Chapter 2
Proposed Action and Alternatives

2.1 Introduction

The National Environmental Policy Act (NEPA) directs that federal agencies consider "a reasonable range of alternatives to the proposed agency action, including an analysis of any negative environmental impacts of not implementing the proposed agency action in the case of a no action alternative, that are technically and economically feasible, and meet the purpose and need of the proposal." 42 U.S.C. § 4332 (C) (iii).

As explained in *Chapter 1*, *Section 1.1*, *Introduction*, Green Eagle Railroad (GER) has requested Surface Transportation Board (Board) authority to construct and operate approximately 1.3 miles of new common carrier rail line in the city of Eagle Pass and Maverick County, Texas.[1] The proposed line would extend from the United States/Mexico border to the existing Union Pacific Railroad (UP) mainline, connecting at approximate UP milepost 31. The proposed line would cross the Rio Grande River on a new rail bridge (New Rail Bridge) approximately three miles upriver from the existing UP Rail Bridge.

The Board will either authorize with appropriate conditions the construction and operation of the proposed line or will deny GER's request for authority. The Board's Office of Environmental Analysis (OEA) considered reasonable alternatives for the construction and operation of the proposed line. Following consultation with the U.S. Coast Guard (USCG); the U.S. Army Corps of Engineers (USACE); the International Boundary and Water Commission (IBWC); other appropriate federal, state, and local agencies; Native American tribes; other affected stakeholders; the public; and GER, OEA determined that the ~~Draft~~ Environmental Impact Statement (EIS) would analyze two build alternatives: the Southern Rail Alternative and the Northern Rail Alternative. Under the Southern Rail Alternative, GER would construct the alignment presented in GER's December 2023 petition for exemption, as modified in subsequent submittals to OEA (see *Section 2.3.1.2*, *Southern Rail Alternative*, *GER's Preferred Alignment*). Under the Northern Rail Alternative, GER would construct a different but similar alignment that OEA developed. The two build alternatives are described below in *Section 2.3.2*, *Detailed Description of the Build Alternatives*. The Southern Rail Alternative is GER's preferred alignment. For the reasons explained in *Section 2.5.3*, ~~*Preliminary*~~ *Preferred Alternative: Southern Rail Alternative*, below, OEA has ~~preliminarily~~ identified the Southern Rail Alternative as the Preferred Alternative.

As explained in *Chapter 1*, *Section 1.1*, *Introduction*, the proposed line would be part of an international commercial transportation corridor, the Puerto Verde Global Trade Bridge project, also consisting of a new border crossing for commercial motor vehicles (CMVs) (associated CMV Facility). The associated CMV Facility would include a new roadway bridge (New Road Bridge) across the Rio Grande River, just north of the New Rail Bridge; a new road (CMV Road) between the New Road Bridge and Farm-to-Market Road (FM) 1589 (Hopedale Road); and supporting CMV inspection and surveillance facilities.

[1] A common carrier rail line is part of the interstate rail network and is operated by a railroad that has a common carrier obligation to provide rail service to any shipper upon reasonable request.

The associated CMV Facility is not within the Board's jurisdiction and does not require a license from the Board. However, GER and Puerto Verde Holdings (PVH) intend to construct and operate the proposed line and the associated CMV Facility, respectively, as a single port of entry for freight rail and CMV traffic between the United States and Mexico. Therefore, ~~this Draft~~the EIS analyzes the effects of constructing and operating the associated CMV Facility as well as the impacts associated with constructing and operating the proposed line. The associated CMV Facility, which would be the same under both build alternatives, is described in *Section 2.3.3*, *Associated CMV Facility*, below.

The ~~Draft~~ EIS ~~will also provide~~provides the information needed by the federal agencies that have or may have other actions related to the proposed line and the associated CMV Facility and are participating in this EIS process, including USCG, IBWC, USACE, and the U.S. Customs and Border Protection (CBP), as discussed in *Chapter 1*, *Section 1.4.4*, *Other Federal Agencies*.

~~This Draft~~The EIS also presents the effects of the No-Action Alternative, representing the denial of the request for authority to construct and operate the proposed line. The No-Action Alternative is described in *Section 2.3.4*, *No-Action Alternative.* Other alternatives considered early in the planning process but eliminated from detailed study are addressed in *Section 2.4*, *Alternatives Considered but Eliminated from Detailed Study. Section 2.5*, *Comparison of Build Alternatives and No-Action Alternatives* compares the alternatives and ~~preliminarily~~ identifies the Southern Rail Alternative as the Preferred Alternative.

2.2 Background

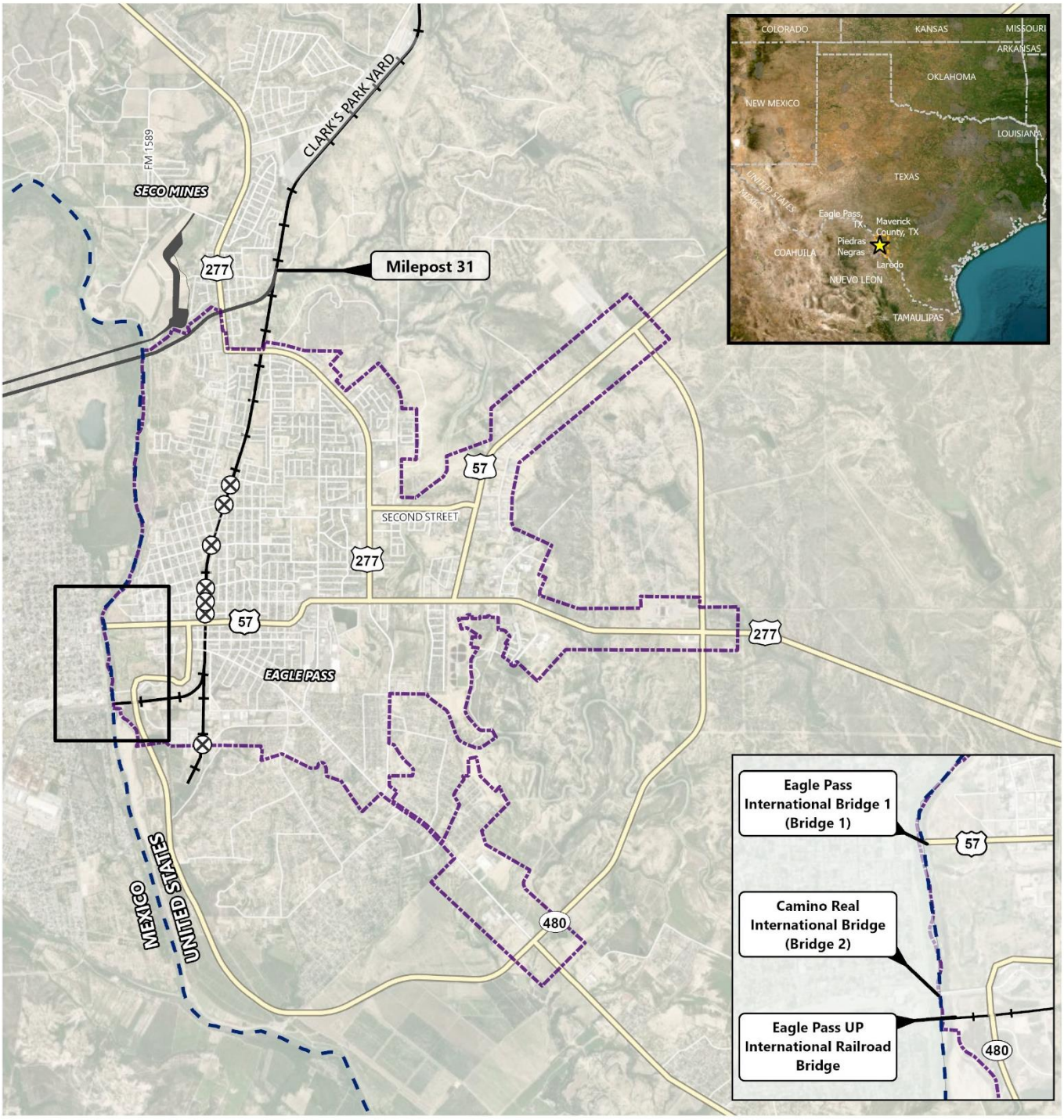
This section provides background information for the proposed line and the associated CMV Facility.

2.2.1 Existing Eagle Pass Crossings

Eagle Pass, in Maverick County, Texas, is home to one active freight rail bridge and two vehicle bridges across the Rio Grande River between Mexico and Texas. These three bridges are in the south-central part of the city and connect the city to the Mexican city of Piedras Negras across the river (see **Figure 2-1**). From north to south, they are:

- Eagle Pass International Bridge 1 (Bridge 1) (West Garrison Street / U.S. 57): Last rebuilt in 1957, Bridge 1 is a two-lane bridge connecting downtown Eagle Pass and downtown Piedras Negras; it serves non-commercial vehicles and has a pedestrian walkway.
- Camino Real International Bridge (Bridge 2): Built in 1999 approximately a half mile south of Bridge 1, Bridge 2 is a six-lane (four inbound and two outbound) bridge that serves both commercial trucks and non-commercial vehicles and has pedestrian sidewalks.
- The UP International Railroad Bridge (UP Rail Bridge): Last rebuilt in 1922, the UP Rail Bridge is a single-track bridge. It connects to UP's Clark's Park Yard, to the north of Eagle Pass, via approximately 5 miles of track through downtown Eagle Pass. This route contains nine at-grade crossings.

Figure 2-1. Location Map



Source: ArcGIS Online, NearMap

The U.S. sides of Bridge 1 and Bridge 2 are owned and operated by Eagle Pass (the Mexican government owns the Mexican sides). UP owns and operates the U.S. portion of the UP Rail Bridge, with BNSF Railway Company (BNSF) also operating over it through trackage rights. The Mexican government owns the Mexican side of the UP Rail Bridge and Ferromex, the largest railroad network in Mexico, operates the rail line.

Border inspection facilities for non-commercial and commercial vehicles are located at or near the U.S. ends of Bridge 1 and Bridge 2, respectively. These inspection facilities are owned by the United States and under the jurisdiction of the General Services Administration (GSA). Primary inspection facilities for freight trains are located near the U.S. end of the UP Rail Bridge; secondary inspection facilities for freight trains are located in Clark's Park Yard. Train crew changes, however, occur on the UP Rail Bridge at the border between the United States and Mexico, which is in the middle of the Rio Grande River. Therefore, current operations require trains to stop on the bridge. All border inspection facilities in Eagle Pass are staffed and operated by CBP.

Overall, commercial vehicles account for a small portion of the total cross-border traffic in Eagle Pass. Total traffic (passenger vehicles and CMVs) on Bridge 1 and Bridge 2 in the first six months of 2024 was approximately 4.8 million vehicles; of these, CMVs, which only use Bridge 2, represented approximately 234,000 vehicles, or 5 percent.[2]

The Texas Department of Transportation's (TxDOT) *Texas-Mexico Border Transportation Master Plan 2021* (BTMP) addresses Eagle Pass as part of the Laredo/Coahuila/Nuevo León/Tamaulipas Region, which includes Del Rio to the north of Eagle Pass, and Laredo to the south. Most of the region's border crossings currently occur at Laredo: the BTMP classifies Laredo's World Trade Bridge as a very large crossing with respect to the movement of goods by truck (more than 1,500,000 movements annually). By contrast, Bridge 2 is classified as a medium crossing (from 75,000 to 499,999 movements annually). This generally reflects the respective sizes of the two cities: 255,205 people in Laredo according to the 2020 U.S. Census, versus 28,255 in Eagle Pass. Laredo is approximately nine times the size of Eagle Pass and in 2023, it managed nearly nine times the trade volume of Eagle Pass.

Most international truck traffic to Eagle Pass originates in Piedras Negras and the surrounding area. Transportation infrastructure in Mexico makes it difficult for truck traffic from farther away to cross the border at Eagle Pass. This is because, south of Piedras Negras, substantial stretches of Federal Highway (U.S.) 57, the main connection between Piedras Negras and the interior of Mexico, including Mexico City, consist of a relatively narrow two-lane highway. By contrast, Laredo is accessible via the wider, faster, four-lane, divided Highway 85. Therefore, it is currently easier and more convenient for truck traffic from the interior of Mexico to cross the border at Laredo than at Eagle Pass.

After crossing the border at Eagle Pass, trucks generally travel to local warehouses where cargo is redistributed regionally and nationally. Warehouses are largely concentrated in two areas: south of

[2] Data on southbound (United States to Mexico) traffic to Mexico is maintained by Eagle Pass (City of Eagle Pass, Texas, 2024). Data on northbound traffic (Mexico to United States) is maintained by CBP (CBP 2024). A comparison between both data sets for recent years (2019, 2022, 2023) indicates that the number of vehicles traveling southbound is approximately equal to the number of vehicles traveling northbound. Because TxDOT's *Texas-Mexico Border Transportation Master Plan 2021* uses data from CBP, the numbers it uses are for northbound traffic only. These numbers should be doubled to obtain an estimate of the total number of vehicles traveling both southbound and northbound. The numbers in this paragraph include both northbound and southbound traffic.

Bridge 2 along State Loop (SL) 480 and northeast of Eagle Pass, along U.S. 57. Trucks reach these areas via SL 480, which loops to the south and east of Eagle Pass before connecting to U.S. 57. From there, trucks that are eastbound (toward San Antonio and Interstate 35) use U.S. 57 eastbound; trucks that are northbound (toward I-27 and points north) use U.S. 57 westbound to Second Street (State Highway Spur 216) and U.S. 277 northbound. These routes are illustrated in **Figure 2-1.**

The UP Rail Bridge is the second-busiest international rail crossing between the United States and Mexico. Between 2019 and 2023, the average number of trains crossing the bridge each month ranged from a high of 572 (2019) to a low of 465 (2021 and 2022), totaling a daily average ranging from 19 (2019) to 15 (2021 and 2022) trains. For the first three months of 2024, there were 557 trains on average monthly and a total daily average of approximately 19 trains (Bureau of Transportation Statistics 2024).

After clearing primary inspection, freight trains continue northbound through downtown Eagle Pass toward Clark's Park Yard. There are seven operational public at-grade crossings in Eagle Pass, six of which are between the UP Rail Bridge and milepost 31. Under the Federal Railroad Administration's (FRA) Train Horn Rule, locomotive engineers must begin to sound the train's horn at least 15 seconds but no more than 20 seconds before reaching a public crossing. 49 C.F.R. Part 222. Based on OEA's field observations, trains move slowly and occasionally stop between the UP Rail Bridge and Clark's Park Yard.

In 2023, the Port of Eagle Pass (which includes the three existing international bridges) recorded a total of $37.14 billion in two-way trade between the United States and Mexico. Driving economic growth at Eagle Pass are imports of commercial vehicles ($2.5 billion), passenger vehicles ($2 billion) and beer ($906 million) from Mexico. As of June 2024, other major imports included manufactured and scrap metal items; agricultural products; and miscellaneous machinery. Major exports from the United States to Mexico included passenger vehicles, soybeans and other agricultural products; gasoline and other fuels; and miscellaneous metal items (U.S. Trade Numbers 2024).

2.2.2 Freight Forecasts

TxDOT developed the BTMP to evaluate long-term border crossing infrastructure needs based on projected growth in the movement of goods and persons across the border. The BTMP provides projections of cross-border movement activities, including rail and CMVs, to 2050, which GER used in its project planning. However, the BTMP's 2050 horizon year is well beyond the 2031 analysis year that OEA uses in ~~this Draft~~the EIS. Consistent with past practice, OEA determined that 2031—five years after the anticipated issuance of a final decision by the Board in this proceeding—is the appropriate analysis year. OEA uses a five-year traffic projection because it allows enough time for the project to be implemented and ensures that any increase in traffic is related to the effects of the project and not to changing market conditions. Anything beyond five years is speculative and not reasonably foreseeable. Therefore, for ~~this Draft~~the EIS, OEA used 2031 rail and truck traffic projections developed by GER.

While OEA recognizes TxDOT's and GER's need for long-term planning, unforeseeable changes in the national or global economy through 2050 may result in outcomes very different from those the BTMP projects, including substantially more or less growth in international trade volumes.[3]

2.3 Alternatives Analyzed in the EIS

Following consultation with USCG; USACE; IBWC; other appropriate federal, state, and local agencies; tribes; other affected stakeholders; the public; and GER, OEA determined that the ~~Draft~~ EIS ~~will~~would analyze two build alternatives: the Southern Rail Alternative (GER's preferred alignment) and the Northern Rail Alternative. The two build alternatives are illustrated in **Figure 2-2**. The ~~Draft~~ EIS also analyzes the No-Action Alternative.

2.3.1 Development of the Alternatives Analyzed in the EIS

This section describes the development of the build alternatives analyzed in ~~this Draft~~the EIS. Alternatives that OEA considered but dismissed from analysis are described in *Section 2.4*, *Alternatives Considered but Eliminated from Detailed Study*.

2.3.1.1 Evaluation Criteria

In a letter dated January 22, 2024, GER provided OEA with information on the process GER used to evaluate potential alternatives for the proposed line. GER considered a range of potential alternatives and assessed their feasibility based on several factors, including:

- Commercial viability, i.e. compatibility with the current and proposed Mexican and U.S. rail and highway infrastructure and border crossing plans in the Piedras Negras Master Plan. This plan identifies a right-of-way for a rail line and highway corridor development in Mexico to bypass the city of Piedras Negras, including one location for the proposed border crossing for both the rail line and the highway. This border crossing, chosen based on longstanding regional plans to reroute commercial traffic out of the urban centers of Eagle Pass and Piedras Negras, is to the north of both cities, just outside the Eagle Pass city limits.
- Operational compatibility with the UP mainline, which requires connecting to the mainline south of Clark's Park Yard because any connection to the north of the yard would require trains entering the U.S. to stop once they are on the mainline and reverse south to reach the inspection facilities at Clark's Park Yard. This would result in congestion and security issues.
- Ability to reduce rail crossing times and the number of at-grade rail crossings.

[3] TxDOT's forecasts in the BTMP were based on trends in international trade at the time the BTMP, published in March 2021, was being developed. GER/PVH developed conceptual designs for the proposed line and the associated CMV Facility at a later date. Therefore, the increase in trade activity that the BTMP forecasts for Eagle Pass does not depend on, and it would not be caused by, construction and operation of the proposed line or the associated CMV Facility. The proposed line and the associated CMV Facility would simply accommodate any future increase in international trade, should it occur, more efficiently compared to existing infrastructure.

- Ability to collocate the CBP facilities that process both rail and vehicular freight, to ensure an efficient use of CBP staffing resources and meet CBP's need for efficiency.
- Ability to minimize environmental impacts, including locating the rail right-of-way outside urban areas and preferably on previously disturbed land; minimizing idling times and associated pollutant emissions; and minimizing impacts on wetlands, floodplains, and surface waters.

OEA reviewed the factors that GER considered when evaluating potential alternatives and found alternatives that would meet the following criteria to be reasonable:

1. Meet the Purpose and Need.
2. Achieve commercial viability by being compatible with the Piedras Negras Master Plan and planned infrastructure in Mexico and the United States.
3. Maintain operational compatibility with the UP mainline and Clark's Park Yard.
4. Allow for collocation of rail and commercial vehicle inspection facilities.
5. Potentially avoid or minimize adverse environmental effects.

Based on these criteria, OEA determined that the ~~Draft~~ EIS would analyze two build alternatives: the Southern Rail Alternative (GER's preferred alignment) and the Northern Rail Alternative as well as the No-Action Alternative. These alternatives are described in more detail below.

2.3.1.2 Southern Rail Alternative

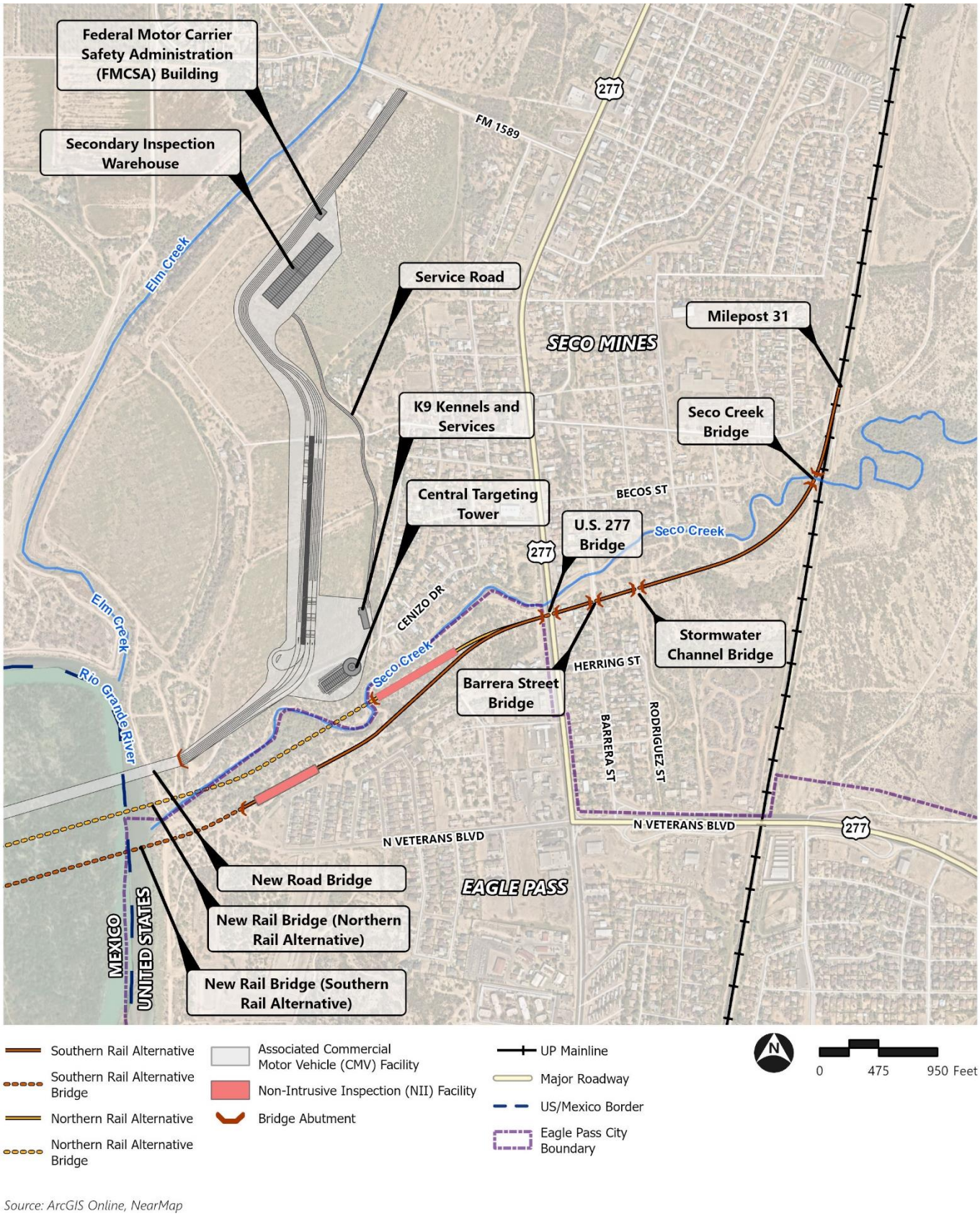
As originally presented in its December 2023 petition for exemption, GER's preferred alignment followed a route that diverged from the UP mainline at approximate milepost 31; curved to the south; crossed Seco Creek, an existing stormwater channel north of Rodriguez Street, Barrera Street, and U.S. 277 (Del Rio Boulevard) on bridges with an embankment in between; traversed an undeveloped area west of U.S. 277; crossed Seco Creek again in two locations; and continued to and across the Rio Grande River.[4] This was the route that OEA presented during the scoping process for the EIS.

As GER explained in a letter to OEA dated June 27, 2024, GER subsequently modified its original preferred alignment. GER's modified route (the Southern Rail Alternative) departs the UP mainline at the same location as originally proposed and follows the same route as the original route through the crossing over U.S. 277. West of U.S. 277, the modified route curves slightly to the south of the originally proposed route to avoid crossing Seco Creek and continues to and across the Rio Grande River. GER stated that this modification is intended to avoid potential impacts to Seco Creek. Additionally, to reduce the potential for noise effects on residential developments near the proposed line between Seco Creek and North Veterans Boulevard west of U.S. 277, GER incorporated a noise barrier into the design. GER specified the extent and height of the noise barrier in supplemental letters to OEA dated September 4, 2024, and October 17, 2024, respectively.

After reviewing GER's modifications, OEA determined that the modified Southern Rail Alternative was reasonable under the five criteria listed above. A detailed description of the Southern Rail Alternative, including a map, is provided in *Section 2.3.2*, *Detailed Description of the Build Alternatives*.

[4] An embankment is a raised structure used to hold back water or to carry a roadway or rail line.

Figure 2-2. Proposed Line and Associated CMV Facility



Source: ArcGIS Online, NearMap

2.3.1.3 Northern Rail Alternative

Based on information obtained through the scoping process, a preliminary assessment of the potential noise and visual effects of GER's preferred alignment after the modifications described in the letter dated June 27, 2024, and an additional site visit, OEA developed an alternative route for the proposed line that could further minimize potential noise effects as well as minimize visual effects on the existing residential developments located west of U.S. 277, between North Veterans Boulevard and Seco Creek. This alternative follows the same route as the Southern Rail Alternative from the UP mainline to U.S. 277 but diverges to the north approximately 0.1 miles west of U.S. 277. The Northern Rail Alternative then crosses Seco Creek in two places and curves to cross Seco Creek again and the Rio Grande River.

OEA also determined that the Northern Rail Alternative is reasonable under all five criteria listed above. A detailed description of the Northern Rail Alternative, including a map, is provided below in *Section 2.3.2*, *Detailed Description of the Build Alternatives*.

2.3.2 Detailed Description of the Build Alternatives

The Southern Rail Alternative (GER's preferred alignment) is described in *Section 2.3.2.1*, *Southern Rail Alternative*, and is illustrated in **Figure 2-3**. The Northern Rail Alternative is described in *Section 2.3.2.2*, *Northern Rail Alternative*, and is illustrated in **Figure 2-4**. Typical cross sections for both alternatives can be found in **Appendix M**. Supporting facilities common to both alternatives are described in *Section 2.3.2.3*, *Facilities Associated with the Proposed Line Under Both Build Alternatives*. Construction activities and operations, also common to both alternatives, are described in *Section 2.3.2.4*, *Construction of the Proposed Line Under Both Build Alternatives*, and *Section 2.3.2.5*, *Operations on the Proposed Line Under Both Build Alternatives*, respectively.

2.3.2.1 Southern Rail Alternative

Under the Southern Rail Alternative, the proposed line would be a secure, double-tracked, approximately 1.3-mile rail line extending between the existing UP mainline and the United States/Mexico border, as described in *Section 2.3.1.2*, *Southern Rail Alternative, GER's Preferred Alignment*, and shown in **Figure 2-3**. The proposed line would cross the Rio Grande River on the New Rail Bridge. Based on a conceptual design developed by GER and provided to OEA, the New Rail Bridge would stand approximately 60 feet above the water line and would be approximately 45 feet wide. It would consist of 164-foot spans with cast-in-place concrete drilled shaft piers supporting the superstructures. The U.S. portion of the bridge would be approximately 968 feet long (out of a total bridge length of around 2,300 feet), supported by five piers (out of a total of 13 piers). Each pier would be approximately 85 feet by 20 feet. All piers on the U.S. side would be on land. There would be one in-water pier, on the Mexican side of the Rio Grande River. The eastern end of the bridge would consist of a concrete abutment approximately 66 feet long and 20 feet wide.[5] *Figure M-1, Cross Section A-A',* in **Appendix M** shows a cross section of the eastern end of the New Rail Bridge.

Farther east, the proposed line would cross U.S. 277; Barrera Street; a concrete-lined stormwater drainage channel; and Seco Creek over four other, smaller bridges: the U.S. 277 Bridge; Barrera Street Bridge; Stormwater Channel Bridge; and Seco Creek Bridge, respectively. **Figure 2-2** shows the

[5] An abutment is a supporting structure built at the end of a bridge.

location of these four bridges. *Figure M-1*, *Cross Section C-C'*, in **Appendix M** shows a cross section of the U.S. 277 Bridge.

These four new, smaller bridges would be single-span structures. The U.S. 277 Bridge and the Seco Creek Bridge would be 120 feet long. The Barrera Street Bridge and the Stormwater Channel Bridge would be 80 feet long. The abutments of each of the four bridges would be of the same size as those of the New Rail Bridge, described above. Vertical clearances above U.S. 277 and Barrera Street would be approximately 18.5 feet.

Between the five bridges (the New Rail Bridge across the Rio Grande River and the four smaller bridges), the proposed line would be constructed on an elevated embankment that would be approximately 18 to 19 feet high and 130 feet in width. This would allow the line to maintain a nearly flat profile along its entire length (no more than 0.15 percent slope), at approximately the same elevation as the existing UP mainline to which it would connect. Three culverts through the embankment (two west of U.S. 277 and one east of it) would provide for stormwater drainage as well as wildlife access to and from Seco Creek.

2.3.2.2 Northern Rail Alternative

The Northern Rail Alternative only differs from the Southern Rail Alternative between the United States/Mexico border and U.S. 277. East of U.S. 277, both alternatives are the same, including the U.S. 277 Bridge, Barrera Street Bridge, Stormwater Channel Bridge, and Seco Creek Bridge.

West of U.S. 277, the Northern Rail Alternative would run along a slightly more northern alignment than the Southern Rail Alternative, as explained above in *Section 2.3.1.3*, *Northern Rail Alternative*. The New Rail Bridge would cross the Rio Grande River and then Seco Creek in three locations (see **Figure 2-4**).

As described by GER in its September 11, 2024, letter to OEA, the U.S. section of the New Rail Bridge under the Northern Rail Alternative would be approximately 2,175-feet long (out of a total bridge length of approximately 3,482 feet), with 13 piers (out of a total of 21). The New Rail Bridge would cross the Rio Grande River slightly to the north of where the New Rail Bridge would be located under the Southern Rail Alternative. As shown in **Figure 2-4**, after spanning the river, the New Rail Bridge would continue across the mouth of Seco Creek then continue before crossing the creek again in two locations. *Figure M-2, Cross Section A-A'*, in **Appendix M** shows a cross section of the New Rail Bridge under the Northern Rail Alternative.

Figure 2-3. Southern Rail Alternative and Supporting Facilities

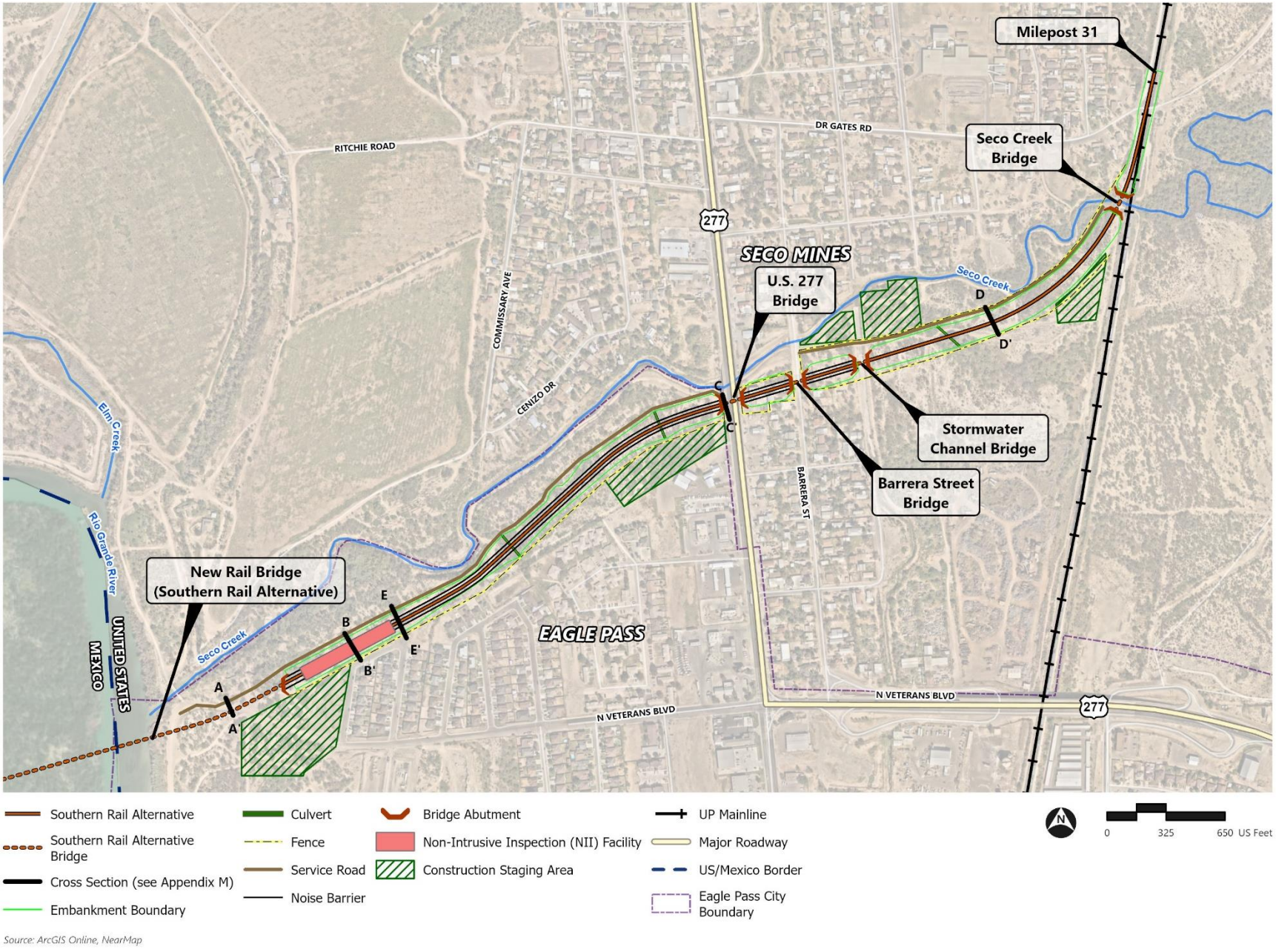
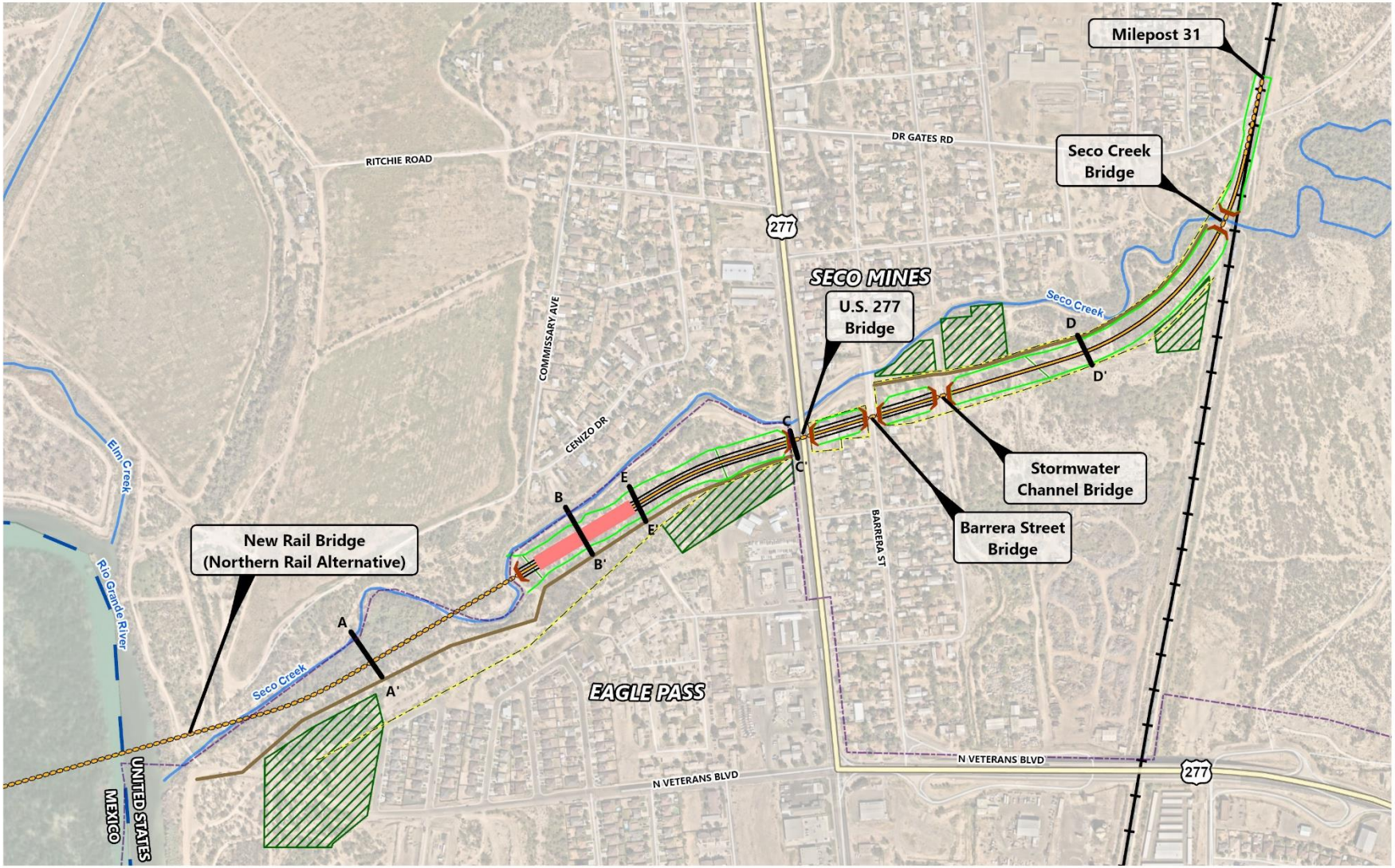


Figure 2-4. Northern Rail Alternative and Supporting Facilities



Source: ArcGIS Online, NearMap

2.3.2.3 Facilities Associated with the Proposed Line Under Both Build Alternatives

The facilities described in this section are illustrated in **Figure 2-3** for the Southern Rail Alternative and **Figure 2-4** for the Northern Rail Alternative.

Security Fence

As GER indicated in its letter to OEA dated July 8, 2024, an 8-foot-tall perimeter fence would secure the proposed line. East of U.S. 277, the fence would run along both sides of the right-of-way, up to the connection with the existing UP mainline, with a break at the Barrera Street Bridge. West of U.S. 277, the fence would run along the south side of the right-of-way only. No fence would be installed along the northern side of the right-of-way in that section to avoid cutting off wildlife from Seco Creek. The fence would be constructed of steel posts and wire-welded steel mesh, with concertina wire on top.[6]

Along with the fence, a closed-circuit video monitoring system with motion sensors mounted on 50-foot concrete poles would be installed along the proposed line. Power would be supplied by solar panels.

Access Road

A 10-foot-wide, gravel access road would run along the proposed line between the Rio Grande River and U.S. 277. Under the Southern Rail Alternative, the road would be north of the tracks (see **Figure 2-3** and *Figure M-1*, *Cross Section E-E'*, in **Appendix M**). Under the Northern Rail Alternative, it would run south of the tracks (see **Figure 2-4** and *Figure M-2 Cross Section B-B'*, in **Appendix M**).

East of U.S. 277, under both alternatives, the access road would resume on the north side of the tracks just east of Barrera Street and end at the south bank of Seco Creek, near the connection with the existing UP mainline (see *Figure M-1* and *Figure M-2*, *Cross Section D-D'*, in **Appendix M**). In the fenced portion of the proposed line, 10-foot-wide steel doors would control access to the access road. At its western end, the access road would connect to existing unpaved, private roads.

Non-Intrusive Inspection Facility

The proposed line under both alternatives would incorporate a non-intrusive inspection (NII) facility. The NII facility would be used for the primary inspection of United States-bound freight trains (there would be a similar facility near the Mexican end of the bridge for Mexico-bound trains). The proposed NII facility would use electrons or other subatomic particles naturally generated by the cargo to generate images for inspection. This technology is safe for humans, plants and animals, and sensitive cargo because, unlike X-ray systems, it produces no radiation (Decision Sciences Institute 2022).

The NII facility would consist of a 42,000-square-foot roofed, steel structure, covering approximately 560 linear feet of track, with room for equipment and sufficient indoor vertical and horizontal clearances for safe train circulation and screening operations. The height from track level to rooftop would be approximately 37 feet.

Under both build alternatives, the NII facility would be located a short distance from the eastern end of the New Rail Bridge (see **Figures 2-3** and **2-4**, and *Figures M-1* and *M-2, Cross Section B-B'*, in **Appendix M**). Because of the different length of the New Rail Bridge under each build alternative, the

[6] Concertina wire is a type of barbed wire shaped in large coils and placed either directly on the ground or on top of a structure such as a wall or fence.

NII facility would be farther east under the Northern Rail Alternative than under the Southern Rail Alternative.

Noise Barriers

In its letter dated October 17, 2024, GER stated that it would build noise barriers along both sides of the line between the NII facility and the western end of the Stormwater Channel Bridge, which is where the tracks are closest to noise-sensitive receptors.[7] However, GER indicated that it does not intend to construct noise barriers on bridges under either build alternative (including the U.S. 277 Bridge and the Barrera Street Bridge). According to GER, the inclusion of noise barriers over bridges would present significant challenges in meeting the required performance standards for those bridges. **Figure 2-3** and **Figure 2-4** show the proposed noise barriers under each build alternative. In response to GER's concerns, OEA conducted its own feasibility analysis of noise barriers over bridges (see *Chapter 3*, *Section 3.6*, *Noise and Vibration*, for more details).

Under both build alternatives, the noise barriers would rise 20 feet above the tracks. They would be made of noise-absorbing material covered with concrete or steel plates. Vegetation would be planted along sections of the barriers to help screen them from view.

2.3.2.4 Construction of the Proposed Line Under Both Build Alternatives

As PVH stated in its October 17, 2023, Presidential Permit Application for the Puerto Verde Global Trade Bridge project (PVH 2023), both the proposed line and the associated CMV Facility would be designed and operated in a manner that prioritizes environmental sustainability. GER/PVH's approach to sustainability includes building design and material selection, procurement practices, construction operations, power generation and consumption, emissions reduction, ongoing operations management, and community impact and civic involvement. In particular, GER would design the proposed line to meet American Railway Engineering and Maintenance-of-Way Association (AREMA) standards. AREMA sets industry standards and publishes recommended practices for railway infrastructure design, construction, and maintenance. It also provides guidance for rail network resiliency. Adoption of these practices by GER would help ensure that the proposed line is built to minimize impacts from weather events, including extreme heat and flooding.

According to GER, construction of the proposed line under either the Southern or the Northern Rail Alternative would take approximately 1.5 years. The construction phases described below would overlap.

Track

GER would begin construction of the proposed line with removal of vegetation, including roots and stumps, along the track alignment. Topsoil and unsuitable material would be removed to a maximum depth of 6 inches. The remaining soils along the track alignment would be compacted, and the embankment would be built up to reach the desired elevation. Suitable material from the grading work would be used to cover and soften the slope of the embankment. This phase of the construction work would take place over approximately seven months, with work on other elements, such as the New Rail Bridge and the NII facility, being conducted at the same time.

[7] "Sensitive receptors" are land uses such as schools, places of worship, libraries, hospitals, residences, retirement communities, and nursing homes. In this case, they are residences.

Following completion of the embankment, GER would spread a 12-inch deep and compacted sub-ballast layer. Track switches and track segments would be placed on top of the embankment using cranes, and they would be fixed in place. A 12-inch layer of ballast would then be spread out, after which the tracks would be leveled, and the final welds performed.

Bridges

According to GER, construction of the New Rail Bridge, U.S. 277 Bridge, Barrera Street Bridge, Stormwater Channel Bridge, and Seco Creek Bridge would involve ground preparation similar to what would be done for the railroad track, followed by construction of concrete piles of a sufficient size and depth to support the bridge structure. This would involve drilling holes, reinforcing them with steel, then pouring pre-mixed concrete. Concrete would also be used to construct the above-ground portion of the piers and abutments supporting the bridges. Bridge superstructure elements would be placed last, using cranes.

Construction of the New Rail Bridge across the Rio Grande River would take place over approximately 1.5 years, while the rest of the proposed line would be built at the same time. Construction of the other four bridges would occur over approximately nine months, starting in the second year of construction.

Construction of the New Rail Bridge would involve building a temporary embankment (or jetty) on the Mexican side of the border but require no in-water activities on the U.S. side. Constructing the U.S. 277 Bridge would require temporary lane closures: for each abutment, the nearest lane of traffic would be closed for approximately 10 days. After completion of the abutments, installation of the bridge superstructure would require closing U.S. 277 entirely at this location for eight to ten hours. Barrera Street between Herring Street and Becos Street would provide an alternate route during that time.

Similarly, construction of the Barrera Street Bridge would require days-long partial closures for the abutment, followed by an hours-long period of full closure for installation of the bridge's superstructure. Access to the portions of the street south and north of the construction site would be maintained through Herring Street and Becos Street, respectively.

Associated Facilities

According to GER, construction of the NII facility would take place over approximately 1.5 months. It would begin after the track inside the facility is laid. Foundations and a concrete slab would be installed first, followed by walls and cladding. Construction of the perimeter fencing would involve the excavation of holes for fence posts and excavation of a base for chain-link fence. The access road would be built by removing the topsoil along the road alignment, compacting the base, and spreading gravel on top of it.

Staging Areas

GER would use five staging areas to support construction of both the Southern and the Northern Rail Alternative, all five on land owned by PVH. The staging areas, shown in **Figures 2-3** and **2-4**, would be located west of the western end of North Veterans Boulevard; west of U.S. 277; east of Barrera Street and south of Seco Creek on either side of the concrete-lined stormwater channel; and south of the connection point between the line and the existing UP mainline.

Prior to being used, the staging areas would be fenced and cleared of vegetation. Activities conducted in these areas would include the stockpiling of materials; storage of equipment; and assembly of structural elements, such as bridge decks, prior to installation.

2.3.2.5 Operations on the Proposed Line Under Both Build Alternatives

GER anticipates that, once complete, the proposed rail line would move all freight rail traffic between Mexico and the United States that passes through Eagle Pass and Maverick County.[8] The proposed line would not generate new or additional traffic but would reroute traffic that currently uses the existing UP Rail Bridge, which would continue to be used should the line not be built. If the proposed line is built, UP and BNSF would no longer run through trains on the UP mainline south of milepost 31 (including over the existing UP Rail Bridge). The proposed line, therefore, would eliminate rail traffic from downtown Eagle Pass, except for an occasional local train. Construction and operation of the proposed line would be consistent with the City of Piedras Negras's Master Plan, which includes rerouting rail traffic away from its downtown areas to the north of the city.

The proposed line would operate every day. However, unlike current operations, trains would not need to stop on a single-track portion of the UP mainline or bridge to perform crew changes between the United States and Mexico. Instead, GER would enter into agreements with UP, BNSF, and Ferromex to have GER crews shuttle the trains between rail yards in the two countries (Clark's Park Yard and Ryan's Ruin Yard in the United States for UP and BNSF, respectively; Rio Escondido Yard in Mexico), simplifying border crossing formalities. While crew changes would require trains to idle at Clark's Park Yard, as well as at Ryan's Ruin Park for BNSF trains, the use of dedicated, local crews to shuttle trains back and forth would minimize such idling time. In the NII facility, trains would go through primary inspection without stopping. CBP personnel, relocated from the existing border facilities, would conduct inspections. Secondary inspection, when needed, would occur in Clark's Park Yard, as is the case today.

GER forecasts that by 2031, the analysis year for ~~this Draft~~the EIS, an average of 19 trains would travel daily on the proposed line, similar to existing operations (Sept. 4, 2024, letter to OEA). GER anticipates trains to be approximately 9,300 feet long, or approximately 150 cars with two locomotives at the front end and one at the rear. Car types would include box cars, refrigerated box cars, gondola cars, intermodal double-stack cars, tank cars, and hopper cars for grains and other dry material. OEA estimates that trains would operate at an average speed of 15 miles per hour. GER does not expect new commodities to travel on the proposed line that do not already move by rail across the UP Rail Bridge.

2.3.3 Associated CMV Facility

This section describes the associated CMV Facility that would be constructed under either of the build alternatives. The associated CMV Facility is shown in **Figure 2-2.** As noted above, the associated CMV Facility does not require a license from the Board.

2.3.3.1 New Road Bridge and CMV Road

According to GER, the associated CMV Facility would be constructed a short distance to the north of the proposed line, on what is currently agricultural land. The associated CMV Facility is shown in **Figure 2-2**. It would consist of the New Road Bridge, across the Rio Grande River; a CMV Road

[8] In a comment on the Draft EIS submitted to OEA on June 2, 2025, GER stated that "[i]f GER is unable to attract all cross-border rail traffic through the prospect of a more efficient and safer cross-border trade corridor, then the stated purpose of an economically viable solution to the problems that exist at the Eagle Pass/Piedras Negras border is not feasible, and GER would be unable to construct and/or operate the proposed line."

connecting the New Road Bridge to FM 1589 (Hopedale Road); and associated border inspection facilities.

The New Road Bridge would be a short distance north of the New Rail Bridge and approximately 89 feet wide and 1,980 feet long. Approximately 470 feet of the New Road Bridge would be built in the United States. It would stand approximately 60 feet above the water line and accommodate six 12-foot-wide traffic lanes. The New Road Bridge would have two piers on the U.S. side and nine piers on the Mexico side. Each pier would be approximately 104 feet by 13 feet. All piers on the U.S. side would be on land. The only in-water pier would be on the Mexican side of the Rio Grande River. The eastern end abutment would be approximately 90 by 13 feet with 50-foot wingwalls.

East of the New Road Bridge, the multi-lane CMV Road would continue in a north-south direction to a new intersection with FM 1589 for approximately 1.3 miles. FM 1589 connects to U.S. 277 and the local, regional, and national road network beyond. Inspection facilities along the CMV Road would include portal radiation monitoring systems, scales, and an NII runway (Technology Pilot Runway) with scanners. United States-bound trucks would move through these facilities prior to passing through the primary inspection booths. The Technology Pilot Runway would be used to test new technologies as they are developed.

2.3.3.2 Facilities Part of the Associated CMV Facility

Buildings

The associated CMV Facility would include four support buildings along the CMV Road. From south to north (**Figure 2-2**), they are:

- Central Targeting Tower: This building, approximately 353 feet long, would consist of a rectangular structure with a two-story circular turret, approximately 140 feet in diameter, at its eastern end. Located in the southeast corner of the associated CMV Facility, the Central Targeting Tower would centralize surveillance activities for both the associated CMV Facility and the proposed line.
- K9 Kennels and Services: This one-story building would house facilities for detection dogs and other security and screening services. It would be approximately 175 feet long by 52 feet wide.
- Secondary Inspection Warehouse: This approximately 660 feet by 164 feet warehouse would be located at the northern end of the associated CMV Facility. Vehicles requiring secondary inspection would be processed in this building.
- Federal Motor Carrier Safety Administration (FMCSA) Building: This building, approximately 91 feet by 48 feet, would be used for FMCSA activities. FMCSA ensures that trucks meet U.S. safety standards and requirements.

In addition to these buildings, the associated CMV Facility would include a service road along its eastern end. This road would be an asphalt road, approximately 24 feet wide. It would connect the area of the Central Targeting Tower and K9 Kennels building to the area of the Secondary Inspection Warehouse.

Fencing

The entire perimeter of the associated CMV Facility would be enclosed with a chain link fence.

Intersection with FM 1589

Access to and from FM 1589 (Hopedale Road) would be through a new unsignalized T-shaped intersection. The intersection would have one inbound lane and one outbound lane.

2.3.3.3 Construction of the Associated CMV Facility

According to GER, the associated CMV Facility would be constructed in several overlapping phases (or components) over approximately 1.5 years. Component 1 (approximately 12.5 months) would start with vegetation clearing, including tree cutting and stump removal. Topsoil removal and compaction would follow. Component 2 (approximately 5 months) would include laying down the pavement, including subbase and base layers of stone materials and concrete or asphalt for the paved surfaces.

The four support buildings would be built during Component 3 (approximately 8.5 months, starting when Component 1 is ending). For each building, work would involve foundation excavation and construction, structural framing, wall construction, and finishings.

Component 4 would include construction of the New Road Bridge across the Rio Grande River (approximately 1.5 years, starting at the same time as Component 1). This would involve vegetation clearing and material removal. Construction of reinforced concrete piles up to 65 feet in depth, pile caps, and abutments would come next, followed by the installation of post-tensioned girders and 8-inch-thick concrete slab. The last steps would include the construction of curbs, parapets, and sidewalks.

Component 5 would include construction of perimeter fencing (approximately 4.5 months, starting at the same time as Component 1). In Component 6 (approximately 2.5 months), the final component, utility connections and drainage structures would be excavated. This would include trenching to depths of 3 to 9 feet to establish two sewer lines connecting the support buildings to existing drainage infrastructure.

2.3.3.4 Operation of the Associated CMV Facility

According to GER, the associated CMV Facility would accommodate all commercial traffic that currently uses Eagle Pass's existing Bridge 2. It would connect to the northern bypass route planned by Piedras Negras in the city's master plan to take truck traffic out of its downtown area and replace the route currently leading to Bridge 2 (see *Section 2.3.1.1*, *Evaluation Criteria*, above). With all truck traffic relocated to the new associated CMV Facility, Eagle Pass's Bridge 2 would become entirely available for passenger vehicle traffic (including personal cars and buses).

Based on the projections in TxDOT's BTMP and assuming steady growth from 2019 levels, GER forecasts that in 2031 (the analysis year for ~~this Draft~~the EIS), the associated CMV Facility would process and inspect a total of approximately 289,067 northbound (Mexico to the United States) vehicles.[9] The normal vehicle processing hours would be from 8:00 a.m. to 10:45 p.m. on weekdays and 8:00 a.m. to 2:00 p.m. on weekends (pre-cleared vehicles would be able to pass through anytime).

[9] Only northbound vehicles would be inspected at the associated CMV Facility. Southbound vehicles would be inspected in Mexico; these vehicles would travel through the associated CMV Facility to the New Road Bridge without stopping. As explained in *Section 2.2.1, Existing Eagle Pass Crossings* (see footnote 2), based on a comparison between CBP data and Eagle Pass Bridge data, the number of vehicles traveling southbound is approximately the same as the number of vehicles traveling northbound. Therefore, the total number of vehicles traveling through the associated CMV Facility in a year would be approximately 578,000, with a 48,167 monthly average and a 1,588 daily average.

The associated CMV Facility would be designed for "slow-roll" operations, allowing for efficient processing with reduced waiting and idling. Processing would occur in seven stages: radiation portal monitoring (Stage 1), weighing (Stage 2), NII inspection (Stages 3 to 5), queuing (Stage 6) and primary inspection at Primary Booths (Stage 7). According to GER, each truck would go through the process in 15 minutes or less. The longest stage would be Stage 6, during which trucks would wait for the NII results before proceeding to the Primary Booths; this stage could last 12 minutes, most of it spent idling. Stages 1 through 5 would not require trucks to stop. Some waiting could occur at the Primary Booths. Altogether, time spent idling would be approximately 11 minutes per truck.

Once past the Primary Booths, trucks not requiring secondary inspection would exit to FM 1589 and continue toward U.S. 277. OEA anticipates that most trucks would turn left onto northbound U.S. 277, either to continue to points north or to connect to points east via FM 1588 and SL 480. Although SL 480 is not yet completed and is not connected to FM 1588, TxDOT indicates that the loop will be completed by 2031, the analysis year for ~~this Draft~~the EIS (TxDOT 2024b).

2.3.4 No-Action Alternative

Under the No-Action Alternative, the Board would deny authority for GER to construct and operate the proposed line. Under the No-Action Alternative, all three existing bridges in Eagle Pass (Bridge 1, Bridge 2, and the UP Rail Bridge) would continue to operate as they do today.

2.4 Alternatives Considered but Eliminated from Detailed Study

GER initially considered six additional potential alternatives that would cross the border approximately one mile north of the Southern Rail Alternative and would connect to the UP mainline approximately one mile north of milepost 31 (Jan. 22, 2024, letter to OEA). These alternatives, several of which partially overlap, are shown in **Figure 2-5**. All of them would run from the Rio Grande River in a generally eastward direction across undeveloped land; turn northward before crossing FM 1589; then continue eastward again and across U.S. 277. East of U.S. 277, the alternatives would run through residential and industrial areas before connecting to the UP mainline and Clark's Park Yard. GER determined and, after review, OEA also found that none of the six additional alternatives would meet Criteria 2, 3, and 5 (see *Section 2.3.1.1, Evaluation Criteria*, above) and, therefore, would not be reasonable alternatives for the following reasons:

- The alternatives would not achieve commercial viability by being compatible with the Piedras Negras Master Plan because of the locations of the Rio Grande River crossings, well to the north of the one location determined in the master plan based on longstanding regional plans to reroute commercial traffic.
- The alternatives would not achieve operational compatibility with the UP mainline and Clark's Park Yard, because they would connect to Clark's Park Yard's tracks at locations used for switching, which would substantially interfere with existing rail operations or require a major reconstruction of the yard; or they would connect at a location that would require trains to reverse direction to reach the border inspection facilities located at the yard.
- The alternatives would not potentially avoid or minimize adverse environmental effects. East of U.S. 277, they would require displacing more residences and commercial, or industrial, properties than the Southern and the Northern Rail Alternatives. All six alternatives would also be

substantially longer than the Southern or the Northern Rail Alternative and would adversely affect more land and properties and cause more noise and visual effects than the Southern and Northern Rail Alternatives. The longer length of these alternatives would also result in greater air pollutant emissions from locomotives because trains would travel longer distances before connecting to the UP mainline and Clark's Park Yard than under the Southern or Northern Rail Alternatives.

Therefore, OEA dismissed the six additional alternatives shown in **Figure 2-5** from further consideration.

GER focused its alternatives analysis on routes to the north of the proposed line because it determined early in its planning process that routes to the south of the existing international bridges would not be feasible, as such routes would require acquiring more than 10 miles of new right-of-way along SL 480 (in addition to 10 miles in Mexico) from private landowners. Upon review, OEA found that such alternatives would fail to meet Criteria 2 and 4 and, therefore, did not warrant further consideration.

During the development of the Northern Rail Alternative (see *Section 2.3.1.3*, *Northern Rail Alternative*), OEA considered whether there would be reasonable alternatives that would shift the alignment farther to the north while remaining to the south of the associated CMV Facility and maintaining a connection to the UP mainline at or near milepost 31 to avoid interfering with Clark's Park Yard operations.

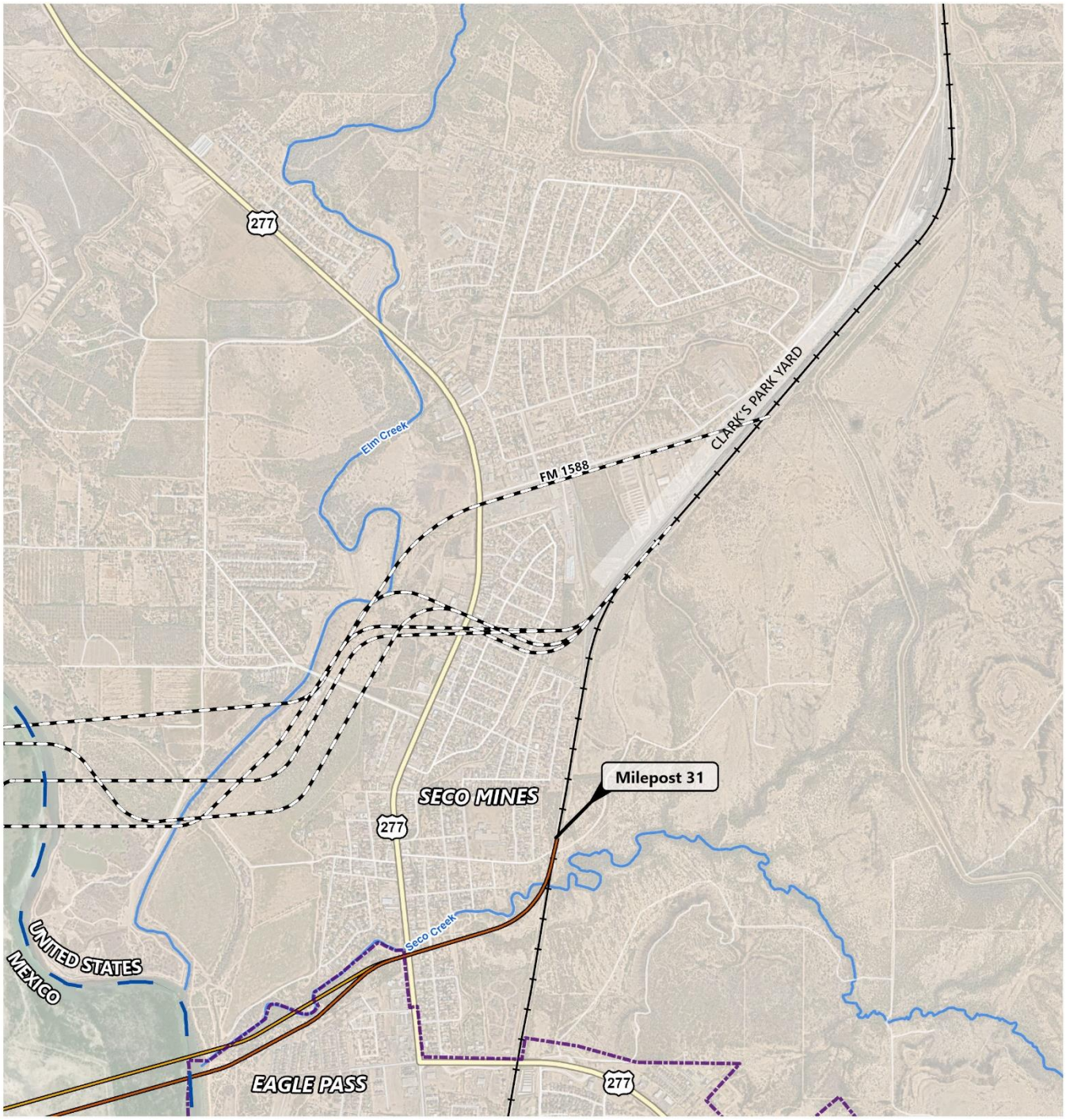
OEA found that, east of U.S. 277, any potential alignment other than the Southern Rail Alternative and the Northern Rail Alternative would displace more residences. West of U.S. 277, shifting the route farther to the north would bring it closer to residences along Cenizo Drive, with associated noise and visual effects. Therefore, these potential alternatives would not avoid or minimize adverse environmental effects, and OEA eliminated them from detailed study.

OEA did not analyze alternatives for the associated CMV Facility because the site identified for the associated CMV Facility is the only site where the associated CMV Facility can feasibly be built. There is no other available area of sufficient size that is both near the proposed line and the United States/Mexico border. As explained in *Section 2.3.1.1*, *Evaluation Criteria*, any reasonable alternative for the proposed line must collocate the CBP facilities that process both rail and vehicular freight to ensure an efficient use of CBP staffing resources.

2.5 Comparison of Build Alternatives and No-Action Alternative

To define the issues and provide a basis for choice among alternatives, the following narrative and **Table 2-1** compare the environmental impacts of the Southern and Northern Rail Alternative, and the No-Action Alternative based on the information and analyses presented in *Chapter 3, Affected Environment and Environmental Consequences*. The table also discusses the impacts of the associated CMV Facility for the reasons discussed above. Because PVH would construct the associated CMV Facility under either the Southern or the Northern Rail Alternative, and because OEA identified no alternatives for the associated CMV Facility, it is not addressed in the following narrative.

Figure 2-5. Alternatives Considered but Dismissed



Source: ArcGIS Online, NearMap

If the Board authorizes the proposed line, UP and BNSF would no longer run through trains on the UP mainline south of milepost 31 (including over the existing UP Rail Bridge). All international rail traffic would use the proposed line. Under the No-Action Alternative, rail traffic on the UP mainline would continue like at present. OEA does not anticipate any growth in rail traffic by 2031. However, existing adverse impacts from current operations would continue, including impacts related to at-grade crossing safety and delays, and noise impacts through downtown Eagle Pass.

OEA analyzed the potential impacts of the Southern Rail Alternative and the Northern Rail Alternative on freight rail safety, grade crossing safety, grade crossing delay, noise and vibration, air quality, energy, cultural resources, biological resources, water resources, land use, and visual quality.

2.5.2 Impacts Common to Both the Southern and the Northern Rail Alternatives

Because the Southern Rail Alternative and the Northern Rail Alternative only differ west of U.S. 277 and remain close to each other between U.S. 277 and the Rio Grande River, their potential impacts on a wide range of resources area are similar.

OEA found that the Southern and the Northern Rail Alternatives would have the same beneficial impact on freight rail safety because the reduction in distances traveled would be the same. Similarly, the Southern and Northern Rail Alternatives would have the same beneficial impact on grade safety and delay because neither include any at-grade crossings and both would result in the elimination of rail traffic at the seven operational, public, at-grade crossings in Eagle Pass. OEA also found that both the Southern and the Northern Rail Alternative would have the same beneficial impact on air quality and energy because both would reduce the distance traveled by trains between the United States/Mexico border and milepost 31, and both would eliminate train idling.

OEA found that neither the Southern nor the Northern Rail Alternative would have impacts on historic properties, either above- or below-ground, because none are present. However, for both alternatives, OEA ~~preliminarily~~ recommends mitigation requiring additional surveying and monitoring in areas where bridge piers on the rail line would be constructed to identify potential deeply buried archaeological resources (**MM-Cultural-01** and **MM-Cultural-02**).

OEA also found that both the Southern and the Northern Rail Alternative would have impacts on species and critical habitats that are listed or are proposed for listing under the Endangered Species Act (ESA). In a Biological Assessment (BA) prepared in accordance with Section 7 of the ESA, OEA determined that both alternatives *may affect, are not likely to adversely affect* the Texas hornshell (a mussel species listed as endangered) and are n*ot likely to jeopardize* the Mexican fawnsfoot (a proposed endangered mussel species) and the monarch butterfly (a proposed threatened species). OEA also determined that both the Southern Rail Alternative and the Northern Rail Alternative *would not adversely modify* proposed critical habitat for the Texas hornshell and the Mexican fawnsfoot. To ensure compliance with Section 7 of the ESA, OEA ~~preliminarily~~ recommends mitigation requiring GER to implement the conservation, minimization, and mitigative measures developed with the U.S Fish and Wildlife Service (USFWS) for the protection of the federally listed or proposed threatened and endangered species that could be affected by the rail line (**MM-Biological-01**).

Finally, OEA found that both the Southern and the Northern Rail Alternatives would displace three properties just east of U.S. 277 (one residence and two commercial buildings) and require rezoning by the City of Eagle Pass for the section of the proposed line located within the city's boundaries.

2.5.3 Impacts That Differ Between the Southern and the Northern Rail Alternatives

OEA found that, with the noise barriers proposed by GER (which would not be installed on bridges), the Southern Rail Alternative would result in severe adverse impacts on three noise receptors east of U.S. 277. With the noise barriers proposed by GER (which also would not be installed on bridges), the Northern Rail Alternative would result in severe noise impacts on 12 receptors (nine west of U.S. 277 and the same three east of U.S. 277). However, with the noise mitigation that OEA ~~preliminarily~~ recommends for these impacts (**MM-Noise-01a** for the Southern Rail Alternative and **MM-Noise-01b** for the Northern Rail Alternative), neither alternative would result in any severe noise impacts. Both alternatives, by relocating rail traffic out of downtown Eagle Pass, would eliminate existing severe noise impacts to 1,980 receptors.

OEA further found that while both the Southern and the Northern Rail Alternatives would have minor adverse impacts on water quality due to ground disturbance, the Northern Rail Alternative would potentially cause greater disturbance to Seco Creek than the Southern Rail Alternative because it would cross the creek in four locations compared to one location for the Southern Rail Alternative. However, the Southern Rail Alternative would have a greater adverse impact on visual quality than the Northern Rail Alternative, as it would dominate the view from two analyzed key observation points, compared to one for the Northern Rail Alternative.

2.5.4 ~~Preliminary~~ Preferred Alternative: Southern Rail Alternative

Based on the analyses presented in this ~~Draft~~ EIS, OEA ~~preliminarily~~ identifies the Southern Rail Alternative as the agency's Preferred Alternative. The potential impacts of the Southern Rail Alternative are similar or less than those of the Northern Rail Alternative, with the exception of visual impacts. OEA ~~preliminarily~~ finds that the lesser impacts of the Southern Rail Alternative on noise and Seco Creek compared to the potentially greater impacts the Northern Rail Alternative would have on those resources compensate for the greater visual impact of the Southern Rail Alternative.

Table 2-1. Comparison of Alternatives

Resource and Impact	Southern Rail Alternative	Northern Rail Alternative	Associated CMV Facility	No-Action Alternative
Noise and Vibration				
Number of receptors exposed to severe impacts	3	12	0	N/A
Number of receptors no longer experiencing the equivalent of severe impacts because the UP mainline would no longer be used for through trains	1,980	1,980	0	0
Impact Conclusion: Operation of the Southern or Northern Rail Alternative would adversely affect 3 and 12 receptors, respectively, where FTA-classified "severe" noise levels would exceed 65 DNL (day-night average noise level) and increase by 3 dBA (A-weighted decibels) or more. OEA ~~preliminarily~~ recommends mitigation requiring GER to install noise barriers on bridges, which would reduce noise levels at affected receptors from "severe" to "no impact" (**MM-Noise-01a** and **MM-Noise-01b**). Elimination of through trains from the existing UP mainline for both build alternatives would reduce noise levels for 1,980 receptors from FTA's classification of "severe" to "no impact."				
Visual Resources				
Dominate visual quality of Key Observation Points (KOPs)?	Yes (KOPs 1 and 2)	Yes (KOP 2)	No	N/A
Impact Conclusion: Either the Southern or Northern Rail Alternative, along with the associated CMV Facility, would have visual impacts due to vegetation removal, landform changes, building removal, new tracks, culverts, roadways, and bridges. Either build alternative would dominate the visual quality of the area from certain key observation points (KOPs). GER is proposing to reestablish native tree plantings to help screen the proposed line. However, visual impacts would remain and be greater under the Southern Rail Alternative.				
Biological Resources				
Endangered Species Act – Listed and proposed species and critical habitat	"*May affect, not likely to adversely affect*" Texas hornshell (listed) "*Not likely to jeopardize*" Mexican fawnsfoot and monarch butterfly (proposed) "*Would not adversely modify*" proposed critical habitat for Texas hornshell and Mexican fawnsfoot.	Same as Southern Rail Alternative	Same as Southern and Northern Rail Alternatives	N/A

Resource and Impact	Southern Rail Alternative	Northern Rail Alternative	Associated CMV Facility	No-Action Alternative
Migratory Birds	May affect several species of migratory birds protected under the Migratory Bird Treaty Act (MBTA).	Same as Southern Rail Alternative	Same as Southern and Northern Rail Alternatives	No impacts
Impact Conclusion: To ensure compliance with Section 7 of the ESA, OEA ~~preliminarily~~ recommends mitigation requiring GER to implement the conservation, minimization, and mitigative measures developed with USFWS for the protection of the federally listed or proposed threatened and endangered species that could be affected by the rail line (**MM-Biological-01**). With these measures, the Southern or Northern Rail Alternative, and the associated CMV Facility "*may affect, not likely to adversely affect*" the federally endangered Texas hornshell; they are "*not likely to jeopardize*" the proposed endangered Mexican fawnsfoot and the proposed threatened monarch butterfly. The Southern or Northern Rail Alternative and the associated CMV Facility "*would not adversely modify*" proposed critical habitat for the Texas hornshell and the Mexican fawnsfoot. To ensure compliance with the MBTA, OEA ~~preliminarily~~ recommends mitigation requiring GER to clear vegetation in preparation for construction of the rail line before or after the nesting season; and if clearing is required during the nesting season, for GER to consult with OEA and USFWS on appropriate nest survey methods prior to any clearing or construction activities (**MM-Biological-02**).				
Water Resources				
Adverse impacts to Seco Creek from foundation installation	No	Yes	No	N/A
Impact Conclusion: The Southern or Northern Rail Alternative and the associated CMV Facility would result in short-term water quality impacts due to ground disturbance. The Northern Rail Alternative would potentially cause greater disturbance to Seco Creek than the Southern Rail Alternative because it would cross the creek in four locations, compared to one location under the Southern Rail Alternative. Even with the need to comply with Texas Pollutant Discharge Elimination System (TPDES) permitting requirements to minimize impacts, impacts would remain potentially greater under the Northern Rail Alternative.				
Freight Rail Safety				
Years between accidents	25 to 50	Same as Southern Rail Alternative	N/A	8 to 16
Predicted rail incidents per year	0.02 to 0.04	Same as Southern Rail Alternative	N/A	0.06 to 0.13
Impact Conclusion: Under either the Southern or Northern Rail Alternative the number of predicted years between incidents would increase to 25 to 50 compared to 8 to 16 under the No-Action Alternative, a beneficial impact. In addition, the predicted number of rail incidents would decrease to between 0.02 to 0.04 per year compared to between 0.06 to 0.13 per year under the No-Action Alternative, a beneficial impact. This beneficial impact would be due to the lesser distance freight trains would travel under both the Southern and the Northern Rail Alternatives.				
Grade Crossing Safety				
Number of operational, public grade crossings	0	Same as Southern Rail Alternative	N/A	7

Resource and Impact	Southern Rail Alternative	Northern Rail Alternative	Associated CMV Facility	No-Action Alternative
Total years between predicted vehicle crashes (by 2031)	0	Same as Southern Rail Alternative	N/A	93
Total predicted number of vehicle crashes per year (in 2031)	0	Same as Southern Rail Alternative	N/A	0.011
Impact Conclusion: The Southern or Northern Rail Alternative would eliminate all public at-grade crossings in the study area and, as a result, the predicted 0.011 grade crossing crashes per year under the No-Action Alternative would be eliminated, a beneficial impact.				
Grade Crossing Delay				
At-grade crossings on roads above the average annual daily traffic (AADT) volumes threshold	0	Same as Southern Rail Alternative	N/A	6
Average delay time at grade crossings in seconds	0	Same as Southern Rail Alternative	N/A	24.8
Impact Conclusion: The Southern or Northern Rail Alternative would eliminate all public at-grade crossings in the study area, and, as a result, the average delay time of 24.8 seconds at high-volume annual average daily traffic (AADT) crossings under the No-Action Alternative would be reduced to zero, a beneficial impact.				
Roadway Safety				
Expected crashes per year (in 2031)	N/A	N/A	9.16	7.81
Impact Conclusion: Operation of the CMV Facility associated with the proposed line under both build alternatives would result in an additional 1.35 crashes per year in the study area in 2031 compared to the No-Action Alternative.				
Roadway Capacity				
Level of Service (LOS) and average delay in seconds (s) at study intersections in 2031	N/A	N/A	U.S. 277 and FM 1589, unsignalized, eastbound approach: • a.m. = LOS F (50.2) • p.m. = LOS F (502.2) U.S. 277 and FM 1588, signalized, overall: • a.m. = LOS A (9.5) • p.m. = LOS B (10.3)	U.S. 277 and FM 1589, unsignalized, eastbound movement: • a.m. = LOS C (16.6) • p.m. = LOS B (11.1) U.S. 277 and FM 1588, signalized overall: • a.m. = LOS A (7.7) • p.m. = LOS A (8.2)

Resource and Impact	Southern Rail Alternative	Northern Rail Alternative	Associated CMV Facility	No-Action Alternative
Impact Conclusion: The associated CMV Facility would create poor LOS conditions during peak hours at the intersection of U.S. 277 and FM 1589. If TxDOT installs the anticipated traffic signal at this intersection, the intersection's eastbound approach would operate at LOS B during both peak hours.				
Land Use				
Displacements	One residential and two commercial properties	Same as Southern Rail Alternative	None	None
Impact Conclusion: Both the Northern and the Southern Rail Alternatives would require one residential and two commercial displacements. Neither the build alternatives nor the associated CMV Facility would sever contiguous properties or permanently curtail or constrain access to properties.				
Air Quality				
Impact Conclusion: Maverick County is in attainment for all criteria pollutants. Construction of the Southern or Northern Rail Alternative and the associated CMV Facility would generate temporary emissions of criteria pollutants (below any *de minimis* thresholds), hazardous air pollutants (HAPs), and greenhouse gases (GHGs). Operation of the Southern or Northern Rail Alternative and the associated CMV Facility would decrease truck and rail travel distances and CMV idling times, resulting in a net decrease in rail and truck emissions for all analyzed air pollutants compared to the No-Action Alternative.				
Energy				
Operations-related energy consumption in 2031 (in gallons of diesel fuel [gal.])	Approximately 167,866 gal.	Same as Southern Rail Alternative	Approximately 510,640 gal.	Rail: approximately 529,870 gal. CMV: approximately 1,909,095 gal.
Impact Conclusion: Either the Southern or Northern Rail Alternative would decrease train travel distance, reducing energy consumption by approximately 362,000 gallons of diesel fuel compared to the No-Action Alternative. The associated CMV Facility would reduce truck travel distance and idling time, reducing energy consumption by approximately 1,398,455 gallons of diesel fuel.				
Cultural Resources				
Potentially affected National Register-eligible above-ground resources	None	Same as Southern Rail Alternative	None	N/A
Potentially affected National Register-eligible below-ground resources	None	Same as Southern Rail Alternative	None	N/A

Resource and Impact	Southern Rail Alternative	Northern Rail Alternative	Associated CMV Facility	No-Action Alternative
Impact Conclusion: OEA conducted surveys and identified no above-ground or archaeological National Register-listed or -eligible resources in the Area of Potential Effects. Therefore, there would be no historic property affected by either the Southern or Northern Rail Alternative, or the associated CMV Facility. However, OEA ~~preliminarily~~ recommends mitigation requiring GER to conduct additional archaeological survey and monitoring prior to drilling piles for new bridge piers on the rail line to confirm the presence or absence of deeply buried cultural deposits (**MM-Cultural-01** and **MM-Cultural-02**).				