remediation efforts at the nearby potential hazardous waste site (if it is later determined to be contaminated).

**Utilities**

Wherever possible, the industry connectors would be located near or parallel to existing roads or utility corridors to reduce future restrictions on industrial development in this area. SEA recommends that the Board require KCS to enter into an MOU with BASF, Borden, and Shell to require the builder of the industry connectors to develop a plan for maintaining service and relocating utilities during construction of the lines and to incorporate the plan into the final project design. Construction of the connector lines would not unavoidably affect utility systems.

**Prime Farmlands and Farming Operations**

Some of the soil in the Geismar Industrial Area is classified as prime farmland and about seven acres of the industrial connector ROW outside the boundary of the GIA is considered prime farmland. However, since the early 1970's the entire area has been intensively developed for industrial petrochemical manufacturing and ancillary utilities, and there are no active farming operations in the GIA. Although construction of the connector lines would cause the unavoidable loss of some prime farmland, it is unlikely that this land would be developed for farming even if the connectors were not built.

**Effects on Other Public Plans**

The GIA is a designated industrial area and there are no public plans for the land within the planned ROW for the industry connector lines. The rail line would be consistent with the prevailing land use in the area.

## 4.3 SOCIO-ECONOMICS

### 4.3.1 Route A

**Demography**

**During the 18-month rail construction period, population in Ascension Parish is not expected to increase due to the proposed construction. Most of the construction jobs would probably be filled by people from Ascension and surrounding parishes. Therefore, few new people would move to Ascension Parish as a result of project construction. Population could increase slightly following completion of the proposed rail line, due to increased production and employment at BASF, Borden, and Shell. Since 1980, Ascension Parish population has increased by 33 percent. This growth has been fueled by expansion in the petrochemical industry as well as an urban-to-suburban shift in residential housing as people working in Baton Rouge have moved to Ascension Parish. The U.S. Department of Commerce predicts that Ascension Parish population will grow by 15 percent between 1996 and 2005.**

**Neighborhoods**

**There are 2 structures within the Route A ROW, 1 structure within the bands from the ROW edges to 200 feet from the ROW edges, 19 structures within the bands from 200 to 500 feet from the ROW edges, and 59 structures within the bands from 500 to 1,000 feet from the ROW edges. Thus, there are a total of 81 structures, including 74 residences, within this Route A study**

zone west of the KCS mainline (see Table 2-6 in Chapter 2). There are 10 structures within the study zone east of the KCS mainline ROW.

Construction and operation of Route A would not displace any neighborhoods. However, 12 parcels would have their present or future use adversely affected through either severance of access by the rail line or creation of lots too small to be useable (see Section 4.2.1). Five of these parcels are part of the proposed Delatte Tract subdivision near Brittany Road. KCS would purchase any parcel (or portion of a parcel) rendered unusable or uneconomic to own because of the proposed rail line. The construction of Route A would limit expansion of this subdivision. However, Route A would not isolate or bisect any existing neighborhoods.

Based on existing development patterns in Ascension Parish, it is probable that subdivisions would continue to develop on either side of the rail line along existing public or newly constructed subdivision roads. Studies of subdivision construction along the existing KCS main line reveal that a wide range of developments, including upscale neighborhoods, have located and continue to locate adjacent to this rail line (Russell and Associates 1995).

The primary effect of the proposed project on neighborhoods in the project area would be the displacement of two residences, one located along LA 941 and the other along Brittany Road. Another potential temporary effect of the project would be the visual and noise impacts of construction activities on residences located near the project area. Potential project-related noise impacts are discussed in Section 4.8.

**Community Resources**

As few new people are expected to move to Ascension Parish due to the construction process itself, that process would place few additional demands on public facilities or services. The slight population increase which may occur as a result of expanded employment at BASF, Borden, and Shell due to proposed rail operations could increase demand for public facilities or services. Ascension Parish plans to build two new schools in the next few years in order to address the current overcrowding at some parish schools (*The Advocate*, May 31, 1996).

No community resources are located within the proposed Route A ROW. The only community resources located within 1,000 feet of Route A are the Do-Right Church (along LA 44), St. Peter Church (east of US 61 in the Brittany area), the Ascension Parish Vocational/Technical School (east of the existing KCS line), and the Ascension Parish Sheriff's Firing Range (east of St. Landry Road). The primary effect on the Do-Right Church would be the visual presence of the rail line, unless it is obscured by trees or new development. The crossings of LA 44 and I-10 would be grade separated, and so the train whistle would not sound at these crossings (other project-related noise impacts are discussed in Section 4.8). St. Peter Church and the Ascension Parish Vocational/Technical School are located near an existing rail line, so the proposed project would not substantially

change existing conditions. The wye connection to the existing KCS line would be partially obscured by trees, which would dampen most of the sound and also form a buffer between the wye and the vocational/technical school grounds and parking lot. The firing range has a high earthen embankment on the south side, which would obscure views of the proposed rail line.

**Business and Industrial Activities**

As most of the rail construction jobs would probably be filled by residents of Ascension and surrounding parishes, this would have a beneficial effect on local businesses. BASF, Borden, and Shell state that proposed rail operations would result in more efficient transportation of materials to and from their facilities, and that this would enable them to compete more effectively and ensure their continued presence and expansion in Ascension Parish.

**Tax Revenue**

The proposed construction and operation should increase sales and employment tax revenues. If BASF, Borden, and Shell expand their operations as a result of the proposed project, this could increase property and business tax revenues for the parish and state. Other area businesses providing goods and services to the three industries could generate additional sales tax revenue for the parish and employment tax revenue for the state.

**Employment and Labor**

The proposed construction would take approximately 18 months and involve the concurrent tasks of ground clearing, bridge work, and rail construction. KCS estimates that the project would cost approximately $25 million. Employment would increase quickly from the start of the project to a peak of 50 to 75 workers. Ground clearing and bridge work would occur simultaneously, and the peak employment would last for four to five months. KCS would hire construction contractors to complete the work. These contractors would probably hire people from Ascension and surrounding parishes.

The proposed construction and operation could also result in an increase in jobs at BASF, Borden, and Shell and in support industries in Ascension Parish.

### 4.3.2 Route B

**Demography**

The demographic impacts for Route B would be comparable to those described for Route A (see Section 4.3.1).

**Neighborhoods**

There are 2 structures within the Route B ROW, 3 structures within the bands from the ROW edges to 200 feet from the ROW edges, 28 structures within the bands from 200 to 500 feet from the ROW edges, and 75 structures within the bands from 500 to 1,000 feet from the ROW edges. Thus, there are a total of 108 structures, including 105 residences, within this Route B study zone west of the KCS mainline. There are 17 structures within the study zone east of the KCS mainline ROW.

Construction and operation of Route B would not displace any neighborhoods. However, 25 parcels would have their present or future use adversely affected either through severance of access by the rail line or creation of lots too small to be useable (see Section 4.2.2). Seven of these parcels are in or near the Alfa Acres subdivision and 10 are in or near the Hodgeson subdivision. KCS would purchase any parcel (or portion of a parcel) rendered unusable or uneconomic to own because of the construction of Route B.

The primary effect of the construction and operation of Route B on neighborhoods in the project area would be the displacement of two residences, one located at the east end of Rose Avenue and the other along Hodgeson Road. Another potential temporary effect of the project would be the visual and noise impacts of construction activities on residences located near the project area. Potential project-related noise impacts are discussed in Section 4.8. Future development patterns adjacent to Route B can be expected to be similar to those described for Route A.

**Community Resources**

The effects on community resources due to workers moving to Ascension Parish as a result of construction and operation of Route B would be comparable to those described for Route A.

No community resources are located within the Route B ROW. The only community resources located within 1,000 feet of Route B are the Do-Right Church (along LA 44), St. Peter Church (east of US 61 in the Brittany area), and the Ascension Parish Vocational/Technical School (east of the existing KCS line). Potential impacts on the Do-Right Church would be the same as for Route A. The incremental effects on St. Peter and the vocational school would be negligible, as they are already located near an existing rail line. The Ascension Parish Sheriff's Firing Range is located east of St. Landry Road. The firing range has a high earthen embankment on the south side, which would obscure views of the proposed rail line.

**Business and Industrial Activities**

Construction and operation of Route B would have approximately the same effect on business and industrial activities as for Route A.

**Tax Revenue**

Construction and operation of Route B would have approximately the same effect on tax revenues as for Route A.

**Employment and Labor**

Construction and operation of Route B would have approximately the same effect on employment and labor as for Route A.

### 4.3.3 Industry Connector Lines

**Demography**

The industry connector lines would be on property owned by the chemical companies. There are no residences within 1,000 feet of the edge of the rights-of-way. Therefore, construction and operation of the industry connector lines themselves would not affect Ascension Parish demography.

**Neighborhoods**

Construction of the industry connectors would be within established industrial areas. No structures are located within the industry connector rights-of-way, or within 1,000 feet of the edges of those rights-of-way. There are no neighborhoods in the vicinity of the industry connectors.

**Community Resources**

Construction and operation of the industry connectors themselves would not affect the demand for Ascension Parish community resources. No community resources are located either within or in the vicinity of these connectors.

**Business and Industrial Activities**

The process of constructing the industry connectors would create substantially fewer jobs than those needed for the construction of Routes A or B, because there would be no bridge work and only limited ground clearing. Operation of the connectors may create jobs and contract opportunities for businesses in Ascension Parish.

**Tax Revenue**

Construction and operation of the industry connectors would probably result in a small increase in tax revenue for Ascension Parish and the State of Louisana. Tax revenue would come from sales tax and payroll tax related to the construction of the connector lines.

The construction of the connector lines should increase the value of the property where they would be located, and property tax revenue should also increase. Although most plant expansion projects qualify for the 10-year industrial tax exemption, some immediate tax revenue would come from the small portion of industrial investment (generally less than 10 percent) that does not qualify for the 10-year exemption (Szuszka 1996a, 1996b). Additional tax revenue would be generated when the 10-year exemption would expire.

**Employment and Labor**

Construction of the connector lines would create temporary employment, especially in relation to ground clearing and rail construction. Operation of the connectors would contribute to the employment and labor effects ascribed to operation of Routes A or B.

## 4.4 WATER RESOURCES

### 4.4.1 Route A

**Surface Water**

Rail construction and operation can affect surface waterways in a number of ways. Soil erosion can cause siltation of waterways, adversely affecting the drainage capacity of the channel and aquatic habitat. Raised rail line embankments and improperly designed waterway crossings can block drainage of the area, especially during floods. Leaks and spills can affect the water quality of surface waterbodies.

**Impacts from the Construction Process**. Most of the waterways that Route A would cross are intermittent streams; only two of the waterways carry water at all times of the year (the lower crossing of Bayou Conway and a tributary to Bayou Francois crossed by the set-out tracks along the existing KCS line). KCS proposes to use Best Management Practices (BMPs) to minimize surface water impacts (see Table 4-2).

If the Board approves the proposed project, KCS would develop a detailed BMP and Storm Water Pollution Prevention Plan and submit it to the Louisiana Water Pollution Control Division, Office of Water Resources, Department of Environmental Quality, to support the issuance of a Storm Water General Permit for Construction Activities pursuant to LAC 33:IX.1 Chapter 7, Section 709.H. The Storm Water General Permit for Construction Activities, would be required because the project would disturb more than five acres. As noted in the subsection dealing with wetlands, the proposed construction would also require a permit

from the Corps.

SEA concludes that implementation of the BMPs listed in Table 4-2 should minimize potential impacts on surface waterbodies during construction. However, KCS has not yet identified the specific steps it would take to control sedimentation and erosion during construction, other than to indicate that they would conform to LDOTD Standard Roadbed Specifications Section 717, 718, and 720. KCS would develop this level of detail when, and if, the Board approves construction and operation of Route A. SEA recommends that, if the Board authorizes the proposed action, KCS develop and implement an erosion and sediment control plan in consultation with the LDOTD, LDEQ, and NRCS, and that this plan include water quality monitoring to ensure that construction does not adversely affect prevailing water quality. Such a plan could be incorporated into the final design BMPs for the project. KCS should submit to SEA its erosion and sediment control plan, its detailed, finalized project-specific BMPs, the final design plans for the approved route, and a summary of the results of its consultations. KCS should also provide to SEA for informational purposes the SWP3 application submitted to LDEQ. KCS should not begin earth disturbing activities until it receives any required approvals of its erosion and sediment control plan and BMPs.

Much of the proposed rail line is near surface water channels and wetlands. Refueling and maintenance of construction equipment could release contaminants into waterways. SEA recommends that KCS conduct all refueling and, to the extent possible, maintenance, of construction equipment in areas with an impervious surface (e.g., clay, plastic liner, pavement). This would facilitate capture of spilled fluids prior to introduction to waterways and wetlands.

Even with these protective measures, there may be minor, short term unavoidable impacts on waterways due to sedimentation during construction.

**Impacts of Rail Line Design, Operation, and Maintenance on Hydrology and Water Quality**. These impacts are listed below.

**(1) Hydrology**: KCS proposes to design, construct and maintain the proposed line in a manner that would not interfere with hydrologic processes. Route A would not displace any of the seven channels listed in Chapter 2, Table 2-15. The waterway crossing structures would be large enough to allow unobstructed flow of flood water. KCS proposes new bridges for the crossing of Smith Bayou and the two Bayou Conway crossings. The proposed

25-feet spacing between pilings should be sufficient to prevent substantial accumulations of debris that could impede the free flow of water. The twin, 60-inch culverts proposed for the crossing of the Hachett Canal should maintain the existing drainage regime in this intermittent channel.

With proper final design and culvert/bridge maintenance, the presence of the proposed rail line should not adversely affect the normal flow of water. Prior to finalization of the rail line design, KCS should address the issue of how to accommodate Ascension Parish's ongoing waterway debris removal and maintenance program. Although details of the Parish's program have not been provided, the intermittent nature of most of the streams could allow bulldozers or backhoes to traverse the dry channels for maintenance purposes. A culvert or bridge could obstruct access to the full length of a channel by the Parish's maintenance equipment. SEA therefore recommends that KCS consult with appropriate Ascension Parish officials prior to finalizing all channel crossing designs and provide documentation to SEA that the Parish's waterway maintenance program would not be compromised by the proposed project. If the proposed rail line would block traditional access points for channel maintenance, KCS should provide appropriate alternative access sites, either by purchase or easement.

The available hydrologic information for project area waterways is limited. This information would be useful in developing proper emergency responses to accidental spills. SEA thus recommends that KCS include in the water quality monitoring plan (described in the following section) measurements of flow velocity, volume, and direction at all rail line crossings of major waterways in the project area. Because most waterways are intermittent, it would be necessary to schedule hydrologic data collection during periods when there is flow in the channels (e.g., during or shortly after significant rain events). Recent rainfall records should be included as part of the documentation of this monitoring.

**(2) Water Quality**: KCS's proposed BMPs (Table 4-2) should minimize potential contamination of adjacent waterways and wetlands. Runoff from bridge crossings of Bayou Conway and Smith Bayou would be diverted from the bridges onto land to prevent direct runoff into the bayous. The engines that would be used by KCS have internal collection systems designed to prevent the leakage of fuel and other engine fluids into waterways and wetlands.

KCS would minimize the use of herbicides along the proposed ROW by using a track-based weed and brush cutter which extends out 28 feet on each side of the track. Mechanical vegetation control would reduce the chances of herbicides entering waterways and wetlands. Where mechanical vegetation control is not feasible (e.g., in stone ballast between ties and rails), only EPA-approved herbicides would be used. KCS would use certified/licensed pesticide applicators to apply herbicides.

SEA recommends that KCS develop a site-specific herbicide application plan for the

proposed ROW. This plan shall specify types of herbicides that KCS (or its contractor) would use and show the location of proposed herbicide use on a map. Much of the route is adjacent to stream channels and wetlands, which would necessitate restriction of herbicides to those approved by the EPA for application adjacent to waterbodies. The plan should indicate the location of areas where only manual vegetation control would be used and also environmental conditions that would preclude herbicide application (e.g., high winds). KCS should incorporate the herbicide application plan into the final BMP plan to be submitted to SEA.

KCS provided no information on existing water quality for waterways which Route A would cross nor did it indicate the location of any point source discharges into waterways near the route (point source dischargers usually require a National Pollution Discharge Elimination System [NPDES] permit). As a result, there is no baseline to which water quality data during project construction and operation could be compared. SEA recommends that KCS, in consultation with LDEQ, develop and implement a water quality monitoring plan for waterways that Route A would cross. This plan should provide for periodic monitoring of those parameters most likely to be associated with construction (e.g., total suspended solids, oil and grease) and project operations (those chemicals most likely to be transported by the rail line; e.g., volatile organics). The plan should include the parameters to be monitored and frequency of sampling. Monitoring should begin prior to the onset of construction. KCS should include in the plan a definitive statement regarding the presence of point source discharges to waterways crossed by the Route A. KCS should submit to SEA a copy of the plan and the results of its consultation.

SEA believes that routine operation and maintenance of the proposed rail line would have no unavoidable adverse impacts on surface water quality. However, nonroutine operation and maintenance events could also affect water quality, as discussed below.

- **Leaks and Accidental Spills along the Rail Line**. Although the risk is small, spills along the rail line could occur as a result of accidents. If the spilled material entered surface water bodies, it could affect surface water quality. Keeping potential impacts from an accidental spill to a minimum depends on available emergency response capabilities.

  KCS would construct ditches at the base of the rail line embankment. In the event of a small spill, the ditches could be blocked near the source with sorbent or other appropriate barriers and the spill cleaned up. KCS would contain potential larger spills by placing sorbent or curtain booms across downstream channels at road crossings to contain the spread of contaminants. Enough slack could be left in the booms to accommodate fluctuations in water levels. Most of the channels crossed by Route A do not contain water for much of the year, which would reduce the chances of a spill adversely affecting water quality and the aquatic community.

KCS would require thorough inspections of the rail cars both before and during transport, in compliance with the Code of Federal Regulations (CFR, Title 49- Transportation), the KCS System Operating Rules, and the Title 33 Water Quality Regulations from the Louisiana Department of Environmental Quality (Chapter 9: Spill Prevention and Control). This would reduce the risk of leakage of liquid cargo from the rail cars. If a leak were detected, KCS would not allow the train to continue until the leak is stopped. Measures taken by KCS and other responders in response to a leak or a spill would follow the existing KCS Emergency Response Plan. This plan would be updated to incorporate any site specific emergencies that could occur along the proposed rail line. Section 4.6 of this chapter (Transportation/Safety) discusses specific details of the plan and SEA's recommendations regarding potential leaks and spills along the rail line.

- **Spills within the Interchange Yard**. The interchange yard would be surrounded by a two-foot high levee, as a spill control measure. Water draining from the enclosed interchange yard would drain into a retention basin which would be built east of the yard. The retention basin would be able to retain the rainfall from the 100-year storm over a period of 24 hours (i.e., 12.6 inches of rainfall) in addition to a spill from fifteen 100-ton rail cars (approximately 1,500 tons of chemicals, depending on the specific gravity of the chemical), assuming that the basin was dry when the 24 hours of rain began. The total holding capacity of the retention basin would be approximately 1.6 million gallons (or 6,250 tons) of liquid.

  The retention basin and the interchange yard would have an impervious bottom. If geotechnical analysis of the existing soils prior to construction shows that they are pervious, the basin would be lined with an impervious material to avoid leaching of contaminants into the soil. This material could consist of a plastic membrane liner, synthetic rubber liner, or bentonite.

  In KCS'conceptual design, the retention basin would capture chemicals without manual closure of gates. Spilled chemicals that are heavier than water would be concentrated in a deep subbasin within the retention basin. The subbasin would have the capacity to retain chemicals from fifteen rail cars. Chemicals that are lighter than water would be captured on the surface of the retention basin. The outflow of the basin toward Bayou Conway would have an elbow pipe that would be turned downward into the basin. This would prevent chemicals that are lighter than water (up to the volume of 15 tank cars) from being released into Bayou Conway, in the unlikely event that the basin would completely fill with liquids.
  The retention basin is likely to accumulate runoff from the interchange yard that is associated with normal rainfall events. If normal runoff is allowed to remain in the retention basin, the ability of the basin to contain a catastrophic

spill could be reduced. This could allow the introduction of contaminants into Bayou Conway. KCS'conceptual design for the retention basin does not yet specify how the storage capacity of the basin would be maintained. KCS' conceptual plan also does not address the scenario of a spill of chemicals that mix with water. If the retention basin is filled with liquids, these contaminants could be released to Bayou Conway through the elbow pipe outfall. Both of these issues would need to be resolved in the final design of the retention basin. Section 4.6 contains SEA's recommendations regarding the retention basin.

KCS would inspect the tracks associated with the proposed rail line, including the interchange yard, at least once a week. This would allow timely detection and repair of breaches in the levee around the interchange yard that could be caused by such things as burrowing animals (such as nutria, muskrats, and armadillos). A field survey on October 25, 1996, detected no evidence of burrowing into existing levee or embankment structures in the vicinity of the proposed rail line. SEA believes that, with appropriate BMPs, the integrity of the levee around the interchange yard could be ensured. This would minimize the potential for accidental releases into Bayou Conway through breaches in the levee.

## Floodplains

**Hydrology**. Approximately 110 acres (72 percent) of Route A are within the 100-year floodplain. The terrain in the vicinity of Route A is relatively flat, with a low hydraulic gradient. Most of the floodplain is drained by Bayou Conway and Smith Bayou, and their associated tributaries (see Figure A-21).

The final design of the proposed rail embankment would be comparable to that of other existing roads and rail lines in the area. To ensure that the track is not flooded, the top of the embankment would be at an elevation at or above 100-year flood elevation. The embankment would contain single, 24-inch diameter pipe culverts, spaced at a maximum distance of 500 feet apart. These culverts would prevent impoundment of flood water on adjacent land and enable surface runoff to equalize on either side of the embankment. The rail line would cross Bayou Conway and Smith Bayou on pre-stressed concrete girder ballast deck bridges, to maintain existing flow and allow for easy maintenance. KCS' proposed twin 60-inch diameter pipe culvert at the Hachett Canal crossing should be sufficient to accommodate flood flows in this channel. Ditches would be constructed along both sides of the embankment to provide a limited amount of temporary floodwater retention and to direct overland flow to nearby culverts under the embankments.

KCS would establish the final configuration and location of any onsite flood control structures during final design of Route A. A detailed topographic survey would be conducted at that time to allow the design of drainage structures according to detailed local

hydraulic requirements. All bridge and culvert crossings would be designed to allow for easy maintenance to maintain proper flow in the waterways. The final drainage measures would be in compliance with state and local regulations, including Chapter 9.5 (Flood Damage Prevention) of the Ascension Parish Code of Ordinances.

**Flood Water Storage Capacity**. The average elevation of the land within the floodplain is estimated to be about one foot below the 100-year flood elevation. Construction of Route A would displace the existing flood storage capacity in the area. SEA estimates that roughly 180,000 cubic yards of flood storage capacity would be lost. Given the large size of the floodplain in the project area (see Figure A-24), this reduction would be comparatively small and unlikely to noticeably increase flood water elevations.

SEA concludes that construction of Route A using sound hydrological and engineering practices should not increase the flood hazard to local property owners. However, without the benefit of a detailed topographic survey and KCS' final design of flow diversion and flood protection elements of the proposed rail line, SEA cannot confirm that Route A would not alter flow patterns and flooding in the area. SEA thus recommends that KCS consult with the Federal Emergency Management Agency (FEMA) regarding the adequacy of its proposed flood protection measures and whether the proposed construction would diminish flood storage capacity sufficiently to warrant an update of the Ascension Parish Flood Insurance Study (FEMA, 1993). As noted in the wetlands subsection, SEA recommends that state and local officials be included in the review of the wetland mitigation plan to ensure that compensatory flood storage is included as a function of replacement wetlands). KCS should submit the results of this consultation to SEA.

**Flood Protection Levee for the Town of Sorrento**. The Town of Sorrento eventually plans to construct a flood control levee in the vicinity of the Britanny Road crossing of Route A. This levee is not likely to be constucted in the near future. Section 4.2 contains SEA's recommendations regarding this levee.

## Groundwater

**Impacts from the construction process**. The rail construction process itself could affect groundwater if substances used during construction leached into the underlying aquifer following accidental spills. Such substances would most likely consist of fuel and engine oil used for refueling and maintenance of the construction equipment. However, SEA does not expect groundwater impacts during the proposed construction for the following reasons:

- SEA has already recommended that KCS conduct all refueling and, to the extent possible, maintenance of construction equipment in areas with an impervious surface. This would not only facilitate clean up of any accidental spills but would prevent the leaching of contaminants into aquifers. Also,

implementation of KCS'final site-specific Best Management Practices would further reduce the chance of accidental spills and leaks during construction

- Project area soils consist of non-marine clays with varying amounts of silt and sandy silt, with moderately slow to very slow permeability. Frequently this clay and silty soil is more than 100 feet thick over the aquifer (Figure A-13). Known wells adjacent to Route A are drilled to depths ranging from 108 to 495 feet. In the event of an accidental spill during construction, contaminants would most likely remain on the surface or penetrate only a short distance into the soil. This localized containment would facilitate a complete spill clean up.

**Impacts from Rail Line Design, Operation, and Maintenance**. Design, operation, and maintenance of a rail line could affect groundwater in the following ways: (1) location of the line could displace wells within or adjacent to the ROW; (2) location of the line could impede recharge of area aquifers; (3) normal rail operations could cause leaching of contaminants into the aquifer; (4) accidental spills could cause leaching of contaminants into the aquifer, either directly through the soil or through uncapped wells; (5) vibration from moving trains could damage existing wells. These factors are discussed below.

- **Displacement of wells located within or near the ROW**. There are no known wells that would be within the proposed ROW; however, the route would be near several active wells in the area (e.g., wells 495, 5193Z, 5194Z, 7938Z, as shown on Figure A-32).[29] These wells are used for either public or domestic water supply (Table 2-18). Prior to final design of the proposed line, KCS would inspect the ROW and identify any unreported wells that would be within 50 feet of the drainage ditches on both sides of the rail line embankment. According to the Louisiana Water Well Rules, Regulations, and Standards (LDOTD, November 1985), potable water wells must be located a minimum distance of 50 feet from drainage ditches. KCS would also interview adjacent property owners to identify unreported potable water wells.

  The Louisiana Water Well Rules, Regulations, and Standards require all new wells to be built at least 100 feet beyond rail lines that may carry hazardous cargo. However, existing wells within 100 feet of the rail line would not need to be replaced (M. Dore, LDOTD, personal communication, January 14, 1997).

  SEA recommends that, if the Board authorizes Route A, KCS should conduct a thorough field review to identify all wells (including abandoned wells) within

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[0] Information on the exact distance of these wells to the proposed rail ROW would be available only if and when the Board approves the proposed line, and on-site work would begins.

100 feet of the rail embankment. The location of known wells, shown on Figure A-32, should be field verified. If any wells are within 100 feet of the rail line, the coordinates should be established and the location accurately shown on the final design plans. If any wells are within the ROW or within 50 feet of a proposed rail line drainage ditch, KCS should drill a replacement well that provides the same functions (including comparable or greater yield) as the well that would be lost (unless the design of the rail line could be altered to accommodate the wells).

- **Decrease in recharge potential of the aquifers in the area**. There are no known major recharge areas for the underlying Norco and Gonzales-New Orleans Aquifers in Ascension Parish (recharge of the aquifer occurs primarily from surficial sands in parishes north of the project area - see Figure A-29). Aquifer recharge is limited primarily by the low permeability of the surface soils. The proposed project would not substantially impede surface water flow to potential recharge areas elsewhere, and thus SEA believes that the proposed project would not decrease recharge of area aquifers.

- **Leaching of contaminants into the aquifer during normal operation**. Railroads are generally not a source of pollution under normal operating conditions. Diesel fuel and other fluids from the locomotives would be collected internally by the engines. Persistent leaks from rail cars would be avoided by required inspections. Herbicides to control ROW vegetation would be applied according to manufacturer's specifications by a licensed herbicide contractor. Due to the slow permeability of area soils, SEA does not expect contaminants associated with normal operation of the rail line to adversely affect the aquifer.

- **Leaching of contaminants into the aquifer during accidental spills**. The transportation of hazardous substances by any means has inherent risks of accidental spills of the cargo. The volume of spilled material could vary from small leaks to the rupture of several tank cars. However, SEA expects only minimal risks of groundwater contamination from an accidental spill, due to the very slow to moderately slow permeability of the surface deposits. Given the nature of the soil, there would be sufficient response time after most accidental spills to facilitate a complete clean-up and remediation. Section 4.6 discusses the issue of the risk of spills and the emergency response after a spill.

  KCS has system-wide precautionary measures in place to avoid accidental spills. These measures are specified in the KCS System Operating Rules and are in compliance with the Code of Federal Regulations (CFR, Title 49-Transportation) for shipping hazardous cargo.

- **Leakage of spilled contaminants into the aquifer via improperly capped wells**. Improperly abandoned wells or active wells with faulty caps could allow the movement of contaminants from the surface into the aquifer through the casing or through uncapped well piping. There are no reported abandoned wells within the 2,000 foot Route A study corridor. However, unreported abandoned wells could exist in the project area. SEA's recommended field review to identify all wells within 100 feet of the rail embankment (see earlier discussion) would document all well locations in the project area.

  SEA recommends that all wells within 100 feet of the rail line be examined by a certified well contractor to assure that they are within current construction standards. KCS should repair (e.g., apply grouting, replace cracked well caps of active wells, properly cap abandoned wells) any wells found that could allow contaminants released during a spill to enter the well and potentially contaminate the aquifer. KCS should provide to SEA a statement from the certified driller verifying the inspection of all wells shown on the final design plans and that all wells are structurally sound and not likely to introduce contaminants to the aquifer in the event of a spill.

  Although the proposed project is unlikely to adversely affect groundwater, there is very little baseline data for groundwater near Route A. SEA therefore recommends that, if the Board authorizes construction of Route A, KCS should develop and implement a groundwater monitoring plan, in consultation with LDEQ, and submit to SEA the results of its consultations. The plan should test existing representative wells near Route A. Monitored parameters should be representative of the materials most likely to be spilled (perhaps a priority pollutant scan[30]). A one-time sampling effort should be sufficient unless there is reason to believe that there is a seasonal element to area groundwater quality (perhaps related to the seasonal groundwater flow characteristics shown in Figure A-28). Monitoring results would provide a basis for future rulings regarding responsible parties, in the event that a spill is alleged to have contaminated groundwater.

- **Damage to existing wells due to vibration from moving trains**. Train movement could cause vibrations to be transmitted through the soil. SEA expects any vibrations from trains operating over Route A to rapidly attenuate.

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[0] Under Louisiana regulations, a priority pollutant may be any one of 125 organic chemicals and heavy metals, including most of the chemicals most likely to be shipped to and from Geismar. The presence of these chemicals in a water sample is typically determined through a Gas Chromatography/Mass Spectroscopy scan.

The maximum speed of the trains on the proposed line would be 25 miles per hour, which would cause only minor train-related vibrations.

Borings and geotechnical testing in the Pleistocene and Holocene deposits near the proposed route indicate that these deposits consist primarily of non-marine clays with varying amounts of silt and sandy silt (see Section 2.3.2).[31] Clays in the Holocene natural levee deposits generally exhibit cohesive strengths in the 400 to 800 lb/ft$^2$ range, and clays of the Pleistocene generally range from 900 to 1700 lb/ft$^2$ (Kolb, 1962). Typically, soils with cohesive strength higher than 250 lb/ft$^2$ create stable conditions not conducive to transmission of vibratory forces/waves (see Section 4.8 for a more complete discussion of potential vibration impacts). Thus, any vibrations emanating from the proposed rail line should not damage existing wells.

**Wetlands**

The Route A ROW, including set-out tracks and interchange yard, would require around 152 acres of land. Of this, about 45 acres are wetlands on land cleared for pasture or other uses, and 49 acres are in forested wetlands. Final determination of the amount of wetlands affected by the project would occur following a decision by the Board authorizing construction and operation of Route A (land could then be acquired and access to all affected properties would be possible). Prior to construction in wetlands, KCS would need to obtain a Dredge and Fill Permit from the Corps, pursuant to Section 404 of the Clean Water Act.

To some extent, human activities have influenced all of the wetlands in the project area. These activities include: historic clearing, rowing, and ditching for sugarcane growing; recent clearing or maintaining former agricultural areas for cattle grazing; channelizing natural drainageways to reduce the extent and duration of flooding; dredging of agricultural and flood control drainage channels to accelerate drainage; and logging.

KCS would minimize wetland impacts along Route A by locating all construction-related sites outside of wetland areas. KCS would direct contractors to acquire any fill material from non-wetland areas. Material dredged from the site on the cleared ROW would be air-dried and disposed of on non-wetland sites or used for mitigation through wetland creation.

KCS plans to purchase, but not clear, the six-acre bottomland hardwood forest

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[0] The nearest borings were taken within about a half mile of the proposed route, and, given the underlying geology shown in Figure A-11, it is probable that those borings are characteristic of Route A (and Route B).

enclosed by the wye connection of Route A and the KCS mainline. KCS would require the construction contractor to fence the wye area in order to prevent any damage to the wetland during construction. KCS would install culverts under the railroad embankment to allow sufficient surface water movement to prevent impoundment at this site, and would set the culverts high enough to prevent drainage of the wye wetland.

As part of its permitting process, the Corps would probably require replacement of filled wetlands on at least a one to one basis. In an October 1995 letter to LDWF, KCS indicated its willingness to mitigate for lost wetlands. KCS would purchase land adjacent to the proposed ROW in excess of that needed for the ROW and enhance or restore it to productive wetlands, and would seek additional mitigation opportunities off-site, but preferably in Ascension Parish. Although at present it does not know what the Corps' mitigation requirements would be, KCS would work with the Corps, LDWF, and FWS to develop appropriate wetland mitigation measures.

SEA agrees that mitigation for lost wetlands is appropriate and recommends that KCS, in conjunction with the Corps permitting process, and in consultation with the Corps, LDWF, and FWS, develop and implement a wetland mitigation plan. The objective of the plan should be to replace, to the extent possible, the functions and values of the wetlands that would be unavoidably lost by construction of Route A.

As floodwater storage is one function of wetlands crossed by the proposed route, SEA recommends that FEMA and Ascension Parish officials be included in consultations regarding the wetland mitigation plan. The replacement wetlands could be constructed in such a manner that compensatory flood water storage would be developed to replace a portion of that lost by project construction. However, the prevailing low relief of undeveloped areas in Ascension Parish, especially in the project area, could restrict the amount of increased flood storage that is available.

The wetland mitigation plan should also contain specifics on how KCS would monitor new replacement wetlands. KCS should submit the plan to SEA, along with a summary of the results of its consultations..

The linear nature of the rail line would necessitate numerous drainage structures to ensure unimpeded flow of water during high flow events. These drainage structures could alter the hydrology of existing wetlands (i.e., more or less water would be provided) or, in extreme cases, cause wetlands to dry up. To ensure that the proposed project would not adversely alter wetlands, SEA recommends that KCS develop and implement a monitoring plan for the wetlands adjacent to Route A, in consultation with LDWF, Corps, and FWS. The plan should specify monitoring techniques, frequency of monitoring, and reporting requirements. KCS should submit the plan should be submitted to SEA, along with a summary of the results of its consultations..

### 4.4.2 Route B

For approximately two thirds of its length, Route B shares a common ROW with Route A, including the segments with the set-out track and the interchange yard. This section addresses water resources impacts for the entire length of Route B, including the overlapping segments with Route A.

**Surface Water**

**Impacts from the Construction Process**. Most of the waterways that Route B would cross are intermittent streams; only two of the waterways carry water at all times of the year (the lower crossing of Bayou Conway and a tributary to Bayou Francois crossed by the set-out tracks along the existing KCS line). KCS proposes to use Best Management Practices (BMPs) to minimize surface water impacts (see Table 4-2).

If the Board approves Route B, KCS would develop a detailed BMP and Storm Water Pollution Prevention Plan and submit it to the Louisiana Water Pollution Control Division, Office of Water Resources, Department of Environmental Quality, to support the issuance of a Storm Water General Permit for Construction Activities pursuant to LAC 33:IX.1 Chapter 7, Section 709.H. The Storm Water General Permit for Construction Activities, would be required because the project would disturb more than five acres. As noted in the subsection dealing with wetlands, the proposed construction would also require a permit from the Corps.

SEA concludes that implementation of the BMPs listed in Table 4-2 should minimize potential impacts on surface waterbodies during construction. If the Board approves Route B, SEA would recommend the same type of site specific erosion and sedimentation control plan and the same limitations on where refueling and maintenance of construction equipment could occur as it did for Route A.

Even with these protective measures, there may be minor, short term unavoidable impacts on waterways due to sedimentation during construction of Route B.

**Impacts of Rail Line Design, Operation, and Maintenance on Hydrology and Water Quality**. These impacts are listed below.

**(1) Hydrology**: KCS proposes to design, construct and maintain the proposed line in a manner that would not interfere with hydrologic processes. Route B would not displace any of the eight channels listed in Chapter 2, Table 2-15. The waterway crossing structures would be large enough to allow unobstructed flow of flood water. KCS proposes new bridges for the crossing of Smith Bayou and the two Bayou Conway crossings. The proposed 25-foot spacing between pilings should be sufficient to prevent substantial accumulations of debris that could impede the free flow of water.

With proper final design and culvert/bridge maintenance, the presence of a rail line along Route B should not adversely affect the normal flow of water. Prior to finalization of a

rail line design for Route B, KCS should address the issue of how to accommodate Ascension Parish's ongoing waterway debris removal and waterway maintenance program. The discussion of this issue and recommendations for action as it relates to Route A (see Section 4.4.1) would also be appropriate for Route B.

**(2) Water Quality**: The discussion and recommendations regarding potential impacts of Route A on surface water quality (Section 4.4.1) also apply to Route B.

**Floodplains**

**Hydrology**. Approximately 97 acres (69 percent) of Route B are within the 100-year floodplain. The terrain in the vicinity of Route B is relatively flat, with a low hydraulic gradient. Most of the floodplain is drained by Bayou Conway and Smith Bayou, and their associated tributaries (see Figure A-24).

The discussion in Section 4.4.1 regarding potential impacts of Route A on floodwater hydrology also applies to Route B, except for Hachett Canal, which Route B does not cross.

**Flood Water Storage Capacity**. The average elevation of the land within the floodplain is estimated to be about one foot below the 100-year flood elevation. Construction of Route B would displace the existing flood storage capacity in the area. SEA estimates that roughly 160,000 cubic yards of flood storage capacity would be lost. Given the large size of the floodplain in the project area (see Figure A-24), this reduction would be comparatively small and unlikely to noticeably increase flood water elevations.

The discussion in Section 4.4.1 regarding potential impacts of Route A on floodwater storage capacity also apply to Route B.

**Groundwater**

The potential impacts of Route B on groundwater resources would be very similar to the groundwater impacts for Route A, as the geologic, hydrogeologic, and geotechnical conditions are nearly the same for both routes. There is one known active well (5218Z) located within the Route B ROW. Seven wells are located near the ROW (5193Z, 5194Z, 7598Z, 7599Z, 7938Z, 8074Z, 8097Z; Figure A-32). According to LDOTD, well 7598Z is plugged and abandoned; the other wells are used as domestic water supplies (Table 2-18).

The discussion and recommendations regarding Route A groundwater resources (Section 4.4.1) also apply to Route B.

**Wetlands**

The Route B ROW, including set-out tracks and interchange yard, would require

around 138 acres of land. Of this, about 41 acres are wetlands on land cleared for pasture or other uses, and 42 acres are in forested wetlands. Final determination of the amount of wetlands affected by Route B would occur after Board approval of the route, if that occurs. Prior to construction in wetlands, KCS would need to obtain a Dredge and Fill Permit from the Corps, pursuant to Section 404 of the Clean Water Act.

The discussion and recommendations regarding Route A wetland resources (Section 4.4.1) also apply to Route B.

### 4.4.3 Industry Connector Lines

**Surface Water**

**Impacts from the Construction Process**. The industry connector lines would cross nine intermittent streams. The discussion and recommendations regarding Route A construction impacts on surface water resources (Section 4.4.1) also apply to construction of the industry connectors.

An entity other than KCS would construct the industry connectors. SEA expects that most of the elements in the final KCS BMP plan and erosion and sediment control plan could be adopted for construction of the industry connectors, with modifications as necessary to account for site specific conditions, especially at the crossing of the BASF retention basin. SEA feels that construction in the vicinity of the retention pond should be limited to periods when there is no flow from the pond. This would minimize potential water quality impacts on Smith Bayou.

**Impacts of Industry Connector Lines' Design, Operation, and Maintenance on Hydrology and Water Quality**. These impacts are listed below.

**(1) Hydrology**: the industry connector lines would be located on some of the highest elevations in the project area. The channels which would be crossed by the connector lines are near the headwaters of their drainage basins and thus drain relatively small areas (see Figures A-21 and A-22). Due to the narrow stream channel widths, the industry connectors could cross all the channels on culverts. All stream channels within the Geismar Industrial Area are on property owned by BASF, Borden, and Uniroyal. Therefore, construction of the connectors should not affect Ascension Parish's ongoing waterway debris removal and channel maintenance program.

**(2) Surface water quality**: Although construction and operation of the industry connectors is not included in KCS' petition to the Board, SEA recommends that the Board require KCS to enter into an MOU with BASF, Borden, and Shell to require the builder of the industry connectors to develop final BMPs patterned, as appropriate, after those which KCS would develop for Route A.

SEA recommends that the Board require KCS to enter into an MOU with BASF, Borden, and Shell to require the builder of the industry connectors to develop and implement a site-specific herbicide application plan and a water quality monitoring plan as described in Section 4.4.1. Water quality sampling in the channels should be scheduled for times when flow is occurring. Monitoring of the BASF retention basin should occur when water is in the basin.

The discussion and recommendations regarding leaks and accidental spills along Route A (Section 4.4.1) also apply to the connector lines. These connectors would be on industrial properties which have emergency response plans in place. SEA's suggestions regarding emergency response for the industry connector lines are discussed in Section 4.6.

**Floodplains**

**Hydrology**. Approximately 1.4 acres (3 percent) of the industry connector lines are within the 100-year floodplain zone located within the BASF property. Smith Bayou drains this section of the floodplain (Figure A-24).

The drainage system for the industry connectors would be designed to avoid impacts on channelized flow during normal conditions and on overland flow during flooding conditions. Construction and maintenance of adequate drainage relief culverts within the embankment for the connector lines should enable surface runoff to equalize on either side of that embankment and minimize the potential buildup of water on its upstream side.

The embankment for the connector lines would be elevated at or above 100-year flood elevation to ensure that the track is not flooded, and would contain single, 24-inch diameter culverts, spaced at a maximum distance of 500 feet apart. Drainage ditches would have appropriately sized culverts to prevent flooding. Ditches would be constructed along the embankment to provide a limited amount of temporary flood water retention.

The final design plans for the connectors would contain the final configuration and location of any onsite flood retention structures. At that time, a detailed topographic survey would be conducted that would allow the design of drainage structures according to detailed local hydraulic requirements. All structures would be designed to allow for easy maintenance to maintain proper flow. The final drainage measures would comply with local and state regulations, including Chapter 9.5 (Flood Damage Prevention) of the Ascension Parish Code of Ordinances.

**Flood Water Storage Capacity**. The average elevation of the area is estimated at about one foot below the 100-year flood elevation. Construction of the industry connectors would displace the existing flood storage capacity in the area. SEA estimates that roughly 2,000 cubic yards of storage capacity would be lost. This loss in capacity would be relatively small and unlikely to noticeably increase floodwater elevations. At least some of

this lost storage capacity could probably be regained by developing compensatory flood storage capacity in replacement wetlands (see Section 4.4.1).

**Groundwater**

The industry connector's potential groundwater impacts would be very similar to groundwater impacts for Routes A and B, as the geologic, hydrogeologic, and geotechnical conditions are similar. LDOTD records indicate that there is one abandoned well (202) on Borden property near the planned industry connector line (Figure A-33, Table 2-18). BASF has one commercial well (339) within the planned industry connector ROW and another commercial well (338) near that ROW. A fourth well (5193Z) on BASF property near the planned connector line is used for domestic water supply.

SEA recommends that the Board require KCS to enter into an MOU with BASF, Borden, and Shell to require the builder of the industry connectors to develop a well identification and replacement plan, a well inspection plan, and a groundwater monitoring plan.

**Wetlands**

The industry connectors would require approximately 45 acres of land. Of this, 1.7 acres are wetlands on land cleared for pasture or other uses, and 4.1 acres are in forested wetlands. Corps jurisdictional delineation confirmation and input regarding proposed mitigation would probably occur after the Board approves KCS proposed construction, if it does so.

The discussion regarding Route A wetland resources (Section 4.4.1) also apply to the industry connectors, except for the discussion regarding the wye (there is no wye on the industry connector lines). SEA recommends that the Board require KCS to enter into an MOU with BASF, Borden, and Shell to require the builder of the industry connectors to develop and implement a wetland mitigation plan and a monitoring plan for existing wetlands.

## 4.5 BIOLOGICAL RESOURCES

### 4.5.1 Route A

**Flora**

Table 2-22 shows that 73.87 acres of land within Route A are pasture/cleared or developed land, while the remaining 77.95 acres are forested (see Figure A-37).

Clearing of forests for farm use (primarily pasture and hay production) and

development of roads and residential lots has fragmented much of the natural habitat near Route A. Vegetation within these two habitat types is continually disturbed by planting, mowing, and grazing.

The loss of bottomland hardwood forests is a major concern in Louisiana. Construction of Route A could remove up to 78 acres of bottomland hardwoods; however, it may not be necessary to clear vegetation along the edge of the ROW. Bottomland hardwood habitat in the Route A vicinity is also currently subject to logging.

SEA has preliminarily determined that approximately 96 acres of land within Route A are wetlands (around 49 acres of forested wetlands and 47 acres of cleared wetlands) [see Table 2-20]. As discussed in Section 4.4.1, KCS would mitigate wetland loss. KCS would not clear the 5 acre bottomland hardwood forest inside the wye connection to the existing KCS line.

Construction of Route A would cause the unavoidable loss of up to about 146 acres of vegetation. This estimate assumes that all vegetation in the ROW would be cleared. During construction it may be necessary to clear to the edge of the ROW to accommodate construction equipment; however, at least part of the ROW would probably be revegetated after construction. KCS would use a track-based weed and brush cutter that extends 28 feet on each side of the track to control vegetation during project operation. Assuming that the crest of the rail would be about 10 feet wide, a maximum width of 66 feet of vegetation would be cleared along single track portions of the alignment. This would leave about 17 feet along each edge of the 100-foot wide ROW that could revert to its original vegetative condition. KCS submitted a conceptual cross sectional design for the proposed rail line to the Corps on May 31, 1995. This design indicates that KCS would maintain existing vegetation along the ROW edge where possible. Depending on ballast and ditching requirements along the line, it should be possible to limit permanent vegetation removal to considerably less than the maximum 146 acres.

SEA recommends that KCS' final design for the proposed rail line incorporate measures to minimize the amount of vegetation clearing within the ROW, especially in bottomland forests. The final design should specify where existing vegetation would be retained during and after construction and where reversion to the original vegetative condition following construction would occur.

Implementation of SEA's recommended wetland mitigation, discussed in Section 4.4.1, would replace some of the functions and values of the estimated 96 acres of wetlands that would be lost. However, the creation of wetlands as mitigation would probably require clearing of upland vegetation, which is relatively uncommon near Route A (see Figure A-35). SEA's recommendation to consult with Corps, LDWF, FWS, FEMA, and Ascension Parish officials prior to finalization of the wetland mitigation plan should minimize, to the extent possible, potential adverse impacts on wetland and upland vegetation.

KCS would prevent the proposed rail line from impounding water and thus potentially affecting project area vegetation by means of project design and implementation of BMPs (see Table 4-2). KCS would develop the final design of the rail line to avoid altering hydrologic processes.

KCS' final BMPs for construction, operation, and maintenance of the rail line would make it possible to incorporate site specific measures for the protection of vegetation and other natural resources into the final design prior to Board authorization of construction, if that occurs.

SEA's recommendation that KCS develop and implement a wetland monitoring plan would ensure that the proposed construction would not adversely alter wetland hydrology either during or after construction (see discussion in Section 4.4.1).

KCS would use manual ROW vegetation control practices to the extent feasible. When herbicide application is necessary, KCS would use only EPA-approved herbicides applied by certified/licensed herbicide applicators. KCS further indicates that herbicide spraying would be done under controlled conditions such that the spray would affect only the targeted vegetation within the ROW.

SEA's recommended site-specific herbicide application plan should minimize potential adverse impacts on vegetation and other natural resources due to the use of herbicides.

**Fauna**

During construction, noise from the operation of heavy machinery would physically displace and disturb wildlife in the area. Following construction, most displaced wildlife would return and use the ROW for feeding and other purposes.

The permanent conversion of up to 78 acres of bottomland hardwood forests to railroad development (embankment and associated ditches) would cause the loss of habitat area for forest-dependent indigenous fauna. The relatively narrow ROW width (100 feet in most places) would limit impacts on the integrity and quality of the adjacent forest habitat for most species of wildlife. The re-establishment of bottomland hardwoods in wetlands created as mitigation would compensate for the lost forest habitat to some degree (possibly at the expense of open field or shrub habitat).

Certain species of birds and amphibians prefer to remain in wooded habitat for most of their lives (see Tables 2-24 and 2-25). Some species, such as the pileated woodpecker, the red-eyed vireo, the northern parula warbler, and the summer tanager, are dependent on large tracts of continuous forest (i.e., 100 to 300 acres) for the maintenance of self-sustaining populations (Southerland, 1993). Fragmentation of existing large tracts of forest by the proposed rail line could adversely affect these species, if they are actually

present near the proposed line. Route A would fragment existing large forested tracts adjacent to the proposed interchange yard and adjacent to the proposed wye (see Figure A-3).

SEA recommends that the wetland mitigation plan consider re-establishing large tracts of forested land as an objective, if resource agencies consider it likely that forest fragmentation would adversely affect sensitive wildlife species. SEA's recommendation to consult with resource agencies during plan development facilitates assessment of this objective.

The "edge effect" created by the rail line through the forest would increase habitat diversity and enhance habitat value for some wildlife species. Herbaceous vegetation would eventually become established on much of the cleared ROW, particularly where manual vegetation control is implemented. This vegetation would provide food for herbivores such as mice, rabbits, and deer. Predators, such as screech owls, red-tailed hawks and red foxes, find such habitat ideal for hunting because they can remain concealed from their prey in the adjoining forest. A study in Michigan indicated that wildlife used rights-of-way more than the surrounding tracts of forests (Cavanagh et al., 1976) .

The proposed rail line would not substantially alter habitat for wildlife preferring pasture or other cleared land as habitat. Portions of the ROW that would be covered by ballast would not support vegetation, thus eliminating some forage for herbivores. However, this is unlikely to noticeably affect wildlife populations because of the abundance of vegetated cleared land near Route A.

Construction and operation of the rail line could be an obstacle to the free movement of some small species of fauna, such as mice, rats, opossums, raccoons, and skunks. However, the regularly spaced culverts through the embankment (maximum spacing would be 500 feet apart) would provide a safe conduit under the tracks for these animals. Slow-moving animals trying to cross the tracks could be struck by trains. However, such losses should be minimal due to the slow train speed (the maximum speed of the trains would be 25 miles per hour) and the low number of trains (two trains per day). The occasional train-related loss of individual animals would not adversely affect overall local populations of those animals.

Some wildlife would be disturbed by routine train operations and retreat to habitat further from the rail line. Along most of Route A, wildlife would resume normal activities following the passage of the train. At the interchange yard, however, train activity could occur during much of the daylight hours. Some wildlife would find this constant activity incompatible and move to a quieter habitat. Other wildlife would eventually become acclimated to the activity and be able to use much of the habitat adjacent to the interchange yard. The displacement of some wildlife due to disturbance from train operations would be a long-term but minor unavoidable impact.

Those wildlife species listed in Tables 2-23, 2-24, and 2-25 as preferring habitat in or near water would be unlikely to occur along much of Route A, because all but two of the streams which would be crossed are intermittent. One of the perennial streams, a tributary to Bayou Francois which would be crossed by the set-out tracks along the existing KCS line, is relatively narrow and appears to offer limited habitat for aquatic-oriented wildlife. The other perennial stream, the lower crossing of Bayou Conway, is slow-moving and wide, with aquatic vegetation near the proposed crossing site. This habitat could be used by muskrats, nutria, ducks, wading birds, and turtles. During construction, aquatic-oriented wildlife would move away from the crossing site, but should return after construction.

Implementation of KCS' proposed BMPs and SEA's recommended site-specific erosion and sediment control plan and herbicide application plan (see Section 4.4.1) would avoid adverse impacts on aquatic wildlife during construction and operation of the proposed line.

There are several ponds near the proposed ROW (e.g., near Ashland Road and LA 10; see Figure A-37). Construction activities could disturb and displace wildlife such as ducks and wading birds that would normally use these ponds. However, there is an ample supply of open water elsewhere in the parish, especially to the south and east. Following construction, waterfowl and wading birds would be expected to resume use of these ponds.

The proposed project would have minimal adverse impacts on aquatic invertebrates and fish along Route A. The route would cross two perennial streams, which are the only locations where sustained aquatic invertebrate and fish populations are likely to occur along the line. KCS would cross both of these channels on bridges. During high flow events, some fish, and possibly invertebrates, could move into intermittent channels to forage for food. Implementation of KCS' proposed BMPs and SEA's recommended site-specific erosion and sediment control plan (which would include water quality during construction) and herbicide application plan would avoid adverse impacts on aquatic invertebrates and fish during construction and operation of the proposed line. Following construction, the bridges could offer cover for fish and invertebrates and a cooler refuge from warmer water in direct sunlight.

**Areas of Special Concern**

There are no areas of special concern along Route A (Ascension Parish Chamber of Commerce, 1996; Evans, 1996; LA Dept. of Recreation and Tourism, 1994). Therefore, project construction and operation would not affect such areas.

**Threatened and Endangered Species**

Neither resource agencies nor field review identified threatened and endangered

species in the Route A vicinity (Fruge, 1995; Lester, 1994). Therefore, project construction and operation would not affect such species.

### 4.5.2 Route B

**Flora**

Table 2-22 shows that 65.51 acres of land within Route B are pasture/cleared or developed land, while the remaining 71.65 acres are forested (see Figure A-37).

Clearing of forests for farm use (primarily pasture and hay production) and development of roads and residential lots has fragmented much of the natural habitat near Route B. Vegetation within these two habitat types is continually disturbed by planting, mowing, and grazing.

The loss of bottomland hardwood forests is a major concern in Louisiana. Construction of Route B could remove up to 72 acres of bottomland hardwoods; however, it may not be necessary to clear vegetation along the edge of the ROW.

SEA has preliminarily determined that approximately 76 acres of land within Route B are wetlands (around 37 acres of forested wetlands and 39 acres of cleared wetlands) [see Table 2-20]. As discussed in Section 4.4.2, KCS would mitigate wetland loss.

Construction of Route B would cause the unavoidable loss of up to about 131 acres of vegetation. This estimate assumes that all vegetation in the ROW would be cleared. However, as noted in the discussion of Route A, at least part of the Route B ROW would probably be revegetated after construction.

The discussion in Section 4.5.1 regarding potential impacts of Route A on local flora as well as recommended mitigation also applies to Route B.

**Fauna**

The permanent conversion of up to 72 acres of bottomland hardwood forests to railroad development (embankment and associated ditches) would cause the loss of habitat area for forest-dependent indigenous fauna. Route B would fragment an existing large forested tract adjacent to the proposed interchange yard (see Figure A-3). The route would cross two perennial streams; the lower crossing of Bayou Conway appears to be the most suited for aquatic-oriented wildlife, fish, and aquatic invertebrates.

The discussion and recommendations pertaining to fauna if Route A is constructed also apply to Route B (see Section 4.5.1).

**Areas of Special Concern**

There are no areas of special concern along Route B (Ascension Parish Chamber of Commerce, 1996; Evans, 1996; LA Dept. of Recreation and Tourism, 1994). Therefore, project construction and operation would not affect such areas.

**Threatened and Endangered Species**

Neither resource agencies nor field review identified threatened and endangered species in the Route B vicinity (Fruge, 1995; Lester, 1994). Therefore, construction and operation of Route B would not affect such species.

### 4.5.3 Industry Connector Lines

The planned industry connector line from KCS Routes A/B to the Borden facility would parallel, to a large extent, existing and proposed development cells, roads, and utility/pipeline corridors on industrial property. The planned industry connector to Shell would be totally within cleared and developed areas of the Shell facility. The habitats within and adjacent to the industry connector rights-of-way are presently very fragmented (see Figure A-38).

Table 2-22 shows that, within the connector lines, 30.62 acres of land are pasture/cleared or developed land, 1.28 acres are open water (retention pond), and the remaining 13.65 acres are forested (see Figure A-37).

The cleared land is industrial property maintained as grassland by mowing and/or herbicide application (along utility rights-of-way). Limited cattle grazing occurs on the Borden and Uniroyal properties; cattle are not currently grazed on the BASF or Shell sites.

Construction of the industry connectors could remove up to 14 acres of bottomland hardwoods, much of which is in early successional stages.

SEA has determined that approximately 8.2 acres of land within the BASF/Borden connector line are wetlands (around 5.6 acres of forested wetlands and 2.6 acres of cleared wetlands) [see Table 2-20].

Construction of the industry connector lines would cause the unavoidable loss of up to about 33 acres of vegetation. Because of the industrial nature of this area, the industries would probably eventually clear much of this vegetation anyway, as they further develop their sites.

The discussion and suggestions pertaining to flora if Route A is constructed also apply to the industry connectors (except that there would be no wye).

**Fauna**

The permanent conversion of up to 14 acres of bottomland hardwood forests to railroad development (embankment and associated ditches) would cause the loss of habitat area for forest-dependent indigenous fauna. All channels which the industry connectors would cross are intermittent, minimizing potential impacts on aquatic-oriented wildlife. The retention pond on the BASF property could serve as aquatic wildlife habitat, under certain conditions. No fish or aquatic invertebrates are expected to occur within the connector rights-of-way.

Most of SEA's discussion and recommendations pertaining to fauna if Route A is constructed would also apply to the industry connectors. However, as the connector lines would not fragment any large tracts of forest, it would not be necessary to re-establish large tracts of forested land as part of the wetland mitigation plan.

**Areas of Special Concern**

There are no areas of special concern along the industry connectors (Ascension Parish Chamber of Commerce, 1996; Evans, 1996; LA Dept. of Recreation and Tourism, 1994). Therefore, construction and operation of the connectors would not affect such areas. The connector lines would be totally within designated industrial areas.

**Threatened and Endangered Species**

Neither resource agencies nor field review identified threatened and endangered species in the vicinity of the industry connector lines (Fruge, 1995; Lester, 1994). Therefore, construction and operation of those rail lines would not affect such species.

## 4.6 TRANSPORTATION/SAFETY

### 4.6.1 Route A

**Impacts of Rail Line Construction on Transportation Infrastructure**

Route A would cross components of the existing transportation infrastructure. The following discussion identifies each element the route would cross and indicates:

- Ownership of the element.
- Modifications necessary due to the proposed crossing and whether the modifications would prevent interference with safe operation of the transportation element.
- The need for additional mitigation.
- Permits which may be needed for the crossing.

**Roadways and Trails**. These transportation elements are as follows:

- **Interstate highways**: I-10 is a four-lane, divided highway owned by the State of Louisiana and operated and maintained by the Louisiana Department of Transportation and Development (LDOTD). Route A would cross I-10 on an overpass which would provide the vertical and horizontal clearances required by LDOTD and the Federal Highway Administration (FHWA). The crossing would not interfere with safe operation of I-10. KCS would seek a permit for construction of the overpass from LDOTD and FHWA. That permit procedure would include location and detail design review. Figure A-63 is a preliminary plan and profile of the proposed I-10 railroad overpass.

- **State highways**: LA 44 is a primary north-south roadway running from Burnside and the industrial areas in the south to Gonzales and US Route 61 in the north. The road is urban in nature between I-10 and Route 61, and rural south of I-10. LDOTD owns and maintains LA 44. The Route A crossing would be grade separated (KCS would rebuild the highway over the rail line). Grade separation would prevent interference with safe operation of the roadway. KCS would seek a permit from LDOTD for the proposed grade separation. Figure A-64 is a preliminary plan and profile of the proposed LA 44 railroad underpass.

  State Routes LA 941 and LA 3251 (Ashland Road) are secondary roads within the Parish. LA 941 serves as a connector road from LA 44 to LA 30 at US 61 around the City of Gonzales. South of I-10 it is rural in nature with low to moderate traffic. LA 3251 is a more significant route, connecting LA 75, which parallels the Mississippi River, with LA 30. It handles traffic to and from the Geismar Industrial Area. LDOTD owns and maintains both highways.

  Route A would cross LA 941 and LA 3251 at grade. The crossings would be equipped with flashing warning lights, crossing gates, and appropriate train detection devices. The grade crossings would be shoulder width, i.e. full width of paved traveled way plus width of each shoulder. KCS would have to obtain permits for the construction and installation of the grade crossings from LDOTD.

- **Local roads**: Brittany Road and St. Landry Road are local roads within the parish. Ascension Parish owns and maintains both roads. Brittany Road serves rural residential areas and is a connector between LA 941 and LA 22 in Sorrento. Route A would cross Brittany Road at-grade, with a crossing protected with flashing warning lights, crossing gates, and appropriate train

detection devices. SEA evaluated the proposed crossing location with regard to provision of adequate sight distance from the sharp curve to the south of the crossing. The posted speed limit on Brittany Road in this vicinity is 35 MPH, with a reduction to 20 MPH through the curves. Sight distance at the crossing location seems to be adequate, based on sight distance requirements as defined by A Policy on Geometric Design of Highways and Streets (American Association of State Highway and Transportation Officials). However, vegetation outside the proposed rail ROW could interfere with motorists' vision and preclude obtaining the required sight distance.

KCS would have to obtain a permit from the Ascension Parish Department of Public Works to construct and install the Brittany Road and St. Landry Road crossings.

- **Trails**: Based on site reconnaissance and available mapping, Route A would cross no significant trails.

Table 4-3 lists the public road at-grade crossings and indicates roadway characteristics. The proposed crossings may result in less safe operation of the roadways than currently exists without the crossings.

The railroad industry and Federal and State transportation officials continuously seek ways to prevent highway-rail crossing accidents, through a coordinated program of education, engineering, and enforcement. KCS has offered to participate with transportation and safety officials and Ascension Parish citizens to educate the public regarding highway-rail safety. The engineering component of the program includes provision of state-of-the-art crossing warning and protection systems and the restriction of train speed through the crossings. Further actions by Parish public safety officials to enforce highway-rail crossing laws would complete the safety program.

**Railroads (Mainline or Other)**. Route A would originate at approximately MP 814.5 on the KCS mainline near Sorrento, with construction of a wye connection to the mainline and a parallel set-out track north of the wye along the mainline. The proposed route would cross the IC mainline and northbound lead track in Geismar approximately at IC's MP 388.7. The western terminus of Route A would be just to the west of the proposed IC crossing, at which point Route A would connect with an industry connector track which Shell would build inside its plant site.

IC states that "In a typical twenty-four hour period, IC operates an average of 70-80 train movements on its main line and north lead in this area" [Verified statement G.L. Harris, Regional Manager, Southern Region, IC (1996)]. Operating schedules furnished by IC indicate that "through" movements (movements other than switching movements) amount to one train per day each way between the Geismar Yard and Memphis, and one train originating in Geismar Yard going to New Orleans and back each day.

Geismar Yard is located approximately 1.1 miles south of the point where Route A would cross the IC. The proposed crossing would affect the two Memphis to Geismar through trains. The crossing would not affect the Geismar to New Orleans (Mays Yard) trains, as they depart from the south end of the yard. The remainder of the movements would be involved in switching the various industries and classification operations into and out of the yard when train lengths exceed 4,000 feet (approximately 60 cars and 2 locomotives). Current operating practices include the temporary storage of cars on the north lead track during switching operations for the industries.

The proposed IC crossing would require the installation of some type of signal system to protect the crossing. IC, as the senior railroad, would determine the level of protection necessary. IC's mainline, north lead track, and other existing track would require signals or protection in both directions. Route A would also need signals or protection in both directions. Current FRA requirements would dictate the installation of signals for the proposed crossing.

The proposed at-grade crossing of the IC involves two primary factors: safety and potential interference with operations. Both factors are interrelated and affect not only each other, but also possibly the level and quality of service, environmental concerns related to hazardous materials incidents/accidents, and train personnel health and safety.

Safety issues include the increased potential for train collisions at the crossing. Collisions raise the possibility of injury to train personnel, damage to railroad equipment and surrounding plant facilities, and the release of hazardous materials. Thousands of at-grade rail-to-rail crossings exist within the U.S. rail system, including 127 on the IC system. Collisions at these crossings are extremely rare, as Tables 4-4 and 4-5 show.

IC's existing operating rules already consider that track switches may not be properly set, or that there may be rail obstructions. IC trains operating near the location of the proposed KCS crossing follow IC operating rules which put safety first. For example, IC's Operating Rules state that trains using any track other than a main track must proceed at "Restricted Speed". Restricted speed is defined as "Proceed, prepared to stop within one-half of the range of vision - short of train, obstruction or switch not properly lined - looking out for broken rail, not exceeding 20 mph. IC trains operating on the north lead track and within the Geismar Yard already operate at restricted speeds due to the large number of switching operations in this area. Also, the IC timetable imposes a speed restriction of 25 MPH at MP 388.2, one-half mile north of the proposed crossing.[32]

Daily KCS switching operations across the IC mainline and adjacent tracks would initially consist of at least one trip into the Shell plant to deliver cars and one trip out of the

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[32] IC System Timetable No. 8, effective September 10, 1995.

plant to remove cars. Shell states that fifty percent of its products move by rail, which amounts to approximately 5,500 rail carloads annually. Shell's annual output is also projected to increase beyond current levels. If KCS were to capture all of the existing Shell traffic (which KCS has stated they do not intend to do), it would amount to an average of 15 loaded cars per day. Empty rail car delivery to Shell would amount to approximately fifteen cars daily. Presuming some efficiency in blocking cars within Shell's own storage yard and reasonable availability of car storage space, it would appear likely that within the first 5 years KCS could service the Shell plant with 2 trips per day, which would involve four crossings of the IC.

IC and KCS would have to resolve how to provide switching operations within the three plant sites in a manner which would provide safe and efficient service. IC states that the switching activities are extensive, complex, and require up to 10-11 hours per day at some plants, with up to six locomotives working simultaneously.

IC requests that Route A not cross its line at-grade, that KCS construct a grade separation instead. IC's engineering staff has testified as to the engineering feasibility of constructing such a separation. However, IC's assessment did not address how the grade separation would interface with existing trackage on the Shell property and how this interface would affect operations at the Shell plant. KCS has not conducted an engineering assessment of a grade separated crossing, as it considers such a crossing to be economically non-viable, extremely difficult from an engineering perspective, and potentially damaging to Shell operations.

It appears that KCS and IC could negotiate equitable use of an at-grade crossing in lieu of constructing the separation. Failing an equitable agreement, detailed engineering, land use, and location studies could be developed for use as a basis for cost-benefit analysis to determine if a separation is warranted.

**Navigable Waterways**. Route A would cross three significant waterways: Bayou Conway, Smith Bayou, and Hachett Canal. Although the U.S. Coast Guard had earlier indicated that none of the three waterways are navigable, it has since indicated that it has not yet officially determined whether Bayou Conway and Smith Bayou are navigable. Although the Coast Guard is expected to allow the crossings whether the waterways are navigable or not, it may require modification of the crossing design and additional permitting, if they are navigable.

**Transmission Lines**. The Entergy Corporation (Entergy) owns and maintains high voltage transmission lines throughout the project area in Ascension Parish. Route A would cross a 500 Kilovolt (kV) transmission line which parallels I-10. Entergy has indicated that minimum clearance between the current conductors and the top of rail must be 37 feet. Existing clearance between the conductors and ground surface is not known. As Route A would cross I-10 on an elevated structure, the resulting clearance would probably be less than the required 37 feet. Therefore, it would be necessary to raise the transmission lines

and structures in this area. Entergy's Engineering Department would determine the extent of this retrofitting; the required work would need to be accomplished prior to construction of the rail line.

Route A would cross other project area transmission and distribution lines, owned by Entergy subsidiaries, Gulf States Utilities and Louisiana Power & Light. The route would cross a 230 kVA transmission line crossing St. Landry Road, two lines northwesterly of Ashland Road (115 and 230 kVA), and two lines running parallel to the IC mainline (115 and 230 kVA) near the proposed IC crossing.

Minimum clearances for 115 kVA and 230 kVA lines are 29 feet and 31 feet, respectively. The rail line in these areas would be on an embankment ranging from 2 to 5 feet above natural (existing) ground. Detailed surveys and measurement will be necessary at each transmission line crossing to determine if minimum clearances are attainable without retrofit or reconstruction of the power lines.

Distribution lines are generally located within road and street rights-of-way. Rail-highway crossings would be at or near existing road elevations, so minimum clearances should be attainable without retrofit. This situation occurs at Brittany Road, LA 941, St. Landry Road, and Ashland Road. As there would be a grade separation at the LA 44 crossing, it would be necessary to reconstruct power distribution lines in this area. Entergy or one of its subsidiaries would determine the method of reconstruction.

**Pipelines**. Numerous pipelines traverse the project area, conveying a variety of chemical and petroleum products. SEA determined the location of existing pipelines within Route A from maps compiled by DTC, Incorporated, and limited field reconnaissance. Significant identified pipelines include:

- 18-inch diameter high pressure natural gas transmission pipeline owned by Bridgeline Gas Distribution, LLC.
- 16-inch diameter refined products pipeline owned by Texaco Pipeline, Inc.
- 24-inch diameter UG Gas pipeline
- 12-inch diameter liquefied petroleum gas (LPG) pipeline owned by Exxon
- Two 6-inch diameter pipelines owned by Enterprise, conveying propane and butane
- 8-inch diameter hydrogen pipeline owned by Air Products
- 20-inch diameter LGPL gas pipeline

At the proposed IC crossing, Route A would also cross several pipelines which run parallel to the IC mainline:

- 8-inch diameter Shell process gas line
- 8-inch diameter Ucar Ethylene line
- 16-inch diameter Arcadian Gas line
- 6-inch diameter Exxon Ethylene line

- Two 4-inch diameter and one 8-inch diameter Exxon LPG lines
- 6-inch diameter Exxon Propylene line
- Two 12-inch diameter BT lines conveying oxygen and nitrogen gases

Pipeline safety practices require pipeline-rail crossings to be adequately protected from imposed loads and potential damage from derailments and wreck recovery operations. Such crossings must also provide for repair and/or replacement of the pipeline without disruption of rail traffic. The American Railway Engineering Association (AREA) has developed a Manual of Railway Engineering Practice which establishes minimum standards of practice, including the design of buried pipeline-rail crossings. At a minimum, these standards include the casing of pipelines carrying flammable substances under tracks and across railroad rights-of-way.

The pipeline owner would determine the final solution at each particular crossing, according to the dictates of pipeline safety and integrity, as well as good engineering practice. The listing of pipeline crossings herein should not be considered complete. If the Board authorizes the proposed construction and operation, KCS should conduct further investigations regarding other possible pipeline crossings prior to construction.

Route A would not cross any municipally owned gas distribution systems.

**Water and Sewer Infrastructure**. Contact with Gonzales and Sorrento town officials indicates that the Route A ROW would not cross any existing municipally owned water or sewer infrastructure. Although Ascension Parish does not currently own or operate either public water or sewer systems, a recent study preliminarily recommended establishing a parish-wide water supply system. The parish has not yet taken definitive action or identified locations for such a system. Water pollution control facilities are also currently being studied. SEA recommends that KCS consult with local officials to avoid conflict with local water supply programs and water pollution control programs.

A number of individual development communities are served by their own water supply and sewage treatment facilities. Route A would not cross or affect such systems, which are limited in extent.

**Communication Systems**. Telecommunication facilities, including telephone, cable television, and microwave systems, exist within the project area.

East Ascension Telephone Co. Inc. (EATEL) provides telephone service in the project area. Maps and diagrams of EATEL's telephone facilities indicate that overhead and underground (buried) telephone cables exist on several of the local roads and streets which Route A would cross, including Brittany Road, St. Landry Road, and LA 44. Buried lines on Brittany Road and St. Landry Road should be sleeved under the railroad line to provide for future maintenance, repair, and non-interruption of service. EATEL and KCS would determine sleeve length and size. KCS and EATEL, in conjunction with Louisiana Power & Light, would develop the required modifications along LA 44, relative to the proposed

reconstruction of the roadway over Route A. The telephone lines could either be routed overhead or buried underground. EATEL's Manager of Outside Plant Facilities would make the final determination.

TCI of Louisiana provides cable television service in the project area. The cable system generally parallels the electric distribution system, carried overhead on Entergy's poles. Route A would cross the cable system, including at LA 941.

Microwave towers are located adjacent to the Airline Highway (US 61) and the KCS mainline. Construction and operation of Route A would not affect these facilities.

Buried American Telephone and Telegraph (AT&T) and SPRINT fiber optic cables run parallel to the IC mainline in Geismar. Route A would cross these cables at the proposed IC crossing. Industry practices generally require fiber optic lines to be protected in sleeves when crossing under railroad lines. The requirements established by AT&T and SPRINT would dictate the details of construction in this location.

**Airport Approaches**. The Louisiana Regional Airport is located approximately 1.5 miles southwest of the intersection of I-10 and LA 44 and approximately one mile south of the proposed interchange yard. The airport is a general aviation facility, jointly owned by Ascension and St. James Parishes and operated by the Ascension - St. James Airport and Transportation Authority. The present runway is 4,000 feet long by 100 feet wide. Proposed expansion would increase runway length by 1,400 feet in a southerly direction, south of Panama Canal, away from the proposed rail line and interchange yard.

The Federal Aviation Administration (FAA) establishes runway approach clearances. These clearance requirements consider both structures and moving obstructions such as highway and railroad traffic. FAA requires a minimum clearance of 23 feet between the top of the railcars and the bottom of the runway approach protection zone. The bottom of the runway protection zone is 101 feet above ground level at the interchange yard, which is more than adequate to maintain the required 23 feet of separation between the top of the railcars and the bottom of the runway approach protection zone.

The Double H Landing Strip, located in the Cornerview area of Ascension Parish, lies approximately 8,000 feet north of Route A at its closes point. The landing strip is privately owned and serves private aircraft owners and pilots. The proposed rail line would not interfere with safe operation of the landing strip.

**Impacts of the Construction Process on Project Area Roads**. The movement of trucks and heavy equipment during rail line construction could degrade local streets and highways. However, existing policies and procedures, as well as measures which could be imposed for this project, should minimize road damage and provide for restoration of any damage which does occur. Louisiana State Law establishes load limits for trucks and heavy construction equipment; State, Parish and local police officials enforce the limits. The

agencies which grant permits for overweight and oversize equipment of the type which would be used in the proposed construction consider the impacts of such equipment and generally establish responsibility for restoration of any resulting damage. Such permits require bonds and/or insurance prior to initiating work to insure any damage would be repaired.

At least during the initial stages of the proposed project, construction sequence and procedure would require that the work site be accessed from public roads. However, once initial clearing, grubbing and mucking within the ROW is completed, much of the subsequent operations (including placement of embankments and borrow pit excavation) may use the cleared ROW for access. Later construction phases (including ballasting and placement of ties and rails) can be accessed by rail.

There would be temporary detours and/or traffic interruptions at the locations where Route A would intersect project area roads, during construction of the crossings. KCS would construct the grade-separated I-10 crossing so that no disruption of highway traffic would occur. Construction of the LA 44 grade separation would require construction of a temporary detour-roadway around the construction site.

Construction of the LA 941, Brittany Road, St. Landry Road, and Ashland Road crossings would all require temporary measures to insure minimum disruption of traffic. The use of flagmen and or police officers to direct traffic at each of these crossings would help minimize blockage of local traffic, school buses, and emergency response vehicles.

**Impacts of Rail Line Operations on Vehicular Traffic Delay**

. The proposed construction and operation of four at-grade crossings along Route A would result in delays of vehicular traffic at those crossings. The proposed action would also increase vehicular traffic delay at some crossings on the KCS mainline. Even with the proposed rail line, there would be an increase in vehicular delay at some crossings on the IC in Ascension Parish, due to expected industry growth and resulting growth in commodity transport by rail. Without the proposed line, delay at crossings on the IC would increase even further.

Grade crossing delay is a function of:

- the number of trains per day;
- the time it takes for a train to pass through the crossing (based on the length and speed of the train);
- the type of crossing warning or protection device; and
- the availability of alternate crossing locations.

SEA used the results of the diversion analysis presented in Chapter 3 to estimate increases in train length and number of trains for the IC mainline, the KCS mainline, and Route A. SEA developed estimates with and without the proposed rail line for each of the

five forecast years: 1998, 2000, 2005, 2010 and 2015. For each year, a likely case scenario and a highest case scenario were developed.

Along Route A, KCS would construct at-grade crossings at Ashland Rd, St. Landry Rd, LA 941, and Brittany Rd. (LA 44 and I-10 would be grade-separated). The at-grade crossings would have flashing warning lights and crossing gates. Maximum timetable speed would be 15 mph and 20 mph east and west, respectively, of the proposed interchange yard.

Table 4-6 shows estimated average grade crossing delay (in minutes) for the no-build (without Route A) and build (with Route A) scenarios for 1996 baseline conditions and for each of the five forecast years, for likely and highest case scenarios. SEA calculated delay using the Stanford equations referenced in Section 2.6. The results of the delay analysis can be summarized as follows:

- **IC Mainline**: At IC crossings north of Geismar (LA 73 and Ashland Rd), there would be an increase in average delay in future years under both no-build and build scenarios.

  At IC crossings south of Geismar (LA 22 and LA 44), average delay would decrease in future years under the no-build scenario; this is because one additional IC train would be introduced to accommodate the extra demand, and this would result in shorter train lengths. Under the build scenario, average delay would go up at these two crossings because forecasted volumes do not appear to warrant any additional IC trains (this reflects diversion of growth to the proposed KCS line). Instead, cars would be added to existing trains, increasing crossing delays. Under the build scenario, the maximum IC delay increase would occur at LA 22. In the 1998 build scenario (assuming high growth), the average delay per train passing would be 1.89 minutes. In 2010 this average delay would increase to 2.03 minutes, and to 2.18 minutes by 2015. In 1998 under the no-build scenario, the average delay would be 1.27 minutes.

- **KCS Mainline**: The KCS mainline would not handle any additional volume under the no-build scenario; therefore all delays remain the same. Under build scenarios, average delay would increase due to increasing train lengths, until additional trains are needed. North of LA 22 where Route A would intersect the mainline, this breakpoint occurs in 2010 under the likely scenario, and in 2005 under the highest case scenario. South of LA 22, the breakpoint at which additional trains would be needed would not occur until 2015 under both the likely and highest case scenario.

  Even with more trains, average delay at KCS crossings under the build scenario are longer than those under the no-build scenario. The greatest

delay increase would occur at North Coolidge, LA 44, LA 3038, and South Purpera Rd., between 1996 and 2015 under the highest case scenario: 27 seconds.

- **Route A**: Average likely delays along the proposed route range from 44 seconds in 1998 to 57 seconds in 2015 for the two crossings west of the interchange yard (Ashland Rd. and St. Landry Rd.) and from 55 seconds in 1998 to 77 seconds in 2015 for the two crossings east of the interchange yard (LA 941 and Brittany Rd.).

**Impacts of Rail Line Operations on Train-Vehicular Collisions**.

There would be a potential for train-vehicular collisions at public highway at-grade crossings which would be built along Route A and associated rail facilities. Consideration of this accident potential included the following circumstances, among others:

- SEA observed line of sight distances at all locations in the field. Route A would cross LA 941, LA 3251 and St. Landry Road at locations providing sight distance in excess of requirements established by highway design practices. Brittany Road, due to its curvature, was of concern; however, field observations of the proposed crossing locations show adequate highway sight distances, based on the posted speed limit of 20 MPH through the curves. However, vegetation outside the proposed rail ROW could preclude obtaining the required sight distance along the railroad to the west.

- Ascension Parish School District indicates that school buses transport pupils over three of the proposed highway-rail grade crossings: LA 941 (6 trips per day by 3 buses); Brittany Road (10 trips per day by 5 buses); and St. Landry Road (6 trips per day by 3 buses). School bus travel generally occurs during early morning hours and in the mid-afternoon. Trains will also be traveling over Route A during those periods, especially during the later years of the planning period.

- Route A would cross Ashland Road, a heavily used access road to and from the Geismar Industrial Area, and Route 30, and it is expected that trains switching the industries would operate during shift change times, especially in the later years, after 2005.

- Trains would operate over Route A between the KCS main line and the interchange yard seven days a week, and so may move over the rail line during church activities at the Do Right Church, located on LA 44. However, LA 44 would be grade separated, and so there would be no grade crossing safety impacts at this crossing involving people attending this church.

- West of the interchange yard, Route A would cross St. Landry Road, near the St. Landry United Methodist Church. The rail line would cross south of the church, on the dead-end section of St. Landry Road and so would have relatively minor vehicular safety impacts. Current switching operations at BASF, Borden, and Shell do not occur seven days a week and traffic volumes probably would not necessitate seven day per week switching operations by KCS until the later years (after 2010).

- Rail-school bus collisions could occur in situations in which there is a signalized highway-rail crossing where the highway is also subject to a traffic signal within close proximity to the crossing.

  Although there would be no such configurations along Route A, there may be such configurations on the existing KCS mainline, particularly at the following locations: LA 44, LA 73, LA 429, LA 30, and LA 22. However, distances between the railroad crossings and the signalized highway intersections provide queuing lengths which appear to be more than adequate for existing or predicted ADT and peak hour volumes. Although the risk appears to be minimal, SEA recommends that KCS and LDOTD engineers review the timing and phasing of the signals, along with the warning devices, to be sure that they provide the most appropriate protection at each crossing.

SEA determined rail-highway crossing safety using the U.S. Department of Transportation (USDOT) accident prediction formula presented in Section 2.6. This formula provides a means of calculating the expected annual number of accidents at a crossing on the basis of the crossing's characteristics (e.g., highway ADT, number of highway lanes, number of trains per day, maximum timetable speed, etc.) and the crossing's historical accident experience.

Table 4-7 shows predicted annual rail-highway grade crossing accidents for the no-build and build scenarios for 1996 baseline conditions and for each of the five forecast years, for likely and highest case scenarios. Accident predictions for IC and KCS mainlines are based on rail-highway crossing characteristics, as well as accident history. Route A accident predictions are based on rail-highway crossing characteristics only.

The results of the accident analysis can be summarized as follows:

- **IC Mainline**: Predicted annual accidents remain at 0.01 through 2015 for two grade crossings (Ashland Rd. and LA 44) under both no-build and build scenarios, for the likely and highest case scenarios. Under no-build scenarios, predicted accidents at LA 73 increase from 0.08 to 0.09 between 1996 and 2015, and at LA 22 increase from 0.18 to 0.22 accidents. Under the build scenario, predicted accidents at LA 73 increase to 0.09, but accidents at LA 22 only increase to 0.19 under the likely scenario.

- **KCS Mainline**: Predicted annual accidents would not change on the KCS mainline under the no-build scenario, despite growing rail and highway traffic volumes. Under the build scenario, between 1996 and 2015, predicted annual accidents at 5 grade crossings would increase by 0.01, at 10 grade crossings would increase by 0.02, and at 1 grade crossing (LA 30) would increase by 0.03. Accident changes are the same for both the most likely and highest industry growth scenarios.

- **Route A**: Predicted annual accidents along Route A remain at 0.01 through 2015. ADT on St. Landry Rd. ranges from 100 to 130 vehicles per day. The USDOT accident prediction formula is not intended for use with grade crossings with ADT less than 500 vpd.

**Impacts of Rail Line Operations on Train-Pedestrian Accidents**.

It is difficult to quantify the potential for train-pedestrian accidents along Route A and associated facilities. The accident/incident reports collect data related to fatal and non-fatal train accidents and train incidents involving trespassers and non-trespassers. Trespassers are any persons, child or adult, whose presence on railroad property, used in railroad operation, is prohibited or unlawful. A non-trespasser is defined as a person, child or adult, who is lawfully on any part of railroad property which is used in railroad operations, or a person who is adjacent to railroad premises when injured or killed as a result of railroad operations. Pedestrian accidents are mostly likely to occur from trespass on railroad property. Table 4-8 shows train accident/incident data involving trespassers.

Factors influencing trespasser activity include the proximity of the track to populations of children and/or adults and the ability to access the railroad property. Along significant portions of Route A it would be difficult to gain undetected or easy access, e.g., the proposed wye at the KCS mainline, the area between Brittany Road and I-10, and the bridge crossing over I-10. The line would be accessible from Brittany and St. Landry Roads and from Ashland Road and LA 941, all relatively rural areas. The proposed LA 44 overpass of the line and the proposed railroad bridge over Bayou Conway would also offer attractive nuisances to trespassers. The set-out and parallel tracks are rather inaccessible. The interchange yard would be removed from most population areas, and the access road to the yard would be posted and controlled.

**Impacts of Rail Line Operations on Train-Train Collisions (IC Crossing)**.

The only circumstances under which two trains might collide at the proposed crossing of the IC would be if someone failed to observe operating rules or if a signal system failed. Before trains could operate over the proposed crossing, KCS and IC would have to develop a set of operating rules governing the control and use of the crossing. The type and sophistication of the train control signal system to be installed at the crossing must be appropriate to the number of train movements and the appropriate FRA requirements.

The governing operating rules now in place at IC's Geismar Yard require that all trains on track other than the main track operate at Restricted Speed, which requires that the train be able to stop "within one half of the range of vision - short of train, obstruction or switch not properly lined, not exceeding 20 MPH."

IC mainline trains passing through the proposed crossing area are presently required to operate at 25 MPH. Following the proposed installation of crossing signals, future IC operations would be at Restricted Speed on its mainline between Mile Posts 388 and 389. The joint operating rules which would apply to KCS operations across the IC tracks should include Restricted Speed limitations, as well as other operating rules. A train collision is most likely to result from human error. Adherence to operating rules would eliminate any collision potential. The safety record established by U.S. railroads shows that this goal can be achieved. Of the 240 collisions reported in the U.S. in 1994, none were identified as occurring at a rail-to-rail crossing. One such collision was reported in 1995. Rail-to-rail crossing collisions, while extremely rare, can be catastrophic, particularly if hazardous materials cars are involved.

**Impacts of Rail Line Operations on Derailment Potential**.

A derailment is defined as an event in which one or more than one unit of rolling stock equipment (rail car or locomotive) leaves the rails during train operations for a cause other than collision, explosion, or fire. The primary causes of derailments are:

- Track, roadbed and structure (track)
- Mechanical and electrical failures (equipment)
- Train operation (human factors)
- Miscellaneous factors (such as, environmental conditions, loading procedures, and unusual operational situations)

In 1995, 2,619 derailments occurred on all railroads within the U.S.; 43 ( 1.64%) of those were in Louisiana. The majority of derailments were the result of track related conditions (34%) and human error during operations (36%), followed by equipment failures (11%) and miscellaneous factors (13%).

Table 4-9 shows derailment rates per million train miles (based on FRA data for the calendar years 1992 through 1995. These rates reflect the experience record of U.S. Class I railroads). One train-mile is equivalent to moving one train a distance of one mile. One round trip over Route A equals approximately 18 train miles. One round trip per day, seven days a week would produce 6,570 train miles per year. In order to generate 1 million train miles, it would require 2 round trips per day for 75 years. Therefore, it would be expected that nearly 3 1/3 derailments could occur in that period of time, or one every 22 years.

The derailment rates shown in Table 4-9 reflect conditions and factors throughout the Class I railroad system. All of these parameters would not necessarily exist on the

proposed rail line. For example, factors which may make the potential for derailment on the proposed line lower than for the entire Class I system include:

- New track constructed to high standards (Class 4)
- Use of continuous welded rail (CWR), eliminating joints
- Reduced operating speeds (25 MPH versus the 49 MPH allowed on Class 4)
- Inspection program which would exceed FRA requirements.

However, other factors could tend to raise the potential for derailment along the proposed line:

- Nature of operation (yard operations, switching activities)
- Congestion within industry property and trackage due to the nature of operations conducted there.

Environmental factors, such as high winds and heavy rains, have a smaller impact on the derailment rate, with only 1 event caused by flood and 9 events caused by extreme wind during 1995 throughout the entire U.S. rail system. The FRA Track Safety Standards require that a track inspection be made following an unusual weather-related event such as flood, hurricane, or other extreme weather, which would detect track conditions detrimental to safe operation.

The potential for derailment along Route A, the set-out track, the parallel track, and at the interchange yard varies due to a number of factors, and is summarized as follows:

- Route A: low potential due to high standard of track construction, low operating speeds, single train operation (initially), and high level of track inspection efforts.
- Set-out track: low potential, but somewhat more risk than on Route A due to the nature of operations, starting/stopping trains, uncoupling/coupling cars, operating switches.
- Parallel track: low potential but includes the risks listed for the set-out track.
- Interchange yard: low potential; areas of risk include switching operations.

Derailments caused by the way in which the train is operated are largely due to human factors such as failure to follow general switching rules, improper train handling, and incorrect use of switches. The chance of these factors coming into play is greater in operations over the set-out tracks, parallel tracks, and interchange yard than in line operations over Route A.

In summary, the overall derailment potential for the proposed rail line is very low. The high proposed standards of construction, inspection, and maintenance would significantly reduce derailment risks from track-related causes. KCS indicates that safe operations are of the highest concern to its management and labor. Adherence to that policy would

minimize the risk of derailment due to human error. Equipment failure would be less of a risk in the proposed action because the majority of cars used in the transportation of petro-chemical products are highly maintained specialty cars of newer construction. Weather extremes such as flood, heavy rain, and/or hurricane are fairly common in Louisiana; however, protective measures such as track inspection following such events, and vigilant, experienced operations during such events would reduce the risk.

Louisiana Technical College, Ascension Campus (at the proposed wye on the KCS mainline), is the only school located within 1,000 feet of the proposed ROW. Derailments and/or collisions occurring along Route A and associated trackage would have no safety impact on private or public schools, unless the event resulted in a release of hazardous materials of a magnitude to have widespread effects. The potential for hazardous materials releases is discussed below.

**Impacts of Rail Line Operations on Potential for Release of Hazardous Materials**.

The following subsections discuss the potential for rail operations over Route A and associated facilities to release hazardous materials, as well as the likely impacts from such a release.

**Hazardous Material Characteristics**. Shell, BASF, and Borden provided data which show that hazardous materials accounted for 75 percent of 1994 inbound and outbound carloads. These shipments fell into the following hazardous material classes:

| | | | | | |
|---|---|---|---|---|---|
| • | **Class 1**: | Explosives | | | 0% |
| • | **Class 2**: | Gases | | | |
| | | Division 2.1 (Flammable Gases) | | 11% | |
| | | Division 2.2 (Nonflammable Gases) | | 3% | |
| | | Division 2.3 (Poison Gases) | | 29% | |
| • | **Class 3**: | (Flammable Liquids) | | 25% | |
| | | Combustible Liquids | | <1% | |
| • | **Class 4**: | Other Flammables | | | |
| | | Division 4.1 (Flammable Solids) | 0% | | |
| | | Division 4.2 (Spontaneously Combustible) | | 0% | |
| | | Division 4.3 (Dangerous When Wet) | | 0% | |
| • | **Class 5:** | Oxidizers | | | 0% |
| • | **Class 6**: | Poisonous Liquids and Solids, Irritants | | | |
| | | Division 6.1 (Poisonous Materials) | 9% | | |
| | | Division 6.2 (Infectious Substance) | | 0% | |
| • | **Class 8**: | Corrosive Materials | | 10% | |
| • | **Class 9**: | Miscellaneous Hazardous Materials | | 12% | |

Table 4-10 is a more detailed listing of annual quantities of chemicals shipped by IC to or from BASF, Borden, and Shell in 1994. The table also shows physical and toxicity

characteristics of each chemical (some chemicals in the table are indicated by proprietary chemical name, and so some physical and toxicity characteristics are not known).

Table 4-10 shows that IC moved approximately 5,839 rail cars of chlorine for BASF and Borden in 1994. Chlorine is a gas under atmospheric conditions and is classified by U.S.DOT as a "poisonous gas" and by the EPA as an "Extremely Hazardous Substance." The Permissible Exposure Limit (PEL) for chlorine is 1 part per million (ppm). Exposure to concentrations higher than the PEL can cause irritation to the eyes, nose, and throat; build up of fluid in the lungs; and can severely burn the eyes and skin, causing permanent damage.

Table 4-10 also shows that there are approximately 1,180 rail cars of Lupranate (toluene diisocyanate) transported each year. Lupranate is a liquid and is classified by the U.S. DOT as a "poison" and by the EPA as an "Extremely Hazardous Substance". The PEL for Lupranate is 0.02 ppm. Exposure to concentrations above the PEL irritates the eyes, nose, and throat; and can cause headaches. High levels of exposure can cause a feeling of drunkenness and build-up of fluid in the lungs. Lupranate is also classified as a carcinogen (cancer-causing agent).

**Transport Notification**. Nearly every train moving over the proposed KCS line would be carrying hazardous materials. On its mainline through the project area, KCS currently hauls, on a daily basis, significant quantities of chemicals classified as hazardous materials. If the proposed line is built, these volumes would increase, but the types of hazardous materials shipped would not change significantly over existing conditions, and KCS does not propose a notification process regarding the transport of hazardous materials over the proposed line.

**Monitoring System**. Both railroads and shippers rigorously inspect rail cars carrying hazardous materials. Prior to loading, the shipper completes a comprehensive inspection of each vehicle container and operating equipment. Once loaded, the shipper examines each seal, checks for leaks, and again inspects the operating equipment. When picked up at the plant, KCS would conduct a visual inspection of the container and the operating equipment before moving the rail car. KCS would also inspect each rail car entering or leaving an interchange or rail yard at the time of entering or departure. KCS also inspects all rail cars entering and leaving its Baton Rouge yard.

Also, the Federal Rail Administration requires railcars to be inspected after each 1,000 miles of travel; this is in addition to the inspection process noted above.[33] Furthermore, exchange of railcars between carriers automatically requires an inspection,

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[0] These inspections are visual in nature and are intended to review for leaks and possible equipment malfunction (during train movement there is considerably more strain on container seals and joints than when the vehicle is parked).

regardless of the miles traveled by the car or the location of the last inspection.

The proposed interchange yard could eventually have as many as 8 tracks for the temporary storage of inbound and outbound traffic. The yard would not be used as an auxiliary storage yard for the shippers; KCS would expeditiously move inbound traffic to the destination business, and outbound traffic would remain in the yard only until serviced by the appropriate KCS mainline locomotive. Initially, 2 trains per day would deliver and remove cars from the interchange yard. In addition, the switcher would make two deliveries per day to each industry.

KCS states that, during typical daily operations in the interchange yard, each rail car would be inspected three times: once when the switcher takes delivery from the customer, a second time when the switcher places the car in the interchange yard, and a third time when the mainline locomotive hauls the car from the interchange yard.

The frequent rail car inspections noted above should minimize the risk of equipment failure which could result in a hazardous material release.

**Emergency Response Preparedness**. Ascension Parish is a population already exposed to the effects of a wide variety of emergency situations for which prior planning among federal, state, and local response providers is required. Disaster conditions could be caused by natural phenomena such as hurricanes, tornadoes and floods; transportation accidents involving hazardous materials; plant explosions; chemical, oil, and other hazardous material spills; leaks and emissions; and the dumping of hazardous wastes.[34] This section addresses only those emergency situations related to transportation of hazardous materials over KCS' proposed rail line.

The *Ascension Parish Multi-Hazard Operations Plan*, prepared and updated by the Acension Parish Office of Emergency Preparedness, is the framework by which the parish and its political subdivisions can plan and perform their respective functions during an emergency situation. The plan contains a Basic Plan which establishes a program for preparation against, operation during, and relief and recovery following disasters; as well as "Annexes" which address elements and conditions in greater detail.

Annex H is the *Ascension Parish Hazardous Materials Emergency Operations Plan*. It sets forth actions to be taken in response to chemical incidents and emergencies, and provides for the following:

- Authority to initiate actions in the event of a spill/release.

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[34] Ascension Parish Multi-Hazard Operations Plan, Ascension Parish Office of Emergency Preparedness, December 1994.

- Establishment and training of a HazMat spill/release response team.
- Methodology for determining the degree of risk to the population/environment.
- Mechanisms for alerting the at-risk populace and advising them on appropriate actions they should take for self-protection.
- Methodology and mechanisms for coordinating the actions of the HazMat spill/release response team with local fire, police and other support agencies.

In 1985, a 16 member committee known as the Community Awareness Emergency Response (CAER) was formed. It is compose of 15 local chemical company representatives and the Ascension Parish Office of Emergency Preparedness. The committee's purpose is to provide the Ascension Parish community with new and up-to-date information about chemical emissions, inventories and emergency procedures within the parish. As part of this committee's information and education efforts, it has prepared a short, succinct *Ascension Parish Emergency Preparedness Guide* for chemical emergencies. The *Guide* is published in the front of the parish Phone Directory, the pages of which are distinguished by a red border. Using language that is easy to understand, the *Guide* advises Parish residents of the following:

- The meaning of various alert sirens and how to find out more about them.
- What radio and TV stations to turn to for more precise information regarding a chemical emergency.
- What to do about children in school at the time of an emergency.
- How to report a hazardous materials incident.

The *KCS Emergency Management Guide* provides management resources and identifies resources for serious incidents and accidents. A serious incident or accident is one which:

- involves hazardous material cars, loaded or empty;
- involves any release of oil or hazardous materials;
- occurs at grade crossings;
- involves injuries or fatalities;
- involves derailments, collisions, or other incidents with $20,000 or more damage;
- involves derailments of 5 or more cars;
- results in evacuation of the general public or the closing of a major transportation artery (highway, rail, air, water);
- involves AMTRAK.

KCS provides an incident notification guide in the form of a flow chart which directs KCS employees to the appropriate response persons, agencies or teams. Local, state and

federal notification is required for serious accidents and releases of oil and hazardous materials, and the guide provides direction on how to assess the gravity of these situations. The guide also provides direction on contacting chemical equipment manufacturers and shippers, utilities, fire departments and hospitals.

A release of hazardous materials could occur along the proposed rail line, in the proposed interchange yard, at the industries, or along existing rail-lines. KCS transports significant quantities of hazardous materials along its main line already. Although the number of railcars carrying these materials along the KCS main line would increase under the proposed action, the types of substances being carried and the magnitude of a release, if one were to occur, would not significantly change.

A similar condition is assumed for BASF, Borden, and Shell. Industrial growth may lead to an increase in hazardous chemical production; however, because of the significant quantities of hazardous materials already used and manufactured at Geismar, the additional risk of exposure would be minimal. SEA does not expect changes in the existing emergency response plans for spills or releases on the existing KCS rail line or at the industries.

When a release occurs, a KCS employee is required to immediately report the incident to the operating supervisor, such as the yardmaster, upon notice. The yardmaster then assesses the extent of the emergency, and immediately reports to a supervisor, if the situation so requires. If the spill is life threatening, or if there has been a release of an extremely hazardous substance, supervisors first notify local public safety officials (e.g., police and fire departments, highway patrol, “911") to request assistance, and then contact the chief dispatcher, as soon as possible. The chief dispatcher evaluates the information provided, contacts the appropriate company officers, government entities, and customer representatives, or, if the situation requires, contacts the KCS Emergency Management Team for assistance in carrying out these functions. The Emergency Management Team gathers, evaluates, and verifies the information provided, contacts the appropriate company officers, government entities, and customer representatives, and assists in implementing the appropriate response.[35]

The *KCS Emergency Management Guide* provides a telephone listing of county/parish sheriff, fire and emergency services, including the Gonzales Volunteer Fire Department (EMS) and the Gonzales - 7th District Volunteer Fire Department (EMS) in Ascension Parish. KCS employees are also required to report any release of hazardous materials to the Chemical Manufacturers Association Transportation Emergency Notification Group (CHEMTREC). The Association of American Railroads, Bureau of

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[35] *Kansas City Southern Railway Co. Emergency Management Guide.*

Explosives can be contacted through CHEMTREC.[36]

If a spill is life threatening or there has been a release of an extremely hazardous substance (e.g., chlorine), KCS supervisors are required to first notify local public safety officials. The Ascension Parish Sheriff's Hazardous Materials (HazMat) Team and Fire Department are trained to assist in decontamination, chemical fires, and other emergency control services.

**Potential for Hazardous Material Release**. The proposed action could result in a release of hazardous materials along Route A or existing rail lines, in the interchange yard, or at BASF, Borden, or Shell.

Hazardous materials can be released in three different phases: gas, liquid, and/or solid. The following discussion of releases deals with each of these forms. Review of the chemical quantities transported through the Geismar area indicates the following as most prevalent: chlorine, toluene diisocyanate (Lupranate), hydrochloric acid, vinyl chloride and methanol. Of those five chemicals, chlorine, which is usually transported as a liquefied gas, is the most prevalent. As Table 4-10 shows, BASF, Borden, and Shell together ship or receive approximately twice as many rail cars of chlorine than any other chemical. However, toluene diisocyanate (Lupranate), which is a liquid, is the most toxic for inhalation purposes, based on a comparison of the Permissible Exposure Limits (PELs) prepared by the National Institute for Occupational Safety and Health (NIOSH-1994).

In view of the volumes transported, Table 4-11 considers chlorine in more detail, summarizing all chlorine spills reported to USDOT from 1970 to present. Although there were 17 incidents in Louisiana, the average release was very small (0.4 pounds) and the maximum was only 3.0 pounds. Nationwide, the average chlorine release for this period was approximately 440 lbs. with a maximum release of 90,000 lbs. (catastrophic release).

Review of rail incident data showed two catastrophic chlorine incidents in 1978 and 1979, involving releases of 90,000 lbs. and 2,000 lbs, respectively. Both occurred in Florida; releases of this magnitude have not occurred since. The intent of the following hazardous material impact analysis is to evaluate a "most likely" and a "worst case" scenario, not to investigate catastrophic incidents, especially their frequency and randomness.

- **Potential for Release During Line Operations**. Ascension Parish residents are already at risk from hazardous materials, as trains carrying significant volumes of hazardous materials currently pass through the parish.

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[36] *Kansas City Southern Railway Co. Emergency Management Guide.*

Table 4-12 shows that there are 8,229 people living within 10,000 feet of the IC or KCS mainline in Ascension Parish. If Route A is built, there would be 8,798 people in the parish living with 10,000 feet of the mainlines or Route A. Thus, under the build scenario there would be an increase in the number of people in the vicinity of hazardous material transportation routes, but this increase (7%) would be small compared to the number of people already living near such routes. Although some development has occurred since completion of the 1990 Census, the data in the table is still useful to gauge order of magnitude.

- **Potential for Release During Operations at the Interchange Yard**. A leak from a rail car in the interchange yard would probably be associated with a valve or seal. Both the switcher and mainline locomotives would operate at speeds of 2-6 mph in the yard. These speeds are not typically associated with accidents involving a container rupture. Consequently, an interchange yard release would probably be minor. The yard would not be used for long term storage, and typically each car would be visually inspected before entering and leaving the yard.

  USDOT statistics show that in 1995 there were over 14,700 incidents involving a hazardous material release.[37] Less than 8% of these events involved railroads. Around 76% of the releases occurred during loading or unloading; only 5% occurred in a temporary storage area. Events involving a rail car release in a temporary storage area accounted for less than 0.5% of the total number of reported hazardous material releases.

- **Potential for Minor Leaks**. Table 4-11 shows that chlorine releases in Louisiana were generally small. For 17 reported releases, the average release was 0.40 pounds and the maximum was 3.0 pounds.

**Impacts of a Hazardous Material Release**. In order to evaluate the potential environmental effects of a hazardous material release, this EIS incorporates an air simulation model exercise using chlorine as the released chemical. Lupranate was considered for the exercise; however, it is easily contained and mitigated and consequently is less detrimental to the environment and public health.

To investigate environmental impacts of a hazardous material release along Route A

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[0] Derived from an Internet Library of Transportation Statistics, compiled by USDOT's Research and Special Programs Administration, Office of Hazardous Materials.

(and Route B) two release scenarios were investigated: a "most likely case" and a "worst case".

Review of accident and train volume data indicated that the “most likely” release location would be the proposed interchange yard, due to the level of train activity and tank car residence time. All trains entering and leaving Geismar via Route A would pass through the interchange yard, regardless of their destination. Thus, there would be a number of rail cars in the yard at any given time.[38]

The “worst case” release location would be the proposed wye connector to the KCS mainline, due to the proximity and density of local residences and businesses, proximity of potable water wells, and the proximity of schools.

- **Impacts of the "Most Likely” Release** (in the Interchange Yard). As described previously, the interchange yard would be surrounded by a two foot high levee which could contain rainfall from a 24-hour, 100-year storm, as well as the contents of fifteen tank cars. In addition, KCS would construct a retention basin at one end of the yard to control effluents from the yard.[39] This retention basin is designed with 4 discharge pipes which would have 90 degree elbows on the upstream ends. The inverts of these elbows would be located at an appropriate elevation to provide storage for the contents of eleven 100-ton tank cars. Further, there would be a drain line in the very bottom of the basin which would be used to periodically drain the basin. This would prevent storm water from collecting in the basin and decreasing spill containment capacity. In the final design stage, KCS would conduct additional studies to determine whether a liner would be needed under the interchange yard and retention basins. At issue is the permeability of the soil, and the response time for damage control.

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[0] The maximum number of rail cars in the interchange yard would be a function of the ultimate yard capacity, which could be approached when one or more of the three shippers are operating near capacity. Ultimate capacity for the 8-track yard would be 800 rail cars; however, the likely number of cars would be far below that. For example, likely usage based on 1998 daily car loads would range from 20 to 36 cars, depending on the low, most likely, or high industry growth scenario (see Table 3-7, in Chapter 3).

[0] As noted earlier, SEA recommends that KCS consult with LDEQ regarding the design of the retention basin.

***Liquid* Release**. If a relatively insoluble chemical which is lighter than water (Light Non-Aqueous Phase Liquid, LNAPL) were released, it would float on top of any standing water. Such a chemical could be cleaned up using absorbent booms, pads, etc. If the retention basin were full of storm water, the elbows on the ends of the discharge lines would prohibit the chemical from being discharged to outside surface waters. If there were no standing water in the retention basis, the spill could be pumped to containers for off-site disposal.

If a relatively insoluble chemical which is denser than water (DNAPL) were released, it would settle down to the bottom of the basin. If possible, any standing water on top of the chemical would be pumped/drained off and the contaminant pumped to containers for off-site disposal. If the water on top could not be pumped off, then the entire contents of the retention basin would be pumped out for treatment and disposal.
If a water-soluble chemical were released, the discharge lines from the retention basin would be blocked and KCS could then treat the water/chemical mixture in place and discharge it or pump it out for off-site disposal. Rail yard attendants would drain standing stormwater from the retention basin on a routine basis,.

In sum, SEA believes that the retention basin would provide KCS with the means to clean up most spills with no effect on surface water bodies in the area. The design of the levee and the retention basin at the interchange yard would provide sufficient storage to handle a chemical spill of fifteen 100-ton tank cars. As noted above, KCS would decide in the final design stage whether to put a liner under the interchange yard.
An employee detecting a liquid spill at the interchange yard would first report to an operating supervisor.

***Solid* Release**. Table 4-10 shows that few hazardous material solids move in and out of Geismar by rail. If a chemical solid were released, it could be cleaned up locally using conventional equipment.[40] An employee detecting a solids release at the interchange yard would first report to an operating supervisor.

***Gas* Release**. A gas release, specifically chlorine, is by far the most likely and most critical release which might occur, as chlorine transport volumes to

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[0] KCS would have the cleanup done by professionals trained in handling hazardous materials. The financial responsibility of cleanup operations would be determined based on accident cause and liability.

the three industries are nearly twice the amount of any other hazardous materials. If chlorine were released in the interchange yard, the amount which would be released into the atmosphere would probably be relatively small, and pose minimum risk, as discussed below.

SEA used an air flow simulation model to determine the environmental effects of a chlorine release within the interchange yard. The model computes airborne contaminant concentrations at certain distances from the location of the simulated release. The average chlorine release in Louisiana from 1970 to the present is 0.4 pounds; however, this quantity is too small to use in a simulation model. A release of this size would dissipate almost instantly and be of little concern to the environment and population. The nationwide average chlorine release from 1970 to the present (excluding the two catastrophic incidents) is approximately 20 lbs. A 20 lb. release would also generally have minimal impact on the environment and the public. Thus, for the purpose of performing air flow simulation modeling, a larger chlorine release of 50 pounds was used (this quantity is almost 17 times the maximum release reported in Louisiana in the past 27 years).

The air flow simulation model considers meteorological data applicable to Louisiana, including but not limited to historical wind speeds and wind direction. The model was performed assuming that the release would last 4 to 8 hours and that it would come from only one tank car.

SEA estimates that detection, response, and remediation of a chlorine gas release of the size and nature considered herein would take 4 to 8 hours. Most chlorine leaks are associated with a leaking seal or seam. Information from the Association of American Railroads regarding previous chlorine releases indicates that, when a chlorine release occurs from a pressurized vessel (tank car), the decrease in vapor pressure from the interior of the tank to the atmosphere causes a severe drop in temperature. The cold temperature causes the chlorine to freeze and eventually seals the point of release. Over time, this frozen seal melts and the process repeats.

Table 4-13 shows the air modeling results for a 50 lb. chlorine gas release in the interchange yard. The table shows estimated response time for residents, air concentration, and time required for the contaminant to dissipate to the PEL. Figure A-65 shows concentric circles drawn from the point of release. The circles have radii in 1,000 foot increments to a distance of 9,000 feet, with an additional circle with a radius of 350 feet to highlight the area of greatest concern. These concentric circles correspond to the distances in Table 4-13.

As Table 4-13 shows, a 50 lbs. release of chlorine gas would have minimal

effect on the public and environment. The highest concentration that would be observed is 0.368 ppm, at a distance of approximately 350 feet downwind. An individual exposed to this concentration for 15 minutes would experience itching and stinging of the nose and throat and burning of the eyes.[41] These symptoms would probably be temporary and would not cause irreversible damage. At distances greater than 350 feet there would be no noticeable effect on human life or the environment other than a pungent odor and tickling of the nose. Such a release would cause no significant or permanent ecological damage.

Table 4-14 shows population within 10,000 feet of the interchange yard, in 1,000 foot increments. The table shows that there are 9 residents within 1,000 feet of the yard; however, there are none within 350 feet of the yard. There were no group homes or places of assembly until the Southern Mobile Home Park located about 3,000 feet away. The Occupational Safety and Health Administration permissible exposure limit (OSHA PEL) for chlorine is 1 ppm. With a concentration of 0.368 ppm within 350 feet of the source point, no emergency response would be needed.

As previously noted, these are the impacts associated with a 50 lb. release. Although statistics show that smaller releases are more typical, a value of 50 lbs was used because of the model sensitivity.

KCS regulations require supervisors to immediately call “911" or the parish sheriff’s department if a release exceeds the “reportable quantity” (RQ) over a 24-hour period for that particular hazardous material. The RQ for chorine is 10 pounds. KCS would immediately notify Ascension Parish law enforcement agencies if a chlorine release of 50 lbs. occurred at the interchange yard.

- **Impacts of the "Worst Case” Release** (at the Proposed Mainline Wye Connector). The worst-case hazardous material release associated with Route A would be at the proposed wye connection with the KCS mainline. Although the statistical likelihood of such a release is small, a release at this location could cause the highest level of adverse environmental impact, due to the proximity and density of residences and businesses, and proximity of potable water wells, schools, etc. (Figure A-67 shows the hazardous material impact areas along Route A, including the wye connector). A release at this location would probably be due to a collision, which would have the potential

[0] A release of chlorine gas to the atmosphere would not remain at the highest expected concentration (0.368 ppm, in this case), but would dissipate to lower, finally imperceptible levels.

for a larger spill than considered under the most-likely scenario discussed above.

***Liquid* Release**. The physical presence of Route A would help contain a liquid release at the wye. The proposed rail line would have drainage ditches along each side which would convey storm water to outlet structures placed at distances of less than 500 feet. If a liquid release occurred, the outlet structures could be blocked to contain the contaminant.

The soil types along Route A would provide an excellent barrier between contaminant and groundwater. The depth to the first subsurface source of drinking water is approximately 150 feet, and the majority of the soils in this area are silty clays with permeability coefficients from $10^{-6}$ to $10^{-8}$. Soils with permeability coefficients less than $10^{-6}$ are considered to be practically impervious (Peck, Hansen, Thornburn, 1973). Soils along the route would effectively contain downward infiltration of the contaminant and mitigate the release until clean up could occur. Also, as area topography is flat, subsurface dispersion of a release would be minimal. Considering the very low soil permeability and the depth to the drinking water aquifer, a liquid spill would probably have little to no effect on drinking water.

As with a liquid spill at the interchange yard, an employee detecting a liquid spill along the wye connector would first report to an operating supervisor. In this case, however, the outlet structures of the perimeter ditch system would need to be blocked as soon as possible to contain the contaminant. Clean-up should also occur as quickly as possible due to the aquifer approximately 150 feet below grade. Due to the very low permeability of the soils in the vicinity, it is unlikely that a liquid spill would affect the drinking water supply.

***Solid* Release**. Table 4-10 shows that few hazardous material solids move in and out of Geismar by rail. If a chemical solid were released, it could be cleaned up locally using conventional equipment.

***Gas* Release**. As stated above, a gas release, specifically chlorine is by far the most likely release.

SEA used an air flow simulation model to determine the environmental effects of a chlorine release due to a container rupture at the wye connection. Although the maximum reported chlorine release in Louisiana from 1970 to the present was 3.0 pounds, this quantity is too small for use in modeling. A release of this size would be of minimal impact on the environment and the public and would not yield accurate modeling results for a "worst-case" scenario. To obtain a quantity which could be modeled, SEA investigated

chlorine spills which occurred throughout the nation over the past 15 years (1981-1996). The maximum reported chlorine release during that period was 437.13 pounds, on April 11, 1996, in Montana. For modeling purposes a release of 500 pounds was used as the worst-case scenario.

Table 4-15 indicates the results of the air modeling for a 500 lb. chlorine release at the wye connection between Route A and the KCS mainline. The table shows estimated response time for residents, air concentration, and time required for the contaminant to dissipate to the PEL. Figure A-66 shows concentric circles drawn from the point of release. The circles have radii in 1,000 foot increments to a distance of 9,000 feet, with an additional circle with a radius of 350 feet to highlight the area of greatest concern. These concentric circles correspond to the distances in Table 4-15.

As Table 4-15 shows, a 500 lbs. chlorine release at the wye connection would have a temporary impact on the environment. The IDLH (Immediately Dangerous to Life and Health) value for Chlorine is 10 ppm. This is the maximum level a healthy person can be exposed to for 30 minutes and escape without suffering irreversible health effects. If a 500-lb. release of chlorine gas were to occur, the highest concentration that would be observed is 3.68 ppm at a distance of approximately 350 feet downwind. Exposures to this concentration can cause irritation to the nose and throat, followed by headache and coughing. However, review of the location of possible receptors near the ROW indicates that the first likely population receptor is approximately 1,000 feet from the expected release point. The maximum concentration at that distance is expected to be 0.57 ppm.

An individual exposed to a concentration of 0.57 ppm for 15 minutes would experience itching and stinging of the nose and throat, and burning in the eyes. These symptoms should be temporary and should not cause irreversible damage. At a distance of 2,000 feet, people would experience tickling of the nose and throat. At distances greater than 2,000 feet from the point of release, there would be no noticeable effect on human life or the environment other than possibly a pungent odor and tickling of the nose.

Table 4-16 gives the characteristics of potential impact areas in the Route A vicinity, at various distances from the assumed point of release at the wye connection between Route A and the KCS mainline. Figure A-67 shows the location of these areas. The impact area designations shown in the figure correspond with those listed in the table.
Table 4-17 shows the number of people residing within 10,000 feet of the wye connection between Route A and the KCS mainline, in 1,000 foot increments. The table shows that there are 3 residents within 1,000 feet of

the Route A wye connector. There is also one school located within 1,000 feet of the wye.

Upon learning of the release, KCS supervisors would immediately call the parish sheriff department, the chief KCS dispatcher, and possibly the KCS Emergency Management Team.

Exposure concentration levels would be somewhere between 0.57 ppm (at 1,000 feet) and 3.68 ppm (at 350 feet). If the release were slow (such as the 4 to 8 hour release time simulated), the likely emergency response would be to suggest that the residents and school attendees temporarily leave the area until the gas has dissipated (approximately 15 minutes from the time the release completely stops). If the release is immediate, the likely emergency response would be to direct affected individuals to temporarily seek shelter indoors. Because there would be so few locations affected, communication could be direct and carried out by local law enforcement. The release would not affect emergency response routes because of the low concentration levels.

### 4.6.2 Route B

Transportation and safety impacts from construction and operation of Route B would be similar to those of Route A. Routes A and B share a common ROW for almost all of their distance west of I-10, and so would have identical impacts in that area. East of I-10, the two routes diverge from each other; Route B would connect to the KCS mainline approximately one mile north of the Route A connection. Route B would cross LA 941 approximately one mile north of the Route A crossing. The discussion below deals only with those Route B impacts which would differ from previously discussed Route A impacts.

**Impacts of Rail Line Construction on Transportation Infrastructure**

**Roadways and Trails**. Table 4-18 lists the public road at-grade crossings and indicates roadway characteristics. Route B impacts are identical to Route A, except for:

- Route B would not cross South Hodgeson Road, as the road ends before that point. South Hodgeson is a local dead-end road which serves a rural-residential area.

Ascension Parish owns and maintains the road.

- Route B would not cross Brittany Road.

**Railroads (Mainline or Other)**. Route B would originate at approximately MP 813.5 on the KCS mainline near Sorrento and Gonzales, with construction of a wye connection to the mainline and a parallel set-out track northerly of the wye along the mainline. The route would cross the IC mainline and northbound lead track in Geismar at the same point as Route A. Route B would have the same western terminus as Route A and would connect with the industry connector track at Shell at the same point as Route A.

The description already given for Route A of train movements on the IC mainline, of the proposed IC crossing, of IC's Geismar Yard operations, and of proposed KCS operations in the Geismar area would also apply to Route B.

**Navigable Waterways**. Construction and operation of Route B would have the same effect on navigable waterways as would Route A.

**Transmission Lines**. Construction and operation of Route B would have the same effect on transmission lines as would Route A.

**Pipelines**. Construction and operation of Route B would have the same effect on pipelines as would Route A.

**Water and Sewer Infrastructure**. Construction and operation of Route B would have the same effect on water and sewer infrastructure as would Route A.

**Communication Systems**. Construction and operation of Route B would have the same effect on communication systems as would Route A.

**Airport Approaches**. Construction and operation of Route B would have the same effect on airport approaches as would Route A.

**Impacts of the Construction Process on Project Area Roads**. The discussion of this issue for Route A also applies to Route B, except that Route B would not cross Brittany Road.

**Impacts of Rail Line Operations on Vehicular Traffic Delay**.

The discussion of this issue for Route A also applies to

Route B, except that Route B would not cross Brittany Road. Table 4-19 shows estimated average grade crossing delay (in minutes) for the no-build (without Route B) and build (with Route B). The calculations used the same methodology as for Route A. The results of the delay analysis can be summarized as follows:

- **IC Mainline**: Same as Route A.

- **KCS Mainline**: Same as Route A.

- **Route B**: Delays for the three at-grade crossings on Route B (Ashland Rd., LA 941 and St. Landry Rd.) are the same as delay at those crossings under Route A. Average likely delay ranges from 44 seconds in 1998 to 57 seconds in 2015 for the two crossings west of the interchange yard (Ashland Rd. and St. Landry Rd., and from 55 seconds in 1998 to 77 seconds in 2015 for the crossing east of the interchange yard (LA 941).

**Impacts of Rail Line Operations on Train-Vehicular Collisions**.

There would be a potential for train-vehicular collisions at public highway at-grade crossings which would be built along Route B and associated rail facilities. Route B at-grade road crossings would be at LA 941, LA 3251 (Ashland Road) and St. Landry Road. The previous discussions of this issue for Route A also apply to Route B except that Route B would not cross Brittany Road.

Table 4-20 shows predicted annual rail-highway grade crossing accidents for the no-build and build scenarios for 1996 baseline conditions, and for each of the five forecast years, for likely and highest case scenarios. Accident predictions for IC and KCS mainlines are based on rail-highway crossing characteristics, as well as accident history. Route B accident predictions are based on rail-highway crossing characteristics only. The calculations used the same methodology as for Route A. The results of the analysis can be summarized as follows:

- **IC Mainline**: Same as Route A.

- **KCS Mainline**: Same as Route A.

- Route B: Predicted annual accidents for the three at-grade crossings on Route B (Ashland Rd., LA 941 and St. Landry Rd.) would be the same as accidents at those crossings under Route A. Predicted annual accidents

along Route B remain at 0.01 through 2015. ADT on St. Landry Rd. ranges from 100 to 130 vehicles per day. The USDOT accident prediction formula is not intended for use with grade crossings with ADT under 500 vpd.

**Impacts of Rail Line Operations on Train-Pedestrian Accidents**.

Train-pedestrian accident potential along Route B and associated facilities would be similar to that discussed for Route A. However, Route B would pass nearer to two residential areas, (along LA 941 and South Hodgeson Street) than would Route A, and so could have a higher attraction to trespassers. This could increase the potential for accidents involving trespassers on rail property.

**Impacts of Rail Line Operations on Train-Train Collisions (IC Crossing)**.

The IC Crossing location and issues are the same for Route B as discussed for Route A.

**Impacts of Rail Line Operations on Derailment Potential**.

There is virtually no significant difference between Routes A and B regarding derailment potential. Derailments and/or collisions occurring along Route B and associated trackage would have no safety impact on private or public schools, unless the event resulted in a release of hazardous materials of such magnitude to have widespread effects. The potential for hazardous materials releases is discussed below.

**Impacts of Rail Line Operations on Potential for Release of Hazardous Materials**.

Construction and operation of Route B could result in a release of hazardous materials along Route B or existing rail lines, in the interchange yard, or at BASF, Borden, or Shell. Ascension Parish residents are already at risk from hazardous materials, as trains carrying significant volumes of hazardous materials currently pass through the parish. Table 4-21 shows the number of people in the parish living within 10,000 feet of a rail mainline (in 1,000 foot increments) for both the build (Route B) and no-build scenario. Under the build scenario there would be an increase in the number of people in the vicinity of hazardous material transportation routes. However, this increase would be small compared to the number of people already living near such routes. Although some development has occurred since

completion of the 1990 Census, the data in the table is still useful to gauge order of magnitude.

The Route A discussion regarding impacts of a hazardous material release at the proposed interchange yard also applies to Route B. However, as Route B would connect to the KCS mainline at a different location than Route A, SEA recalculated the modeling and impacts associated with a release at the wye connection to the mainline.

SEA used an air flow simulation model to determine the environmental effects of a 500 lb. worst-case chlorine release at the wye connection of Route B and the KCS mainline. Table 4-22 indicates the results of the air modeling of such a release. The table shows estimated response time for residents, air concentration, and time required for the contaminant to dissipate to the PEL. Figure A-68 shows concentric circles drawn from the point of release; the circles correspond to the distances in Table 4-22.

As Table 4-22 shows, a 500 lb. chlorine release at the wye connection would have a temporary impact on the environment. The highest concentration that would be observed is 3.68 ppm at a distance of approximately 350 ft. downwind. However, review of the location of possible receptors near the ROW indicates that the first likely population receptor is approximately 1,000 feet from the expected release point. The maximum concentration at that distance is expected to be 0.57 ppm.

Table 4-23 gives the characteristics of potential impact areas in the Route B vicinity, at various distances from the assumed point of release at the wye connection between Route B and the KCS mainline. Figure A-69 shows the location of these impact areas. The impact area designations shown in the figure correspond with those listed in the table.

Table 4-24 shows the number of people residing within 10,000 feet of the wye connection between Route B and the KCS mainline, in 1,000 foot increments. The table shows that there are 4 residents within 1,000 feet of the wye. There is also one church within 1,000 feet of the wye.

Exposure concentration levels would be somewhere between 0.57 ppm (at 1,000 feet) and 3.68 ppm (at 350 feet). If the release were slow (such as the 4 to 8 hour release time simulated), the likely emergency response would be to suggest that the residents and church attendees temporarily leave the area until the gas has dissipated (approximately 15 minutes from

the time the release completely stops). If the release is immediate, the likely emergency response would be to direct affected individuals to temporarily seek shelter indoors. Because there would be so few locations affected, communication could be direct and carried out by local law enforcement. The release would not affect emergency response routes because of the low concentration levels.

### 4.6.3 Industry Connector Lines

**Impacts of Rail Line Construction on Transportation Infrastructure**

**Roadways and Trails**. The industry connector lines to BASF, Borden, or Shell would make a number of at-grade crossings of privately owned and maintained roads within BASF, Borden, Shell, and Uniroyal plant sites. The respective plant safety and operations personnel would determine to what extent these crossings would interfere with safe operations within the plant site(s). The Board suggests that, at a minimum, each rail crossing should be indicated by a set of standard cross bucks and stop signs.

**Railroads (Mainline or Other)**. There would be no additional impacts beyond those previously stated for Routes A and B.

**Navigable Waterways**. There would be no additional impacts beyond those previously stated for Routes A and B.

**Transmission Lines**. The industry connectors would also cross certain 115 and 230 kVA lines. Detailed surveys and measurement would be necessary at each transmission line crossing to determine if minimum clearances would be attainable without retrofit or reconstruction of the power lines.

**Pipelines**. The industry connecting track would cross pipelines including:

- 20-inch diameter LGPL gas pipeline
- Two 30-inch diameter UG gas pipelines
- 4-inch diameter UTP ethylene pipeline

**Water and Sewer Infrastructure**. There would be no additional impacts beyond those previously stated for Routes A and B.

**Communication Systems**. There would be no additional impacts beyond those previously stated for Routes A and B.

**Airport Approaches**. There would be no additional impacts beyond those previously stated for Routes A and B.

**Impacts of the Construction Process on Project Area Roads**. There would no additional impacts beyond those previously stated for Routes A and B.

**Impacts of Rail Line Operations on Vehicular Traffic Delay**.

There would be no additional impacts beyond those previously stated for Routes A and B.

**Impacts of Rail Line Operations on Train-Vehicular Collisions**.

There would be no additional impacts beyond those previously stated for Routes A and B.

**Impacts of Rail Line Operations on Train-Pedestrian Accidents**.

There would be no additional impacts beyond those previously stated for Routes A and B. The industry connectors would be located on private property owned by the several industries, is presently posted for no-trespassing, and is controlled access.

**Impacts of Rail Line Operations on Train-Train Collisions**.

There would be no additional impacts beyond those previously stated for Routes A and B.

**Impacts of Rail Line Operations on Derailment Potential**.

The risk of derailment on the industry connecting tracks, although low, would still be higher than on Routes A or B or associated trackage, due to the nature of switching operations and the number, type, and frequency of moves within the industrial plant properties. However, this risk would be minimal due to the reduced speed of operations.

## 4.7 ENERGY CONSUMPTION

### 4.7.1 Route A

**SEA estimated energy consumption for the proposed project based principally on the fuel consumption associated with two transportation modes: truck and rail. It estimated truck fuel consumption based on vehicle miles of travel (VMT), and rail fuel**

consumption based on gross ton miles (GTM).

VMT is a standard unit of measurement used extensively by EPA for determining mobile source emissions. A truck VMT of 1 represents 1 truck traveling one mile. A VMT of 10 could represent 10 trucks each traveling 1 mile, or 1 truck traveling 10 miles. EPA calculates fuel consumption and mobile source emissions by applying fuel consumption and emission rates to VMT totals. For the proposed project, SEA calculated total truck VMT by considering the number of truck loads entering and leaving Geismar. It calculated truck loads by first predicting quantities of products produced in the three plants (BASF, Borden, and Shell), and then predicting mode share. As previously discussed, mode share considered existing mode share percentages, as well as a forecasted shift in mode share toward rail, with reductions in mode share for truck and barge.

In addition to forecasting outbound product, SEA also considered inbound raw material quantities by mode. As stated earlier, inbound raw material tonnage and output product tonnage are not equal. The main reason for this difference is that some raw materials arrive by pipeline.

The calculation of truck VMT considered that the pickup or delivery of a product is only half of the trip; the vehicle either arrived at the plant empty, or left the plant empty. SEA did not entirely know the origin or destination of the truck traffic, nor, therefore, the distance traveled by each truck. Consequently, SEA could not calculate VMT for the entire truck trip, but instead calculated VMT for the truck mileage within Ascension Parish.

Table 4-25 shows truck VMT inside Ascension Parish for the no build and build scenarios. These VMTs reflect all shipments associated with BASF, Borden, and Shell. Based on these VMT figures, Table 4-26 shows fuel consumption estimates for no-build and build scenarios.

Railroad GTM considers all rail shipments regardless of whether they occurred on IC or KCS. The forecasted product volumes shown earlier demonstrate that the total product generated by BASF, Borden, and Shell would be significantly greater if the proposed rail line is built than if it is not built. One of the three industries indicates that its production with the proposed rail line would be five times what it would without the line. As a result, under the build scenario, both IC and KCS would carry higher volumes to or from the three industries.

After considering mode split and forecasting the volumes of material shipped by rail (as compared to truck or barge), SEA forecast carrier commodity splits. These forecasts predicted that KCS' share of rail traffic would increase (in the high growth scenario) until 2010, when it would level off due to congestion in the KCS interchange yard. By 2015, in the high growth scenario, KCS and IC would carry similar volumes, as each would be operating at a similar level of congestion. IC and KCS would each be carrying more traffic than currently transported by IC. It was necessary to evaluate each carrier's market share because each carrier's mileage in Ascension Parish is different. After calculating market

share, SEA calculated GTM within Ascension Parish for the no build and build scenarios. Table 4-27 shows this GTM, while Table 4-28 shows the resulting implied fuel consumption estimates.

Both the no build and build rail fuel consumption estimates include IC rail traffic. SEA did this to show the systemwide fuel consumption implications of Route A. Under the future no-build scenario, Geismar shippers would have two freight transportation options (IC and truck), as they do currently. Under the build scenario they would have three options (KCS, IC, and truck).

Table 4-29 shows the net change in truck and rail fuel consumption calculated by taking the difference between the no-build and build scenarios. The build fuel consumption figures are considerably higher than the no-build. This difference is mainly due to the higher production volumes under the build scenario.

### 4.7.2 Route B

BASF, Borden, and Shell plant production levels would be identical for Routes A and B. Therefore, gross tonnage would be the same for either route. Truck activities would not change based on either the selection of Route A or Route B. Route B would be shorter than Route A; however, the difference in length is negligible and does not require the recalculation of fuel consumption. Route A fuel consumption estimates also apply to Route B.

### 4.7.3 Industry Connector Lines

The overall energy computations discussed above included fuel consumption by rail operations over the planned industry connector lines. The energy computation reflected Geismar traffic on both IC and KCS. SEA considered switching mileage for both railroads and factored it into the rail fuel consumption estimates.

## 4.8 AIR QUALITY

### 4.8.1 Route A

**Construction Impacts**

The rail construction process would affect air quality primarily as a result of construction equipment exhaust and fugitive dust due to soil disturbance.

**Equipment Exhaust**. SEA estimated heavy equipment emissions by using emission rates published in the document *Compilation of Air Pollutant Emission Factors, Volume II: Mobile Sources (AP- 42)*[EPA, 1985]. SEA performed the calculations in three

steps: (1)it calculated the average emissions in pounds per hour for nine classes of diesel construction; (2)it multiplied the average emissions by an assumed amount of ten pieces of equipment in use at the site on a daily basis; and (3)it then multiplied this daily emission rate by an assumed number of operating hours per year (10 hours per day, 240 work days per year).

SEA also estimated on-site travel emissions from the vehicles delivering and removing materials from the construction site. The vehicle emission rates used were based on rates calculated by the EPA-approved MOBILE5a vehicle emissions model. MOBILE5a calculates an average fleet emission rate in grams of pollutant per vehicle mile traveled (g/VMT). To estimate VMT associated with constructing the proposed rail line, SEA multiplied an assumed number of new trips for each type of vehicle trip (20 trips per day) by an assumed on-site vehicle trip length (one mile). Then it multiplied daily VMT by the vehicle pollutant emission rate in g/VMT and subsequently multiplied by 240 working days per year, to obtain an estimate of annual emissions. SEA then converted these annual emissions to tons per year (tpy).

Table 4-30 shows the results of the emissions analysis for construction equipment and construction delivery vehicles. More than 99 percent of the projected construction emissions of $NO_x$ and VOC would come from construction equipment, rather than delivery vehicles. The worst case scenario would be in 1998, because much of the projected 20-month construction period would occur in that year. Emissions during any year when construction takes place for less than the full year could be estimated by prorating the worst case values (divide the number of actual construction days in the year by 240 construction days in a full year).

KCS could reduce construction equipment exhaust by keeping the vehicles well maintained, and preventing unnecessary idling of equipment when not in use. SEA recommends that KCS' final project-specific BMPs include specific measures that KCS (and its contractors) would take to ensure that construction equipment is well maintained and that unnecessary idling of equipment is minimized.

Although the proposed construction would release the ozone precursor pollutants NOx and VOC, this would be a short-term, minor, unavoidable adverse impact.

**Fugitive Dust**. The primary source of particulate matter (PM) emissions during construction would be fugitive dust caused by winds blowing across areas disturbed by surface grading. Standard techniques to limit particulate emissions during construction include the following:

- Application, where possible given prevailing environmental conditions, of water or chemicals to control dust during grading of rail beds and clearing of land;

- Application of asphalt, oil, water, or suitable chemicals to construction access roads, materials (including ballast), stockpiles, and other surfaces which could yield airborne dust;

- Covering open-bodied trucks when transporting construction materials likely to yield airborne dust; and

- Prompt clean-up from paved streets of inadvertent deposition of earth or other construction material.

SEA recommends that KCS'final project-specific BMPs include specific measures that KCS (and its contractors) would take (including those listed in the preceding paragraph) to minimize release of fugitive dust during construction. The final BMPs should also indicate any locations where specific dust control measures such as application of oil or other chemical would not be appropriate because of other environmental considerations (e.g., proximity to open water, wetlands, wells, livestock).

Even with implementation of appropriate BMPs, the proposed rail construction would have short-term, minor unavoidable impacts from the release of fugitive dust. The potential for fugitive dust emissions from construction activities would diminish following soil stabilization.

**Open Burning**. Louisiana's Environmental Quality Regulations (Title 33, Chapter 11) prohibit the outdoor burning of waste material or other combustible materials. The proposed construction would be subject to this requirement, and so there would be no open burning of any material during construction of the proposed rail line.

All waste material from construction should be properly disposed of in accordance with all applicable laws and regulations. SEA recommends that the final BMPs for this project specify how KCS (and its contractors) would dispose of waste material from construction.

**Operation Emissions Impacts**

**Methods**. The locomotives hauling freight on the KCS and IC lines in Ascension Parish and the switching locomotives which would haul freight between BASF, Borden, or Shell and the interchange yard would emit air pollutants.

SEA estimated locomotive emissions based on the procedures and data contained in the EPA document *Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources* (EPA, 1992). Projected annual fuel consumption (see Section 4.7) is important in determining estimated air pollutant emissions. SEA multiplied projected annual fuel consumption by the pollutant emission rate [in pounds per gallon (lbs/gal)] and converted the result to estimated annual emissions in tons per year (tpy).

Two line haul locomotives would provide train service between Geismar and the KCS main line. These locomotives would tow inbound traffic to the interchange yard and then pick up outbound traffic. This equates to two train movements: one inbound and one outbound. Two pickup/delivery trips would occur per day, for a total of four daily train movements between the interchange yard and the KCS main line. The locomotives would travel 27.33 miles per day, or 9,975 miles per year.

The switching locomotive would operate approximately eight hours per day providing service to the BASF, Borden, and Shell sites. For analysis purposes, SEA assumed that the switch engine would make two trips per day to each of the three companies. Based on the distance traveled to each company, this equates to 25.6 miles per day, or 9,344 miles per year.

**Findings**. The Clean Air Act Amendments (CAAA) of 1990 require each state to submit to EPA a State Implementation Plan (SIP) which demonstrates how the state will attain and maintain air quality standards for pollutants for which the state is designated non-attainment. The SIP must contain specific measures for controlling and reducing emissions to bring the state into compliance. It must also include criteria and procedures for determining the conformity of transportation plans, programs, and projects with the SIP. Portions of Louisiana, including Ascension Parish, are in designated ozone non-attainment areas.

EPA established *de minimus* emission values to assist states in determining whether federally funded transportation plans, programs, and projects conform to appropriate SIPs (40 CFR 93). If a project's total estimated emissions are below these *de minimus,* the project is presumed to conform to the SIP. The proposed KCS project would be privately funded and is not required to conduct a conformity demonstration. However, the *de minimus* values provide a measure for assessing whether expected emissions from the proposed rail line would conform to the SIP and not represent a substantial degradation of existing air quality. Table 4182 show the *de minimus* values for ozone.

In order to provide a basis of comparison, Table 4-32 shows estimated annual emissions if the proposed line is not built. If Route A is not built, IC would continue to provide rail service to BASF, Borden, and Shell. Trucks would continue to haul a substantial portion of inbound and outbound material for these industries. The no-build assessment considered both continued rail and truck hauling. That assessment evaluated three potential scenarios related to transporting material under the no-build and build alternatives: (1) future industrial growth at BASF, Borden, and Shell would be lower than anticipated; (2) future industrial growth would be as expected; and (3) future industrial growth would be greater than expected.

Table 4-33 shows the results of the emissions analysis for the operation of Route A. Comparison of Tables 4-31 and 4-33 shows that operation emissions of VOCs would be below the *de minimus* value for all growth scenarios through 2015. Operation emissions of

$NO_X$ would exceed the *de minimus* values under the likely growth scenario for years 2010 and beyond and under the high growth scenario for years 2005 and beyond (construction emissions would also be below the *de minimus* values). Table 4-34 shows the incremental increase in emissions between the build and no-build scenarios.

In 1997 EPA proposed emission standards for newly manufactured and remanufactured locomotive engines. EPA estimates that the new standards would reduce $NO_X$ emissions by approximately two-thirds, and VOC and PM emissions by one-half. The proposed rule is expected to be finalized by the end of 1997 and take effect in 2000. Implementation of this rule would provide significant reductions in emissions to help the state comply with the NAAQS for ozone. This would probably result in 2015 High Industrial Growth scenario emissions that would be below the *de minimus* values.

Based on the above information, construction of Route A would be consistent with the plans set forth in the SIP to attain the NAAQS for ozone, except for the High Industrial Growth scenario in the year 2015.

### 4.8.2 Route B

The above discussion and analysis of air quality impacts associated with construction and operation of Route A also apply to Route B. Route B would be about 0.2 miles shorter than Route A; this would only influence the distance that the road locomotives travel. During an average year, road locomotives would travel an estimated 292 fewer miles over Route B than over Route A. Such a difference is insignificant in comparison to the estimated 19,000 total miles per year which would be traveled by line haul and switching locomotives.

### 4.8.3 Industry Connector Lines

Switching locomotives would frequently move from the interchange yard to BASF, Borden, or Shell. The air quality analysis discussed above for Route A included emissions by operation of switching locomotives over the planned industry connector lines. The air quality analysis for construction and operation of Route A also applies to the industry connectors. Estimated emissions during construction would require prorating the estimated annual emissions by the estimated number of days to construct the connector lines.

## 4.9 NOISE AND VIBRATION

### 4.9.1 Route A

**Noise**

**Construction Noise**. Potential noise impacts due to the rail construction process

are distinct from such impacts due to operations over the proposed rail line. The main difference is in the duration of these two types of activities. Although most construction projects have the potential for causing highly annoying noise levels, e.g. pile driving, compressors, use of heavy equipment etc., the impact is of limited duration, that is, it ceases once construction is completed.

Construction noise would not create any permanent impacts. The extent of impact would depend on construction schedules, tasks performed, equipment used, access to the site through residential areas, weather, and other unforeseeable circumstances.

In all construction projects, noise-generating activities are limited to the daytime hours of weekdays unless special situations develop requiring nighttime and weekend work. In areas where construction would continue for an extended time and affect noise sensitive receptors, appropriate mitigating measures must be developed to lessen impact. Plans for mitigation of construction noise would need to consider the Ascension Parish noise ordinance as well as information from the potentially affected public.

In most cases mitigation is achieved with a combination of administrative and engineering measures. Examples of administrative measures may be the scheduling and location of work which could cause complaints. Typical engineering measures are the maximum use of noise control equipment, e.g. effective mufflers, the utilization of partial or full enclosures, temporary shielding by structures and bulk materials, etc. Construction contracts should include a specification giving details of what is expected of the contractor to minimize noise levels.

**Operational Noise**. SEA determined impacts by calculating the day/night noise levels of proposed rail operations and comparing the results with existing day/night noise levels at the residential locations listed in Chapter 2, Table 2-35. Table 4-35 shows the results of those calculations for the receptor locations located along Route A (for the most likely traffic level scenario, for the base and horizon years). SEA based its calculations on best available input data, including reasonable assumptions where no data was available.

SEA's methodology for predicting operational noise levels is similar to that outlined in *Transit Noise and Vibration Impact Assessment,* a handbook published by the Federal Transit Administration in April 1995, except that the inputs to the equations given in the handbook were measured values (as opposed to calculated values). The inputs can be the highest pass-by noise levels ($L_{max}$), the equivalent noise levels ($L_{eq}$), or the sound exposure level (SEL), from which the day/night noise levels ($L_{dn}$) can be calculated using a 10 dB adjustment for the 10 PM to 7 AM time period of the day.

Table 4-35, column four, shows existing averaged day/night residential noise levels, $L_{dn}$, at the six receptor locations. To derive this, SEA took the energy average of the two one-hour daytime measured noise levels and applied it to the 7 AM to 10 PM part of the day, and then added the nighttime reading with adjustment.

To calculate noise levels from proposed rail operations, SEA used measured results from the Baton Rouge train pass-by, and assumed a train of 25 cars hauled by two mainline locomotives traveling at 25 mph. The locomotives would sound their warning horn 1/4 mile before each at-grade crossing, which represents approximately 36 seconds of warning time. As trains would be operating over the proposed rail line in both directions, SEA considered the 1/4 mile distance in both directions in assessing horn noise at grade crossings. Route A would cross Ashland Rd., St. Landry Rd., and Brittany Rd. at-grade. SEA calculated noise levels for trains traveling with and without horn use before at-grade crossings. It estimated horn noise level based on published data.

For the purposes of this noise analysis, SEA considers the industry connector (closest to location 1) and the interchange yard (closest to location 3) to be part of Route A. SEA measured the shortest distances from rail line to receptors on USGS Quadrangle maps. SEA also calculated the 65 $L_{dn}$ contour lines for trains operating with and without using a horn to allow impact determination to be made for sensitive receptors other than the 6 listed in Table 4-35.

SEA calculated expected interchange yard noise levels to assess the possible impact on residents at the Mobile Home Park area. It considered three operational modes in detail: (1)switching locomotives working, (2)switchers idling, and (3)car impacts during train assembly. SEA derived switchyard operational noise levels from measurements made at the KCS yard in Baton Rouge and from published data. It assumed interchange yard noise levels to be concentrated at two points, each at approximately 1/3 the distance from the end of the yard. It also assumed that activities would be evenly distributed between these two areas. SEA assumed a total of 24 car impacts during each train assembly, distributed evenly between the two areas of activity. Given the distances to the Mobile Home Park, SEA calculated the combined noise level generated by switchyard activities and added this to levels generated by line haul operations. Calculations also included use of the train horn at the St. Landry Rd. crossing.

In Table 4-35, SEA calculated the values shown in the column labeled “Noise Level at Receptor Inclusive of Existing and Distance Corrected Rail” by adding noise levels from proposed rail operations to existing noise levels on an energy basis. SEA then compared the projected total noise levels to the criteria adopted for this project. The comparison shows that the projected total noise levels would exceed the absolute threshold of 65 $L_{dn}$ at location 6 (a residence on LA 941) and would exceed the incremental increase criteria (3 or more dB) at locations 6 and 7 (a residence on Britanny Road) for all forecasted scenarios.

SEA used the same methodology described above to analyze noise impacts at an additional receptor location, on St. Landry Rd., just north of the at-grade crossing. This residential property is on the corner of St. Landry Rd. and an unmarked road leading to the firing range. It is approximately 350 feet from Route A in an area where use of the train horn would be mandatory. The estimated existing noise level at this site is 58 $L_{dn}$; combined

noise levels in 1998 including proposed rail operations would be 59 $L_{dn,}$ which represents a 1 dBA increase. This noise level would not exceed the criteria used to identify areas subject to noise impact. However, by 2010 (when the number of train movements would increase to six per day), projected total noise levels at this location would rise by more than 3 dBA over existing levels.

**Summary of Operational Noise Impacts**. SEA estimates that four daily train movements over Route A (expected under the most likely scenario to continue through approximately 2009) would have adverse noise impacts on nine residences. Two of these are along LA 941 (including location 6 in Table 4-35 and another home located in the right-of-way that KCS would need to acquire), and another 7 are in the Brittany Road area (including location 7 in the table and another residence in the right-of-way that KCS would need to acquire).

SEA estimates that six daily train movements over Route A (expected under the most likely scenario to continue from approximately 2010 through at least 2015) would have adverse noise impacts on 22 residences. One of these is in the St. Landry Road area, 4 are near LA 941 (including one in the right-of-way that would require KCS acquisition), and 17 are near Brittany Road (including one in the right-of-way that would require KCS acquisition). Most of these locations would be affected because proposed train operations would cause noise levels to rise by 3 dBA or more. Mandatory use of audible warning (train horn) for at-grade crossings would generate the loudest operating noise levels. Use of the train horn as a warning to motorists or pedestrians is an important safety measure, and, therefore, it would not be feasible to try to reduce projected train noise impacts by banning use of the train horn along Route A.

## Vibration

Train movement along Route A would cause low level vibrations to be transmitted through the soils. At maximum speeds of 20 mph, vibrations would be at very low levels and would attenuate with distance as they travel away from the rail.[42] The closest structures to Route A are several residential-type structures along LA 491, approximately 160 to 350 feet from

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[0] Pleistocene and Holocene deposits within the project area are primarily clays with varying amounts of silt and sandy silt. The clays in the Holocene natural levee deposits generally exhibit cohesive strengths in the 400 to 800 pounds per square foot (lb/sf) range, and clays of the Pleistocene generally range from 900 to 1700 lb/sf (Kolb & van Lopik, 1962). The silts and sandy silts are generally thin, lenticular, and irregular in areal distribution. As a result, SEA considers the potential for seismic response to vibrations from train movement to be minimal.

proposed rail line (Station 390 to 395). There are a series of tanks and light industrial structures at the west end of Route A (Station 0+00 to 0+32), which are approximately 170 feet from the proposed line. A high voltage power line tower is located about 170 feet north of the alignment just west of I-10 (approximately Station 306). A vocational school is located near the east end of Route A, about 260 feet away from the proposed line. There is an additional residential-type structure about 500 feet away at Brittany Road (Station 423+00), and a church (the Doright Church) located about 800 feet north of LA 44 (approximately Station 278).

At the closest structures, about 160 to 200 feet from the proposed line, ground vibrations are expected to be less than 0.02 inches per second, which may be just perceptible to people, but are low enough to prevent even cosmetic damage to residential structures. At structures 250 to 500 feet from the proposed rail line, train-related vibrations should be less than 0.01 inches per second, which would be barely perceptible to humans and well below cosmetic damage levels. Beyond 500 feet from the line, vibrations are expected to be less than 0.005 inches per second, and would not be perceptible. Therefore, rail-caused vibrations along the Route A should not cause vibration damage to structures.

### 4.9.2 Route B

**Noise**

**Construction Noise**. Noise impacts from construction of Route B would be similar to those for Route A.

**Operation Noise**. SEA used the same train noise levels (including the sounding of warning horns for at-grade crossings), train lengths, and locomotive power for Route B as for Route A. SEA assumed that Route B would also accommodate two way traffic. Table 4-36 lists the representative noise receptor locations along Route B. As the table shows, noise impacts at locations 1, 2, and 3 are the same as for those locations along Route A (see Table 4-35). However, locations 4, 5, and 8 have characteristics unique to Route B. The sensitive receptor associated with location 4 (the Do Right Church) is about 300 feet further away from Route B than from Route A. Therefore, as with Route A, rail operations along Route B should cause no increase in existing noise levels.

Location 8 is a residence on Rose Road near the existing KCS

mainline, and currently experiences eight train pass-bys on the KCS mainline. To determine existing noise levels incorporating KCS mainline train operations, SEA made the assumption that three train pass-bys occur at night and that there is an even distribution of mainline rail traffic affecting the Rose Road area.

Sounding of the warning horn along Route B would occur at the grade crossings of Ashland Road, St. Landry Road, Hodgeson Road, and LA 941.

As Table 4-36 shows, there would be no noise impacts at locations 1,2,3,4, and 8. There would be an impact at location 5 (the end of Hodgeson Road). At that location, total $L_{dn}$ noise levels would be 9 to 10 dBA higher over the forecast period than at present, and, beginning around 2010, would exceed 65 dBA.

**Summary of Operational Noise Impacts**. SEA estimates that 4 daily train movements over Route B (expected under the most likely scenario to continue through approximately 2009) would have adverse noise impacts on 11 residences. Five of these are near the end of Hodgeson Road (including location 5 and another home within the ROW that KCS would need to acquire). Five additional residences are near LA 941, and the remaining residence is near Rose Road (within the Route B ROW).

SEA estimates that six daily train movements over Route B (expected under the most likely scenario to continue from approximately 2010 through at least 2015) would have adverse noise impacts on 14 residences. One of these is near St. Landry Road, 7 are near Hodgeson Road (including 1 in the ROW that KCS would need to acquire), 5 are in the LA 941 area, and 1 is near Rose Road (within the Route B ROW). Most of these locations would be affected because proposed train operations would cause noise levels to rise by 3 dBA or more. Mandatory use of audible warning for at-grade crossings would generate the loudest operating noise levels. Use of the train horn as a warning to motorists or pedestrians is an important safety measure, and, therefore, it would not be feasible to try to reduce projected train noise impacts by banning use of the train horn along Route B.

**Vibration**

The closest structures to Route B (in addition to those along the common section of Routes A & B west of I-10) are several residential structures, one at the end of Hodgeson Road and the other close to the KCS mainline at the end of Rose Road. The Rose Road structure may be within the range of perceptible vibration from Route B operations, and the frequency of

perceptible vibration may increase. For the Hodgeson Road structure, vibration levels are within the perceptible range but below the level for potential structural damage.

At the closest structures, about 160 to 200 feet from Route B, anticipated ground vibrations should be less than 0.02 inches per second, which may be just perceptible to people, but low enough to prevent even cosmetic damage to residential structures. For structures 250 to 500 feet from Route B, train-related vibrations should be less than 0.01 inches per second, which would be barely perceptible to humans and well below cosmetic damage levels. Beyond 500 feet from the line, vibrations should be less than 0.005 inches per second, and not perceptible.

## 4.10 CULTURAL RESOURCES

### 4.10.1 Route A

SEA conducted a Phase I archaeological investigation along that portion of Route A for which landowners granted access (4.1 miles, or around 47 percent of the ROW). The investigation did not identify any significant or potentially significant prehistoric or historic-period resources (see Chapter 2, Section 2.9). SEA did not find a cemetery reportedly located near St. Landry Road. Based on these results, it is unlikely that archaeological resources occur within the unsurveyed portion of the route.

SEA did identify two architectural resources, each a dwelling over fifty years of age, within approximately 1,640 feet of Route A. SEA believes that neither demonstrates qualities of significance necessary to meet National Register Criteria.

At this time, SEA believes that the proposed construction and operation would not significantly affect cultural resources. However, the Louisiana Department of Culture, Recreation, and Tourism’s Office of Cultural Development is currently reviewing the results of the Phase I study and will make a final determination regarding potential impacts on cultural resources. SEA is awaiting that office’s finding as well as its opinion regarding possible needed mitigation, if any.

### 4.10.2 Route B

Because right-of-entry could not be obtained, SEA conducted archaeological and architectural field investigations only for the same 4.1 miles of Route B as it did of Route A. Existing cultural resource information indicates that Route B contains no previously recorded archaeological resources. Also, no buildings or structures over 50 years of age are known to exist within or in the vicinity of Route B. As with Route A, SEA believes that construction and operation of Route B would not significantly affect cultural resources, but is awaiting a final determination from the Office of Cultural Development.

### 4.10.3 Industry Connector Lines

SEA's Phase I investigation identified two locations of cultural activity along the industry connectors. One was a pile of bricks and concrete blocks on Uniroyal Chemicals' property; the other was fragments of slag within the BASF Chemical Plant. SEA did not formally record either as an archaeological site (i.e. given an archaeological site number), due to lack of demonstrable characteristics justifying such recordation. Also, SEA did not identify any buildings or structures over 50 years of age within or in the vicinity of the industry connectors.

SEA believes that construction and operation of the industry connector lines would not significantly affect cultural resources, but is awaiting a final determination from the Office of Cultural Development.

## 4.11 RECREATIONAL RESOURCES

### 4.11.1 Route A

Construction and operation of Route A would not affect any existing or planned recreational facilities. Removal of forested habitat for the construction of Route A could affect hunting that occurs on private lands in the project area.

### 4.11.2 Route B

Construction and operation of Route B would not affect any existing or planned recreational facilities. Removal of forested habitat for the construction of Route B could affect hunting that occurs on private lands in the project area.

### 4.11.3 Industry Connector Lines

The industry connectors would not affect any existing or planned recreational facilities or any recreational activities in the project area.

## 4.12 CONCLUSION

SEA is conscious of the public's concerns raised during the scoping process, particularly regarding potential safety impacts due to the proposed transportation of hazardous materials. However, based on the information provided from all sources to date and its independent analysis, SEA preliminarily concludes that construction and operation of either Route A or Route B would have no significant environmental impacts if the Board imposes and KCS implements the mitigation recommended in Chapter 6. There is little difference between Routes A and B in terms of environmental impacts. SEA recommends approval of either or both of these routes, with conditions detailed in Chapter 6.

# CHAPTER 5.0 UNAVOIDABLE ADVERSE IMPACTS

SEA considers unavoidable adverse impacts to be those impacts that can not be avoided or would not be fully mitigated by properly implemented measures proposed by KCS or recommended by SEA. Unavoidable adverse impacts from construction and operation of Routes A or B and the industry connectors can directly occur to either the natural environment or humans living in the natural environment. SEA identifies no unavoidable adverse impacts to either cultural or recreational resources associated with the construction and operation of the proposed rail line.

Water quality of streams crossed by Routes A or B is likely to experience a short term, localized, minor increase in sedimentation during construction even with implementation of SEA's proposed BMPs.

Vegetative clearing and habitat disturbance associated with construction activities would temporarily displace wildlife from the vicinity of the approved route, representing a short term but minor unavoidable impact. Following construction, the area beneath the rail bed and other project related features (e.g., access roads) would not be revegetated. Some wildlife that are sensitive to activities associated with the rail line operation would not recolonize the area adjacent to the rail line. Permanent displacement of vegetation and wildlife represents a minor, long term unavoidable impact.

The use of fossil fuel burning construction equipment would release the ozone precursor pollutants NOx and VOC to the air and there would be a localized increase in fugitive dust emissions when soil is exposed during construction even with implementation of SEA's recommendations. Air quality impacts associated with construction would be minor and short term in nature. Air emissions associated with the operation of Routes A or B is dependent on the level of industrial growth that is associated with the Geismar Industrial Area. Estimates of emissions associated with both the low and likely industrial growth scenarios indicate that the release of ozone precursor pollutants would be lower with project operation compared to the no-build alternative through the year 2010. Emissions estimates associated with the likely industrial growth scenario indicate that project operation during the year 2015 would emit about 4 additions tons of NOx per year than the no-build alternative. With a high industrial growth scenario, project operation would result in a predicted net increase in NOx emissions beginning in

the year 2005. If increased air emissions occur because of project operations, it would represent a minor, but long term unavoidable adverse impact with the possible exception of the high industrial growth scenario, beginning in the year 2015. If air emissions of NOx exceed 50 tons per year (the *de minimus* value established by the EPA) because of project operation (as predicted with the high industrial growth scenario in 2015), this would represent a moderate, long term unavoidable impact. Construction and operation of the proposed rail line would also result in the increased consumption of fossil fuels, which could be considered a minor, long term unavoidable adverse impact.

The human population in proximity to either Routes A or B would also be exposed to direct unavoidable impacts if the proposed rail line is approved. During construction, equipment along Route A or B would intrude on the existing landscape and represent a minor, short term unavoidable impact to viewers. Noise associated with construction of the project would represent a moderate but short term unavoidable impact, especially to those residents in proximity to the approved route. Noise associated with project operation would represent long term, minor unavoidable impacts to 9 to 11 residences up to the year 2010 and 13 to 22 residences beginning in the year 2010. Construction of the rail line at road crossings (either at grade or grade-separated) would result in minor, short term unavoidable impacts to vehicular traffic. Operation of the rail line would result in minor, long term, vehicular traffic delays at proposed at-grade crossings.

# CHAPTER 6.0 SECTION OF ENVIRONMENTAL ANALYSIS' RECOMMENDATIONS FOR MITIGATION

## Recommended Mitigation

Based on SEA's review of all information available to date and its independent analysis of the proposed rail line construction and operation, all the comments and mitigation requested by various federal, state, and local agencies, as well as other concerned parties, and the mitigation offered by KCS, the SEA recommends that, if the Board approves construction and operation of either Route A or Route B, such approval be subject to the following mitigation measures:

### Land Use

1. KCS shall offer to purchase at fair market value any parcel or portions of parcels rendered unusable due to severance of access or creation of lots that are too small to be usable. KCS shall offer to purchase or relocate any structures within the approved right-of-way.

2. KCS shall consult with the Louisiana Department of Agriculture and Forestry to develop and implement procedures for livestock owners to document, report, and obtain compensation for, alleged livestock losses due to operation of the approved rail line. KCS shall distribute the plan to all landowners who currently use land crossed by the approved alignment for livestock grazing.

3. Prior to constructing the interchange yard, KCS shall consult with the Ascension Parish Sheriff's Department to determine whether berming around the firing range can be improved sufficiently or other measures can be taken to prevent stray rounds from leaving the range and entering the interchange yard. KCS shall report the results of these consultations to SEA.

### Water Resources

4. Before beginning construction, KCS shall consult with LDOTD, LDEQ, and the NRCS to develop and implement final design Best Management Practices (BMPs). KCS shall submit to SEA the final BMPs, including:

(a) the preliminary BMPs proposed by KCS in Table ES-2;

(b) a detailed, site-specific Storm Water Pollution Prevention Plan;

(c) a detailed, site-specific erosion and sedimentation control plan for construction activities, including water quality monitoring to ensure that construction does not impair prevailing water quality. To establish baseline surface water quality data, KCS shall begin monitoring before beginning construction;

(d) provisions for ensuring that refueling and, to the extent possible, maintenance, of construction equipment occurs in areas with an impervious surface to allow capture of any spilled fluids;

(e) a site-specific herbicide application plan and map for the proposed rail construction route specifying type and location of proposed herbicide use, and specifying sensitive locations where only manual vegetation control would be used, as well as environmental conditions that would preclude herbicide application (e.g., high winds). The herbicides used shall be those registered with EPA for use in aquatic sites;

(f) provisions for ensuring the protection of the wetland within the wye connector to the KCS mainline, including the erection of fences around the wetland during construction;

(g) provisions for establishing all construction staging areas, obtaining any needed fill material, and disposing of excavated material on non-wetland sites to the extent possible, and for disposing of waste material generated during construction in an environmentally sensitive manner.

5. Prior to undertaking any construction activities, KCS shall coordinate the final design of the rail line project with Ascension Parish officials to incorporate, as practicable, flood control elements that would be achieved by the proposed Sorrento flood control levee. KCS shall provide the results of this consultation to SEA.

6. KCS shall consult with Ascension Parish officials prior to finalizing all waterway channel crossing designs to ensure that the approved construction would not compromise the parish's waterway maintenance program. Where the rail line would block traditional access points for channel maintenance, KCS shall provide appropriate alternative access sites.

7. KCS shall consult with LDEQ to develop and implement a water quality monitoring plan for waterways that the approved route would cross. This plan shall include:

   (a) periodic monitoring for those chemicals most likely to be transported by the proposed rail line (e.g., volatile organics). To establish baseline data, KCS shall begin monitoring before initiating construction. The plan shall specify the parameters to be monitored;

   (b) provisions for measuring flow velocity, volume, and direction at all rail line crossings of major waterways in the project area. Because most of these waterways are intermittent, KCS shall schedule hydrologic data collection during periods when there is flow in the channels. Documentation of this monitoring shall include current rainfall records, if available;

   (c) the frequency of water quality monitoring; and

   (d) the location and nature of any National Pollutant Discharge Elimination System point source discharges to waterways crossed by the proposed route.

8. KCS shall update its existing Emergency Response Plan to account for possible site-specific emergencies along the approved rail route.

9. KCS shall consult with LDEQ in developing the final design for the retention basin at the interchange yard. The final design shall include measures to ensure that the accumulation of water from normal runoff would not compromise the ability of the basin to contain a catastrophic spill. The final design shall also address the possibility of a major spill of chemicals that mix with water and how release of these liquids into Bayou Conway through the elbow pipe outfall would be prevented if the retention basin is filled with liquids.

10. After conducting detailed topographic surveys and final design of the approved route, KCS shall consult with FEMA regarding the issues listed below. KCS shall submit the results of the consultation to SEA.

    (a) whether KCS' proposed flood protection measures are adequate; and

    (b) whether the approved rail line construction would diminish flood storage capacity so as to warrant an update of the Ascension Parish Flood Insurance Study.

11. KCS shall conduct a thorough field review to identify all wells (including abandoned wells) within 100 feet of the approved ROW and establish their coordinates. If any wells are within the ROW or within 50 feet of a proposed rail line drainage ditch, KCS shall offer to drill a replacement well providing the same functions (including comparable or greater yield) as the well that would be lost.

12. KCS shall retain a certified well contractor to inspect all wells within 100 feet of the approved ROW to assure that they are within current construction standards. If wells are found that could allow entry of contaminants released during a spill resulting in potential contamination of the aquifer, KCS shall repair the well as necessary.

13. KCS shall consult and reach agreement with LDEQ to develop and implement a groundwater monitoring plan to test existing representative wells for those chemicals most likely to be spilled. The plan shall identify those wells most appropriate for testing and to which KCS has access.

14. Before beginning construction, KCS shall consult with Ascension Parish officials to avoid conflict with local water supply programs and water pollution control programs and take appropriate measures to avoid any such conflict. KCS shall report the results of this consultation to SEA before beginning construction.

15. Prior to construction, KCS shall obtain any required Dredge and Fill permit from the Corps. KCS shall develop and implement a final wetland mitigation plan in consultation with the Corps, FWS, LDWF, and Ascension Parish officials. The objective of the plan shall be to replace, to the extent possible, the functions and values of wetlands that would be unavoidably lost due to the approved rail line construction. The wetland mitigation plan shall specifically consider

re-establishing large tracts of forested land as a function of replacement wetlands. KCS shall submit the final plan to SEA.

16. KCS shall consult with the Corps, FWS, and LDWF to develop and implement a monitoring plan for existing wetlands adjacent to the approved rail route to ensure that the new rail line would not alter the hydrology of wetlands, impairing existing functions and values. The plan shall specify monitoring techniques, frequency of monitoring, and reporting requirements. KCS shall submit the plan to SEA.

**Biological Resources**

17. KCS shall consult with the Louisiana Department of Wildlife and Fisheries on measures to minimize clearing of vegetation within the ROW, especially in bottomland forests, and shall incorporate those measures in the final design of the rail line.

**Transportation/Safety**

18. (a) KCS shall construct a grade-separated crossing over Interstate 10, after consulting with the Federal Highway Administration to comply with its design requirements for this crossing.

(b) KCS shall construct a grade-separation at LA 44 by constructing a highway bridge for LA 44 over the approved rail alignment, after consulting with LDOTD to comply with state highway requirements for this crossing.

(c) KCS shall install gates and lights at the four at-grade public road crossings (for Route A: Ashland Rd., St. Landry Rd., LA 941, and Brittany Rd.; for Route B: Ashland Rd., St. Landry Rd., LA 941, and So. Hodgeson Rd.).

(d) To minimize the potential for an accident at the wye connector, KCS shall extend the 25 mph speed limit from Gonzales south through the wye junction area.

(e) Before beginning operations over the approved rail line, and in consultation with local and state transportation and safety officials, KCS shall develop and implement a program to educate the Ascension Parish

population regarding highway-rail safety. KCS shall submit plans for this program to SEA.

(f) Prior to constructing crossings at Brittany Rd. And St. Landry Rd., KCS shall obtain the required permit from the Ascension Parish Department of Public Works.

(g) KCS shall consult with LDOTD to review the timing and phasing of the signals along the KCS mainline at the crossings of LA 44, LA 73, LA 429, LA 30, and LA 22, along with the warning devices, to be sure that they provide the most appropriate protection at each crossing.

19. During final project design, KCS shall develop a traffic management plan, in consultation with LDOTD, to ensure that traffic flow is maintained on LA 44 and all other public roads during the period of rail line construction, and that disruption of utility service is minimized.

**Air Quality**

20. (a) KCS shall consult with LDEQ on specific measures to minimize the release of fugitive dust during construction, and shall include those measures in its BMPs. The BMPs shall also indicate specific locations where specific dust control measures such as application of oil or other chemicals would not be appropriate because of other environmental considerations, such as proximity to open water, wetlands, wells, livestock, etc.

(b) In consultation with LDEQ, KCS shall also include in its BMPs specific measures to ensure that construction equipment would be well maintained and not allowed to idle unnecessarily.

**Cultural Resources**

21. KCS shall consult with the Louisiana SHPO concerning the need for archaeological and architectural field investigations along those portions of the approved rail line route that have not been examined due to lack of access.

**Industry Connector Lines**

22. KCS shall execute a Memorundum of Understanding with BASF, Borden, and Shell to require whichever entity is responsible for constructing the industry connector lines to:

(a) develop and implement a plan in consultation with LDEQ to evaluate for contamination any soils that could require excavation. The plan should specify procedures for safe excavation and disposal of contaminated soil, including the potential hazardous waste site at the Shell property;

(b) consult with LDOTD, LDEQ, and the NRCS to develop final design BMPs patterned, as appropriate, after those developed by KCS for the proposed rail line construction, and limit construction activities near the BASF retention basin to periods when there is no flow from the basin;

(c) develop and implement an herbicide application plan and water quality monitoring plan;

(d) develop an emergency response plan;

(e) develop and implement a well identification and replacement plan and a well inspection plan;

(f) consult with LDEQ to develop and implement a groundwater monitoring plan;

(g) consult with the Corps, FWS, and LDWF to develop and implement a wetland mitigation plan;

(h) consult with the Corps, FWS, and LDWF to develop and implement a monitoring plan for existing wetlands to ensure that those lines would not alter the hydrology of wetlands, impairing existing functions and values. The plan shall specify monitoring techniques, frequency of monitoring, and reporting requirements;

(i) include in the final project design details for maintaining service and relocating utilities during construction.

**Conclusion and Request for Comments**

SEA is conscious of the public's concerns raised during the

scoping process, particularly regarding potential safety impacts due to the proposed transportation of hazardous materials. However, based on the information provided from all sources to date and its independent analysis, SEA preliminarily concludes that construction and operation of either Route A or Route B would have no significant environmental impacts if the Board imposes and KCS implements the mitigation recommended above. There is little difference between Routes A and B in terms of environmental impacts. SEA recommends approval of either or both of these routes, with conditions detailed below

SEA specifically invite comments on all aspects of this DEIS, including suggestions for additional mitigation measures. We will consider all comments received in making our final recommendations to the Board. The Board will consider our final recommendations and the environmental comments in making its final decision in this proceeding.

If you wish to file comments and any questions regarding this DEIS, send an original and 10 copies to the Office of the Secretary, Attn: Michael Dalton, Environmental Review (FD 32530), Surface Transportation Board, 1925 K St. NW, Washington, D.C. 20423. Comments should refer to the docket number of this proceeding: Finance Docket No. 32530.

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