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SURFACE TRANSPORTATION BOARD

Finance Docket No. 34284

Southwest Gulf Railroad Company – Construction and Operation Exemption – Medina County, TX

November 2, 2004

NOTICE TO THE PARTIES:

The Draft Environmental Impact Statement (EIS) that was served in this proceeding on November 5, 2004, inadvertently excluded pages 4-56 through 4-66 from Chapter 4 of the document. The full text of these pages appears below and readers are requested to insert these pages into the appropriate section of the Draft EIS.

By the Board, Victoria Rutson, Chief, Section of Environmental Analysis.

Vernon A. Williams
Secretary

potential for impacts to groundwater quality from the proposed rail construction is discussed in Section 4.5.

Flooding and Siltation. Based on its field survey and examination of literature, maps, and photographs, SEA determined that construction of the proposed rail line (all routes) would have the potential to moderately increase the risk of flooding and siltation in karst-prone areas. The typical lack of surface drainage and presence of closed depressions in karst areas commonly results in flash flooding, especially if construction activities disturb or plug natural drainage features or impervious cover is increased. Therefore SEA recommends a condition requiring SGR to employ Best Management Practices (BMPS) to prevent sediments associated with the construction of the rail line from impacting local drainages. Allowing about half of the right-of-way of the rail line to return to native vegetation would also help minimize runoff and siltation. Consequently, SEA recommends a condition requiring SGR to reseed the portion of the right-of-way that does not consist of the roadbed (tracks and ballast) or the ten-foot access area on either side of the roadbed with native vegetation. The limited area of disturbance and minimal impervious cover generated by the rail line would not significantly impact localized drainage if these mitigation conditions are met.

Alteration of Hydrologic Flow Paths. Because the proposed rail line would cover a relatively small area and rail beds are porous, construction would not significantly alter the amount of impervious cover or infiltration rates into the subsurface. Thus, there would be minimal disruption to the natural drainage during construction of the proposed line.

Land Instability and Collapse. Rock dissolution that results in the formation of caves, caverns, and smaller voids obviously impacts the structural integrity of the bedrock. The most common structural hazard associated with karst terrains is the development of sinkholes. A sinkhole develops when the roof of a void or cave within the bedrock collapses either slowly or catastrophically, allowing the overlying materials to fall into the void. The result is the formation of a surface depression or sinkhole. The most common causes of sinkhole development include: overloading of the void roof, lowering of the local water table resulting in dewatering of saturated void spaces, or changing groundwater-flow conditions that result in the removal of sediment or other stabilizing material from the void.

The impact of fluctuation in groundwater flow on sinkhole development is usually associated with more humid climates where the depth to groundwater is less that 50 feet below

ground surface. The climate in the project area is dry. According to the Texas Water Development Board Well Database, the depth to water in groundwater wells located in the Devil's River Formation is greater than 250 feet below ground surface. Therefore, groundwater flow fluctuations are unlikely to impact sinkhole development in the project area.

Based on a review of available aerial photographs and topographic maps, SEA determined that there is no significant sinkhole development within the study area. Additionally, there are no known surveyed cave systems within the immediate vicinity of the proposed route and rail alternatives. (Elliot and Veni 1994). The lack of existing sinkholes or significant cave development in the study area suggests that the potential for sinkhole development would be low. There is, however, some risk of sinkholes developing because of potential overloading of structurally weak bedrock areas during construction.

The ability of the karstified bedrock to accept additional load requirements of structures depends on the degree of rock dissolution that has taken place and the thickness and composition of the overlying materials. There are numerous examples of large cave systems with roads, railroads, and buildings constructed directly on top of passageways. If a sufficient amount of competent rock is present between the roof of the void and the ground surface (usually greater than 10 feet depending on the rock strength), the stability is frequently sufficient to support rail construction and operation. However, when the load-bearing limit of the void roof is exceeded, there is a significant risk of a collapse of the overlying material into the void.

To minimize the risk of a sinkhole developing during construction, SEA recommends that, if the Board authorizes construction of any of the rail routes, it should impose a condition requiring, prior to construction, that SGR identify potential sinkhole-risk areas on the portions of the approved route that are susceptible to karst feature development.[11] There are two possible ways to comply with the this mitigation condition, and SEA recommends that SGR should be permitted to choose the method for compliance.

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[11] While SEA's environmental review has included SGR's loading track (two-mile loading loop or one-mile parallel loading tracks) as part of the proposed action, SGR does not require authorization from the Board to construct and to operate over this track. See 49 U.S.C. 10906. Thus, the Board generally does not impose mitigation conditions on the construction and operation of such track. Nevertheless, such track is subject to the Board's jurisdiction, and the Board has authority to require compliance with environmental conditions as to this track that it deems necessary.

Under the first method, if a significant void or cave were identified during the grading and construction of the rail line, SGR would be required to undertake additional investigation. SGR would have to use qualified personnel to evaluate a void or cave to determine the potential risk of construction causing a sinkhole to develop. In the case of a discovered cave, a full assessment of the cave, including an inventory of possible endangered species inhabiting the environment, would have to be conducted. Any actions to fill, remove, or block off any significant void or cave (to prevent sinkholes) would have be completed in compliance with the Edwards Aquifer Rules as presented in Title 30 Texas Administrative Code Chapter 213, which regulate construction activities in the recharge and transition zones of the Edwards Aquifer.

An alternative method would require use of geophysical and geotechnical investigation to identify areas of sinkhole risk prior to construction. For example, ground penetrating radar (GPR) and electrical resistivity can be used to identify the potential presence of voids. (Memon, et al., 1999). To investigate the presence of shallow voids in the bedrock of the Devil's River Formation (identified as Kdvr on Figure 3.6-1), SGR could choose to use GPR, electrical resistivity, seismic refraction, and/or natural potential surveys (the latter measures naturally occurring voltage from electrical currents within the subsurface). Suspect voids identified by geophysical investigations would then have to be further inspected by geotechnical borings to determine the hazard probability. For locations at which the geotechnical borings reveal voids of significant size and proximity to the ground surface to pose a risk of collapse to the rail line, additional hazard-mitigation efforts would need to be undertaken at the time of construction. These efforts could include moving the rail line to avoid the hazard area, intentionally collapsing or digging out and then filling in the void, grouting the void closed, or additional engineering controls to reinforce the rail line and distribute the weight away from the void.

Destruction of Caves or Their Contents. Caves frequently serve as important groundwater-flow pathways and also support fragile ecosystems that may include one or more endangered species. Should SGR discover any caves that would be affected by the rail line construction, a recommended condition (discussed above) would require the railroad to inventory the cave for endangered and protected species and to comply with the State rules for construction activities in the recharge and transition zones of the Edwards Aquifer. SEA believes that if these conditions are imposed and implemented, any construction-related impacts to caves and their contents would not be significant.

Operation Impacts to Karst-Feature Hazards

Groundwater contamination. The potential for impacts to groundwater quality from operation of the proposed rail line is discussed in Section 4.5.

Flooding and Siltation. SEA anticipates no significant impacts on flooding from the operation of the rail line. Mitigation to reduce the potential for increases in flooding is discussed in Section 4.5.3.

Alteration of Hydrologic Flow Paths. Because the proposed rail line would cover a relatively small area, it would not significantly alter the amount of impervious cover or infiltration rates into the subsurface. Thus, there would be minimal disruption to the natural drainage during operation of the proposed rail line.

Land Instability and Collapse. There is a slight risk that a void or cave not discovered (and mitigated) during construction of the proposed rail line could later cause a sinkhole that would affect the alignment of the rails. In turn, rail misalignment could cause a derailment. As discussed above, like any similar railroad, SGR would be required to conduct track safety inspections and follow maintenance procedures according to the Federal Railroad Administration (FRA) standards set forth at 49 CFR Part 213. The inspection program should detect any potential problems with the physical condition of the rail line at an early stage and minimize derailment potential.

While the future development of karst-features cannot be predicted with certainty, SEA believes that compliance with FRA's standards would minimize the potential impacts to karst features from rail line operation.

Destruction of Caves or Their Contents. SEA does not anticipate any potential impacts on caves or their contents from the operation of the proposed rail line.

Proposed Route and Rail Alternatives

The portion of the study area that is susceptible to karst-feature hazards is limited to the loading loop and a portion of the main line extending about 1,500 feet to the south of the loading loop. This area also includes the alternative straight-loading tracks. The alternate routes deviate minimally from the proposed route in this portion of the study area and do not deviate

significantly until they are out of the karst-feature-hazard area. Consequently there is no apparent difference in the susceptibility to karst-feature hazards between the proposed or alternate rail routes.

No-Action Alternative

As previously stated, the no-action alternative would require the addition of 1,700 heavy-truck trips on area roads and would likely require roadway repairs and expansion. Any roadway expansion projects would result in an increase in the impervious cover (which water cannot penetrate) in the study area. While this increase in impervious cover would likely be minimal, it would exceed the amount of impervious cover generated by the rail line.

More importantly, based on recent studies conducted in karst watersheds in Austin, Texas, the increase in truck traffic and the expansion and/or repair of roadways covered in asphalt would have the potential to adversely affect surface water quality. Specifically, in one study, runoff from roofs of buildings in proximity to a major highway was found to have elevated concentrations of polycyclic aromatic hydrocarbons (PAHs) and heavy metals as compared to sampling locations away from the highway (Van Metre and Mahler, 2003), resulting from the accumulation of tire debris and exhaust particulates from the highway. In another study, analytical measurements of runoff from asphalt parking lots and roadways, particularly those that had been treated with asphalt sealer, contained concentrations of PAHs that exceeded by several orders of magnitude the regulatory guidelines for protection of aquatic organisms (Mahler, et al., 2004). Both of these studies suggest that the increased truck traffic and roadway expansion and repairs could contribute to the degradation of water quality within the project area, as discussed in Section 4.5.

4.10 Land Use Impacts

In this section, SEA explains the process used to gather information on land use in the project area and describes the land use impacts associated with construction and operation of the proposed route and alternative routes, as well as the no-action alternative.

Acquisition and use of right-of-way for the proposed rail line under any of the alignments (proposed route, Alternative 1, Alternative 2, or Alternative 3) would have some adverse effects on land use that could not be fully mitigated, as would the trucking and remote rail loading operations under the no-action alternative. The no-action alternative would have greater effects on land use than the proposed action. Alternative 1 would have greater effects on land use than

the other alignments, followed by Alternative 3, Alternative 2 and then the proposed route. The effects from the proposed action could be reduced through the implementation of SEA's recommended mitigation.

4.10.1 Methodology

SEA assessed the land use impacts of the proposed route and alternative routes by conducting a detailed review of land use and soils data as shown on aerial photography (Texas Digital Ortho Quadrangle False Color Infrared, dated 1995), National Wetland Inventory Maps, and USGS 7.5 minute topographic maps, and from Medina County soil survey data (Dittmar et al., 1977).

4.10.2 Summary of Impacts

The potential for land use impacts from construction and operation of a new rail line generally arises from acquisition of land for the proposed right-of-way and associated uses, as well as from effects of the rail line on property adjacent to the right-of-way.

Impacts to Existing Land Uses

As set forth in Chapter 3, the proposed project area is in a rural region of Medina County, Texas, approximately 30 miles west of San Antonio. Currently, a majority of the proposed project area is evergreen forest, cropland and pasture, or shrub and brush rangeland. There are several county roads and one state farm to market road in the area that would be crossed by the proposed rail line under any of the potential routes (proposed route, Alternative 1, Alternative 2, or Alternative 3). The average daily traffic (ADT) on the county roads ranges from 40 to 200 vehicles, while the ADT on Farm to Market road (FM) 2676 is 610 vehicles. Six creeks would be crossed at various points by each of the potential rail routes.

The right-of-way for the proposed rail line would primarily traverse land currently owned by SGR, or its affiliate, VCM, including the tract on which VCM plans to develop a new quarry. To the extent property not already owned by SGR or its affiliate would need to be acquired for the proposed line, SGR states that it would locate the line along or near fence lines to reduce impacts to agriculture. However, several properties would be severed by the proposed rail line under any of the alignments (proposed route, Alternative 1, Alternative 2, or Alternative 3), as discussed in more detail below in the comparison of alternatives section.

The closest schools are Medina Valley Elementary within seven miles and Hondo High School within 7.9 miles of the proposed project area. The proposed route has 63 homes within half a mile and 166 homes within one mile. There are 27 homes within half a mile of Alternative 1 and 56 homes within one mile. Alternative 2 has 98 homes within half a mile and 145 homes within one mile, and there are 60 homes within half a mile of Alternative 3 and 153 homes within one mile.

If the proposed rail line were built, the residences would be exposed to temporary effects associated with construction of the proposed new rail line, and long-term effects from activities along the rail line during operations. Secondary land use impacts from operations could result from dust, noise, vibration, and exhaust emissions from the locomotives. These potential impacts are further discussed in Section 4.7, Air Quality Impacts, Section 4.12, Noise, and Section 4.13, Vibration. The at-grade road crossings are discussed in Section 4.1, Transportation and Traffic Safety, and the stream crossings are discussed in Section 4.5, Water Resource Impacts.

Some comments to SEA have indicated that the proposed rail line would cross the Gerdes T-4 Ranch, honored in 1986 as a Texas Family Land Heritage property, indicating that the ranch has been in continuous agricultural occupation by the same family for 100 years or more. Each of the alignments (proposed route, Alternative 1, Alternative 2, or Alternative 3) would cross this property. Thus, the proposed rail line construction and operation has the potential to adversely affect this ranch. However, SEA believes that any adverse effects would be reduced by the mitigation recommended below.

Some of the soils in the area of the proposed and alternative routes have been classified by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) as prime farmland (NRCS electronic Field Office Technical Guide). Table 4.10-1 lists the acres of prime farmland soils that would be crossed by the proposed alignment and alternative rail routes. As noted in Chapter 3, some of these designations may not be applicable here based on use, as a few of the soil types crossed (CsB, McB, MnC, MoC) are not currently cultivated in the areas that would be impacted by the proposed alignment and alternatives. However, all NRCS designated prime farmland soils are included in the totals regardless of current land use.

The total impact to prime farmland by alternative alignment ranges from 48 to 77 acres. Approximately 45 percent of the 868,480 acres in Medina County are considered prime

farmland (Handbook of Texas Online). Therefore, construction of any of the proposed alignments would permanently remove from agricultural use less than 0.02% of the prime farmland within Medina County. SEA preliminarily concludes that construction and operation of the proposed rail line under any of the alignments (proposed route, Alternative 1, Alternative 2, or Alternative 3) would adversely impact agricultural resources in the area to a small degree. SEA specifically requests comments from NRCS regarding this issue.

Table 4.10-1. Prime Farmland Soils Impacted by Proposed Rail Line and Alternatives

Soil Series	Symbol	Area Cross by Rail Line (acres)			
		Proposed	Alt. 1	Alt 2	Alt 3
Castroville clay loam 0-1% slopes	CsA	0	0.5	0	0
Castroville clay loam 1-3% slopes	CsB	0	1.7	6.2	0
Divot clay loam	Do	0	1.3	0	0
Hanis sandy clay loam 0-1% slopes	HaB	1.8	0	0	0.4
Knippa clay 0-1% slopes	KnA	20.6	35.8	27.6	21.6
Knippa clay 1-3% slopes	KnB	1.3	2.7	2.5	0.8
Mercedes clay 0-1% slopes	McA	0	3.1	0	0
Mercedes clay 1-3% slopes	McB	0	0.8	0.8	0.8
Monteola clay 1-5% slopes	MnC	10.9	6.6	1.8	9.2
Monteola gravelly clay 1-5% slopes	MoC	1.2	5.3	7.8	1.9
Victoria clay 0-1% slopes (if irrigated)	VcA	12.9	19.4	12.6	13.7
Total Prime Farmland (NRCS)		48.6	77.2	59.2	48.4
Total Route Acreage Outside Quarry Property		64.2	81.6	62.2	68.2

Comparison of Alternatives

The construction of the proposed route would directly affect about 86 acres, assuming a construction corridor of about 80 feet. Approximately 64.2 of the 86 acres would be outside the quarry property, with 48.6 acres of that consisting of NRCS designated prime farmland. As discussed in Section 4.6, about 32 acres would be restored as fenced and maintained grasslands after construction, although this area will no longer be available for agricultural use or grazing. SGR states that the proposed route would cross 10 properties not owned by SGR or VCM. About half of them would be severed to some extent by the proposed route.

The construction of Alternative 1 would directly affect about 103 acres, assuming a construction corridor of about 80 feet, approximately 81.6 acres of which would be outside the quarry property, with a high percentage (77.2 acres) consisting of NRCS designated prime farmland. About 38 acres would be restored as fenced and maintained grasslands after

construction, although that area would no longer be available for agricultural use or grazing. According to SGR, Alternative 1 would cross more than 20 properties not owned by SGR or VCM. Approximately half of them would be severed to some degree by this alternative. This alternative would have somewhat greater impacts on land use than the other routes.

The construction of Alternative 2 would directly affect about 84 acres, assuming a construction corridor of about 80 feet, approximately 62 acres of which would be outside the quarry property, with a high percentage (59.2 acres) consisting of NRCS designated prime farmland. About 32 acres would be restored as fenced and maintained grasslands after construction although that area would no longer be available for agricultural use or grazing. According to SGR, Alternative 2 would cross more than 18 properties not owned by SGR or VCM. Approximately half of them would be severed to some extent by this alternative. This alternative would have slightly greater impacts on land use than the proposed route, but less than Alternative 1 or Alternative 3.

The construction of Alternative 3 would directly affect about 90 acres, assuming a construction corridor of about 80 feet, approximately 68.2 acres of which would be outside the quarry property with 48.4 acres consisting of NRCS designated prime farmland. About 34 acres would be restored as fenced and maintained grasslands after construction, although that area would no longer be available for agricultural use or grazing. Alternative 3 would cross more than 16 properties not owned by SGR or VCM. Approximately 12 of them would be severed to some extent by this alternative. This alternative would have slightly greater impacts on land use than the proposed route and Alternative 2, but less than Alternative 1.

Under the no-action alternative, quarry products would be transported by truck from the quarry to a remote rail loading facility. Any secondary land use impacts related to product transport would result from dust, noise, vibration, and exhaust emissions from the high levels of truck traffic along the proposed truck routes. These impacts are discussed in Section 4.7, Air Quality Impacts, Section 4.12, Noise, and Section 4.13, Vibration. The remote rail loading facility would permanently alter the land use of approximately 100 acres of shrub and brush rangeland. This tract consists of approximately 79 acres NRCS designated prime farmland (67 acres Monteola clay, and 18 acres Monteola gravelly clay) which would be no longer available for agricultural use. The Creekwood Subdivision is about 1 mile from, and three residences are within ½ mile of, the proposed remote rail loading facility. Thus, there would be greater impacts to land use under this alternative than under the proposed action.

Conclusions and Mitigation

Construction and operation of the proposed rail line under any of the proposed alignments (proposed route, Alternative 1, Alternative 2, or Alternative 3) would have some adverse effects upon existing land uses in the proposed project area. SEA recommends that the Board impose the following mitigation conditions to reduce these adverse effects:

- As agreed to by Southwest Gulf Railroad Company (SGR), SGR shall maintain native grass and shrubs inside the rail line right-of-way to allow the rail line to blend with the natural surroundings.
- Where construction of the rail line would cause unavoidable property severance, Southwest Gulf Railroad Company shall negotiate with the appropriate land owner to ensure access to the severed property.

However, even with the implementation of these mitigation conditions, SEA believes that some adverse effects to land use would remain. Alternative 1 would have more impacts to land use than the other potential rail alignments. For this and other reasons, SEA does not recommend Alternative 1.

Condemnation

SEA has received a number of comments requesting information about condemnation of private land for construction of the proposed rail line. In Board-approved rail construction cases, the applicant is responsible for the acquisition of land necessary to implement the approved project. Condemnation (also known as eminent domain) of property needed to complete a Board-approved line occurs in accordance with the state's railroad condemnation law. However, states cannot apply their eminent domain statutes in such a way as to present an "insurmountable barrier" for a Board-approved railroad construction project, because their railroad condemnation statutes would have the effect of state "regulation" of railroads, and accordingly would be preempted under 49 U.S.C. 10501(b), which detail state and Federal regulation of activities related to rail transportation. See Dakota, Minn. & E. R.R. Corp. v. South Dakota, 236 F. Supp. 2d 989, 1006-09 (D.S.D. 2002), aff'd on other grounds, 362 F.3d 512 (8th Cir. 2004).

4.11 Environmental Justice

SEA conducted an analysis of any disproportionate impacts on low-income and minority populations ("environmental justice" assessment) for the proposed rail line, as described below.

Background

Presidential Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations" directs individual Federal agencies to develop approaches that address environmental justice concerns in their programs, policies, and procedures. SEA based its environmental justice analysis for SGR's proposed rail line on Executive Order 12898, as well as the following guidance materials: the U.S. Department of Transportation (U.S. DOT) order providing information on how to address environmental justice concerns; the Council on Environmental Quality (CEQ) guidance on environmental justice; and the U.S. Environmental Protection Agency (EPA) guidance on evaluating environmental justice in the National Environmental Policy Act (NEPA) process (U.S. DOT 1997, CEQ 1997, U.S. EPA 1998).

Approach

SEA conducted an environmental justice analysis to determine the presence or absence of any community of concern (COC) in the area surrounding the proposed rail line. If a COC is present, SEA then determines whether the proposed project would have disproportionately high and adverse human health or environmental effects on the citizens in the COC. Based on the CEQ, EPA, and U.S. DOT guidance documents mentioned above, and consistent with SEA's approach in other environmental reviews, SEA defines a COC as any occurrence within the area potentially affected by a proposed new rail construction where one or more of the following criteria is met:

- At least one-half of the census block being analyzed is minority; or
- At least one-half of the census block being analyzed is low-income status; or
- The percentage minority of the census block being analyzed is more than 10 percent higher than the average for the entire county in which the block is located; or
- The percentage low-income of the census block being analyzed is more than 10 percent higher than the average for the entire county in which the block is located.

Analysis

To conduct an environmental justice analysis on block groups within Medina County that could be affected by construction and operation of the proposed new rail line, SEA analyzed information available from the U.S. Census Bureau from the 2000 Census of Population and Housing. Table 4.11-1 shows the percent minority and percent low-income for all block groups having potentially affected persons, and includes comparison statistics for Medina County.