

## **1.0 INTRODUCTION AND BACKGROUND INFORMATION AND FINAL CONCLUSIONS AND RECOMMENDATIONS (MITIGATION)**

On February 27, 2003, Southwest Gulf Railroad Company (SGR) filed a petition with the Surface Transportation Board (Board) for authority to construct and operate a new rail line in Medina County, Texas.<sup>1</sup> SGR's proposal involves the construction and operation of approximately seven miles of new rail line from a Vulcan Construction Materials, LP (VCM) proposed limestone quarry to the Union Pacific Railroad Company (UP) rail line near Dunlay, Texas. The Board's Section of Environmental Analysis (SEA) issued a Draft Environmental Impact Statement (DEIS) on November 5, 2004, for public review and comment. The DEIS evaluated the potential environmental impacts that could result from SGR's proposed rail line construction and operation, and the four alternatives to SGR's proposed rail line (including the No-Action Alternative)<sup>2</sup>, and recommended mitigation that could be undertaken to reduce the potential impacts identified.

In response to the DEIS, SEA received approximately 120 written comment letters, as well as 75 oral comments submitted at two public meetings held in Hondo, Texas, on December 2, 2004 (SEA has considered each time a commenter spoke as one comment, even though several commenters spoke multiple times). After carefully reviewing all comments received, as well as additional information about the project proposal submitted by SGR, SEA decided to prepare a Supplemental DEIS (SDEIS).

SEA issued the SDEIS on December 8, 2006. The SDEIS focused on three specific matters: (1) evaluation of three alternative rail routes that were not studied in detail in the DEIS and a comparison of these three alternative routes to the four rail routes previously studied in the DEIS and the No-Action Alternative; (2) a discussion of the progress of additional historic property identification efforts following issuance of the DEIS; and (3) additional noise analysis, based on updated operational data provided by SGR indicating that trains may operate during nighttime hours.

In response to the SDEIS, SEA received 237 written comments. Chapters 5 and 6 of this Final Environmental Impact Statement (FEIS) provide a summary of all the comments received on the DEIS and the SDEIS, and their corresponding responses.

### **1.1 Organization of this Document**

This FEIS focuses on responding to the comments received on the DEIS and SDEIS and the environmental review process subsequent to issuance of the SDEIS. In order to avoid repetition, this document adopts SEA's analysis in the DEIS and SDEIS, and refers to those documents as appropriate. Thus, the organization of this document varies from the Council on Environmental Quality's (CEQ's) recommended format for Environmental Impact Statement (EIS) documents and does not repeat the comprehensive affected environment and environmental consequences discussions that were included in the DEIS and SDEIS. However, this document includes the substance of all of the sections required by CEQ's regulations (see 40 Code of Federal Regulations [CFR] 1502.10).

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<sup>1</sup> SGR did so by filing a request under 49 U.S.C. 10502 for an exemption from the requirements of 49 U.S.C. 10901.

<sup>2</sup> SEA has defined the No-Action Alternative as the use of trucks to transport limestone from VCM's quarry to the UP rail line, based on SGR's statements that VCM would transport the material by truck if SGR's rail line were not built. Chapter 2 of this document contains an in-depth discussion of this alternative.

**Chapter 1:** provides a brief history of this proceeding and presents SEA’s final conclusions and recommendations (recommended mitigation).

**Chapter 2:** discusses the proposed action and alternatives, specifically addressing the substantive comments that have been received regarding the scope of analysis for this proceeding and the definition of the No-Action Alternative. It summarizes SEA’s environmental analysis and conclusions for the Modified Eastern Bypass Route and provides a comparison of all the evaluated alternatives in this proceeding. Finally, this chapter discusses SEA’s designation of the environmentally preferable alternative(s).

**Chapter 3:** provides an in-depth discussion of SEA’s cumulative impacts analysis for this proceeding.

**Chapter 4:** summarizes the Section 106 process of the National Historic Preservation Act (NHPA) for this proceeding and the development and execution of a Programmatic Agreement (PA).

**Chapter 5:** provides summaries and responses to the comments received on the DEIS.

**Chapter 6:** provides summaries and responses to the comments received on the SDEIS.

**Chapter 7:** lists the corrections to typographical and other errors in the DEIS and SDEIS identified by SEA and commenters.

**Appendix A:** includes the correspondence relevant to the Section 106 process as well as the final PA.

**Appendix B:** contains the comments received on the DEIS.

**Appendix C:** contains the comments received on the SDEIS.

**Appendix D:** contains other relevant correspondence.

**Appendix E:** contains miscellaneous information and documents not included elsewhere.

## **1.2 History of this Proceeding**

In its petition filed with the Board on February 27, 2003,<sup>3</sup> SGR stated that the primary purpose of the proposed rail line construction and operation is to transport limestone from VCM’s quarry to the UP rail line for shipment to markets in the Houston area, as well as to other markets in the Southeast, Gulf Coast, and Rio Grande Valley regions of Texas. SGR intends to hold itself out as a “common carrier” — that is, a railroad that has an obligation to provide reasonable service upon reasonable request to all shippers tendering traffic, applying publicly disclosed rates and service terms (see 49 U.S.C. 11101), and to provide service to other industries that might locate to the area in the future. SGR states that it may enter into an agreement with an existing rail carrier, such as UP, to operate the line for SGR, should the Board issue final approval for the project. Any such carrier would need to seek Board authority to

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<sup>3</sup> SGR’s petition, as well as the DEIS, SDEIS, and this FEIS, and all written comments submitted, are available on the Board’s website at [www.stb.dot.gov](http://www.stb.dot.gov). For the DEIS, SDEIS, and FEIS, go to “E-Library,” click on “Decisions & Notices,” and then conduct a full text search for the material under “FD 34284.” The environmental correspondence can be viewed by selecting “Environmental Matters,” then clicking on “Environmental Correspondence,” and then searching the correspondence under “FD 34284.”

operate over the line. SEA's environmental review of SGR's petition has examined both the proposed rail construction and proposed rail operations, taking into consideration that SGR may not be the actual operator of the proposed rail line.

SGR states that the proposed rail line construction and operation is needed to more efficiently transport limestone aggregate from VCM's quarry to the UP rail line. SGR also states that if the proposed rail line were not built, VCM would use trucks to transport the limestone from the quarry to the UP rail line, which would require the construction of a remote truck-to-rail loading facility near the UP rail line, and that the number of truck trips that would be required to transport the limestone would far exceed the number of train trips. The proposed rail operations would be four trains per day (two loaded and two empty). Approximately 1,700 trucks per day (850 loaded and 850 empty) would be needed to transport that same amount of limestone from the quarry to the UP rail line.

Under the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. 4321 et seq., the Board must consider the environmental impacts of actions requiring Board authorization and complete its environmental review before making a final decision on a proposed action. SEA is the office within the Board that carries out the Board's responsibilities under NEPA and related environmental laws and regulations, including the CEQ's regulations for implementing NEPA at 40 CFR Part 1500, the Board's environmental regulations at 49 CFR Part 1105, and the Section 106 process of the NHPA, 16 U.S.C. 470 (hereafter Section 106 or NHPA).

SEA began the environmental review of SGR's proposal by consulting with appropriate Federal, state, and local agencies, as well as with SGR, and conducting technical surveys and analyses. Due to substantial early public interest in SGR's proposal, SEA conducted an informational Open House in Hondo, Texas, on June 12, 2003, and received over 100 comment letters in response to the Open House, primarily from area residents who raised concerns regarding potential environmental impacts.

SEA reviewed the comments received and continued to conduct technical studies, which included the identification of historic properties in the project area. SEA also initiated consultation with the Texas Historical Commission (THC), in accordance with the regulations implementing Section 106 at 36 CFR Part 800, and began to identify appropriate consulting parties to the Section 106 process.<sup>4</sup>

On October 10, 2003, SEA issued a Preliminary Cultural Resources Assessment (PCRA) report to the then-identified Section 106 consulting parties for review and comment. The report summarized the historic properties identified in the project area, which included a potential historic district, and set forth SEA's preliminary conclusions and recommendations regarding the cultural resources in the proposed

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<sup>4</sup> The Section 106 consulting parties in this proceeding are: the Advisory Council of Historic Preservation; the THC; SGR; the Honorable Ciro Rodriguez of the U.S. House of Representatives; Joe H. and Erna L. Balzen; Comanche Nation of Oklahoma; Richard Fournier; Richard C. Garay; Archie Gerdes; Dr. Thomas Hester; The Michael Churchill Jones Ranch Trust; Kiowa Tribe of Oklahoma; Lester Landrum; Russell Mangold; Medina County Environmental Action Association; Medina County Historical Commission; Mescalero Apache Tribe; Quihi and New Fountain Historical Society; Donato Rios, Jr; Curtis Saathoff; Larry Saiers; Madelyn Schott; Schweers Historical Foundation; Joseph and Vicki Solomon; Lynette Stewart; Tap Pilam Coahuiltecan Nation of Texas; Harold Weiblen; and Wichita and Affiliated Tribes of Oklahoma; Coahuiltecan Research Associates, Weiblen Farms. Some of these parties had not been identified as consulting parties at the time SEA issued the Preliminary Cultural Resources Assessment.

project area. The THC, the consulting parties, and other individuals submitted comment letters in response to the report.<sup>5</sup>

Based on the nature and content of the numerous public and agency comments received, SEA determined that the effects of the proposed project on the quality of the human environment are likely to be highly controversial, and that thus, pursuant to 40 CFR 1508.27(b)(4), preparation of an EIS would be appropriate. On January 28, 2004, SEA issued a Notice of Intent (NOI) to prepare an EIS and Draft Scope of Study for the EIS (Draft Scope) for public review and comment. SEA received approximately 100 comment letters in response to the Draft Scope. SEA reviewed and carefully considered the comments in preparing the Final Scope of Study for the EIS (Final Scope), which was issued on May 7, 2004. SEA also continued to conduct appropriate studies and analyses for the environmental review of SGR's proposed project.

Additional cultural resources identification efforts were conducted. Through these efforts, SEA identified a potential rural historic landscape in the Quihi, Texas area. In consultation with the THC and SGR, SEA developed a draft PA<sup>6</sup> to mitigate potential effects on cultural resources in the area, which SEA included in the DEIS for public review and comment.

As noted above, SEA issued the DEIS for public review and comment on November 5, 2004. In the DEIS, SEA evaluated the environmental effects of the proposed rail line construction and operation for the following impact categories, as identified in the Final Scope:

- 1) transportation and traffic safety;
- 2) public health and worker health and safety;
- 3) water resources;
- 4) biological resources;
- 5) air quality;
- 6) geology and soils (including karst features);
- 7) land use;
- 8) environmental justice;
- 9) noise;
- 10) vibration;
- 11) recreation and visual resources;
- 12) cultural resources; and
- 13) socioeconomics

SEA also studied the potential cumulative effects and indirect effects that could be caused by the proposed project. The alternatives that SEA studied in depth included four potential rail alignments (the Proposed Route, Alternative 1, Alternative 2, and Alternative 3) and the No-Action Alternative (which SEA defined as the use of trucks to transport limestone from VCM's quarry to the UP rail line, based on SGR's statements that VCM would transport the material by truck if SGR's rail line were not built). A map of the alternatives considered in the DEIS can be found in Figure ES-1 of this FEIS.

While some of the commenters to the DEIS expressed support for SGR's proposed project, the majority of the commenters expressed opposition to the project and raised concerns about the DEIS.

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<sup>5</sup> The report was also made publicly available by posting on the Board's website.

<sup>6</sup> A PA is a legally binding agreement document used to stipulate the process for mitigating adverse effects to historic properties under Section 106 (see 36 CFR 800.14(b)).

Many of the comments included those from some of the Section 106 consulting parties regarding the cultural resources analysis in the DEIS. In particular, the THC and the Advisory Council on Historic Preservation (ACHP) raised concerns regarding the need to further identify the boundaries of the potential rural historic landscape in the Quihi area that had been discussed in the DEIS and to look at additional rail alternatives that could potentially avoid historic properties near Quihi. Based on the concerns that had been raised, SEA determined that a more detailed study of the rural historic landscape was warranted, and requested and received additional information from SGR. In particular, SEA requested information regarding how SGR had developed the four potential rail alignment routes that SEA had studied in depth in the DEIS (the Proposed Route, Alternative 1, Alternative 2, and Alternative 3) and whether SGR had studied the feasibility of rail routes that are farther to the west or to the east of those four alignments and that could potentially bypass the Quihi area.

After carefully reviewing the comments received on the DEIS and the additional information submitted by SGR, SEA determined that three alternative rail routes (the Eastern Bypass Route, the Medina County Environmental Action Association (MCEAA) Medina Dam Alternative, and SGR's Modified Medina Dam Route, collectively the Eastern Alternatives) were potentially reasonable and feasible, but had not yet been studied in depth.<sup>7</sup> Thus, SEA decided that these alternatives warranted study in a SDEIS.

SEA issued the SDEIS on December 8, 2006, to provide the public with an opportunity to review and comment on SEA's analysis of the Eastern Alternatives and to compare these routes with the routes already studied, as well as the No-Action Alternative. The SDEIS also presented the results of the rural historic landscape study, which identified three rural historic landscape districts in the area (the Quihi Rural Historic District, the New Fountain Rural Historic District, and the Upper Quihi Rural Historic District), and a discussion of additional noise analysis that SEA conducted, based on updated operational data provided by SGR indicating that trains may operate during nighttime hours.

SEA preliminarily designated both the Eastern Bypass Route and the MCEAA Medina Dam Alternative as the environmentally preferable alternatives out of all of the alternatives studied in the environmental review process for this proceeding.

Given that SGR continued to support the Proposed Route, on January 16, 2007 (see #EI- 2658 in Appendix A-2 of this FEIS), SGR submitted a proposal to the THC for additional mitigation to the Proposed Route that SGR offered to minimize potential adverse impacts to the Quihi and Upper Quihi Rural Historic Districts. The proposal submitted by SGR is further explained in Chapter 4 of this FEIS. In consultation with ACHP, SEA decided to make SGR's proposal public and allow input from official Section 106 consulting parties on the proposed mitigation measures.

Accordingly, on March 26, 2007, SEA held a meeting in San Antonio to provide an opportunity for the Section 106 consulting parties to offer comments to SEA regarding SGR's proposed voluntary mitigation measures for the proposed route. SGR's proposed mitigation was not received well by most of the attendees. Therefore, it was agreed that SGR would modify its proposal, address the issues raised in the meeting, and resubmit a revised proposal to the Board within 10 days. The revised proposal from SGR was to include a visual concept and a profile for the bridge over Quihi creek, more detailed information about cultural resources preservation measures, a more thorough description of the role of locals in the preservation process, and a description of the procedures to be carried out to handle Native American sites.

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<sup>7</sup> See Figure ES-1 of this FEIS.

On April 5, 2007, SGR submitted a revised proposal to SEA and the consulting parties, and on April 20, 2007, SEA coordinated a conference call with the Section 106 consulting parties to discuss the revised proposal. The revised proposal contained additional mitigation measures further explained in Chapter 4 of this FEIS. During the conference call to discuss SGR's revised mitigation proposal and in subsequent comment letters, a number of the Section 106 Consulting Parties continued to voice objections to the Proposed Route and SGR's proposed mitigation measures. On April 27, 2007, the ACHP wrote to SEA stating that the consulting parties needed greater clarity in assessing what should be avoided, preserved, or protected during project planning. The ACHP also stressed the importance of continuing to work closely with the Tap Pilam-Coahuiltecan Nation.

Based on the ACHP concerns and recommendations, on June 5, 2007 SEA requested a formal determination of eligibility (DOE), from the Keeper of the National Register (Keeper), in accordance with the Section 106 regulations (See # EO-517 in Appendix A-2 of this FEIS).

On July 24, 2007, the Keeper issued a letter (see #EI-3030 Appendix A-2 in this FEIS) stating that the Quihi and Upper Quihi Rural Historic Districts should be viewed as a single rural historic district. The Keeper also asked for additional information.

Following receipt of that letter on August 3, 2007, SGR submitted a letter to the Board (see #EI-3040 in Appendix C of this FEIS) withdrawing its support for the Proposed Route and stating that it now preferred the Eastern Bypass Route.<sup>8</sup>

On August 17, 2007, SEA advised the keeper that SGR's rejection of the Proposed Route through the center of Quihi/Upper Quihi Historic District in favor of a route to the east of the area rendered moot SEA's request to the Keeper for a DOE. SEA also stated that, given SGR's rejection of the Proposed Route, there was no need to provide additional analysis on that route to the Keeper and that it intended to develop a PA with SGR and the appropriate consulting parties that would focus on the eastern routes.

In March 2008, the PA was developed and in April 2008 signed by all necessary consulting parties. The final executed PA is attached in Appendix A-3 of this FEIS and Mitigation Measure #F-77 requires compliance with the PA.

SEA then completed this FEIS to respond to the comments received on the DEIS and the SDEIS, and in its final recommended mitigation. The issuance of this FEIS brings to a close the environmental review process for this proceeding. The Board will now consider the DEIS, SDEIS, and FEIS, and all comments received in determining whether to approve SGR's project, deny SGR's request for authority, or approve SGR's project with conditions, including environmental conditions.

### **1.3 30-Day Administrative Appeal**

CEQ regulations (40 CFR 1506.10(b)) provide that an agency shall not make a decision on a proposed action less than 30 days from publication of a notice of a FEIS in the *Federal Register* unless the agency's decision is subject to a formal administrative review process after publication of the FEIS. In such cases, the CEQ regulations provide that the period for appeal of the agency's decision and the 30-day period prescribed in 40 CFR 1506.10(b) may run concurrently.

The Board has an established administrative review process. Under the Board's rules, parties who wish to file an administrative appeal of the Board's final decision, including any environmental conditions that the Board might impose, may do so within 20 days of the service date of the Board's final

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<sup>8</sup> SGR has since asked that SEA recommend that all of the Eastern Alternatives that SEA has identified as environmentally preferable be authorized.

decision, or within any further period (not to exceed 20 days), as the Board may authorize (49 CFR 1115.3(3)). Given the CEQ regulation at 40 CFR 1506.10(b), in this case, the Board will provide 30 days from the publication of the U.S. Environmental Protection Agency's (EPA's) notice of availability of the FEIS in the *Federal Register* for the filing of administrative appeals.

SEA anticipates that EPA will publish a notice of the availability of FEIS in the *Federal Register* on June 6, 2008. The Board's vote on whether to give final approval to this proposal will be made no earlier than the same day (i.e., June 6, 2008). The deadline for filing administrative appeals will be 30 days from the publication of the notice of the FEIS to and including July 7, 2008. This schedule will afford the public adequate time to pursue administrative review of all aspects of the Board's final decision and is consistent with the CEQ regulations at 40 CFR 1506.10(b).<sup>9</sup> The Board will consider any administrative appeals in a subsequent decision.

#### **1.4 Summary of the Environmental Analysis for this Proceeding**

SEA has conducted a thorough environmental review of seven rail line alternatives (the Proposed Route, Alternative 1, Alternative 2, Alternative 3, the Eastern Bypass Route, the MCEAA Medina Dam Alternative, and SGR's Modified Medina Dam Route) and the No-Action Alternative (the use of trucks to transport the limestone from VCM's quarry to the UP rail line) as presented in the DEIS, SDEIS, and this FEIS. To avoid potential impacts to the Weiblen property and a new subdivision (Castroville West), SEA also analyzed the potential environmental impacts of a modification of one of these seven rail line alternatives. This modification is referred to as the Modified Eastern Bypass Route. SEA refers the reader to Chapters 3 and 4 of the DEIS, Chapters 3, 4, 5, and 6 of the SDEIS, and Chapter 2 of this FEIS, including Figure ES-1, for more detailed information.

##### **1.4.1 Environmentally Preferable Alternative(s)**

SEA believes that, based on all information compiled to date, there are not enough differences between the Eastern Bypass Route (including the Modified Eastern Bypass Route) or the MCEAA Medina Dam Alternative to name one of them as the environmentally preferable alternative. Thus, SEA is designating the Eastern Bypass Route (including the Modified Eastern Bypass Route) and the MCEAA Medina Dam Alternative as environmentally acceptable alternatives. For additional information on SEA's determination of the environmentally preferable alternative(s), see Chapter 2 of this FEIS.

#### **1.5 Mitigation**

In the DEIS, SEA recommended 52 mitigation measures. Five of these mitigation measures were voluntary mitigation measures offered by SGR,<sup>10</sup> and 47 of the mitigation measures had been developed by SEA as part of its environmental analysis to date and its consultation with Federal, state, and local agencies and the public.<sup>11</sup>

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<sup>9</sup> Interested parties and the general public will have more than 30 days to review the FEIS. On May, 30 2008, SEA is filing the FEIS with EPA and issuing it to government agencies, elected officials, community groups, citizens, and parties of record. The entire document is also available on the Board's website (<http://www.stb.dot.gov>), under "Environmental Issues", "Key Cases", and "Southwest Gulf Railroad in Medina, Texas". The FEIS is also available to all interested persons for review in the reference section of public libraries in the project area where the DEIS is also available.

<sup>10</sup> SEA encourages railroads to propose voluntary mitigation, which can be more far reaching than the mitigation the Board unilaterally could impose.

<sup>11</sup> If the Board should issue a decision authorizing SGR to construct and operate its rail line, SGR would be legally obligated to comply with all of the mitigation measures imposed by the Board in its decision.

In response to the DEIS, commenters suggested that SEA modify several of the mitigation measures and requested that new or additional mitigation measures be recommended. SEA recommended 17 mitigation measures in the SDEIS that were either new mitigation measures based on SEA's additional analysis or were modifications to mitigation measures recommended in the DEIS. In response to the SDEIS, commenters also suggested that SEA modify several of the mitigation measures and requested that new or additional mitigation measures be recommended.

SEA recommends 34 mitigation measures in the FEIS that are either new mitigation measures based on SEA's additional analysis or modifications to mitigation measures previously proposed (see Chapters 5 and 6 of this FEIS for specific responses to comments). Below, SEA lists the final 91 recommended mitigation measures. Ten of these are voluntary mitigation measures and 81 are mitigation measures that SEA has developed through its environmental analysis and consultation with Federal, state, and local agencies, and the public. These mitigation measures cover the following resource areas: transportation and traffic safety, public health and safety, hazardous materials, worker health and safety, groundwater, surface water, wetlands, biological resources, air quality, land use, noise, vibration, recreational and visual resources, cultural resources, karst features, and monitoring and enforcement. For each of the mitigation measures, SEA indicates whether the condition was originally recommended in the DEIS, originally recommended in the SDEIS, or originally recommended in this FEIS. SEA also notes whether the conditions originally recommended in the DEIS and SDEIS have been modified here. To distinguish the final recommended conditions from those recommended in the DEIS and SDEIS, SEA has included the letter "F" before the number of each condition.

### **1.5.1 Voluntary Mitigation**

- F-VM1. As agreed to by SGR, SGR shall conduct all maintenance and fueling activities at a designated area off the Edwards Aquifer Recharge Zone (EARZ) and SGR shall ensure that the fueling and maintenance activities occur at a facility with secondary containment to meet the requirements of an approved Texas Commission on Environmental Quality (TCEQ) Water Pollution Abatement Plan (WPAP) and a Spill Prevention, Containment, and Countermeasures Plan (SPCC). *Originally recommended in the DEIS as VM1.*
- F-VM2. As agreed to by SGR, SGR shall conduct appropriate hydrological modeling prior to beginning construction and shall incorporate the resulting design criteria into the design of the rail line to avoid or minimize adverse impacts to existing floodplain conditions. As part of this modeling, SGR shall:
- (a) Compile information regarding existing land use, topography, drainage features, impervious surfaces, and other information needed for the modeling effort.
  - (b) Conduct additional surveying, as required, to obtain data related to existing channel geometry.
  - (c) Coordinate with the Medina County Floodplain Administrator and the U.S. Army Corps of Engineers (Corps) to discuss the project and address reasonable mitigation requirements.
  - (d) Delineate the overall watershed and sub-watersheds, and related drainage patterns corresponding to relevant points of interest.
  - (e) Compile an existing-conditions hydrologic model, based on existing watershed characteristics and regional design storm information to determine the 2, 5, 10, 25, 50, 100, and 500-year design storm intensities and related stream or flood-flow rates for these recurrence intervals.
  - (f) Develop existing-conditions hydraulic models of appropriate points of interest, such as stream crossings so that the existing conditions-hydraulic model can be compared to the existing floodplain data.

- (g) Analyze the proposed bridges and other proposed structures on the rail line that may impact the floodplain and the watershed, producing a technical report addressing the estimated extent of the existing floodplains in the project vicinity and providing appropriate design criteria for minimum bridge openings, culvert locations and sizes, bridge lengths and low chord heights, bank stabilization, scour protection, and erosion control measures.
- (h) Design a WPAP and a Stormwater Pollution Prevention Plan (STPPP), and provide a narrative description of plans to mitigate water quality impacts during and after construction of the rail line.

*Originally recommended in the DEIS as VM2.*

- F-VM3. As agreed to by SGR, SGR shall use continuously welded rail for construction of the rail line other than the loading area. *Originally recommended in the DEIS as VM3; modified based on comments in the FEIS.*
- F-VM4. As agreed to by 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. *Originally recommended in the DEIS as VM4.*
- F-VM5. As agreed to by SGR, SGR shall control weeds and vegetation along its right-of-way, consistent with rail industry standards and the need to minimize fire hazards. *Originally recommended in the DEIS as VM5.*
- F-VM6. As agreed to by SGR, SGR shall maintain the right-of-way consistent with the Manual for Railway Engineering issued by the American Railway Engineering and Maintenance of Way Association (AREMA). *Added in the FEIS.*
- F-VM7. As agreed to by SGR, SGR shall work with local utilities, and review crossing protocols that may already be in place for each such utility to ensure that its rail line does not interfere with the operation of any utility line that might be crossed. *Added in the FEIS.*
- F-VM8. As agreed to by SGR, SGR shall develop emergency evacuation plans following the completion of final engineering prior to beginning construction. SGR's operational plans shall require the routine monitoring of weather reports and conditions, and SGR shall temporarily cease operations along the line when warranted by weather conditions, including flooding. Rail operations shall not resume until any flooding has ceased and an inspection is made of the rail line to ensure that it is safe to resume operations. SGR shall not park trains along the rail line in areas that would block emergency evacuation routes. *Added in the FEIS.*
- F-VM9. As agreed to by SGR, SGR shall prepare and implement a SPCC in compliance with the EPA regulations at 40 CFR Part 112, and provide the map requested by EPA in its comments to the DEIS. SGR's operational plans shall incorporate appropriate measures to protect groundwater from contamination. *Added in the FEIS.*
- F-VM10. As agreed to by SGR, SGR shall utilize above-ground fuel and oil storage tanks, and locate them in concrete containments of adequate height, volume, and thickness to prevent leakage into the ground should the integrity of the tanks be breached. SGR's SPCC shall include fencing and/or other security measures for the containment area, and require tanks to have fill gauges to prevent overfilling. SGR shall also adopt procedures to clean up incidental spills. *Added in the FEIS.*

**1.5.2 SEA's Recommended Mitigation  
Transportation and Traffic Safety**

- F-1. SGR shall conduct track safety inspections and maintenance in accordance with the Federal Railroad Administration (FRA) standards set forth at 49 CFR Part 213 to detect potential problems and minimize derailment potential. *Originally recommended in the DEIS as Mitigation Measure #1.*
- F-2. SGR shall consult with the owner of the pipeline that would be crossed prior to beginning rail line construction and shall make appropriate modifications to the design of the rail line necessary to ensure that the rail line will not affect the integrity of the pipeline. *Originally recommended in the DEIS Mitigation Measure #2; modified in the FEIS to take into consideration the changes in ownership of the pipeline.*
- F-3. SGR shall consult with the Texas Department of Transportation (TxDOT) prior to beginning rail line construction regarding the rail line crossing of FM 2676 and shall adhere to TxDOT's reasonable recommendations regarding the design of this crossing. *Originally recommended in the DEIS as Mitigation Measure #3.*
- F-4. SGR shall consult with Medina County prior to beginning rail line construction regarding the rail line crossing of county roads and shall adhere to Medina County's reasonable recommendations regarding the design of these crossings. *Added in the FEIS.*
- F-5. Prior to beginning rail construction activities, SGR shall consult with the TxDOT and Medina County regarding how to minimize vehicular traffic delay during rail line construction across roadways, and shall adhere to their reasonable requirements. *Originally recommended in the DEIS as Mitigation Measure #4; modified in the FEIS.*
- F-6. SGR shall develop internal emergency response plans for use during rail line construction and operation to ensure that appropriate agencies and individuals are notified in case of an emergency. SGR shall provide the emergency response plan to appropriate state and local entities prior to any rail construction activities. *Originally recommended in the DEIS as Mitigation Measure #5.*
- F-7. SGR shall consult with local fire, police, and Emergency Medical Services (EMS) officials prior to beginning construction activities in order to develop a plan to minimize impacts to area emergency response capabilities during construction and operation of the rail line. *Added in the FEIS.*
- F-8. Prior to beginning construction activities, SGR shall consult with TxDOT and Medina County to develop a plan that specifies the responsibility of each party concerning the maintenance and repair of grade-crossing warning devices and the grade crossings along the new rail line, consistent with recognized highway safety standards, taking into account the level of highway traffic at the crossing. *Originally recommended in the DEIS as Mitigation Measures #6 and #8; modified in the FEIS.*
- F-9. SGR shall take into account maintenance of emergency response capabilities and school bus schedules in planning and executing the necessary roadwork for construction and maintenance activities on the rail line. SGR shall station equipment so as to minimize the need for any total road closures and to allow the disturbed areas to be quickly restored for passage by emergency vehicles. *Originally recommended in the DEIS as Mitigation Measure #7.*

- F-10. SGR shall consult with local school officials in Medina County prior to construction, to take school bus schedules into consideration in its plans and to minimize rail operations when school buses are on area roadways. *Originally recommended in the DEIS as Mitigation Measure #9.*
- F-11. SGR shall be responsible for the cost of all permits, detours, coordination with local officials and agencies, and public notifications related to temporary lane restrictions or road closures necessitated by rail construction activities. *Originally recommended in the DEIS as Mitigation Measure #10.*
- F-12. SGR shall maintain the vegetation along and within the railroad right-of-way to provide a clear line of sight for train operators and vehicle drivers at all at-grade crossings (including public roadways, private roadways, and driveways). *Added in the FEIS.*
- F-13. Prior to beginning any rail construction activities, SGR shall perform an engineering evaluation at each private roadway and driveway crossing, and shall consult and negotiate with the respective landowners to implement appropriate changes to roadway geometry and to install and maintain appropriate warning signs and/or signals. *Added in the FEIS.*
- F-14. Prior to beginning rail construction activities, SGR shall consult with UP to ensure that the design of the connection and rail interchange area with the UP line is safe. During construction, maintenance, and rail operations, SGR shall coordinate with UP regarding all activities in the vicinity of the UP line and shall comply with all applicable safety laws. *Added in the FEIS.*
- F-15. SGR shall notify local authorities immediately in the event that a train malfunction causes a roadway to become blocked; shall clear the blocked roadway crossing as soon as possible; and shall work with local authorities to set up warning signs and detour routes for area vehicles so that drivers are made aware of the situation and would not be cut off while a crossing is blocked. *Added in the FEIS.*

**Public Health and Safety**

- F-16. SGR shall take appropriate measures to prohibit public access to the construction site during rail line construction activities. *Originally recommended in the DEIS as Mitigation Measure #11.*
- F-17. As recommended by the EPA, SGR shall conduct construction and waste disposal activities in accordance with applicable local, state, and Federal statutes and regulations. *Added in the FEIS.*

**Hazardous Materials/Waste Site and Existing Energy Resources**

- F-18. Prior to initiating rail construction activities, SGR shall survey the location of the transmission line poles and avoid them during the construction of the rail line right-of-way. *Originally recommended in the SDEIS as Mitigation Measure #1A.*
- F-19. SGR shall consult with utility companies serving the area prior to beginning rail construction and shall develop a plan to provide area residents with advance notice prior to any necessary disruption of utility services during construction. In the event of any unscheduled disruption of utility services during construction and operation of the rail line, SGR shall contact the appropriate utility companies as soon as it becomes aware of

the situation and shall work with the utility companies to restore service to area residents as soon as possible. *Added in the FEIS.*

### **Worker Health and Safety**

- F-20. SGR shall comply with appropriate Occupational Safety and Health Administration standards (OSHA) General Industry Standards (GIS) at 29 CFR Part 1926 and OSHA Construction Industry Standards at 29 CFR Part 1926 during rail line construction and operation activities. *Originally recommended in the DEIS as Mitigation Measure #12.*

### **Groundwater**

- F-21. SGR shall develop a SWPPP prior to initiating rail line construction activities and implement the measures in the plan during construction and maintenance activities. *Originally recommended in the DEIS as Mitigation Measure #13.*
- F-22. SGR shall use Best Management Practices (BMPs) during rail line construction and maintenance activities to minimize impacts of sediment runoff. *Originally recommended in the DEIS as Mitigation Measure #14.*
- F-23. SGR shall require construction contractors and maintenance crews to maintain their equipment in good operating condition and to operate the equipment safely. *Originally recommended in the DEIS as Mitigation Measure #15.*
- F-24. Prior to beginning rail construction, SGR shall develop a SPCC specifically for stream crossings and for portions of the route constructed over the EARZ. The SPCC shall include planning for flood conditions. *Originally recommended in the DEIS as Mitigation Measure #16.*
- F-25. SGR shall include, at a minimum, the following provisions in the SPCC: definition of what constitutes a spill; requirements and procedures for reporting spills to appropriate government agencies; methods of containing, recovering, and cleaning up spilled material; equipment available to respond to spills and where the equipment is located; and a list of government agencies and SGR's management personnel to be consulted with in the event of a spill. *Added in the FEIS.*
- F-26. During both rail construction and operation, SGR shall monitor the stream beds, land, and water quality in the vicinity of the rail line for indications of diesel or gasoline releases; shall take appropriate action to prevent diesel or gasoline releases; and shall remediate any soils contaminated by any diesel or gasoline release for which SGR is responsible as soon as practicable. *Originally recommended in the DEIS as Mitigation Measure #18; modified in the FEIS.*
- F-27. Prior to initiating any rail line construction activities, SGR shall develop a contingency plan to protect the health and safety of well owners, should any contamination to wells occur as a result of rail line construction and operation. *Originally recommended in the DEIS as Mitigation Measure #19.*
- F-28. SGR shall ensure that all wells within the rail line right-of-way are properly abandoned prior to beginning rail construction activities. *Added in the FEIS.*
- F-29. SGR shall comply with the Edwards Aquifer rules as presented in Title 30 Texas Administrative Code (TAC) Chapter 213 for all construction activities for the rail line

and associated fuel supply facility that occur within the Edwards Aquifer Recharge Zone. *Added in the FEIS.*

- F-30. SGR shall conduct a recharge zone delineation study by a qualified hydrogeologist, under the supervision and oversight of the Edwards Aquifer Authority (EAA), to determine the exact boundaries of the recharge zone, in order to locate the fueling and maintenance area completely off the recharge zone. *Added in the FEIS.*
- F-31. SGR shall select and monitor appropriate points along Quihi Creek and/or along Cherry Creek that would capture any pollution that may flow downstream from the Quihi, Polecat, Elm Creek, and Cherry Creek watersheds as a result of this project. The monitoring shall include, at a minimum, analyses for oil and grease, total petroleum hydrocarbons, and total suspended solids. *Added in the FEIS.*
- F-32. SGR shall use "CONVAULT-type" Above Ground Storage Tanks (ASTs) at its fueling and maintenance facility. These ASTs are above-ground, concrete, full-storage tanks that have dual wall construction to provide maximum protection in the event of a leak. These ASTs are also equipped with sensors that will "alarm" if leakage is detected and that have instruments to show fuel level and multiple safety devices to prevent overfilling and rupture, and superior flame-arrested venting ports. These ASTs shall also be located within a third concrete-walled container that holds 1-1/2 times the volume of the AST maximum volume to provide extra protection to contain a fuel leak in the unlikely event of multiple containment failures. All ASTs shall be located off of the EARZ and on areas where fuels from an unlikely catastrophic release would flow away from the EARZ (generally areas south of the Balcones Escarpment on outcrops of Del Rio Clay, as determined by a geologist). SGR's fueling and maintenance facility shall also have an established SPCC in place in addition to any STPPP appropriate to the location. *Added in the FEIS.*
- F-33. SGR shall locate its fueling and maintenance facility on a site to the south of the EARZ over the upper confining units of the Edwards Aquifer within the general location depicted in Figure 5-2 of this FEIS, and shall implement permanent BMPs to prevent and/or abate the release of potential pollutants or sediment from the site. In addition, SGR shall establish a STPPP appropriate to the site to address potential stormwater runoff concerns. *Added in the FEIS.*
- F-34. Prior to construction, SGR shall conduct a comprehensive karst feature inventory (including springs, seeps, and sink holes) and evaluation in compliance with 30 TAC Chapter 213, administered by the TCEQ for the area of the selected rail line alignment. *Added in the FEIS.*

#### **Surface Water**

- F-35. SGR shall use BMPs during rail line construction, operation, and maintenance activities to minimize soil erosion and to reduce the potential for oil and fuel spills. *Originally recommended in the DEIS as Mitigation Measure #20.*
- F-36. SGR shall use Best Engineering Practices in the design of rail line stream crossings to avoid increasing the floodplain width. *Originally recommended in the DEIS as Mitigation Measure #21.*

- F-37. Prior to initiating any rail line construction activities, SGR shall design and implement site-specific “scour and instability countermeasures” to minimize local and downstream instability from stream crossings. *Originally recommended in the DEIS as Mitigation Measure #22.*
- F-38. Prior to initiating any rail line construction activities, SGR shall conduct a floodplain study, as described in Voluntary Mitigation Measure # F-VM2, in consultation with the Medina County Floodplain Administrator. SGR shall comply with the reasonable requirements of the Medina County Floodplain Administrator, as delegated to the Medina County Floodplain Administrator pursuant to the regulations of the Federal Emergency Management Agency (FEMA) at 44 CFR 60.3. These requirements will include, but not be limited to, ensuring that SGR’s construction plans will not cause more than a 12-inch rise in the current 100-year floodplain elevation, consistent with the Medina County Floodplain Administrator’s permitting standards, as set forth during the environmental consultation process for this project. *Originally recommended in the DEIS as Mitigation Measures #23 and #24; modified in the FEIS.*
- F-39. SGR shall obtain all required Corps permits for stream crossings prior to initiating any rail line construction activities. *Originally recommended in the DEIS as Mitigation Measure #25.*
- F-40. SGR Company shall use environmentally-friendly solvents and/or absorbent pads to minimize ground contact by the materials used to clean the engine and to clean excess oil from lubricated parts of the train. *Originally recommended in the DEIS as Mitigation Measure #26; modified in the FEIS.*
- F-41. SGR shall repair and resurface its railroad tracks using manual resurfacing and switch-cleaning methods. *Originally recommended in the DEIS as Mitigation Measure #27.*
- F-42. SGR shall use manual vegetation cutting methods (rather than chemicals or herbicides) for weed control and other right-of-way clearing activities. *Originally recommended in the DEIS as Mitigation Measure #28.*
- F-43. SGR shall incorporate specific BMPs into the SPCC to address the possibility of sediment runoff or diesel spills flowing into privately owned stock watering ponds. *Originally recommended in the DEIS as Mitigation Measure #29.*
- F-44. In response to the request of the USEPA, SGR shall:
- (a) Use span bridges where possible to minimize impacts to streams, including all perennial streams;
  - (b) Take precautions to avoid channel degrading from head-cutting (such as ensuring that grades at the culverts and bridges remain at their existing elevation);
  - (c) If a series of box culverts is installed to carry high flows, make one culvert lower than the others to handle frequent flows (i.e., “bankfull” or less) and the other culverts at higher elevations for less frequent events;
  - (d) Plan the route and design of the rail line crossings to avoid the need to cut off meanders and channelize stream reaches;
  - (e) Minimize impacts to the riparian corridor, especially by forested areas for example, not clearing entire right-of-way through the riparian area or floodplain, and only clearing what is needed for construction and access;

- (f) Minimize impacts to the creek banks (soil and vegetation) and stabilize and replant disturbed banks with native vegetation as soon as construction in the creek bank is completed.
- (g) Minimize erosion of banks and bare soil, and reduce siltation of streams; stabilize and revegetate bare soil as soon as possible; inspect and repair hay bales and silt fences as needed after each rainfall that creates runoff; install multiple rows of silt fences as necessary, parallel to contours on long and steep slopes; and
- (h) Avoid using wetlands or forested floodplains for staging areas or for borrow areas. *Added in the FEIS.*

- F-45. SGR's plans for maintaining drainage structures associated with the rail line shall provide for regular maintenance (i.e., removal of debris, rock, and sediment) of ditches and crossings. *Added in the FEIS.*
- F-46. SGR shall consult with appropriate Medina County officials prior to beginning rail construction to identify the location of emergency evacuation routes in the project area. When flood conditions prevail in the area, SGR shall ensure that train operations do not obstruct identified emergency evacuation routes, even if this may require SGR to cease rail operations during periods of flooding. *Added in the FEIS.*

#### **Wetlands**

- F-47. Prior to initiating rail construction activities, SGR shall survey the location of privately owned stock ponds and irrigation systems within the project area. If avoidance is not possible, SGR shall minimize intrusion to these water bodies and to important sources to these water bodies to the extent practicable, and shall consult with the Corps to determine if a full wetland delineation study is required. In addition, SGR shall negotiate with affected landowners regarding the appropriate replacement of these stock ponds/irrigation systems. *Originally recommended in the SDEIS as Mitigation Measure #2A, a modification and replacement to Mitigation Measures #31 and #44 in the DEIS.*
- F-48. Prior to initiating rail line construction activities, SGR shall develop a plan to prevent erosion and sediment runoff from disturbed areas and shall implement the measures in its plan during the rail construction activities. Any hay used for erosion control shall be certified weed free. Slopes for graded embankments shall be established based upon standard engineering practices, environmental considerations, and consultation with TPWD. Runoff control measures shall be maintained until native vegetation has been established in all disturbed areas. *Originally recommended in the DEIS as Mitigation Measure #32; modified in the FEIS.*
- F-49. Prior to the completion of final engineering plans, SGR shall conduct surveys of stream channels and associated wetlands along the railroad right-of-way. These surveys shall include photographs of the sites, general descriptions of the dominant vegetation species and percent cover, and the elevations of the sites. SGR shall submit a written report of the surveys to TPWD and the Medina County Floodplain Administrator, as well as to SEA. SGR shall then consult with TPWD and the Medina County Floodplain Administrator and shall incorporate into its final engineering plans methods of restoring each site to the pre-project elevations, contours, and hydrologic conditions or other conditions that may more appropriately take into consideration the engineering needs of the rail line and post-construction hydrology. *Added in the FEIS.*

## **Biological Resources**

- F-50. Prior to finalizing construction plans and before beginning rail construction activities, SGR shall review specific aspects of its construction plans, including temporary construction features, and shall instruct the preparers of the plans to fully review areas to be affected such that losses of stands of woody vegetation and other forms of natural buffers, including areas along waterways, will be held to a minimum. During rail construction, SGR shall minimize disturbance of natural buffers contiguous to floodplains in order to prevent soil erosion and to preserve wildlife cover, food sources, and travel corridors. *Originally recommended in the DEIS as Mitigation Measure #33; modified in the FEIS.*
- F-51. During rail construction, SGR shall replace mature trees at a 3:1 ratio and shall monitor these replacement trees to ensure a survival rate of 80 percent. If the removal of old timber trees is unavoidable, SGR shall replace old timber trees at a ratio of 10 trees for each one lost and shall monitor these replacement trees to ensure a survival rate of 80 percent. *Originally recommended in the DEIS as Mitigation Measure #34.*
- F-52. To protect migratory birds in the area, if rail construction activities take place during the March-August migratory bird nesting season, SGR shall consult with the TPWD to develop and implement measures to avoid impacts on nesting birds prior to initiating construction activities. *Originally recommended in the DEIS as Mitigation Measure #35.*
- F-53. During rail construction, SGR shall promptly reseed the native grasses on the portion of the right-of-way that does not consist of the roadbed (tracks and ballast) or the 10-foot access area on either side of the roadbed. *Originally recommended in the DEIS as Mitigation Measure #36.*
- F-54. SGR shall consult with the U.S. Fish and Wildlife Service (USFWS) and the EAA during final engineering of the rail line and prior to beginning construction to ensure that the material used for the track, ties, and ballast does not pose hazards to the water quality of the Edwards Aquifer or species dependent upon the aquifer (e.g., use of ties not preserved with creosote). *Originally recommended in the SDEIS as Mitigation Measure #3A.*
- F-55. SGR shall use only Vulcan Materials Company's (Vulcan's) existing Edwards Aquifer water rights or any other existing Edwards Aquifer water rights that may be acquired when using water from the Edwards Aquifer during construction, maintenance, and operation of the rail line. *Originally recommended in the SDEIS as Mitigation Measure #4A.*
- F-56. SGR shall consult with the TPWD and affected landowners prior to beginning rail construction activities regarding appropriate measures to protect livestock and wildlife in the area during rail construction and operation activities. Appropriate measures could include the use of specific types of fencing or barriers. *Added in the FEIS.*
- F-57. During rail construction and operation, SGR shall maintain native grass and shrubs within the right-of-way and mow only essential use areas. *Added in the FEIS.*

## **Air Quality**

- F-58. SGR shall comply with all applicable Clean Air Act requirements for burning debris generated by construction of the rail line. *Originally recommended in the DEIS as Mitigation Measure #37.*

- F-59. During rail line construction, SGR shall take appropriate measures to control fugitive dust, including the use of water trucks. *Originally recommended in the DEIS as Mitigation Measure #38.*
- F-60. SGR shall implement best practices to minimize the impact of any air pollutants released during rail construction and operation. *Added in the FEIS.*
- F-61. SGR shall check the moisture content of the rail car loads of limestone prior to transportation and shall wet the surface of the rail car loads that appear to be dry prior to transporting them. *Added in the FEIS.*

**Land Use**

- F-62. Where construction of the rail line would cause unavoidable property severance, damage to a home or to an irrigation system, or property demolition and/or destruction, SGR shall negotiate with the appropriate land owner(s) to ensure access to the severed property and/or replacement of the irrigation system, and, if appropriate, realign the track to avoid taking houses and/or to minimize the impacts. *Originally recommended in the DEIS as Mitigation Measure #39 and then modified in the SDEIS as Mitigation Measure #5A.*
- F-63. Prior to beginning rail construction, SGR shall consult with the TPWD and with affected landowners to determine whether the rail line would separate livestock and wildlife from water supplies. If the rail line would separate livestock and wildlife from water supplies and suitable alternative sources are not available, SGR shall develop additional water sources for livestock and wildlife to replace those lost, adversely affected, or rendered inaccessible to wildlife and livestock due to the rail line construction. *Added in the FEIS.*

**Noise**

*The following conditions were originally recommended in the DEIS as mitigation Measure # 40 and modified in the SDEIS as Mitigation Measures # 6A thorough #16A.*

- F-64. SGR shall equip all noise-producing project construction equipment and vehicles using internal combustion engines with mufflers, air-inlet silencers, and other shrouds, shields, or other noise-reducing features, and keep them in good operating condition that meets or exceeds original factory specifications. SGR shall equip mobile or fixed package equipment (e.g., arc-welders, air compressors) with shrouds and noise control features that are readily available for that type of equipment.
- F-65. SGR shall comply with all applicable local, state, or Federal regulations that apply to the noise produced by mobile or fixed equipment used during rail construction activities.
- F-66. SGR shall use electric-powered equipment instead of pneumatic or internal combustion-powered equipment during rail construction activities, where electric-powered equipment is available to perform the function.
- F-67. SGR shall minimize noise by locating material stockpiles, mobile equipment staging areas, parking areas, and maintenance areas as far as practicable from noise sensitive receptors.
- F-68. SGR shall establish and enforce a 10 mile per hour construction site and a 25 mile per hour private construction access road speed limit during the rail construction period.

- F-69. SGR shall not engage in rail construction activities between 7:00 p.m. and 7:00 a.m. Monday through Saturday or at any time on Sunday or on Federal holidays, except for emergency situations.
- F-70. SGR shall use noise-producing signals, including horns, whistles, alarms, and bells for safety warning purposes only.
- F-71. SGR shall ensure that no project-related fixed, mobile, or portable public address or music system is audible at any adjacent noise sensitive receptor, except for emergency situations.
- F-72. To minimize wheel squeal, if a loop track is used, SGR shall design the loop track with a radius greater than 1000 feet or 10 times the wheelbase of the largest car used on the tracks.
- F-73. SGR shall provide a track lubrication system for any track that is used to mitigate wheel squeal noise. However, this lubrication system shall only be used over the EARZ with prior approval from the EAA.
- F-74. SGR shall provide a movable point crossover (a crossover designed with a spring loaded piece to eliminate the noise producing gap) to mitigate excess noise from the crossover at the neck of any loop track (where the curved track reconnects with the tangent or straight track).

**Vibration**

- F-75. Prior to beginning rail construction, SGR shall conduct a survey to locate nearby wells and shall monitor the vibration levels at these wells during any pile driving activities related to rail construction to ensure that the peak particle velocity limit of 2.72 inches per second in any axis (in either of the two lateral directions or in the vertical direction) is not exceeded during construction. *Originally recommended in the DEIS as Mitigation Measures #41, #42, and #43 and modified in the SDEIS as Mitigation Measure #17A.*

**Recreational and Visual Resources**

- F-76. Prior to initiating construction activities, SGR shall identify the location of privately owned stock ponds within the project area and attempt to avoid them. If avoidance is not possible, SGR shall minimize intrusion to these water bodies to the extent practicable and minimize disturbances to important sources of influent to these water bodies. *Originally recommended in the DEIS as Mitigation Measure #44.*

**Cultural Resources**

- F-77. SGR shall comply with the terms of the PA, developed pursuant to 36 CFR 800.14(b), which has been executed by all required parties. *Originally recommended in the DEIS as Mitigation Measure #45.*

**Karst Features**

- F-78. SGR shall identify potential risk areas for sinkhole formation prior to initiating rail construction activities along the two-mile loading loop or one-mile parallel loading tracks and the first 1,500 feet of rail line south of the loading loop or loading tracks, and shall implement engineering design measures to protect the rail line from future sinkhole development. SGR shall conduct its identification efforts by one of the following two methods:

- a) If SGR identifies a significant void or cave during the grading and construction of the rail line, SGR shall undertake additional investigation by using qualified personnel to determine the potential risk of construction causing a sinkhole to develop; or
- b) SGR shall conduct geophysical and geotechnical analysis to identify areas of sinkhole risk prior to construction. SGR shall further inspect any identified suspect voids by using geotechnical borings to determine the hazard probability. For locations at which the geotechnical borings reveal voids of significant enough size and proximity to the ground surface to pose a risk of collapse to the rail line, SGR shall identify and implement additional hazard-mitigation efforts, such as 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 developing additional engineering controls to reinforce the rail line and to distribute the weight away from the void. *Originally recommended in the DEIS as Mitigation Measure #46.*

F-79. If SGR identifies a significant karst feature during the grading and construction of the two-mile loading loop or one-mile parallel loading tracks and the first 1,500 feet of rail line south of the loading loop or loading tracks, SGR shall consult with a karst feature specialist and implement appropriate mitigation measures. These include developing an inventory of caves for endangered species and complying with the reasonable requirements of the State of Texas for construction activities in the recharge and transition zones of the Edwards Aquifer. *Originally recommended in the DEIS as Mitigation Measure #47.*

**Monitoring and Enforcement**

F-80. SGR shall submit quarterly reports to SEA documenting the progress of its implementation of all of the environmental mitigation measures during rail construction and for three years after rail operations have begun. *Added in the FEIS.*

F-81. SGR shall retain a community liaison to work with the community in addressing any concerns related to SGR’s rail construction and operation activities, and assist in the implementation of the environmental mitigation measures. *Added in the FEIS.*