No. 23-975

In the

Supreme Court of the United States

SEVEN COUNTY INFRASTRUCTURE COALITION and UINTA BASIN RAILWAY, LLC,

Petitioners,

v.

EAGLE COUNTY, COLORADO et al.,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the District of Columbia Circuit

JOINT APPENDIX
Volume II of II

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Section 3.15, *Unita Basin Railway, Final Environmental Impact Statement*, STB Docket No. FD 36284 (Aug. 2021)

3.15 Cumulative Impacts

This section describes the cumulative impacts that could result from the addition of impacts from the proposed rail line to impacts of other past, present, and reasonably foreseeable future projects and actions. The subsections that follow describe the cumulative impacts study area; the methods used to analyze cumulative impacts; past, present, and reasonably foreseeable future actions that could contribute to cumulative effects; and cumulative impacts by resource topic.

3.15.1 Analysis Methods

OEA followed the guidelines outlined in the CEQ handbook titled *Considering Cumulative Effects under the National Environmental Policy Act* (CEQ 1997) to evaluate whether cumulative impacts could result from adding impacts of constructing and operating the proposed rail line to impacts of past, present, and reasonably foreseeable future projects. Based on the CEQ guidance, OEA undertook the following steps to evaluate the cumulative impacts from construction and operation of the proposed rail line.

- OEA defined the geographic and temporal scope of the analysis.
- OEA relied on information from other agencies and organizations about reasonably foreseeable projects and actions that are beyond the scope of the Board's authority.

- OEA considered impacts of other past, present, and reasonably foreseeable future actions that relate to the geographic and temporal scope of the proposed rail line.
- OEA reached conclusions based on the best available data at the time of the analysis.

3.15.2 Cumulative Impacts Study Area

The cumulative impacts study area includes the areas identified for oil and gas development as shown on Figure 3.15-1. Consistent with past OEA practice, OEA used a 20-year time period for the analysis, extending from 2020 to 2040. OEA defined the cumulative impacts study area for each resource that would be affected by construction and operation of the proposed rail line, as described in Section 3.15.5, *Cumulative Impacts by Resource*. Some cumulative impacts study areas are identical to the resource study areas described for the analysis of direct and indirect effects in Section 3.1, *Vehicle Safety Delay*, through Section 3.13, *Socioeconomics*, of this ~~Draft~~ EIS. Other resources have a larger cumulative impacts study area.

3.15.3 Affected Environment

The exact location of the proposed rail line would depend on which Action Alternative, if any, the Board authorizes. Any of the Action Alternatives would have the same two terminus points in the Basin near Myton and Leland Bench, Utah, and the same connection with the existing UP rail line near Kyune, Utah. Figure 3.15-1 shows the Action Alternatives along with the other relevant projects included in this cumulative impacts analysis. The overall geographic region is primarily rural and sparsely populated.

Predominant land uses include oil and gas production, ranching and farming, and rural residential development on subdivided ranch land.

Figure 3.15-1. Past, Present, and Reasonably Foreseeable Future Actions

(See foldout next page)

Figure 3.15-1. Past, Present, and Reasonably Foreseeable Future Actions

The proposed rail line is located primarily within the Colorado Plateau ecoregion, composed of Semiarid Benchlands and Canyonlands, Escarpments, and the Uinta Basin Floor subregions. The region provides habitat for special-status species and big game wildlife species such as elk (Cervus canadensis), mule deer (Odocoileus hemionus), pronghorn antelope (Antilocapra Americana), Western moose (Alces andersoni), and bighorn sheep (Ovis canadensis). Cultural resources include homestead cabins and nationally significant Fremont, Ute, and Archaic rock art and structures. The study area includes land managed by the Forest Service, BLM, state of Utah, and Ute Indian Tribe. Several BLM special designations are also located in this region, including Areas of Critical Environmental Concern (ACECs), Lands with Wilderness Characteristics, and Special Recreation Management Areas. Forest Service lands include Inventoried Roadless Areas (IRAs). Public lands in the study area support a variety of recreational activities including hunting, fishing, hiking, picnicking, bicycling, camping, horseback riding, nature viewing, OHV riding, scenic driving, and winter sports.

3.15.4 Other Past, Present, and Reasonably Foreseeable Future Actions

3.15.4.1 Oil and Gas Development

Oil and Gas Production

Oil and gas refer generally to fluid petroleum products that are derived from organic material deposited millions of years ago and now lie underground. Over time, heat and pressure transformed those raw materials into energy-rich

hydrocarbon liquids and gases. Oil and gas are produced by drilling wells into the formations that contain oil and gas resources. After well sites are selected, they are prepared for drilling by construction of a well pad and supporting infrastructure. Drilling involves a drill rig, associated equipment such as pumps, and truck trips. After the wells are drilled, they are completed using a variety of techniques depending on the characteristics of the formation, such as hydraulic fracturing to create fractures in the rock. Hydraulic fracturing allows fluids to more freely flow from the formation into the well, where the fluids flow up the well to the surface. Oil, gas, and/or water produced by a well are separated at the well site or are transported to nearby facilities for separation. OEA anticipates that, if the Coalition were to construct and operate the proposed rail line, some of the crude oil produced in the Basin would be trucked from wells to rail terminals near Myton and Leland Bench for loading into trains.

The Coalition estimates that rail traffic on the proposed rail line would range from 3.68 trains per day (low rail traffic scenario) and 10.52 trains per day (high rail traffic scenario), on average, depending on future market conditions. The trains would primarily transport crude oil and would have the capacity to ship between approximately 130,000 and 350,000 barrels of oil each day, on average, out of the Basin. The actual volume of oil transported on the proposed rail line and the number of trains would depend on various independent variables and factors including general domestic and global economic conditions, commodity pricing, and the strategic and capital investment

decisions of oil producers and their customers (Coalition Response to IR#2).

For the analysis of potential cumulative impacts, OEA developed two potential scenarios for future oil and gas development in the Basin that correspond to the Coalition's estimated range of rail traffic. Under the low oil production scenario, total oil production in the Basin would increase by an average of 130,000 barrels per day compared to historical production levels. Under the high oil production scenario, total oil production in the Basin would increase by an average of 350,000 barrels per day. Historical production has varied substantially from year to year. Where the analysis required quantification of historical production, OEA used 90,000 barrels per day as a conservative baseline level of production, which is slightly lower than the maximum historical production from the Basin of 94,000 barrels per day. Although OEA expects that the proposed rail line would divert some oil that in the past has been trucked to terminals outside the Basin to rail transportation, OEA assumed, for the purposes of the cumulative impacts analysis, that all oil transported on the proposed rail line would come from new production. This is a conservative assumption because it may overstate total future oil production in the Basin and, therefore, potential cumulative impacts.

OEA assumed that future oil and gas development, including well drilling and operation along with construction and operation of related facilities, such as pipelines, would occur throughout the Basin in the fields shown in Figure 3.15-1. The exact locations of new oil and gas development would

depend on many factors, including domestic and global demand, as well as future decisions by private, state, tribal, and federal owners of mineral rights in the Basin. The Monument Butte Oil and Gas Development Project, which proposes to develop up to 5,750 oil and gas wells in an area located about 6 miles south of Myton, Utah, is an example of a proposed oil and gas development project in the region (BLM 2016). Crude oil produced by the Monument Butte project wells potentially could be transported on the proposed rail line.

Well Development

To assess the impacts of increased oil and gas development as part of the cumulative analysis, OEA estimated the number of oil wells that would need to be constructed and operated to satisfy the expected increased oil production volume scenarios of 130,000 or 350,000 barrels per day, respectively. Based on consultation with UGS regarding current drilling technologies and methods in the Basin, OEA estimated that new horizontal wells would produce an average 366 barrels of crude oil per day during the first year of production (Vanden Berg pers. comm.). OEA reviewed data about vertical wells drilled between 2014 and 2018 from the Utah Division of Oil, Gas, and Mineral (UDOGM) to estimate an average initial production rate of 66 barrels of crude oil per day for new vertical wells. OEA used historical well data from UDOGM's completion and production databases to create a 15-year oil production decline curve for horizontal and vertical wells.[1] Based on consultation

[1] A duration of 15 years was selected to balance the two competing analysis interests: (1) a robust decline curve and (2)

with UGS, OEA assumed that 20 percent of the new wells drilled each year would be vertical wells and 80 percent would be horizontal wells (Vanden Berg pers. comm.; UGS 2019).

OEA used the initial production rates, decline curves, and estimated ratio of horizontal wells to vertical wells to calculate the annual production rate of an average well in each year of its lifetime and the number of wells that would need to be constructed each year to meet the oil production volume expected in the respective scenarios. For simplicity, OEA assumed it would take one year to construct all the wells before they would start producing oil at their expected annual rate. In the second year of the project (i.e., the first year of production), the wells constructed in the first year would be operating at the production volume needed to satisfy each of the two oil production scenarios (i.e., 130,000 or 350,000 barrels per day).

By the third year of the project (i.e., the second year of production) the wells constructed in the first year would not produce enough to satisfy the production scenarios because the average well production volume decreases over a well's lifetime.

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an accurate estimate of well production volumes. A longer duration captures a more complete decline curve, including the later period when a well's annual production begins to plateau from year to year. On the other hand, a shorter duration captures the production volumes of wells that were more recently drilled in the Basin. Compared to wells drilled in earlier years, these wells are more likely to use the same technologies and drilling processes of future wells analyzed under the cumulative analysis and are therefore more representative. Balancing the tradeoffs of optimizing interests (1) and (2), OEA selected a 15-year period of well volume data (i.e., 2004 to 2019).

Therefore, additional wells would need to be constructed in the second year of the project to supplement the reduced production from the wells constructed in the first year. In the third year, the old (first year) and new (second year) wells combined would produce the volume needed to satisfy the production scenarios, and so forth. As the decline curve starts to plateau in later years, fewer and fewer wells would need to be constructed each year. OEA chose year 15 of the analysis to represent steady state development, as this was the analysis year when the number of wells constructed per year was closest to the number of new producing wells in that year (i.e., wells that were constructed in the 14th year). Production from an oil well will steadily decline. By year 15, OEA estimated that an average horizontal well could produce approximately 40 barrels per day and an average vertical well could produce approximately 7 barrels per day.

Based on this approach, steady state annual development under the low oil production scenario requires construction of approximately 80 wells, plus production from 83 wells for each year of production (i.e., under the steady state assumption there are 83 wells of each "vintage" steady state year). Therefore, the steady state total number of wells in the field in any year is 83 wells times 15 years, or 1,245 wells. Under the high oil production scenario, there would be 217 wells constructed and 222 wells operating for each steady state year of production. Therefore, the steady state total number of wells in the field in any year is 222 wells times 15 years, or 3,330 wells. As an example, Table 3.15-1 and Table 3.15-2 display the estimated annual well development for the low oil

production scenario and high oil production scenario, respectively.

Table 3.15-1. Estimated Well Development for the Low Oil Production Scenario

Year	New Wells in Production	Wells in Construction	Total Wells in Production	Oil Produced (barrels/day)[a]
1	0	425	0	>=130,000
2	425	184	425	>=130,000
3	184	148	609	>=130,000
4	148	130	757	>=130,000
15 (steady state)	83	80	1,245[b]	>=130,000

Notes:

[a] The number of wells in production and construction in any given year is based on satisfying the condition that at least 130,000 barrels of oil be produced per day.

[b] Steady state development represents the average year of production. For the steady state year, total wells in production are equal to new wells in production (83) multiplied by the number of years from initial development (15).

Sources: UDOGM ~~Mining~~ 2020; UGS 2019; Vanden Berg pers. comm.

Table 3.15-2. Estimated Well Development for the High Oil Production Scenario

Year	New Wells in Production	Wells in Construction	Total Wells in Production	Oil Produced (barrels/day)[a]
1	0	1,144	0	>=350,000
2	1,144	496	1,144	>=350,000
3	496	398	1,640	>=350,000
4	398	349	2,038	>=350,000
15 (steady state)	222	217	3,330[b]	>=350,000

Notes:

[a] The number of wells in production and construction in any given year is based on satisfying the condition that at least 350,000 barrels of oil be produced per day.

[b] Steady state development represents the average year of production. For the steady state year, total wells in production are equal to new wells in production (222) multiplied by the number of years from initial development (15).

Sources: UDOGM~~Utah Division of Oil, Gas, and Mining~~ 2020; UGS 2019; Vanden Berg pers. comm.

OEA's estimate of oil well development exceeds the estimates provided by the Coalition. In response to an Information Request from OEA, the Coalition estimated that, on average, under the low oil production scenario there would be 130 wells operating and 29 under construction and under the high oil production scenario there would be 350 wells operating and 70 under construction. OEA's independent analysis as described in this section

determined that the number of producing wells would likely need to be much greater than the Coalition's estimates to produce the low and high oil production scenario volumes.

OEA's estimates of future oil production represent a reasonably foreseeable development scenario based on historical data about the Basin and consultation with UGS. Oil and gas development technology is continually evolving. Changes in technology could affect the number of wells, the typical well mix (i.e., vertical/directional versus horizontal), and the volume of oil produced per well that would be carried on the proposed rail line in the future.

Support Facilities and Truck Trips

Ancillary facilities that support oil field development are expected to include access roads, electric power distribution lines, well pads, surface or subsurface pipelines, and storage tanks. Construction activities would involve vegetation clearing and surface disturbance for the construction of new wells and ancillary facilities. The extent of surface disturbance for construction of new wells and ancillary facilities would depend, in part, on whether the new wells represent infill development within an existing field, including additional well drilling from an existing well pad, or new development within a previously undeveloped area of the field.

OEA assumed that increased production for oil transported on the proposed rail line would originate from oil fields in the Basin, as shown in Figure 3.15-1. OEA estimated that 622 truck trips per day would transport oil from oil fields to the terminals under the low oil production scenario and 1,675 truck trips per

day would transport oil from oil fields to the terminals under the high oil production scenario (Appendix M, *Air Quality Emissions and Modeling Data*).

Rail Terminals

If the Coalition were to construct and operate the proposed rail line, OEA anticipates that new rail terminals would be constructed at the terminus points near Myton and Leland Bench to transfer commodities between trucks and rail cars. The Coalition is not seeking Board authority to construct new rail terminals as part of the proposed rail line. The Coalition anticipates that third parties, such as firms that specialize in oil field or freight logistics, would construct and operate the new rail terminals if the proposed rail line is authorized. This has been a common practice for development of truck-to-rail crude oil terminal facilities, for example in North Dakota, as the movement of crude oil in the United States by rail has increased with increasing oil production (Opendatasoft 2019).

Because new rail terminals are not part of the Coalition's proposal or the Board's decision-making in this proceeding, OEA has only general information regarding the potential design of those facilities based on similar projects elsewhere in the country.

Truck-to-rail terminal facilities providing for tank car loading and storage can have several layouts, including the following.

- Multiple relatively short (i.e., 20- to 40-car) tracks
- One or more long (i.e., 10,000-foot) tracks
- One or more loop tracks

If adequate and suitable land is available, loop tracks are often used for handling bulk commodity trains, such as crude oil, coal, or grain because loop tracks minimize the train movements required, which creates efficiencies. OEA reviewed publicly available information about terminals in North Dakota and Colorado and found that terminals with the capacity to load between a few trains per week up to multiple trains simultaneously range in size from a few hundred to more than 500 acres, and that size is not correlated with train-loading capacity. The review of topography and current land development indicate that the Myton and Leland Bench areas could be suitable for loop track facilities plus sidings to accommodate rail-car storage and handling of other commodities. Based on OEA's review of information on existing terminals in other areas of the country, OEA assumed that terminals at Myton and Leland Bench would be 400 acres each and would have two double-tracked loops with 10,000 feet of additional car storage track for both the low oil production scenario and high oil production scenario.

The rail terminal developers would determine the design and features of any terminals, where storage and transfer of crude oil between trucks, tanks, and rail cars would be subject to the Spill Prevention, Control, and Countermeasure regulations per 40 C.F.R. Part 112. Based on existing terminals developed elsewhere, the basic features for such terminals, in addition to the required rail track, would include facilities for offloading crude oil from tanker trucks, heated crude oil storage tanks and associated piping and pumping, multiple rail tank car loading, facilities for handling nonoil commodities,

administration and utility buildings, and access roads. A mobile crane would be used for loading/offloading non-oil commodities, and open (lay down) areas would be provided for temporary storage of such commodities. These features are illustrated in Figure 3.15-2.

Figure 3.15-2. Example Crude Oil Rail Loading Terminal

As shown, multiple tanks would be anticipated as part of each terminal facility. Air emissions from tanks and unloading/loading would be controlled by flaring and/or vapor combustion units based on each terminal's permit issued by the Utah Department of Environmental Quality. To account for congestion, weather, or other considerations and potential sources of schedule delay, OEA anticipates that terminals would have approximately 5 days of oil-storage capacity.

For the low oil production scenario, OEA assumed that each terminal would have four heated tanks with an approximate 350,000-barrel total storage capacity. Each terminal would have the capacity to load, on average, one train (approximately 70,000 barrels) per day. OEA assumed that the facility would be able to unload at least six trucks simultaneously, load crude oil into at least 12 rail cars simultaneously, and load a unit train in approximately 12 hours. OEA further assumed, again based on readily available information on North Dakota and Colorado terminals, that each facility would employ approximately 50 personnel, and peak construction employment would be 300 personnel for each facility.

For the high oil production scenario, OEA assumed each terminal would have eight heated tanks with an approximate 900,000-barrel total storage capacity and would have the capacity to load three trains per day. OEA assumed the facility would be able to unload at least 12 trucks simultaneously, load crude oil into at least 24 rail cars and two trains simultaneously, and load a unit train in approximately 12 hours. OEA further assumed that each facility would employ approximately 125 personnel, and that peak construction employment would be 300 personnel.

3.15.4.2 Other Projects and Actions

OEA identified other projects and actions in the cumulative impacts study area with the potential to contribute to cumulative effects (Figure 3.15-1). The other projects and actions considered include infrastructure improvements (i.e., airport expansion, facility improvements, stormwater infrastructure),

watershed improvement projects, road improvements projects, Forest Service actions, interstate electric power transmission lines, and cultural resources preservation. These projects are briefly described below; details of specific projects are included in Appendix R, *Other Projects and Actions Considered in the Cumulative Impacts Analysis*.

- **Facility and other infrastructure improvements.** These projects include improvements to the Roosevelt Airport runway and taxiway, new construction or improvements to Peerless Port of Entry facilities, construction of a new library, and stormwater infrastructure improvements.
- **Watershed improvement projects.** Watershed improvement projects address flood protection, sedimentation, water quality, watershed protection, water supply and irrigation infrastructure, agricultural water management, and public recreation development.
- **Road improvement projects.** Road improvement projects include road reconstruction, road widening, rehabilitation of roadway surfaces, drainage improvements, addition of guardrails and shoulder widening, and landscaping.
- **Forest Service actions.** Forest Service actions include forestry management and restoration projects, OHV trail construction, removing a historical guard station, and managing grazing allotments on Forest Service-managed land.

- **BLM actions.** BLM actions include fluid mineral leasing, surface leasing for grazing, issuance and maintenance of right-of-way grants, and management actions to implement the BLM's Resource Management Plans including managing BLM-administered land for recreation, hunting, fishing, wildlife habitat, and special designations.
- **Interstate electric power transmission.** Two planned interstate electric power transmission projects cross the cumulative impacts study area: the Gateway South Transmission Line and the TransWest Express Transmission Line. Following the release of the Draft EIS, BLM notified OEA that a segment of the proposed route for the planned Gateway South Transmission Line in the Emma Park area had been moved south to be closer to the proposed rail line, as shown in Figure 3.15-1. The cumulative impact analysis reflects the new location of this planned transmission line.
- **Cultural resources preservation.** The U.S. Department of the Interior Bureau of Reclamation (Bureau of Reclamation) entered into a Programmatic Agreement with the Utah State Historic Preservation Officer that will govern the mitigation for adverse effects on irrigation infrastructure for projects for which the Bureau of Reclamation is consulting under Section 106 of the National Historic Preservation Act. The Programmatic Agreement applies to projects where the Bureau of Reclamation is the lead federal agency (regardless of land status) and applies to projects that have a determination of

adverse effect on historic properties, which include irrigation infrastructure. The duration of the Programmatic Agreement is 10 years from the date it was fully executed (February 6, 2020).

- **Crude oil processing facility.** Uintah Advantage Energy Associates is proposing to develop a crude oil processing facility in the Basin.

3.15.5 Cumulative Impacts by Resource

3.15.5.1 Vehicle Safety and Delay

Cumulative Impacts Study Area

The vehicle safety and delay cumulative impacts study area includes the public roadways in the Basin that could have increased vehicle traffic as a result of construction and operation of the proposed rail line. The cumulative impacts study area for vehicle safety and delay is the same as the project study area for the analysis of direct and indirect effects.

Cumulative Impacts

Oil and Gas Development

Construction and operation of any of the Action Alternatives would, along with oil and gas development activities in the Basin, contribute to increased vehicle trips in the cumulative impacts study area that could increase the potential for vehicle safety and delay impacts. OEA anticipates that construction of the proposed rail line would occur during the same time period as terminal construction and that both activities would contribute additional vehicle trips on study area roads. To be conservative, OEA based the cumulative impacts analysis for the construction period on the Whitmore Park Alternative because the Whitmore Park Alternative would have

the greatest number of vehicle trips, and therefore the most vehicle safety and delay impacts, in any single year (Section 3.1, Vehicle Safety and Delay, Table 3.1-7). Table 3.15-~~32~~3 displays the estimated annual vehicle traffic, average annual daily vehicle trips, and one-way design hour volume (i.e., a measure of traffic at the daily 1-hour peak volume) that would be associated with construction of the terminals and the proposed rail line, which is the year that OEA expects that construction-related traffic would be the highest.

Table 3.15-3. Estimated Traffic for Terminal Construction and Proposed Rail Line Construction

Activity	Annual Trips	Average Annual Daily Traffic	Design Hour Volume
Terminal construction	438,000	1,200	90
Rail line construction (Whitmore Park Alternative)	1,519,498	4,163	312
Total	1,957,498	5,363	402

Vehicle trips during construction of the proposed rail line, combined with terminal construction, would generate an estimated 402 vehicle trips per hour during peak hour traffic flow. These trips would be distributed over multiple roadways within the Basin. As described in Section 3.1, *Vehicle Safety and Delay*, the major roadways in the study area all have substantial additional capacity. For purposes of comparison, OEA assumed vehicle traffic would be distributed evenly among the major roadways in the study area. Table 3.15-~~43~~4 displays the used roadway capacity for the five major roadways in the study area under baseline conditions during the construction period, which is assumed to be the first year of construction in 2022, and the increase in capacity used during construction of the proposed rail line and

terminals. Used roadway capacity would increase by a maximum of 5 percent on the major roadways, leaving substantial remaining capacity.

Table 3.15-4. Percentage of Used Roadway Capacity during Terminal Construction and Proposed Rail Line Construction

Route	Baseline (%)	Increase (%)	Total (%)
US 6	49	5	55
US 191	13	5	18
US 40	35	5	40
9 Mile Canyon Road	16	5	21
8000S/8250S	2	5	7

Notes:
Percentages may not sum to total due to rounding.
US 6 = U.S. Highway 6; US 191 = U.S. Highway 191; US 40 = U.S. Highway 40

In addition to the major roadways, vehicles used for terminal construction would also use a network of local roads, anticipated to include Leland Bench Road, 7500 E~~,~~ /AR-88, and Sandwash Road/6000 W/~~58885~~5880 W. Traffic on these roads would increase during construction of the terminals and could result in delays and localized road damage from construction vehicles and heavy equipment. Traffic data are not available for these and other local roads, but in general traffic would be lower than the major roads as they are rural and primarily carry local traffic. The anticipated increase in vehicle use on these local roads could result in vehicle delays, although the impacts would be temporary during the construction period. Damage to local roads as a result of construction equipment could be addressed through road use or easement agreements between the rail terminal developers and local government agencies and landowners. Because of the ample roadway capacity in the study area and temporary nature of the impact,

traffic from construction of the proposed rail line, when combined with traffic from terminal construction would not result in significant cumulative impacts on vehicle delay.

Once the proposed rail line and the terminals are constructed, oil and gas construction and operations and terminal operations would increase until the steady state production volumes described above are achieved. These activities would generate vehicle trips as production wells are explored and placed into production and as the rail terminals and proposed rail line operate. OEA has based the cumulative impacts analysis for the steady state operational period on the Wells Draw Alternative because the Wells Draw Alternative would have the greatest number of vehicle trips during rail operations (Section 3.1, *Vehicle Safety and Delay*, Table 3.1-10). Table 3.15-54 displays the estimated annual vehicle traffic, annual average daily vehicle trips, and design hour volumes that would be associated with steady state oil well construction and operation, terminal operations, and operations of the proposed rail line.

Table 3.15-5. Estimated Annual Traffic for Steady State Oil and Gas Development and Operation of Proposed Rail Line

	Annual Trips	Average Annual Daily Traffic	Design Hour Volume
Low Oil Production Scenario			
Well construction	29,033	80	6
Well operations	301,130	825	62
Terminal operations	527,060	1,444	108
Oil and gas development subtotal	*857,223*	*2,349*	*176*
Rail line operations (Wells Draw Alternative)	12,522	34	3
Total	**869,745**	**2,383**	**179**
High Oil Production Scenario			
Well construction	78,752	216	16
Well operations	809,984	2,219	166
Terminal operations	1,405,250	3,850	289
Oil and gas development subtotal	*2,293,986*	*6,285*	*471*
Rail line operations (Wells Draw Alternative)	52,672	144	11
Total	2,346,658	6,429	482

Under the high oil production scenario, 471 trips during one-hour peak traffic volume would be produced from oil and gas development activity. Operation of the proposed rail line would also generate additional vehicle trips, primarily associated with employee commuting, but the number of vehicle trips would be relatively low at about 11 vehicle trips per hour. Similar to what would occur during rail construction, these vehicular trips would be distributed over multiple roadways within the Basin. Table 3.15-~~65~~ displays the used roadway capacity for the five major roadways in the study area under baseline conditions (i.e., assumed to be the first year of railway operations in 2026) and the increase in used capacity used during steady state oil and gas development and operation of the proposed rail line. As the distribution of traffic on area roadways is unknown, OEA assumed that these five major

roadways would carry an approximately even volume of traffic. Traffic would also be disbursed along other local public and private roadways throughout the cumulative impacts study area. Near the rail terminals, these roads include Leland Bench Road, 7500 E~~,~~ /AR-88, and Sandwash Road/6000 W/~~5888~~5880 W. Based on consultation with the Ute Indian Tribe, these and other local roads near the rail terminals are used to access communities with tribal populations, such as Randlett and Fort Duchesne. OEA understands that tribal members are concerned about the potential for traffic and road damage on these roads associated with the increased vehicle trips from terminal construction and operations. Increases in traffic to support terminal operations on these roads could be substantial, and without road improvements such as additional turning lanes, would result in vehicle delays. Improvements to public roadways needed to address increased traffic and wear and tear associated with the proposed rail line, as well as other reasonably foreseeable future actions would be paid for by federal, state, and local taxes.

Table 3.15-6. Used Roadway Capacity during Steady-State Oil and Gas Development and Operation of Proposed Rail Line

	Low Oil Production Scenario (%)			High Oil Production Scenario (%)		
Route	**Baseline**	**Increase**	**Total**	**Baseline**	**Increase**	**Total**
US 6	60	2	62	60	6	66
US 191	14	2	17	14	6	21
US 40	37	2	39	37	6	43
9 Mile Canyon Road	19	2	21	19	6	25
8000S/8250S	2	2	5	2	6	9

Notes:
Percentages may not sum to total due to rounding.
US 6 = U.S. Highway 6; US 191 = U.S. Highway 191; US 40 = U.S. Highway 40

Under the high oil production scenario, used roadway capacity would increase by a maximum of 6 percent on the major roadways, leaving substantial remaining capacity. The increased vehicle traffic from oil and gas development would, therefore, have limited impacts on vehicle delay on major roadways. OEA concludes that because of ample roadway capacity and the dispersion of the increased traffic from oil and gas development, impacts on major roadways from the proposed rail line, when combined with traffic from oil and gas development would result in negligible cumulative impacts on vehicle delay. Local roads, however, have smaller roadway capacity, and OEA concludes that the increase in traffic on local roads used to serve the terminals could result in significant cumulative impacts on vehicle delay in the absence of road improvements or other mitigation.

For the analysis of vehicle safety, OEA evaluated the increase in annual VMT because a higher VMT would correspond to a higher potential for vehicle accidents. Table 3.15-7~~6~~ displays the annual VMT that would be associated with construction of the terminals and the proposed rail line. For comparison, the table also shows the county-wide VMT for Duchesne and Uintah Counties, the two counties in which the major portion of the proposed rail line would be constructed, and the two counties in which the terminals would be constructed. Total VMT per year would be approximately 15 percent of the VMT per year in Duchesne and Uintah Counties. The increase in VMT from construction of the terminals and proposed rail line would be primarily from commercial vehicles operated by professional, licensed and trained operators, who would be required to adhere to federal

and state safety standards. Again, OEA based the cumulative impacts analysis for the construction period on the Whitmore Park Alternative because the Whitmore Park Alternative would have the greatest number of vehicle trips in a single year (Section 3.1, *Vehicle Safety and Delay*, Table 3.1-7). Vehicle miles traveled from any of the Action Alternatives, when combined with VMT from terminal construction would not result in significant cumulative impacts on vehicle safety because of the commercial vehicle operator safety standards that would apply and the available roadway capacity on major roadways in the Basin.

Table 3.15-7. Annual Vehicle Miles Traveled for Terminal Construction and Proposed Rail Line Construction in 2022

Activity	VMT/year	County-wide VMT[a]	Percent of County-wide VMT
Terminal construction	24,191,536	822,422,977	2.9
Rail line construction (Whitmore Park Alternative)	100,670,533		12.2
Total	**124,862,069**	**822,422,977**	**15.2**

Notes:
[a] Duchesne and Uintah Counties.
VMT = vehicle miles traveled

Table 3.15-87 shows the annual VMT associated with steady state oil well construction and operation, terminal operations, and operations of the proposed rail line. Under the high oil production scenario, total VMT per year would be approximately 6 percent of the VMT per year in Duchesne and Uintah Counties. OEA again based the cumulative impacts analysis for the steady state operational period on the Wells Draw Alternative because the Wells Draw Alternative would have the greatest number of vehicle trips during operations (Section 3.1, *Vehicle Safety and Delay*, Table 3.1-10).

Table 3.15-8. Annual Vehicle Miles Traveled for Steady-State Oil and Gas Development and Operation of Proposed Rail Line

	VMT/year	County-wide VMT[a]	Percent of County-wide VMT
Low Oil Production Scenario			
Well Construction	362,912	822,422,977	<0.1
Well Operation	3,764,125		0.5
Terminals Operation	12,225,497		1.5
Oil and Gas Development Subtotal	16,352,534		2.0
Rail line operations (Wells Draw Alternative)	-15,409		0.0
Total	**16,337,125**	**822,422,977**	**2.0**
High Oil Production Scenario			
Well Construction	984,398	822,422,977	0.1
Well Operation	10,124,801		1.2
Terminals Operation	32,595,682		4.0
Oil and Gas Development Subtotal	43,704,881		5.3
Rail line operations (Wells Draw Alternative)	2,346,551		0.3
Total	**46,051,432**	**822,422,977**	**5.6**

Notes:
[a] Duchesne and Uintah Counties.
VMT = vehicle miles traveled

Vehicle safety in the study area is generally good; crash rates in Uintah and Duchesne Counties, where most oil and gas activity is occurring, is below the national average. Because of the commercial vehicle operator safety standards, the available roadway capacity in the Basin, and low existing crash rates, VMT from any of the Action Alternatives, when combined with VMT from oil and gas development would not result in significant cumulative impacts on vehicle safety.

Other Projects and Actions

The proposed rail line would affect vehicle safety and delay, and would result in cumulative impacts on vehicle safety and delay when combined with impacts from other projects. Construction of reasonably foreseeable projects within the cumulative impacts

study area, including the Duchesne County Myton Main Street Project, US 40 Improvement Project~~, removal of the Indian Canyon Guard Station~~, Uintah Advantage Energy Associates crude oil processing facility, and additional road improvement projects (Figure 3.15-1, Items 4 to 15) could occur during the same time frame as construction of the proposed rail line, resulting in an increase in vehicle traffic. Construction on ~~these~~ area roadways may also alter traffic patterns temporarily as drivers avoid construction. Because the study area is largely rural with limited detour routes, temporary impacts on vehicle delay could occur for the duration of the rail construction phase. Operations of the Uintah Advantage Energy Associates crude oil processing facility, which would be located near the proposed rail line terminus and one of the rail terminals at Leland Bench, would require trucks to transport products to and from the facility, contributing to increased traffic on area roadways. When combined with the increased traffic from operations of proposed rail line and rail terminals described previously, the effects of vehicle delay on local roadways, such as Leland Bench Road and 7500 E/AR-88, could be significant. Relative to existing road capacity in the cumulative impacts study area, impacts on major roadways from increased traffic due to the other projects and the proposed rail line would be low. Implementation of the mitigation measures listed in Chapter 4, *Mitigation*, such as installation of detour signage during construction, would also reduce the impacts on safety and delay resulting from the proposed rail line. Therefore, OEA concludes that the contribution of impacts from the proposed rail line to cumulative impacts on major

roadways would not be significant. Impacts on local roads used to serve the crude oil processing facility and terminal at Leland Bench could result in significant cumulative impacts on vehicle delay in the absence of road improvements or other mitigation.

3.15.5.2 Rail Operations Safety

Cumulative Impacts Study Area

OEA defined the rail operations safety cumulative impacts study area as the track for each of the Action Alternatives. The cumulative impacts study area for rail operations safety is the same as the project study area for the analysis of direct and indirect effects.

Cumulative Impacts

Oil and Gas Development

As noted previously, the two oil production scenarios would have different levels of associated equipment at the new rail terminals at Myton and Leland Bench. Table 3.15-98 summarizes the equipment OEA assumed for the purposes of the cumulative impacts analysis for rail operations safety.

Table 3.15-9. Assumed Terminal Facility Equipment

Equipment	Low Oil Production Scenario	High Oil Production Scenario
Heated storage tanks	4	8
Unloading racks	6+	12+
Loading racks	12+	24+
Train tracks for active loading	1	2

These terminal operations each have the potential to have accidents involving injuries to workers; damage to rail cars, trucks, and equipment onsite; or possibly oil spills resulting from equipment failures, human errors, or external events such as vandalism or extreme weather. The terminal operator's use of

proper procedures, protective equipment, and training would limit the likelihood of injury or damage. Potential releases would most likely be small leaks from hoses, pipes, valves, or fittings. Larger releases would be much less likely and might be from major pipe breaks, storage tank leaks, or damage to rail cars. Since terminal operations would all take place in a fixed location and the terminals would be constructed in compliance with applicable local, state, and national standards and guidelines (such as 40 C.F.R. Part 112[2]), OEA expects that the terminal facilities would implement and acquire appropriate worker protection, train and truck movement controls, overfill control systems, excess flow valves, emergency response systems and procedures, spill-containment features, and fire protection equipment. This would minimize both the potential for accidents of any kind and the potential consequences of accidents. These anticipated terminal operations are the only identified projects that could contribute to cumulative impacts related to rail operations safety.

Other Projects and Actions

Aside from the potential rail terminals, other planned or proposed projects and actions would not have direct impacts on rail operations safety (or vice versa) since they do not have any rail operations proposed. Therefore, no additional cumulative impacts analysis is warranted.

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[2] 40 C.F.R. Part 112 addresses oil pollution prevention including spill prevention, control, and countermeasures.

3.15.5.3 Water Resources

Cumulative Impacts Study Area

OEA defined the water resources cumulative impacts study area for surface waters, floodplains, and wetlands as the hydraulic unit code (HUC) 10 watersheds that would be crossed by the proposed rail line (Figure 3.3-1). OEA did not assess cumulative groundwater impacts specifically because, as described in Section 3.3, *Water Resources*, OEA expects that, because impacts would generally be limited to the rail line footprint, or are not anticipated, the proposed rail line would not have adverse impacts on groundwater use (i.e., supply/drawdown), groundwater recharge, ~~or~~ groundwater quality~~.~~, or shallow groundwater flow.

Cumulative Impacts

Oil and Gas Development

Oil and gas development could affect water resources. Past and ongoing oil and gas well construction and operation projects have resulted in ground clearing, soil erosion, placement of fill material, installation of culverts in access roads, use of equipment, and maintenance (e.g., vegetation management) that have affected water resources throughout the study area. Similar activities from foreseeable future oil and gas development would similarly affect water resources; the impacts that would affect surface water, floodplains, and wetlands ~~resources~~ from oil and gas development are similar to those that would occur from the proposed rail line (Section 3.3.3.1, *Impacts Common to All Action Alternatives*). Oil and gas development could also result in accidental releases of crude oil into surface

waters at production sites or from tanker trucks. However, the properties of the waxy crude oils produced in the Basin would help reduce the potential impact and make cleanup easier than it would be for most crude oils, thereby helping to avoid or minimize the long-term chronic effects. In addition, oil and gas development could affect groundwater resources, depending on the methods of drilling used and the location of the development activities. Those groundwater impacts could include drawdown of aquifers as a result of water withdrawals for hydraulic fracturing or the discharge of fracturing fluids or wastewater into groundwater. However, as previously discussed, construction and operation of the proposed rail line are not anticipated to contribute to cumulative impacts on groundwater.

The extent of the cumulative impacts would depend on the location of an oil or gas well relative to the Action Alternatives, with a greater potential for a cumulative impact if oil and gas development is near an Action Alternative (i.e., same subwatershed). The distance of each Action Alternative to oil and gas development areas is about the same; therefore, the potential for cumulative impacts would be generally the same: 36.2 miles of both the Indian Canyon Alternative and Whitmore Park Alternative are within oil and gas development areas, and 36.6 miles of the Wells Draw Alternative are within oil and gas development areas. Because future oil and gas projects would be subject to applicable federal, state, and local permitting, cumulative impacts on water resources would be avoided or minimized through compliance with state and federal laws and regulations that protect water resources, including,

but not limited to, Clean Water Act (CWA) Sections 401, 402, 404, and National Flood Insurance Program and local floodplain management regulations.

Oil and gas well operations also produce a waste stream, including produced water, which is the largest waste stream component generated during oil and gas production. Produced water is natural groundwater that is extracted along with oil and gas; it is commonly saline and mixed with oil residues, so it must be either disposed of or treated and reused. Produced water disposal could result in cumulative surface water quality impacts depending on the disposal method. Current produced water disposal in the Basin consists of injection into deep wells, storage and evaporation in lined disposal ponds, and supplying water for flooding in enhanced oil recovering programs (UGS 2017). Of the current disposal methods, about 60 percent of the produced water is injected back into the ground via deep wells at sufficient depths, so as not to contaminate shallow aquifers, and where it can no longer be accessed or used; this is the most common method of produced water disposal in the United States (UGS 2018; USEPA 2020). USEPA regulates these injection wells through the Safe Drinking Water Act, which established the requirements and provisions for the Underground Injection Control Program.

Potential uses for future produced water from producing formations in the Basin include waterflooding for secondary recovery, drilling mud formulation, hydraulic fracturing fluid for well completion, and use for possible oil shale production (UGS 2017). None of the current disposal methods or

potential future produced water use involve discharging produced water to surface waters. While discharge of produced water is an option for oil and gas producers west of the 98th meridian, which includes Utah, it is a disposal option rarely used due to the cost associated with treating produced waters to a level suitable to discharge to surface waters, as well as the availability of other wastewater management options that are lower cost (USEPA 2020). If in the future treatment of produced waters becomes more cost-effective, discharges to surface waters could occur in the Basin. USEPA regulates produced water discharge under 40 C.F.R. Part 435 and the CWA Section 402 NPDES permit program to ensure there are no exceedances of water quality standards. Therefore, should produced water be discharged to surface waters in the future, OEA believes it would be unlikely to have adverse effects on water quality.

As discussed in Section 3.3, Water Resources, OEA concludes that the proposed rail line would result in significant impacts on surface waters and wetlands, including, in particular, the loss of wetland habitat and permanent changes to surface water hydrology from crossing structures and stream realignments. Future oil and gas projects could worsen these impacts if the projects were to take place near the Action Alternatives and affect the same surface waters or wetlands as the proposed rail line. If the mitigation set forth in this ~~Draft~~ EIS were implemented, the Coalition would need to take steps to avoid, minimize, or mitigate impacts on water resources in compliance with state and federal regulations that protect water resources, including CWA Sections 401, 402, and 404. Future oil and gas projects would also need to comply

with these and other regulations, which would lessen cumulative impacts on water resources.

The Action Alternatives would connect with new rail terminals at Myton and Leland Bench. The terminal area at Myton contains several ponds and emergent wetlands, as well as the Upper Pleasant Valley Canal and associated intermittent streams and canals. The terminal area at Leland Bench contains one intermittent stream and no wetlands. No floodplains, flood-prone soils, groundwater wells, or springs exist in either terminal area; therefore, there would be no cumulative impacts on these resources. Construction and operation of the terminals would disturb ground, remove vegetation, and add new impervious surfaces, which can all affect surface waters and wetlands within or adjacent to construction activities, including water quality and hydrology. Section 3.3, *Water Resources*, describes in detail how construction activities related to the proposed rail line would affect surface waters and wetlands. Impacts from terminal construction on surface water and wetlands would be similar to those from construction of the proposed rail line but would be smaller in extent because the terminals would have smaller footprints than the proposed rail line. The extent of potential impacts would depend on the exact location and layout of the terminals and if surface waters and wetlands could be avoided. OEA expects that impacts on surface waters and wetlands would be avoided, minimized, or mitigated through compliance with state and federal laws and regulations that protect these resources, including, but not limited to, CWA Sections 401, 402, and 404. If impacts from the terminals on surface waters and wetlands cannot be

avoided, construction of the proposed rail line and the new terminals would result in cumulative impacts on water resources in the area of the new terminals.

Other Projects and Actions

In addition to potential future oil and gas development, other past, present, and reasonably foreseeable future projects and actions could affect water resources. OEA identified 232 cumulative projects and actions in the study area, most of which are currently under construction or implementation or will be constructed or implemented in the foreseeable future (Figure 3.15-1 and Appendix R, *Other Projects and Actions Considered in the Cumulative Impacts Analysis*). Many of the cumulative projects and activities would disturb ground, remove vegetation, use construction equipment, and/or add new impervious surfaces, which can all affect water resources within or adjacent to project activities, including water quality and hydrology. The impact mechanisms that would affect water resources from these cumulative projects and activities would be similar to those that would occur from the proposed rail line (Section 3.3.3.1, *Impacts Common to All Action Alternatives*).

The extent of potential cumulative impacts would depend on the location of the cumulative project relative to the proposed rail line, with a greater potential for a cumulative impact if the activity is near the proposed rail line (i.e., same subwatershed). For example, two of the 232 cumulative projects overlap with the water resources study areas for the Action Alternatives (Section 3.3.1.1, *Study Areas*), including the Ashley National Forest grazing allotments and the

Gateway South Transmission Line. Therefore, these two projects would have the greatest likelihood of resulting in cumulative impacts on water resources due to this geographic overlap.

The significant impacts on water resources from construction and operation of the proposed rail line would include the loss of wetland habitat and permanent changes to surface water hydrology from crossing structures and stream realignments. Future projects in the cumulative impacts study area, such as the Ashley National Forest grazing allotments and the Gateway South Transmission Line, could worsen these significant impacts if those projects were to affect the same surface waters or wetlands as the proposed rail line. If the mitigation set forth in this ~~Draft~~ EIS were implemented, the Coalition would need to take steps to avoid, minimize, or mitigate impacts on water resources in compliance with state and federal regulations that project water resources, including CWA Sections 401, 402, and 404. Future projects in the cumulative impacts study area would also need to comply with these and other regulations, which would lessen cumulative impacts on water resources.

3.15.5.4 Biological Resources

Cumulative Impacts Study Area

The biological resources cumulative impacts study area is the same as the study areas defined for biological resources in Section 3.4.1.1, *Study Areas*. While most impacts on biological resources would occur in or around this study area, some species, such as big game, could be affected beyond this area due to their migratory nature.

Cumulative Impacts

Oil and Gas Development

Wildlife

Potential future oil and gas development would affect wildlife species and their habitats. The types and severity of impacts from oil and gas development on wildlife would be similar to many of those that would occur from construction and operation of the proposed rail line (Section 3.4.3.1, *Impacts Common to All Action Alternatives*). Species displacement due to noise would occur during construction and drilling activities and from continuous mechanical well operations. Mortality rates may increase in conjunction with oil and gas development, especially for smaller species that have more difficulty escaping the vegetation-clearing activities. Impacts on habitat would result from vegetation removal for development of the well pad and associated features (e.g., road construction) ~~road construction, pad installation, and ditch digging~~. Specific disturbance areas would vary depending on type of development, type of well used, and the necessary infrastructure for development and production. The lifespan of a project would also vary and would depend on many factors (e.g., economic conditions, pumping life of well). OEA assumes that all oil and gas projects would be subject to proper reclamation procedures in compliance with Utah law when the wells are abandoned (per Utah Rule 649-3, Drilling and Operating Practices). Oil and gas wells on BLM-administered lands would be abandoned and reclaimed in compliance with BLM requirements.

Any of the Action Alternatives would be constructed and would operate in landscapes affected

by oil and gas development and would contribute to cumulative impacts on wildlife by causing habitat loss, degradation, and alteration, as well as potentially causing injury or mortality of wildlife and changes to species distribution and composition. The extent of potential cumulative impacts would depend on the location of the oil and gas development relative to the proposed rail line, with a greater potential for a cumulative impact if the activity is closer to the proposed rail line. ~~The proposed rail line impact area and oil and gas development impact area must overlap for there to be a cumulative impact. However, there is limited area in which this could occur because oil and gas development would need to occur within several hundred feet of the rail line, which is unlikely.~~ There could be some ~~small~~ areas of wildlife habitat removal from oil and gas development around~~in~~ the proposed rail line cumulative impacts study area related to oil and gas access roads or other ancillary features. However, any impact on habitat would likely be small compared to habitat surrounding the area of impact. In addition, reclamation is required for all oil and gas development once pumping stops, including on all federal lands, which would restore the area's more natural conditions~~, where most of the oil and gas development will likely occur~~. Noise and the presence of the rail line could affect wildlife movement and behavior, but ~~again,~~ this would need to occur near the proposed rail line where there is overlap with the impacts generated by both the proposed rail line and oil and gas development, and the distance at which noise generated by the proposed rail line would no longer rise to the level of a significant disturbance to wildlife is approximately 460 feet from the rail line

(Section 3.4.1.3, *Analysis Methods*). Further, the direct and indirect impacts of the proposed rail line would be reduced by the implementation of the mitigation measures listed in Chapter 4, *Mitigation*. For these reasons, OEA anticipates that cumulative impacts on wildlife from the proposed rail line and oil and gas development would not be significant.

Due to their migratory nature and large ranges, big game populations could experience impacts beyond the vicinity of the proposed rail line and throughout the Utah Division of Wildlife Resources (UDWR) management units. While all of the Action Alternatives would remove less than 1 percent of available crucial big game habitat in the UDWR management units (Table 3.4-15), oil and gas development in these management units could remove additional big game crucial habitat. The extent of potential impacts would depend on the exact location and layout of the well pads and if big game habitat could be avoided. A geographic information system (GIS) analysis of the area of big game crucial habitat within oil and gas fields compared to all available crucial habitat in each species' UDWR management unit indicates that the percent of crucial habitat for each species in oil and gas fields is generally small, with the exception of pronghorn (Table 3.15-10). Further, because oil and gas development projects would not disturb the entire area of the oil and gas fields in which they take place, the numbers presented in Table 3.15-10 tend to overstate the percentage of available crucial habitat in UDWR management units that would be disturbed by oil and gas development. Oil and gas development throughout oil and gas fields can affect big game migration similar to the migration

impacts described for the proposed rail line. Most of the big game movement corridors mapped by UDWR (see Appendix G, *Biological Resources Figures*, for the movement corridors for each big game species) occur on oil and gas fields. Sawyer et al. (2020) studied the impact of natural gas development in Wyoming on mule deer migration and found that migratory use by mule deer generally decreased as natural gas development and surface disturbance increased. Declines in migratory use related to surface disturbance were nonlinear, where migratory use sharply declined when surface disturbance from development exceeded 3 percent (Sawyer et al. 2020). Disturbance thresholds may vary across regions, species, or migratory habitats (Sawyer et al. 2020). To offset the proposed rail line's impacts on big game migration, OEA is recommending mitigation measure BIO-MM-18, which would require the Coalition to develop a big game movement corridor crossing plan. Oil and gas development that occurs on federal lands (e.g., BLM) would need to comply with the land agency's land use management plan and any requirements to avoid or mitigate impacts on big game and big game migration. Similarly, oil and gas development on state lands, tribal lands, or private lands would need to address big game migration impacts in accordance with applicable state or tribal requirements for oil and gas development. With OEA's recommended big game movement corridor crossing plan for the proposed rail line, along with the requirements and guidance of federal, tribal, and state agencies that address big game impacts from oil and gas development, OEA expects that cumulative

impacts on big game and big game migration would be minimized.

Table 3.15-10. Percent of All Big Game Crucial Habitats in Oil and Gas Fields Compared to All Crucial Habitat throughout Each UDWR Management Unit

UDWR Management Unit	Percent Crucial Habitat in Oil and Gas Fields Compared to all Available Crucial Habitat in UDWR Management Unit
Bighorn sheep (*Ovis canadensis*)	
Nine Mile Unit 11	7.32
Wasatch Mountains Unit 17	1.64
Elk (*Cervus canadensis*)	
Central Mountains Unit 16	2.17
Nine Mile Unit 11	2.05
South Slope Unit 9	1.47
Wasatch Mountains Unit 17	1.74
Moose (*Alces alces*)	
Nine Mile Unit 11	0.26
Wasatch Mountains Unit 17	1.66
Mule deer (*Odocoileus hemionus*)	
Central Mountains Unit 16	2.15
Nine Mile Unit 11	1.51
South Slope Unit 9	1.94
Wasatch Mountains Unit 17	1.49
Pronghorn antelope (*Antilocapra americana*)	
Central Mountains Unit 16	5.46
Nine Mile Unit 11	31.70

Notes:

UDWR = Utah Division of Wildlife Resources

Source: Coalition 2020a; UDWR 2015, 2017a, 2017b, 2018, 2019b, 2019d, 2021

The Action Alternatives would connect with terminals at Myton and Leland Bench. The Myton terminal would be within mule deer habitat and both terminals would be within pronghorn antelope habitat (see Appendix G, *Biological Resources Figures*, for big game species habitats). Both terminals would be outside of bighorn sheep, elk, and moose habitat, and the Leland Bench terminal would be outside of mule deer habitat; therefore, there would be no cumulative impacts on those species. There is no mule deer crucial

habitat at the Myton terminal (just substantial habitat), and pronghorn crucial habitat is present at the Leland Bench terminal and in part of the Myton terminal location. Similar to the Action Alternatives' impact on pronghorn crucial habitat (Table 3.4-15), impacts on pronghorn crucial habitat would be small compared to the available crucial habitat in the UDWR pronghorn management unit. No mule deer movement corridors were identified by UDWR around the Myton terminal, and several pronghorn high importance movement corridors were identified by UDWR around the Myton terminal (none at the Leland Bench terminal) (see Appendix G, *Biological Resources Figures*, for big game movement corridors). Construction and operation of the terminals would cause habitat loss for various wildlife species, increase potential for wildlife injury and mortality, and result in wildlife avoidance from increased human activity in and around the terminals. The proposed rail line would contribute to these impacts, the extent of which would depend on the exact location and layout of the terminals, and the species affected. For most wildlife species, impacts would likely be localized and habitat impacts small compared to available habitat surrounding the area of impact. For other species, particularly migrating pronghorn, the impacts may extend beyond the immediate vicinity of the proposed rail line and terminals and affect pronghorn populations in the UDWR management unit. ~~However, similar to the discussion for oil and gas development, the proposed rail line's contributing impacts on wildlife are not anticipated to be extensive due to the limited overlap of the of the proposed rail line cumulative impacts study area; any impact that would~~

~~occur in terms of both ground disturbance to habitat and~~ ~~n~~Noise that would be generated by trains would be limited to within several hundred feet of the proposed rail line, which would not extend far into the terminal footprints. ~~Therefore,~~ OEA anticipates that the impacts from the proposed rail line, when combined with construction and operation of the terminals, would not result in significant cumulative impacts on most wildlife species. Impacts on pronghorn movement corridors could be adversely affected by both the proposed rail line and Myton terminal. However, none of the pronghorn movement corridors go through the Myton terminal location, and with OEA's recommended big game movement corridor crossing plan for the proposed rail line (BIO-MM-18), OEA expects that cumulative impacts on pronghorn movement corridors in the area of the Myton Terminal would be minimized.

Fish

As discussed in detail in Section 3.4, *Biological Resources*, construction of the proposed rail line could affect fish by affecting water quality in nearby streams or altering fish habitat. Oil and gas development could also affect fish if construction or operations activities were to degrade water quality of nearby streams or alter fish habitat. The types and severity of impacts from oil and gas development on fish would be similar to many of those that would occur from the proposed rail line (Section 3.4.3.1, *Impacts Common to All Action Alternatives*). OEA assumes that oil and gas developers would minimize surface water impacts by implementing avoidance and minimization measures,

such as sediment barriers, in compliance with appropriate federal, state, and local requirements.

Any Action Alternative would add to fish impacts from oil and gas development, including water quality degradation and habitat alteration. The extent of potential cumulative impacts would depend on the location of the oil and gas development relative to the proposed rail line, with a greater potential for a cumulative impact if the activity is closer to the proposed rail line. Fish habitat (i.e., surface waters) is protected through federal and state surface water and water quality regulations and permitting requirements. Because future oil and gas projects and the proposed rail line would be subject to the same applicable federal and state permitting requirements, cumulative impacts on water resources that support fish would be avoided or minimized through compliance with state and federal laws and regulations that protect water resources, including CWA Sections 401, 402, and 404. Any cumulative impacts that could occur would be localized and minimized through implementation of mitigation measures (e.g., sediment barriers) required by applicable permits. Therefore, OEA anticipates that the impacts from the proposed rail line, when combined with impacts from oil and gas development, would not result in significant cumulative impacts on fish.

The terminal areas at Myton and Leland Bench contain no perennial streams that support fish populations. Several ponds, the Upper Pleasant Valley Canal, and associated intermittent streams and canals are located within the terminal areas that could

provide habitat for fish. Construction of the rail terminals would add impervious cover and increase surface water runoff that could affect fish habitat. The proposed rail line would contribute to these impacts, the extent of which would depend on the exact location and layout of the terminals and if surface waters containing fish habitat could be avoided. However, as described for oil and gas development, fish habitat (i.e., surface waters) is protected through federal and state surface water and water quality regulations and permitting requirements, which would apply to both the proposed rail line and terminals. As such, cumulative impacts on water resources that support fish would be avoided or minimized through compliance with state and federal laws and regulations that protect water resources, including CWA Sections 401, 402, and 404. Therefore, OEA anticipates that the impacts from the proposed rail line, when combined with construction and operation of the terminals, would not result in significant cumulative impacts on fish.

Vegetation

Oil and gas development would affect vegetation during construction of roads, pads, and other related infrastructure. The types and severity of impacts from oil and gas development on vegetation would be similar to many of those that would occur from the proposed rail line (Section 3.4.3.1, *Impacts Common to All Action Alternatives*). Specific disturbance areas would vary depending on type of development, type of well used, and the necessary infrastructure for development and production. OEA assumes that all oil and gas projects would be subject to proper

reclamation procedures in compliance with Utah law when the wells are abandoned (per Utah Rule 649-3, Drilling and Operating Practices). Oil and gas wells on BLM lands would be abandoned and reclaimed in compliance with BLM requirements.

Any Action Alternative would add to vegetation impacts from oil and gas development, such as permanent vegetation loss, constraints to plant germination and growth, the spread of noxious weeds, effects on plant growth, increased risk of wildfires, altered riparian vegetation, and altered vegetation communities. The extent of potential cumulative impacts would depend on the location of the oil and gas development relative to the proposed rail line, with a greater potential for a cumulative impact if the activity is closer to the proposed rail line. The proposed rail line impact area and oil and gas development impact area must overlap for there to be a cumulative impact. However, there is limited area in which this could occur because oil and gas development would need to occur within several hundred feet of the rail line, which is unlikely. There could be some small areas of vegetation removal from oil and gas development in the proposed rail line cumulative impacts study area related to oil and gas access roads or other ancillary features. However, any impact on vegetation would likely be small compared to the area of vegetation surrounding the impact area. In addition, reclamation is required for all oil and gas development once pumping stops, including on all federal lands~~, where most of the oil and gas development will likely occur~~. Further, the direct and indirect impacts of the proposed rail line would be reduced by the implementation of the mitigation

measures listed in Chapter 4, *Mitigation*. For these reasons, OEA anticipates that cumulative impacts on vegetation from the proposed rail line and oil and gas development would not be significant.

The Action Alternatives would connect with terminals at Myton and Leland Bench. Land cover at both terminals is primarily Inter-Mountain Basins Mat Saltbush Shrubland. Construction of the terminals would disturb ground, remove vegetation, and add new impervious surfaces, which can all affect vegetation within or adjacent to construction activities. The proposed rail line would contribute to these impacts, the extent of which would depend on the exact location and layout of the terminals. However, OEA expects that the proposed rail line's contributing impacts on vegetation would not be significant due to the limited overlap of the proposed rail line cumulative impacts study area; any ground disturbance and vegetation impact would be limited to within several hundred feet of the proposed rail line, which would not extend far into the terminal footprints. The proposed rail line would terminate in areas with little vegetation cover and low to very low Wildfire Hazard Potential (Forest Service 2020a). Therefore, the risk that operations at new rail terminals could trigger a wildfire would be low and OEA does not anticipate any cumulative wildfire impacts as a result of the proposed rail line and new rail terminals.

Special Status Species

As discussed in Section 3.4, *Biological Resources*, OEA concludes that impacts from construction and operation of the proposed rail line on biological

resources would be significant in part because of the number of special-status species that could be affected, including species listed as threatened or endangered under the ESA. The proposed rail line would affect special-status species by displacing, degrading, or altering habitat, introducing a new source of noise that could disturb wildlife, and potentially causing injury or mortality of the species status species and changes to species distribution and composition. New oil and gas development projects could worsen impacts on special-status species if the projects were to take place in the same area as the proposed rail line and affect the same special-status species habitat as the proposed rail line.

Oil and gas development could affect special-status species in the same way that it could affect common plant and animal species. The types and severity of impacts from oil and gas development on special-status species would be similar to many of those that would occur from the proposed rail line (Section 3.4.3.1, *Impacts Common to All Action Alternatives*). The extent of potential cumulative impacts would depend on the location of the oil and gas development relative to the proposed rail line, with a greater potential for a cumulative impact if the activity is closer to the proposed rail line. However, similar to the discussions for wildlife and vegetation, the proposed rail line's contributing impacts on wildlife and vegetation are not anticipated to be extensive; any impact that would occur in terms of both ground disturbance to habitat and wayside noise from trains would generally be limited to within several hundred feet of the proposed rail line.

Implementation of the mitigation measures described in this ~~Draft~~ EIS would avoid, minimize, or mitigate impacts on special-status species from construction and operation of the proposed rail line. OEA is consulting with USFWS under ESA Section 7 to develop measures to avoid, minimize, and mitigate impacts on ESA-listed species, including Pariette cactus (*Sclerocactus brevispinus*), Uinta Basin hookless cactus (*Sclerocactus wetlandicus*), Barneby ridge-cress (*Lepidium barnebyanum*), Ute ladies'-tresses (*Spiranthes diluvialis*), Colorado pikeminnow (Ptychocheilus Lucius), humpback chub (*Gila cypha*), bonytail (*Gila elegans*), and razorback sucker (*Xyrauchen texanus*) (Appendix I, ~~*Draft*~~ *Biological Assessment*). New oil and gas development projects would follow either the ESA Section 7 process (for projects with a federal nexus) or ESA Section 10 process (for projects with no federal nexus), which would develop measures to avoid, minimize, or mitigate impacts on ESA-listed species. Under ESA Section 7, federal action agencies must ensure that their proposed action does not jeopardize the continued existence of ESA-listed species or adversely modify designated critical habitat. As part of the ESA Section 10 process, USFWS must also ensure that their action of issuing an Incidental Take Permit to a non-federal entity does not jeopardize the continued existence of ESA-listed species or adversely modify designated critical habitat. These requirements would lessen the cumulative impacts of oil and gas development projects and the proposed rail line on ESA-listed species.

Any of the Action Alternatives would cross habitat for greater sage-grouse (*Centrocercus urophasianus*),

a special-status species that is managed by BLM and the State of Utah, in the Emma Park area near the southern ends of the Action Alternatives. As stated in Section 3.4.1.3, *Analysis Methods*, OEA convened a greater sage-grouse interagency working group to address potential construction and operation impacts of the proposed rail line on the species and their habitats. The working group included state and federal staff with expertise on the species and their habitats, assessing potential impacts, and implementation of the current state and BLM greater sage-grouse management plans. The interagency group focused on sage-grouse management areas (SGMAs), which are the areas identified as containing the necessary habitat for over 94 percent of the greater sage-grouse in Utah (UDWR 2021). As stated in the *Utah Conservation Plan for Greater Sage-Grouse* (State Plan) (State of Utah 2019), areas outside of SGMAs are not required for long-term conservation of the species because much of this habitat has already been disturbed by human and natural causes, and it not suitable for enhancement or improvement. Populations outside of SGMAs are not considered essential to perpetuate the species in Utah, and no specific management actions for this habitat are recommended (State of Utah 2019). Therefore, the interagency working group and impact analysis—including those impacts from cumulative projects—focused on the only SGMA that the Action Alternatives cross, the Carbon SGMA (Section 3.4.2.5, *Greater Sage-Grouse*).

Threats to the Carbon SGMA include isolated small-sized, fire, weeds/annual grasses, energy development, mining, infrastructure, and recreation

(BLM 2015). The Action Alternatives could contribute to fire, spread of weeds/grass, and infrastructure (i.e., habitat removal and noise-related effects) (Section 3.4.3.1, *Impacts Common to All Action Alternatives*, and Section 3.4.3.2, *Impact Comparison between Action Alternatives*). Of all cumulative projects identified and shown in Figure 3.15.1, there are only two cumulative projects that overlap both the Action Alternatives and the Carbon SGMA, the Castlegate gas field (i.e., energy development threat) and the Gateway South Transmission line (see *Other Projects and Actions* below). No other identified cumulative projects are located in the Carbon SGMA. Oil and gas development would contribute to many of the same threats as the proposed rail line, including fire, spread of weeds/grass, and development of the facility (i.e., removal of habitat and operations related impacts, such as noise). Several additional oil and gas fields are also within the Carbon SGMA but outside of the Action Alternatives.

Oil and gas well development (within or outside of a designated field) in the Carbon SGMA would be subject to the same federal and state management plans for protection of greater sage-grouse as the proposed rail line. Under the *Utah Greater Sage-Grouse Approved Resource Management Plan Amendment* (ARMPA) (BLM 2015), any action that would exceed the established 3 percent disturbance cap is not allowed until the disturbance has been reduced to less than the cap. Any future cumulative action that would exceed the BLM disturbance cap (regardless of land ownership) in the Carbon SGMA would not be allowed to proceed. The disturbance cap is a protective measure that limits habitat loss and

habitat fragmentation. Additional non-habitat-related measures in SGMAs would also need to be addressed under the ARMPA for cumulative projects to help conserve the species, including noise levels near leks and lek populations within 3.1 miles of a proposed action. If the Board were to approve an Action Alternative that crossed BLM land, the Coalition would need to ensure that construction and operation of the proposed rail line would be in compliance with the ARMPA, which could include working with BLM to minimize impacts on greater sage-grouse (Chapter 4, *Mitigation*, BIO-MM-13). New oil and gas development projects, if on BLM land, would also need to comply with the ARMPA to avoid and minimize impacts on greater sagegrouse. The State Plan has similar protective measures as the ARMPA, but they are suggested measures rather than requirements. However, to offset the proposed rail line's impacts on greater sage-grouse, the Coalition has committed to executing a Mitigation Agreement with UDWR to address impacts on the Carbon SGMA (Chapter 4, *Mitigation*, VM-35). In addition, OEA is recommending mitigation requiring the Coalition avoid construction in the Carbon SGMA during the nesting and breeding season (BIO-MM-16). With the offsetting mitigation commitment for the proposed rail line, along with the requirements and guidance in the ARMPA and State Plan for any cumulative project development within the Carbon SGMA, OEA expects that cumulative impacts on greater sage-grouse would be significantly reduced.

For other BLM sensitive species, ~~I~~if the Board were to approve an Action Alternative that crossed BLM land, the Coalition would need to ensure that

construction and operation of the proposed rail line would be in compliance with applicable BLM RMPs, which could include working with BLM to minimize impacts on BLM special-status species. New oil and gas development projects, if on BLM land, would also need to comply with applicable BLM RMPs and other BLM requirements that would minimize impacts on BLM special-status species~~, including greater sage-grouse~~. If the Board were to approve an Action Alternative that crosses Forest Service land, the Coalition would need to abide by any Forest Service requirements for minimizing impacts on Forest Service special-status species. Because the Forest Service Biological Evaluation (Appendix H, *Biological Evaluation*) concludes that the proposed rail line would have little or no impact on Forest Service Sensitive Species, OEA expects that cumulative impacts on Forest Service special-status species would not be significant.

The primary special-status species of concern near Myton and Leland Bench, where new rail terminals could be constructed, would be the Ute Ladies'-tresses, a federally listed threatened plant. With the exception of Ute Ladies'-tresses, there would be no cumulative impacts on ESA-listed species because the rail terminals would be outside of suitable habitat for those species (Appendix I, ~~*Draft*~~ *Biological Assessment*). The area where the Myton terminal could be constructed contains some emergent wetland, which could support Ute Ladies'-tresses. Construction of the terminals would disturb ground, remove vegetation, and add new impervious surfaces, which could all affect Ute Ladies'-tresses within or adjacent to construction activities, if that species is present in

the footprint of the terminal. OEA is consulting with USFWS under ESA Section 7 to develop measures to avoid, minimize, or mitigate impacts on Ute ladies'-tresses. Developers of the new terminals would also implement measures developed under ESA Section 7 or ESA Section 10 that would minimize impacts on Ute ladies'-tresses from construction and operation of the new terminals. Both terminals would be outside of any UDWR- or BLM-mapped greater sage-grouse habitat (Figures 3.4-1 and 3.4- 2, respectively); therefore, there would be no cumulative impacts on that species.

Other Projects and Actions

In addition to oil and gas development, other projects and actions could contribute to cumulative impacts on biological resources, including wildlife, fish, vegetation, and special-status species. The extent of potential cumulative impacts would depend on the location of the cumulative project relative to the proposed rail line, with a greater potential for a cumulative impact if the activity crosses the proposed rail line. Of the projects that OEA identified, the Forest Service's management of grazing allotments and the Gateway South Transmission Line would intersect the biological resources study area for the proposed rail line; the Uintah Advantage Energy Associates crude oil processing facility is within several hundred feet of the Action Alternative study areas. The Indian Canyon Alternative and Whitmore Alternative would intersect approximately 6 miles of the grazing allotments along US 191 in Ashley National Forest (Figure 3.15-1). The Indian Canyon Alternative would intersect the Gateway South

Transmission line at one location, the Wells Draw Alternative would intersect the transmission line at three locations, and the Whitmore Park Alternative would intersect the transmission line at five locations ~~The Indian Canyon Alternative and Whitmore Alternative would each intersect the proposed Gateway South Transmission Line at one location, while the Wells Draw Alternative would intersect the proposed transmission line at two locations~~ (Figure 3.15-1).

Cattle grazing can adversely affect biological resources by controlling the vegetation species composition and structure and removing and/or trampling vegetation that would otherwise be used for wildlife food or cover. Defoliation from grazing can also benefit vegetation by promoting shoot growth; enhancing light levels, soil moisture, and nutrient availability; and aiding in seed dispersal and germination (USFWS 2009).

Electric transmission lines affect biological resources mainly by clearing vegetation (i.e., habitat loss), permanently changing forested habitat to shrubs and/or grasses (via vegetation maintenance in the right-of-way), and temporarily displacing wildlife during construction and operations. The Gateway South Transmission line would cross the greater sage-grouse Carbon SGMA for approximately 18.5 miles and crosses the Indian Canyon Alternative and Wells Draw Alternative once, and the Whitmore Park Alternative twice in the Carbon SGMA. The Gateway South Transmission line would parallel several leks within 1 mile in the Carbon SGMA. Power lines have been shown to affect greater sage-grouse habitat use

and demography. Power line infrastructure may influence population dynamics through effects on survival, reproduction, and movements of individuals (Gibson et al. 2018). Direct impacts may occur when development acts directly as an agent of mortality (e.g., collision), and indirect impacts may occur as a by-product of other processes that are altered by infrastructure presence (e.g., raven predation on leks) (Gibson et al. 2018). Any of the three Action Alternatives would contribute to cumulative impacts on greater sage-grouse in the Carbon SGMA (as described in Section 3.4.3.1, *Impacts Common to All Action Alternatives*, and Section 3.4.3.2, *Impact Comparison between Action Alternatives*). If the Board were to approve an Action Alternative that crossed BLM land, the Coalition would need to ensure that construction and operation of the proposed rail line would be in compliance with the ARMPA, which could include working with BLM to minimize impacts on greater sage-grouse (Chapter 4, *Mitigation*, BIO-MM-13). The Gateway South Transmission Line is not on BLM land in the Carbon SGMA, and, therefore, is not subject to the ARMPA. The State Plan has similar protective measures as the ARMPA, but they are suggested measures rather than requirements. As discussed in Section 3.4, *Biological Resources*, the Coalition has committed to executing a Mitigation Agreement with UDWR to offset the proposed rail line's impacts on greater sage-grouse in the Carbon SGMA (Chapter 4, *Mitigation*, VM-35). In addition, OEA is recommending mitigation requiring the Coalition avoid construction in the Carbon SGMA during the nesting and breeding season (BIO-MM-16). With the offsetting mitigation commitment for the

proposed rail line, along with the guidance in the State Plan for any cumulative project development within the Carbon SGMA, OEA expects that cumulative impacts of the proposed rail line and the Gateway South Transmission Line on greater sage-grouse would be minimized.

Any of the Action Alternatives would add to the biological resource impacts from cattle grazing and construction and operation of the Gateway South Transmission Line. The impacts from cattle grazing and electrical transmission lines on biological resources would be similar to many of those that would occur from the proposed rail line, specifically vegetation removal and trampling impacts (Section 3.4.3.1, *Impacts Common to All Action Alternatives*). However, similar to the discussions for oil and gas development and rail terminals, the proposed rail line's contributing impacts on most biological resources are not anticipated to be extensive; any impact that would occur in terms of both in ground disturbance to habitat and noise that would be generated by the train would be limited to within several hundred feet of the proposed rail line. For big game species, crucial habitat in UDWR big game management units could be affected by several of the other projects and actions. However, similar to the proposed rail line, the area of impact on crucial habitat for any of the big game species for the other projects and actions would be small compared to the available crucial habitat in the UDWR management unit. In addition, some of the other projects and actions are projects on existing infrastructure (e.g., road rehabilitation), which would not be considered big game habitat even though big game habitat polygons

may overlap these areas. Big game movement corridors could be affected by other projects and actions, but many of the projects are existing infrastructure or projects that would unlikely pose a new barrier to movement (e.g., improvements and rehabilitation to existing roads) like the proposed rail line. The Uintah Advantage Energy Associates crude oil processing facility near the Leland Bench terminal is within crucial year-long pronghorn habitat, but similar to the proposed rail line, this area of impact on crucial habitat would be small compared to the available crucial habitat in the UDWR management unit. No big game movement corridors were identified by UDWR around the Uintah Advantage Energy Associates crude oil processing facility.

As discussed previously, the proposed rail line would affect special-status species, including ESA-listed species, by displacing, degrading, or altering habitat, introducing a new source of noise that could disturb wildlife, and potentially causing injury or mortality of special-status species and changes to species distribution and composition. Future projects worsen impacts on special-status species if the projects were to take place in the same area as the proposed rail line and affect the same special-status species habitat as the proposed rail line. Implementation of BLM or Forest Service requirements on BLM and Forest Service land, respectively, and of measures developed through ESA Section 7 or ESA Section 10, as applicable, would minimize these cumulative impacts.

3.15.5.5 Geology, Soils, Seismic Hazards, and Hazardous Waste Sites

Cumulative Impacts Study Area

OEA defined the cumulative impacts study area for geology and soils as a 0.5-mile buffer surrounding the construction footprint[3] of each Action Alternative and a 60-mile buffer surrounding the construction footprint of each Action Alternative for seismic hazards. The cumulative impacts study area for hazardous waste sites includes a 2,000-foot buffer surrounding the right-of-way for each Action Alternative. The cumulative impacts study area for geology and soils, seismic hazards, and hazardous waste sites are the same as for the analysis of direct and indirect effects.

Cumulative Impacts

Typically, only projects occurring adjacent to or very close to the project footprint have the potential to

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[3] The *rail line footprint* includes the area of the railbed, as well as the full width of the area cleared and cut or filled. The rail line footprint would also include other physical structures installed as part of the proposed rail line, such as fence lines, communications towers, siding tracks, relocated roads, and power distribution lines. The rail line footprint is the area where rail line operations and maintenance would occur. The area would be permanently disturbed. The temporary footprint is the area that would be temporarily disturbed during construction, including areas for temporary material laydown, staging, and logistics. The *temporary footprint* would be reclaimed and revegetated following construction. The *project footprint* is the combined area of the rail line footprint and temporary footprint, both of which would be disturbed during construction, comprising where construction and operations of the proposed rail line would occur.

interact with the Action Alternatives to result in cumulative impacts related to geology and soils. The proposed rail line would affect geology and soils and would combine with impacts from the other related projects to result in cumulative impacts on geology and soils in the cumulative impacts study area. The types of impacts from cumulative actions on soils and geology would be similar to many of those that would occur from construction and operation of the proposed rail line (Section 3.4.3.1, *Impacts Common to All Action Alternatives*). Impacts would be related to increased potential for mass movement (e.g., landslide), increased erosion and sedimentation, compaction, mixing soil layers, decomposition of organic material, reduction in soil quality, and construction over unmapped abandoned mines, which could lead to collapse. The contribution of impacts from construction and operation of the proposed rail line to cumulative impacts in each affected project category is summarized as follows.

As it relates to the potential cumulative effect of hazardous waste sites, generally, only projects occurring adjacent or very close to the project footprint would have the potential to affect or be affected by the proposed rail line due to the limited potential impact radius associated with the release of hazardous waste into the environment. As discussed in Section 3.5, *Geology, Soils, Seismic Hazards, and Hazardous Waste Sites*, OEA did not identify any potential direct impacts related to hazardous waste sites in the study area.

Oil and Gas Development

Any of the Action Alternatives would intersect with oil and gas fields in the cumulative impacts study area. This overlap would include existing oil and gas wells, as well as both exploratory and production wells and supporting infrastructure that may be created in the future. Ground-disturbing activities associated with exploration and oil production, including drilling and road construction, would contribute to cumulative impacts, which would affect slope failure, soil erosion, and the potential for collapse. The Action Alternatives would also connect with the terminals at Myton and Leland Bench. The Myton terminal area contains soil resources that are vulnerable to both wind and water erosion. Both terminals could be constructed in the area of unmapped abandoned mines. Therefore, ground-disturbing activities associated with all three Action Alternatives would contribute to cumulative impacts affecting soil erosion near the Myton terminal and to cumulative impacts related to the potential for collapse associated with abandoned mines at both terminals. OEA assumes that future oil and gas development would comply with applicable federal and state permits and associated mitigation measures.

However, because future oil and gas development, the terminals, and the proposed rail line would be subject to many of the same applicable federal, state, and local permitting requirements, cumulative impacts related to geology, soils, and seismicity would be avoided or minimized through compliance with state and federal laws and regulations and local permitting requirements, including CWA Section 402,

Occupational Safety and Health regulations, and Federal Railroad Administration requirements. Therefore, OEA concludes that the impacts related to geology, soils, and seismicity from the proposed rail line when combined with impacts from the terminals would not result in significant cumulative impacts.

Other Projects and Actions

In addition to potential future oil and gas development projects, the cumulative impacts study area for geology and soils ~~Action Alternatives~~ would intersect with the ~~footprint of the Removal of Indian Canyon Guard Station (Figure 3.15-1, Item 22) and the~~ Gateway South Transmission line (Figure 3.15-1, Item 24) and the Uintah Advantage Energy Associates crude oil processing facility (Figure 3.15-1, Item 27). Ground-disturbing activities associated with ~~all of~~ these actions would contribute to cumulative impacts affecting slope failure, soil erosion, and the potential for collapse. ~~Both the removal of the Indian Canyon Guard Station and~~The Gateway South Transmission line would be constructed on geologic units subject to slope failure ~~and~~, on soils subject to soil erosion., ~~Both projects~~ and could be constructed in the area of unmapped abandoned mines. The Uintah Advantage Energy Associates crude oil processing facility is located on relatively flat land in the Basin where there is no risk of slope failure, but the facility is in an area that would be subject to wind erosion.

However, because the other projects and actions and the proposed rail line would be subject to many of the same applicable federal, state, and local permitting requirements, cumulative impacts related to geology, soils, and seismicity would be avoided or

minimized through compliance with state and federal laws and regulations and local permitting requirements, including CWA Section 402, Occupational Safety and Health regulations, and FRA requirements. Therefore, OEA concludes that the impacts related to geology, soils, and seismicity from the proposed rail line, when combined with impacts from the other actions and projects, would not result in significant impacts.

3.15.5.6 Noise and Vibration

Cumulative Impacts Study Area

OEA defined the noise and vibration cumulative impacts study area as a 1-mile buffer from the track centerline of each Action Alternative. The cumulative impacts study area for noise and vibration is the same as the project study area for the analysis of direct and indirect effects.

Cumulative Impacts

Only projects occurring adjacent to or very close to the project footprint would have the potential to interact with the Action Alternatives to result in cumulative impacts related to noise and vibration. For example, the 65 DNL noise contours for rail operations would be less than 700 feet from the tracks. If another project were to generate noise at that level 700 feet from the tracks, the result would be a cumulative increase in noise level of 3 decibels. Noise sources further away would cause small cumulative increases in noise level, which typically would not be noticeable. Vibration is even more localized; therefore, cumulative vibration effects would be unlikely.

Oil and Gas Development

All of the Action Alternatives would intersect with oil and gas fields in the cumulative impacts study area. This overlap would include existing oil and gas wells, as well as both exploratory and production wells and supporting infrastructure that may be created in the future. As stated previously, cumulative noise and vibration effects are unlikely because of the lack of overlap of associated 65 DNL contours.

Truck-to-rail terminal facilities providing for tank car loading and storage could include multiple short tracks, one or more long tracks, or loop tracks. These activities would generate noise and vibration, as well as truck traffic to and from the terminals. Cumulative noise impacts associated with a terminal and rail line operations would be possible, but unlikely because there would be no through trains in the immediate vicinity of the new terminals. Therefore, OEA concludes that the impacts from the proposed rail line, when combined with impacts from past, present, and reasonably foreseeable actions, would not result in significant cumulative impacts related to noise and vibration.

Other Projects and Actions

The additional planned or proposed projects and actions known to OEA would not have direct impacts on rail operations noise and vibration because of the lack of overlap of associated 65 DNL contours. Therefore, OEA concludes that impacts from the proposed rail line, when combined with impacts from past, present, and reasonably foreseeable actions, would not result in significant cumulative impacts related to noise and vibration.

3.15.5.7 Air Quality and Greenhouse Gases

Cumulative Impacts Study Area

The air quality and greenhouse gases (GHGs) cumulative impacts study area includes the same areas as described in Section 3.7, *Air Quality and Greenhouse Gases*. The cumulative impacts study area for regional air quality includes the area within 100 kilometers (i.e., 62 miles) of the proposed rail line as shown in Section 3.7, Figure 3.7-1. This area is in the Wasatch Front Air Quality Control Region (AQCR) and the Utah Intrastate AQCR in Utah, as designated by USEPA. The eastern edge of the cumulative impacts study area also extends about 18 miles into the Yampa Intrastate AQCR in Colorado. Within the cumulative impacts study area, OEA assessed air quality related values (AQRVs), which are resources that could be adversely affected by a change in air quality, such as visibility and acidic deposition. There are no Class I areas within the cumulative impacts study area. However, OEA assessed AQRVs at the nearest Class I areas and at sensitive Class II areas that are located in the cumulative impacts study area.

Cumulative Impacts

As discussed in detail in Section 3.7, *Air Quality and Greenhouse Gases*, construction and operation of the proposed rail line would result in emissions of criteria air pollutants and hazardous air pollutants, changes in ambient concentrations of such pollutants, and impacts on visibility and acidic deposition. Any of the Action Alternatives would contribute to cumulative impacts on air quality by adding to impacts from other projects. Any of the Action Alternatives would contribute incrementally to

climate change by adding GHG emissions. The following subsections describe the impacts of the other projects and how impacts from the proposed rail line, when added to the impacts of these other projects, could result in cumulative impacts on air quality.

Oil and Gas Development

The cumulative air quality impact assessment for oil and gas development is based on the assumptions discussed in Section 3.15.4.1, *Oil and Gas Development*. Although this assessment focuses on oil development because crude oil is the primary product that would be transported on the proposed rail line, the wells in the cumulative impacts study area also may produce natural gas. The construction and operation of infrastructure to process and transport the gas also would contribute to cumulative impacts.

Wells and Infrastructure Emissions

To estimate emissions from construction equipment, drilling equipment, and vehicles used in well development, OEA used information from the BLM *Monument Butte Oil and Gas Development Project Final Environmental Impact Statement*, which evaluated a proposed oil and gas field development project in the Uinta Basin (BLM 2016). The Monument Butte project would consist of 5,750 new oil and gas wells, including both vertical and horizontal oil wells, across 119,743 acres of southeastern Duchesne County and southwestern Uintah County.

As noted, OEA considers Monument Butte to be an example of the development that could occur as part of past, present, and reasonably foreseeable future oil and gas projects. Because of the volatility of energy markets, it would be speculative for OEA to

predict the timing and amount of oil and gas development that could occur as part of the Monument Butte project. In the Monument Butte EIS, BLM conservatively calculated the air emissions that could occur if all 5,750 proposed oil and gas wells were operating in a given year (the maximum emissions year), which would be unlikely to occur. Because the number of producing wells in the maximum emissions year for the Monument Butte EIS (5,750 wells) is higher than the number of producing wells that would be needed to support the high oil production scenario in any year (3,330 wells), OEA believes that the air quality impacts described for the maximum emissions year in the Monument Butte EIS represent a conservative estimate of the air quality impacts that could result from producing the crude oil that could move on the proposed rail line.

To assess cumulative impacts on air quality and greenhouse gases, OEA added the estimated emissions from operation of the proposed rail line to estimated emissions from other reasonably foreseeable projects, including the oil and gas development that would be needed to meet the oil production scenarios, and compared those combined emissions to the emissions for the maximum emissions year from the Monument Butte EIS. OEA did not add the maximum emissions year emissions from the Monument Butte EIS to the cumulative emissions from the proposed rail line and reasonably foreseeable future projects because doing so would unreasonably overestimate potential future emissions from oil and gas development and cumulative air quality impacts in the study area. OEA assumed that total ~~the~~ oil and gas development in the Basin would

not increase above baseline levels by more than would be required to meet the high oil production scenario. Oil and gas development at levels greater than would be required to meet the high oil production scenario would be unlikely because the project would not have the capacity to transport the additional production, and no alternative infrastructure exists to transport additional production from the Basin.

The air quality analysis described in the Monument Butte Final EIS drew on the data and results of the Utah Air Resource Management Strategy (ARMS) Modeling Project (BLM 2014), a comprehensive regional modeling study. The ARMS Modeling Project is a cumulative assessment of potential future air quality impacts associated with predicted oil and gas activity in the Basin. The ARMS Modeling Project provides data, models, and estimates of future air quality impacts to facilitate BLM's future NEPA and land use planning efforts. The CMAQ photochemical modeling system was used, primarily because if its ability to replicate observed wintertime ozone formation and timing in the Basin (BLM 2014). To analyze potential future year impacts, model simulations were conducted for a "typical year" based on annualized 2010 emissions, and for four 2021 scenarios reflecting differing levels of emissions controls. Cumulative air quality impacts within the Basin were assessed for criteria pollutants and AQRVs.

As discussed previously, the Monument Butte development project is an example of a recent oil and gas development proposal in the Basin. If the Monument Butte project were developed, crude oil

produced from the Monument Butte wells potentially could be transported on the proposed rail line. The Monument Butte EIS considers the environmental impact of developing and operating a total of 5,750 new wells, including both vertical and horizontal wells. OEA recognizes that the characteristics of other potential future oil and gas development projects in the cumulative impact study area could differ from those in the Monument Butte oil field, but there are no available data on the characteristics of other potential future oil and gas development projects. Because the Monument Butte EIS provides the best available data source on oil and gas development projects in the Basin, OEA adopted the assumptions and inputs from the Monument Butte EIS to assess cumulative air impacts. OEA assumed that future oil and gas field development in the cumulative impacts study area would have characteristics similar to those described for the Monument Butte project, including the types and numbers of equipment, trucks, and commuter vehicles that would be required, and that construction emissions on a per-well or per-facility basis would also be similar to those estimated for Monument Butte.

Similarly, OEA assumed that localized air quality impacts of future oil and gas field development in the cumulative impacts study area would be similar to the localized impacts described for the Monument Butte project. The specific locations of localized air quality impacts in the cumulative impacts study area are not known because there are no available data on the characteristics or local site conditions of potential future oil and gas development projects.

Total air pollutant emissions each year would vary according to the number of wells constructed in that year. Construction emissions on a per-well basis would be the same for both the low oil production scenario and high oil production scenario, but the high oil production scenario would result in more wells under construction at any particular time and so would have greater annual emissions than the low oil production scenario. For purposes of estimating cumulative impacts of the proposed rail line, OEA assumed the low oil production scenario would coincide with the low rail traffic scenario, and the high oil production scenario would correspond to the high rail traffic scenario. Table 3.15-11~~9~~ shows the emissions by source type for both oil production scenarios. OEA assumed that future well operations in the cumulative impacts study area would have characteristics similar to those of the Monument Butte project as discussed previously, including the same facilities, equipment and vehicles, truck trips, and emissions controls.

Once a well is producing, emissions occur from operations and maintenance activities, which generate truck trips to the well site, and from trucks that transport the crude oil to the rail terminals. Emissions also occur from venting, flaring, equipment leaks, and engine exhaust from equipment located at operating wells (e.g., heaters, dehydrators, separators, tanks, pumpjack engines). Operations and maintenance activities for gas wells are similar to those for oil wells, and emissions are assumed to be similar.

3.15-~~9~~11. Estimated Emissions Associated with Oil and Gas Development by Source

Pollutants	Low Oil Production Scenario[a]				High Oil Production Scenario[a]			
	Well Construction	Well Operation	Termini Operation	Total	Well Construction	Well Operation	Termini Operation	Total
Criteria Pollutants and Volatile Organic Compounds (U.S. tons per year)								
CO	9	1,511	146	1,666	25	4,041	388	4,454
NO_X	32	1,092	51	1,175	86	2,922	138	3,146
PM10	159	356	30	546	432	952	79	1,463
PM2.5	17	128	7	152	47	342	17	406
SO_2	0	3	0	3	0	8	0	8
VOCs	4	2,023	51	2,078	10	5,412	136	5,558
Hazardous Air Pollutants (U.S. tons per year)								
Acetaldehyde	0	11	0	11	0	30	0	31
Acrolein	0	11	0	11	0	30	0	30
Benzene	0	9	0	9	0	23	0	23
1,3-Butadiene	0	1	0	1	0	4	0	4
Ethylbenzene	0	0	0	0	0	1	0	1
Formaldehyde	0	80	0	81	1	215	0	216
DPM	1	73	0	75	4	196	1	201
Napthalene	0	0	0	0	0	0	0	1
POM	0	0	0	0	1	0	0	1
GHGs (metric tons per year)								
CO_2	6,744	603,746	7,790	618,279	18,292	1,614,838	20,700	1,653,830
CH_4	0	1,722	0	1,722	0	4,605	1	4,606
N_2O	0	1	0	1	0	3	0	4
CO_2e	6,785	640,198	84,585	731,568	18,404	1,712,337	227,449	1,958,190

Notes:
[a] Values less than 0.5 have been rounded to zero.
CO = carbon monoxide; NO_X = oxides of nitrogen; PM10 = particulate matter 10 microns or less in diameter; PM 2.5 = particulate matter 2.5 microns or less in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds; DPM = diesel particulate matter; POM = polycyclic organic matter; GHGs = greenhouse gases; CO_2 = carbon dioxide; CH_4 = methane; N_2O = ~~nitrogen~~ nitrous ~~di~~oxide; CO_2e = carbon dioxide equivalent

Rail Terminal Emissions

As discussed previously, the Coalition has not proposed to construct and operate new rail terminals in the Basin. OEA assumes that other entities, such as firms that specialize in oil field and/or freight logistics, would construct new rail terminals at the terminus points of the proposed rail line near Myton and Leland Bench. Because those new rail terminals are not part of the Coalition's proposed project, OEA does not know the specific size and design of the

terminals and, therefore, cannot quantify the construction emissions. In general, rail terminal facilities consist mostly of rail track, storage tanks, and structures that can be built using standard construction techniques and that occupy a relatively small construction footprint compared to the size of the completed facility. Because new rail terminals would be located in generally flat areas, there would be minimal need for earthmoving, a construction activity that can result in high levels of air emissions. Activities related to the construction of terminal rail tracks would move over time, which would result in more dispersion of emissions than if the activity occurred at only one location. Given these circumstances, OEA anticipates that the emissions from terminal construction, including construction of the rail line leading from the terminal, would not lead to ambient concentrations that could exceed the NAAQS in the local areas of the terminals. Concentrations would be lower at greater distances from the terminals. Therefore, OEA anticipates that terminal construction would not contribute to cumulative air quality impacts.

OEA estimated emissions from terminal operations based on permitted emissions for the existing Price River Terminal in Price, Utah (UDEQ 2015) adjusted for the quantities of oil handled. Table 3.15-11~~9~~ includes the estimated emissions from terminal operations. The terminals would require air quality permits. As part of the permit application process the terminal developer must demonstrate to the satisfaction of UDEQ that the facility would not cause ambient concentrations to exceed the NAAQS. In addition, OEA does not expect that the cumulative

impact of terminal operations and rail operations on the line to the terminal would exceed the NAAQS because the locomotives would be moving and would not be near the stationary emissions sources at the terminal for long periods of time, which would result in more dispersion of emissions than if all the sources were concentrated at only one location, and concentrations would be lower at greater distances from the terminals.

Downstream End Use Emissions

Refiners would refine the crude oil transported by the proposed rail line into various fuels and other products. To the extent that the crude oil would be refined into fuels that would be combusted to produce energy, emissions from the combustion of the fuels would produce GHG emissions that would contribute to global warming and climate change.

As discussed in Section 3.7, *Air Quality and Greenhouse Gases*, there is broad scientific consensus that humans are changing the chemical composition of Earth's atmosphere. Activities such as fossil fuel combustion, deforestation, and other changes in land use are resulting in the accumulation of GHGs such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and several industrial gases in Earth's atmosphere. The International Panel on Climate Change (IPCC) estimates that the global average concentrations of CO_2, CH_4, and N_2O in the atmosphere have increased by around 40, 150, and 20 percent, respectively, from pre-industrial times until today (IPCC 2014). An increase in GHG emissions is thought to result in an increase in Earth's average surface temperature, primarily by trapping heat and,

thus, decreasing the amount of heat energy radiated by Earth back into space. This phenomenon is commonly referred to as global warming. Global warming is expected, in turn, to affect land and sea surface temperatures, precipitation rates, weather patterns, average sea level polar ice levels, ocean acidification, and other climatic variables, effects which collectively are referred to as climate change.

The IPCC Fifth Assessment Report (IPCC 2014) indicates that the climate system is warming. The report states that global mean surface temperature has increased since the late 19th century and that maximum and minimum temperatures over land have increased on a global scale since 1950. In addition, the globally averaged combined land and ocean surface temperature data show a warming of 0.85 degrees Celsius (°C) or 1.5 degrees Fahrenheit (°F) since 1950. The IPCC concludes that it is extremely likely that human influence has been the dominant cause of the observed warming. The IPCC (2014) has predicted that the average global temperature rise between 1986 and 2100 could be as great as 4.8°C (8.6°F), which could have massive deleterious impacts on the natural and human environments.

The Board generally cannot restrict the types of products and commodities that are transported on rail lines and, in fact, has held that railroads have a common carrier obligation to carry all commodities, including hazardous materials, upon reasonable request under 49 U.S.C. § 11101. See Riffin v. STB, 733 F.3d 340, 345-47 (D.C. Cir. 2013) (and cases cited therein). In addition, the Board has no role in determining or controlling the final destinations or

end uses of any products or commodities transported on the proposed rail line. Therefore, because it has no jurisdiction or control over the destinations or end uses of any products or commodities transported on the proposed rail line, the Board is not required to analyze impacts related to the destinations or end uses of any such products or commodities. Dep't of Transp. v. Public Citizen, 541 U.S. 752, 766-70 (2004). Nevertheless, OEA is reporting the GHG emissions that could be associated with the combustion of fuels produced from crude oil transported on the proposed rail line in the context of cumulative impacts. See id. at 769-70. OEA assumed conservatively that combustion would be the end use of all of the crude oil. OEA estimated the GHG emissions from this combustion, assuming conservatively that these fuels would not displace other fuels from the market, but would add to existing fuel consumption. Table 3.15-12~~0~~ shows the estimated GHG emissions from combustion of the crude oil transported by the proposed rail line.

Table 3.15-~~10~~12. Estimated GHG Emissions from Combustion of Fuels Refined from Cude Oil Transported on the Proposed Rail Line

Scenario	Estimated Greenhouse Gas Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	CO_2e
Low oil production	19,716,083	807	167	19,785,953
High oil production	53,081,761	2,172	449	53,269,873

Notes:
CO_2 = carbon dioxide; CH_4 = methane; N_2O = ~~nitrogen~~ nitrous ~~di~~oxide~~s~~; CO_2e = carbon dioxide equivalent

For comparison, the downstream end use emissions associated with the combustion of crude oil transported on the proposed rail line under the low oil production scenario represent approximately 0.3 percent of nationwide GHG emissions and 0.04

percent of global GHG emissions. Downstream end use emissions under the high oil production scenario represent approximately 0.8 percent of nationwide GHG and 0.1 percent of global GHG emissions. Downstream end use emissions would represent a higher percentage of statewide emissions in Utah, but such a comparison would not be appropriate because OEA expects that the crude oil transported on the proposed rail line would not be refined or used in Utah. As noted previously, the estimates in Table 3.15-12 and the corresponding percentages of nationwide and global GHG emissions are conservative and may overstate impacts because some of the crude oil transported on the proposed rail line could be refined into products other than fuels and some of the fuels produced from crude oil transported on the proposed rail line could displace other fuels from the market. To the extent that crude oil transported on the proposed rail line could be refined into products other than fuel or the fuels produced from crude oil transported on the proposed rail line could displace other fuels, GHG emissions from downstream end uses would be lower than those shown in Table 3.15-12.

Cumulative Air Quality Effects

Approach

Ambient pollutant concentrations and AQRVs in the cumulative impacts study area are influenced by numerous emissions sources spread throughout the study area and beyond, as well as by regional meteorology and topography. BLM and other agencies have modeled the cumulative impacts of oil and gas development and other reasonably foreseeable

development in the region. To assess the cumulative impacts of the proposed rail line and the projected oil and gas development, OEA used information from a detailed photochemical air quality modeling study developed for the Monument Butte EIS (BLM 2016, Appendix K). The Monument Butte Final EIS includes details of the modeling. The maximum emissions year analyzed in the Monument Butte Final EIS assumes that a total of 5,750 wells would be producing in a single year, which is substantially higher than the 3,330 wells that would be needed to support the high oil production scenario, as described in Section 3.15.4.1, *Oil and Gas Development*, for the high oil production scenario.

The Monument Butte development would be located in the Basin in Duchesne County ~~southeast of Duchesne County and~~ south of Myton, and would extend eastward about ~~25~~5 miles into Uintah County. This area is within the region from which producers would truck their crude oil production to the rail terminals. OEA considers the location of the Monument Butte development to be reasonably representative of the cumulative impacts study area in which oil and gas development would occur and, therefore, concluded that the estimated impacts of the Monument Butte development should be used to represent the impacts of the oil and gas development described in Section 3.15.4.1, *Oil and Gas Development*. Because the Monument Butte Final EIS analyzed a maximum emissions year that would involve more wells than would be needed to support the maximum projected rail traffic on the proposed rail line, OEA considers the results of the Monument Butte modeling study to be a conservative

representation of the air quality impacts of future oil and gas development. Table 3.15-131 shows that the estimated emissions of Monument Butte for the maximum emissions year are larger than the sum of the cumulative emissions from the operation of the proposed rail line and other reasonably foreseeable projects.

OEA estimated the air quality effects of the oil and gas development described in Section 3.15.4.1, *Oil and Gas Production*, by using the Monument Butte study. That study used the Community Multi-scale Air Quality (CMAQ) model, version 5.0. CMAQ is a photochemical grid model, which is a type of computer model that simulates the formation, transport, and fate of ozone and other pollutants in the atmosphere.[4] Further details of the emissions inventories, input parameters, and model assumptions are provided in the BLM study (BLM 2016: Appendix K).

[4] The modeling domain encompassed Utah and western Colorado using a grid of cells 4 kilometers and 12 kilometers on a side.

Table 3.15-~~11~~13. Relative Levels of Monument Butte and Uinta Basin Railway Cumulative

Project	Number of Producing Wells	Estimated Emissions (tons per year)					
		CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC
Monument Butte EIS							
Monument Butte proposed action, maximum-emissions year	5,750	8,524	5,690	2,904	617	14	10,360
Proposed Rail Line (Uinta Basin Railway)							
High oil production scenario	3,330	4,454	3,146	1,463	406	8	5,558
Action Alternatives rail operations, high rail traffic scenario (Wells Draw Alternative)	–	1,401	1,238	379	77	2	121
Cumulative: sum of oil and gas and rail operations	3,330	5,855	4,384	1,842	483	10	5,679
Rail operations emissions as percent of cumulative impacts	–	24%	28%	21%	16%	20%	2%
Relative Emissions Levels of Cumulative Impacts and Monument Butte							
Sum of oil and gas and rail operations as percent of Monument Butte	58%	69%	77%	63%	78%	71%	55%

Notes:
Values have been rounded to the nearest ton.
Source: BLM 2016: Appendix K
CO = carbon monoxide; NO_X = oxides of nitrogen; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds

Ambient Concentrations

An important capability of the CMAQ model is the ability to estimate ozone concentrations. Ozone is a component of photochemical smog and is formed from reactions of precursor chemicals (primarily oxides of nitrogen [NO_x] and volatile organic compounds [VOCs]) in the presence of sunlight. Ozone is of particular concern in the Basin because high levels of ozone have been measured there in winter, and USEPA has designated the Basin as nonattainment for ozone.

Appendix M, *Air Quality Emissions and Modeling Data*, Tables M-1 through M-7, shows the predicted impact of the Monument Butte project on criteria pollutant levels in the cumulative impacts study area, as well as the nearest Class I and sensitive Class II areas. The results reported in the Monument Butte project analysis indicate the following.

- The maximum nitrogen dioxide (NO_2) levels at all sites would be less than the NAAQS and Utah Ambient Air Quality Standards (AAQS). Because the high oil production scenario that OEA analyzed would involve a smaller number of wells than were considered in the Monument Butte project, OEA concludes that cumulative NO_2 concentrations from the proposed rail line and potential future oil and gas development would also be less than the NAAQS and Utah AAQS.
- The maximum carbon monoxide (CO) levels at all sites would be less than the NAAQS and Utah AAQS. Because the high oil production scenario that OEA analyzed would involve a smaller number of wells than were considered in the Monument Butte project, OEA concludes that cumulative CO concentrations from the proposed rail line and potential future oil and gas development would also be less than the NAAQS and Utah AAQS.
- The maximum sulfur dioxide (SO_2) levels at all sites would be less than the NAAQS and Utah AAQS. Because the high oil production scenario that OEA analyzed would involve a smaller number of wells than were considered in the Monument Butte project, OEA concludes that

cumulative SO_2 concentrations from the proposed rail line and potential future oil and gas development would be less than the NAAQS and Utah AAQS.

- The maximum ozone impact of the Monument Butte project would not lead to exceedances of the ozone NAAQS at most sites. However, modeled total ozone levels exceed the NAAQS at some sites under existing conditions in the absence of Monument Butte. This is consistent with ozone exceedances measured by DEQ in winter in the Basin. Although the Monument Butte project would increase ozone concentrations, the Monument Butte modeling predicted no new exceedances due to Monument Butte. Because the high oil production scenario that OEA analyzed would involve a smaller number of wells than were considered in the Monument Butte project, OEA concludes that cumulative emissions of ozone precursors (VOC and NO_X) from the proposed rail line and potential future oil and gas development would be lower than predicted for the Monument Butte project. Existing exceedances of the ozone NAAQS would still occur.
- The maximum predicted levels of particulate matter 10 microns or less in diameter (PM10) and annual particulate matter 2.5 microns or less in diameter ($PM_{2.5}$) with the Monument Butte project at all sites would be less than the NAAQS and Utah AAQS. Total 24-hour $PM_{2.5}$ levels would be less than the NAAQS and Utah AAQS at all sites except one. Because the high oil production

scenario that OEA analyzed would involve a smaller number of wells than were considered in the Monument Butte project, OEA concludes that cumulative PM_{10} and $PM_{2.5}$ concentrations from the proposed rail line and potential future oil and gas development would be less than concentrations described for the Monument Butte EIS.

Prevention of Significant Deterioration

The Prevention of Significant Deterioration (PSD) program applies to projects subject to stationary source permitting in attainment areas. The PSD regulations set limits (i.e., increments) on the incremental pollutant concentrations that a project may contribute. The allowable increments are lower in Class I areas than in Class II areas. (There are no Class I areas in the cumulative impacts study area). PSD requirements did not apply to the Monument Butte project because the modeling was not part of a stationary source permitting process. Nevertheless, PSD increments can be used as a guide to compare results and to provide context for evaluating air quality impacts. PSD increments also do not apply to rail projects because railroads are not stationary sources, but the increments can be used to compare potential impacts for purposes of information. In the Monument Butte project analysis, no predicted impacts exceeded the applicable PSD increments. Because the oil production scenarios that OEA analyzed would involve smaller numbers of wells than were considered in the Monument Butte project, OEA concludes that cumulative impacts of the proposed rail

line and potential oil and gas development would also be within the applicable PSD increments.

Visibility

- Under the Clean Air Act, visibility is an AQRV of concern for Class I areas (Section 3.7, *Air Quality and Greenhouse Gases*). In the Monument Butte project modeling, visibility impacts exceeded the applicable thresholds on multiple days. Because the oil production scenarios that OEA analyzed would involve smaller numbers of wells than were considered in the Monument Butte project, OEA concludes that cumulative impacts of the proposed rail line and potential oil and gas development would be lower than those described in the Monument Butte EIS. In general, the number of days on which visibility impacts would exceed the thresholds would be less than estimated for the Monument Butte project.

Acidic Deposition

- Under the Clean Air Act, acidic deposition is an AQRV of concern for Class I areas. The Monument Butte project modeling estimated that the nitrogen deposition analysis threshold (DAT) was exceeded in some areas but the sulfur DAT was not exceeded in any area. Because the oil production scenarios that OEA analyzed would involve smaller numbers of wells than were considered in the Monument Butte project, OEA concludes that cumulative impacts of the proposed rail line and potential oil and gas development relative to acidic deposition would be less than estimated for the Monument Butte project.

- For sensitive lakes, the change in acid neutralizing capacity (ANC) was calculated in the Monument Butte project study using the methodology suggested by the Forest Service (2000). The change in ANC was compared to the threshold of a 10 percent change in ANC for lakes with background ANC values greater than 25 micro-equivalents per liter (µeq/l) and no more than a 1 µeq/l change in ANC for lakes with background ANC values equal to or less than 25 µeq/l. The only sensitive lake in the cumulative impacts study area for which data are available is Dean Lake in the High Uintas Wilderness Area. At Dean Lake the estimated impact due to the Monument Butte project is a 0.18 percent change in ANC, which is less than the 10 percent threshold, and a change in ANC of 0.15 µeq/l, which is less than the 1 µeq/l threshold. Because the oil production scenarios that OEA analyzed would involve smaller numbers of wells than were considered for the Monument Butte project (Table 3.15-131), OEA concludes that cumulative impacts of the proposed rail line and potential oil and gas development would also be less than the applicable ANC thresholds.

Other Projects and Actions

The proposed rail line would affect air quality and would combine with impacts from other projects to result in cumulative impacts on air quality in the cumulative impacts study area. Other projects and actions would produce criteria air pollutant and hazardous air pollutant emissions. These emissions, when combined with emissions from other sources in

and beyond the cumulative impacts study area, would lead to cumulative impacts on ambient air quality and AQRVs. Figure 3.15-1 shows the other projects and actions in the cumulative impacts study area with the potential to contribute to cumulative impacts, which include infrastructure improvements, watershed improvement projects, road improvement projects, Forest Service actions, interstate electric power transmission lines, ~~and~~ cultural resources preservation, and a crude oil processing facility.

Most projects and actions would occur well outside of the study area for the proposed rail line. These projects would have to comply with Utah DEQ and other state permits and approvals related to air quality. Because of their expected emissions levels and their distance from the proposed rail line, OEA considers the air quality impacts of these projects to be captured in the background concentrations applied in the air quality modeling. The impacts described above based on the modeling would include the cumulative contributions from these projects.

Projects that occur near the proposed rail line, if constructed simultaneously with rail line construction in the same local area, could result in localized cumulative impacts. OEA anticipates that only roadway improvement projects and the crude oil processing facility could occur near the proposed rail line. Once constructed, roadway improvements would not contribute further to air quality impacts. OEA anticipates that the crude oil processing facility would contribute to local air quality impacts during operations. However, the crude oil processing facility would have to comply with Utah DEQ permitting

requirements, which are intended to prevent violations of the applicable air quality standards.

Therefore, OEA concludes that the impacts from the proposed rail line, when combined with impacts from past, present, and reasonably foreseeable actions, would not result in new exceedances of the NAAQS or AQRV thresholds. The cumulative impacts of the proposed rail line could increase the pollutant levels that are associated with existing exceedances of the 24-hour PM2.5 NAAQS, the ozone NAAQS, and visibility impact thresholds.

3.15.5.8 Energy

Cumulative Impacts Study Area

OEA defined the energy cumulative impacts study area as the construction footprint for each Action Alternative, because this is the area where all construction and operation activities that would consume energy would take place. The cumulative impacts study area also includes the energy supply and distribution infrastructure, including electricity transmission, crude oil pipelines, natural gas pipelines, and petroleum product pipelines that could intersect the proposed rail line, and existing fuel (gasoline, diesel fuel) transport, storage, and distribution infrastructure that could supply fuel to the proposed construction and operation of the rail line.

OEA has included potential terminal locations and construction and operation of diesel fuel storage distribution equipment for fueling locomotives in the cumulative impacts study area. OEA also considered energy consumption related to the construction and operation of potential new rail terminal facilities and

the disposition of crude oil that would be transported by the proposed rail line. For this reason, the cumulative impacts study area for energy is not the same as for the analysis of direct and indirect effects.

Cumulative Impacts

Oil and Gas Development

Construction of any of the Action Alternatives would provide the capacity to transport crude oil from the Basin to locations outside the Basin. Under the low oil production scenario, an estimated 130,000 barrels per day would be transported from the Basin by rail. Under the high oil production scenario, an estimated 350,000 barrels per day would be transported from the Basin by rail. There are five petroleum refineries located in Utah, all in the Salt Lake City area. These refineries have the capacity to process approximately 100,000 barrels per day of crude oil from the Basin received by truck. OEA does not anticipate that crude oil transported via the Action Alternatives would directly serve the existing oil refineries in Salt Lake City ~~in the short term~~ because those refineries do not currently have the facilities to accept trains carrying crude oil. OEA anticipates that the crude oil would be transported by rail to other states. Therefore, the additional production of crude oil would contribute to the national supply of crude oil but would not directly affect petroleum refining in Utah or directly contribute to petroleum-product production in Utah. OEA expects that the direct impacts from the proposed rail line would not result in cumulative impacts on petroleum refining or petroleum production in Utah.

In the event that the Board authorizes the proposed rail line, rail terminals would be needed in the Basin to transfer commodities between truck and rail transportation modes. Operation of the rail terminals would consume energy directly in the form of fuel (diesel fuel and gasoline) for operation of rail terminal equipment and vehicles and operation of rail terminal personnel vehicles. Rail terminal equipment would include heated crude oil storage tanks and associated piping and pumping and mobile crane and other loading and unloading equipment. Operation of the rail terminals would also consume energy in the form of electricity for operation of terminal equipment, lighting, and administration and utility buildings. OEA anticipates that fuel consumption for rail operations and operation of the rail terminals would be small relative to the refining capacity of the Salt Lake City area refineries and would not, therefore, have a significant impact on regional fuel supply.

Other Projects and Actions

Electric Transmission Line Construction

The right-of-way of the ~~proposed~~ PacifiCorp Gateway South Transmission Line would cross the Indian Canyon Alternative at five~~one~~ locations, the Whitmore Park Alternative at one location, and the Wells Draw Alternative at three locations. Construction of the Gateway South Transmission Line is anticipated to occur from June 2021 to October 2023 (Rocky Mountain Power 2020). The Action Alternatives also would cross the rights-of-way of two existing electric transmission lines. Figure 3.8-1 shows the existing electric transmission lines in the study area. Figure 3.15-1 shows the routes of the

~~proposed~~ planned electric transmission lines in the cumulative impacts study area.

The Gateway South Transmission Line is expected to be constructed from 2021 to 2023 and could be constructed at the same time as the proposed rail line. It is not known whether construction would commence at the specific points where the Gateway South Transmission Line would cross the Action Alternatives before or after the commencement of construction of the Action Alternatives. In either case, any crossing of utility rights-of-way would occur in accordance with applicable regulatory standards (Appendix B, *Applicable Regulations*). As discussed in Section 3.8, Energy, OEA does not anticipate that construction of the proposed rail line would require any modification or relocation of the right-of-way of the ~~proposed~~ Gateway South Transmission Line. The ~~proposed~~ TransWest Express Transmission Line (Figure 3.15-1, Item 25) would not cross any of the Action Alternatives; therefore, no cumulative impacts would result.

Infrastructure ~~Project Construction~~ and Other Cumulative Projects

Construction of infrastructure projects, including the Roosevelt Airport expansion and improvements and Peerless Port of Entry construction and improvements, would consume energy in the form of diesel fuel and gasoline for operation of on-road and off-road construction vehicles and equipment and for operation of construction personnel vehicles. Infrastructure projects constructed during the same timeframe as proposed construction of the Action Alternatives would contribute to demand for diesel

fuel and gasoline (Appendix R, *Other Projects and Actions Considered in the Cumulative Impacts Analysis*).

The anticipated construction timeframe for the Indian Canyon Alternative and Whitmore Park Alternative is 2 years (24 months), and the anticipated construction timeframe for the Wells Draw Alternative is 2.6 years (32 months). Cumulative projects, including the Gateway South Transmission Line, the Pelican Lake Sediment Control Project, and several road improvement projects, could be under construction during the same timeframe as the Action Alternatives. Other cumulative projects, including the Roosevelt Airport expansion, the Ashley Valley Watershed Project, the Uintah Advantage Energy Associates crude oil processing facility, and other road improvement projects, are currently in the planning phases and do not have firm estimates of construction dates (Appendix R, *Other Projects and Actions Considered in the Cumulative Impacts Analysis*). Construction of these planned cumulative projects could also occur during the timeframe of construction of the Action Alternatives.

Section 3.8, *Energy*, Table 3.8-1, provides diesel fuel and gasoline consumption for each year of construction for each Action Alternative. OEA anticipates that total fuel consumption from construction of the Action Alternatives and from cumulative projects constructed in the same timeframe would be small relative to the refining capacity of the Salt Lake City area refineries and would, therefore, not affect regional fuel supply during the construction period.

Section 3.8, *Energy*, Table 3.8-4, provides fuel consumption for rail operations by scenario for the low rail traffic and high rail traffic scenarios for each Action Alternative. Cumulative projects, including road improvements, watershed improvements, and Forest Service actions, would not consume fuel after completion of construction except for equipment and vehicle operations associated with maintenance activities. The proposed Roosevelt Airport expansion and improvements, ~~and~~ Peerless Port of Entry construction and improvements, and the Uintah Advantage Energy Associates crude oil processing facility would increase fuel consumption for operation of those facilities. OEA concludes that fuel consumption for rail operations associated with the proposed rail line, when combined with fuel consumption from the operation of past, present, and reasonably foreseeable actions, would not result in significant cumulative impacts on regional fuel supply. The Uintah Advantage Energy Associates crude oil processing facility would process energy feedstocks and base oil and may contribute to the local fuel supply.

3.15.5.9 Cultural Resources

Cumulative Impacts Study Area

The cultural resources cumulative impacts study area is larger than the study area for direct and indirect cultural resources. It includes the area illustrated on Figure 3.15-1, which encompasses the region's oil and gas fields and other proposed projects. Its northern boundary latitude runs though Vernal and its southern boundary through Price. On the west, the boundary longitude is approximately parallel to

State Route 89. The eastern boundary is the Utah/Colorado state line.

Cumulative Impacts

Construction and operation of the proposed rail line would result in the following impacts on cultural resources: destruction, removal, or alteration of resources within the project footprint, obstructions to accessing cultural resources, and setting impacts (including visual impacts) on resources outside the project footprint. Any Action Alternative could contribute to cumulative impacts on cultural resources by adding to impacts from other projects.

Oil and Gas Development

Cumulative impacts on archaeological resources from oil and gas development would result from ground disturbance during the construction of new access roads, well pads, pipelines, rail terminals, and other associated infrastructure. To the extent that they are present, archaeological resources located on or below the ground surface would be damaged or destroyed by the digging needed to construct the infrastructure used to extract and transport oil and gas. To the extent that tribal resources, above-ground archaeological resources (e.g., rock imagery), and/or built environment resources are present within the footprint of the new infrastructure, these resources would also be damaged or destroyed by construction. Operation of new oil and gas extraction facilities could also impact the setting of above-ground cultural resources.

Impacts from construction and operation of the proposed rail line combined with impacts from oil and gas development could result in cumulative impacts

on cultural resources if oil and gas development projects were to take place within the APE of the Action Alternatives. OEA concludes that adverse cumulative impacts on cultural resources would result because of the potential for permanent damage to or destruction of such resources from construction and degradation of their settings. Mitigation could reduce, but would not eliminate, these cumulative cultural resources impacts. As discussed in Section 3.9, Cultural Resources, adverse effects on cultural resources from construction and operation of the proposed rail line would be appropriately addressed by the implementation of the PA that OEA is developing under Section 106 of the NHPA (Appendix O, ~~*Draft* *Programmatic Agreement*~~). Therefore, OEA concludes that the contribution of the proposed rail line to cumulative impacts on cultural resources would not be significant.

Other Projects and Actions

Although the nature and intensity of each planned project's impacts would vary, the addition of projects or actions in the study area would result in more impacts on cultural resources. Depending on the nature of the other project or action, cultural resources including tribal, archaeological, and built environment resources present within or adjacent to the footprint of the any new infrastructure would be damaged or destroyed by construction. Depending on the character-defining features of cultural resources within the study area of these projects or actions, operation of new projects or actions could also impact the setting of adjacent cultural resources.

Infrastructure Improvement, Watershed Improvement, ~~and~~ Road Improvement, and Crude Oil Processing Facility Projects

To the extent that cultural resources are present within or adjacent to the footprints of any proposed facility, infrastructure, watershed, ~~and~~ road improvement, and crude oil processing facility projects, impacts from such projects would result. Mitigation could reduce, but likely would not eliminate, impacts. If the affected cultural resources are located within the APE of the Action Alternatives, then construction and operation of the proposed rail line could contribute to cumulative impacts on those cultural resources. Because adverse effects on cultural resources from the proposed rail line would be appropriately addressed by the implementation of the PA that OEA is developing in consultation with Section 106 consulting parties, OEA concludes that the contribution of the proposed rail line to cumulative impacts on cultural resources would not be significant.

Federal Agency Actions

Proposed Forest Service projects include removal of a historic guard station, which would be an impact on a cultural resource even with mitigation. Other Forest Service projects may involve ground disturbance or other activities that result in impacts on cultural resources. Some proposed BLM actions may involve ground disturbing activity or other forms of damage/destruction to cultural resources that result in an impact. Mitigation could reduce, but likely would not eliminate, impacts. If the affected cultural resources are located within the APE of the Action Alternatives, then construction and operation of the

proposed rail line could contribute to cumulative impacts on those cultural resources. Because adverse effects on cultural resources from the proposed rail line would be appropriately addressed by the implementation of the PA that OEA is developing in consultation with Section 106 consulting parties, OEA concludes that the contribution of the proposed rail line to cumulative impacts on cultural resources would not be significant.

Interstate Electric Power Transmission

The ~~proposed~~ Gateway South and the TransWest Express transmission line projects both anticipate impacts on cultural resources. Both projects have a Section 106 PA in place to address avoiding, minimizing, and mitigating such impacts. Due to the nature of transmission lines, which have some flexibility in terms of siting, it is possible that impacts on cultural resources can be avoided but equally possible that impacts that cannot be mitigated would occur. Mitigation could reduce, but likely would not eliminate, impacts. If the affected cultural resources are located within the APE of the Action Alternatives, then construction and operation of the proposed rail line could contribute to cumulative impacts on those cultural resources. Because adverse effects on cultural resources from the proposed rail line would be appropriately addressed by the implementation of the PA that OEA is developing in consultation with Section 106 consulting parties, OEA concludes that the contribution of the proposed rail line to cumulative impacts on cultural resources would not be significant.

Cultural Resources Preservation

Although the PA between BLM and the Utah State Historic Preservation Office designed to mitigate adverse effects on historic properties, the need for mitigation implies that cultural resources are being impacted. If the affected cultural resources are located within the APE of the Action Alternatives, then construction and operation of the proposed rail line could contribute to cumulative impacts on those cultural resources. Because adverse effects on cultural resources from the proposed rail line would be appropriately addressed by the implementation of the PA that OEA is developing, OEA concludes that the contribution of the proposed rail line to cumulative impacts on cultural resources would not be significant.

3.15.5.10 Paleontological Resources

Cumulative Impacts Study Area

OEA defined the cumulative impacts study area for paleontological resources as the project footprint, which includes all areas of temporary disturbance where construction activities and staging would occur and all areas of permanent disturbance, including the railbed, access roads, communication towers, and areas of cut and fill. The cumulative impacts study area for paleontological resources is the same as for the analysis of direct and indirect effects.

Cumulative Impacts

A cumulative impact on paleontological resources would occur when past, present, and reasonably foreseeable future projects, in combination with the proposed rail line, would cumulatively disturb, damage, or destroy scientifically important

paleontological resources. Paleontological resources are nonrenewable resources because once they are lost, they cannot be recovered. Cumulative impacts on paleontological resources involve the loss of scientifically important fossils and associated data and the incremental loss to science and society of these resources over time.

Past construction projects, such as road construction and oil and gas well development, that have disturbed the ground and subsurface in areas of high potential to contain fossils have resulted in cumulative conditions affecting paleontological resources in the Basin. However, existing laws and regulations that provide protections for paleontological resources are known to reduce potential impacts with the implementation of mitigation measures during surface- and subsurface-disturbing actions. When properly designed and implemented, these mitigation measures can result in the recovery and permanent preservation of large numbers of scientifically significant paleontological resources that would otherwise have been damaged or destroyed and can greatly reduce the cumulative impacts of construction projects on paleontological resources. With appropriate mitigation, some construction projects can result in beneficial impacts on paleontological resources by making fossils available for scientific research and education that would otherwise never have been unearthed or discovered.

Oil and Gas Development

Impacts on paleontological resources as the result of oil and gas development in the cumulative impacts

study area would occur primarily if fossil-rich geologic units, such as the Green River and Uinta formations, were disturbed during the construction of new access roads, well pads, and pipelines. These actions could damage or destroy surface and subsurface paleontological resources through physical breakage, resulting in direct adverse impacts. New road construction facilitates increased public access to the cumulative impacts study area, which can result in indirect adverse impacts, such as the loss of scientifically important paleontological resources due to unlawful collection and vandalism. With the implementation of appropriate mitigation measures, these impacts could be reduced and could result in beneficial cumulative impacts through the recovery of previously undiscovered paleontological resources of scientific importance. When combined with impacts from past, present, and reasonably foreseeable oil and gas development, OEA expects that impacts from the proposed rail line would not result in significant cumulative impacts on paleontological resources.

The Action Alternatives would connect with the new rail terminals at Myton and Leland Bench. Both terminals would be located in PFYC 2 geologic units, which have low potential to contain paleontological resources (Section 3.10, *Paleontological Resources*, Figure 3.10-1). Therefore, OEA concludes that no cumulative impacts on scientifically important paleontological resources would occur.

Other Projects and Actions

Construction of various planned future projects in the cumulative impacts study area would include surface and subsurface disturbance to geologic units

that have the potential to contain scientifically important fossils that could be damaged or destroyed. Additionally, development projects that result in increased public access due to new roads and trails increase the potential for the loss of scientifically important paleontological resources due to theft and vandalism. The Gateway South Transmission Line project could have direct and indirect impacts on paleontological resources. This project, in combination with the Action Alternatives, would have the potential to cumulatively disturb, damage, or destroy scientifically important paleontological resources. Once they are lost, paleontological resources cannot be recovered because they are nonrenewable. However, the implementation of appropriate mitigation measures during the approval process for the construction projects could result in a beneficial impact through the recovery and permanent preservation of scientifically important paleontological resources that would otherwise likely never have been discovered. Therefore, OEA concludes that the impacts from the proposed rail line, when combined with impacts from past, present, and reasonably foreseeable actions, would not result in significant cumulative impacts on paleontological resources.

3.15.5.11 Land Use and Recreation

Cumulative Impacts Study Area

The cumulative impacts study area for land use and recreation encompasses Carbon, Duchesne, Uintah, and Utah Counties in Utah. The cumulative impacts study area differs from the footprint-specific study area defined Section 3.11, *Land Use and*

Recreation, because construction of an Action Alternative would preclude any other land use impacts within that footprint. The broader four-county planning cumulative impacts study area supports a cumulative impact analysis of total acres of land use designation and ownership impacts.

Cumulative Impacts

Oil and Gas Development

The impacts from oil and gas development would be consistent with trends associated with the continued development of oil and gas resources in the cumulative impacts study area. These trends include increasingly greater density of surface disturbance and construction of facilities due to infill drilling in known oil and gas fields; increasing the potential for loss of livestock forage due to surface disturbance and livestock mortality from vehicle traffic; and increasing visual and noise impacts on recreational users. The proposed rail line would contribute to these changes in land use, including permanent changes in landownership and the loss of public and private lands used for grazing, agriculture, and mineral development. Construction and operation of any of the Action Alternatives would also contribute to visual and noise impacts on recreational users, particularly on areas of public lands where recreationists seek solitude and unobstructed recreational experiences. In the event the proposed rail line is authorized and constructed, OEA anticipates that rail terminals would be constructed near Myton and Leland Bench to transfer commodities between truck and rail transportation modes. Operation of the rail terminals, as well as construction and operation of the proposed

rail line, would require the permanent conversion of historical land uses. The rail terminals would be constructed on private land and would result in permanent changes in land ownership and the loss of lands used for grazing, agriculture, and mineral development if these uses are present and could not be avoided during construction and operation of the terminals. The proposed rail line would contribute to these impacts, as well as to visual and noise impacts on recreational activities, particularly if the immediate vicinity of the terminal areas is used for hunting.

As discussed in Section 3.11, *Land Use and Recreation*, construction and operation of the proposed rail line would result in locally significant impacts on land use and recreation, including the permanent loss of irrigated cropland and grazing land, the severance of properties, and visual and noise disruption of recreational activities on public and private lands. Construction and operation of new oil and gas development projects and new rail terminals could worsen those impacts if they were to occur in the same area as the proposed rail line because of the potential for permanent changes in landownership, the loss of public and private lands, and the increase in visual and noise impacts on recreational users.

Other Projects and Actions

The types of impacts that would affect land use and recreation from past, present, and future actions in the cumulative impacts study area, such as changes in land use and recreational experiences from interstate electric power transmission projects, are similar to those that would occur from the proposed

rail line (Section 3.11.3.1, *Impacts Common to All Action Alternatives*). Conversely, Forest Service actions in the cumulative impacts study area such as the Badlands Lop and Scatter Project and the Badlands Trail Project would result in beneficial impacts on land use and recreation by improving hunting and recreational opportunities.

Short-term cumulative impacts on land use, including the potential loss of public and private lands used for grazing, agriculture, and mineral development would result from the combination of any of the Action Alternatives and the past, present, and future actions. The long-term cumulative impacts would include the permanent conversion of existing land use, permanent loss of livestock forage, and loss of existing cropland. The short-term cumulative impacts on recreation from any of the Action Alternatives in combination with the past, present, and future actions would include potential altered access and increased noise and visual impacts during construction. Long-term cumulative impacts on recreation include new infrastructure that would introduce permanent visual and noise impacts on recreationists in the cumulative impacts study area. The contribution of impacts on land use and recreation from the proposed rail line would generally be greatest under the Wells Draw Alternative because it would affect the most total land, followed by the Whitmore Park Alternative and then the Indian Canyon Alternative. The Indian Canyon Alternative and Whitmore Park Alternative would contribute short- and long-term cumulative impacts on IRAs by introducing new visual and noise impacts on National Forest System lands. If the Indian Canyon Alternative

or Whitmore Park Alternative were licensed, the Coalition will consult with the Forest Service to ensure that construction and operation of the rail line complies with the *Ashley National Forest Land Management Plan* (Forest Service 2017a), including any existing or potential amendments to that plan, and with the Forest Service 2001 Roadless Rule. Because the Indian Canyon Alternative or the Whitmore Park Alternative alignment would adhere to mitigation conditions imposed by the Forest Service, OEA anticipates that cumulative impacts on IRAs would not be significant.

3.15.5.12 Visual Resources Cumulative Impacts Study Area

The cumulative impacts study area for visual resources is the viewshed that encompasses both the proposed rail line and the other cumulative projects. The cumulative impacts study area encompasses up to 10 miles from the rail line footprint, which is within the middleground to background zones. This broad study area includes views of the cumulative projects that OEA identified, as well as the proposed rail line. The cumulative impacts study area for visual resources is not the same as for the analysis of direct and indirect effects.

Cumulative Impacts

Oil and Gas Development

Impacts on visual resources resulting from oil and gas development in the cumulative impacts study area would occur where exploration, construction, and operation of oil and gas infrastructure would be visible by a casual observer. Visual intrusions into the landscape could include any type of infrastructure

related to the oil and gas development, including new access roads, well pads, and pipelines, as well as associated vegetation clearing. The proposed rail line would contribute to these visual impacts by introducing new humanmade infrastructure into the landscape. These cumulative impacts would occur where oil and gas wells are located in the vicinity of the proposed rail line and visible to viewers passing through the cumulative impacts study area. The area where these cumulative impacts would occur already contains extensive oil and gas infrastructure and the addition of new industrial elements would not change the overall visual character. Therefore, OEA concludes that impacts from the proposed rail line, when combined with impacts from past, present, and foreseeable future oil and gas development, would not result in significant cumulative impacts on visual resources.

The Action Alternatives would connect with the terminals at Myton and Leland Bench. Construction and operation of the terminals would introduce industrial elements on the landscape and generate fugitive dust and temporary nighttime lighting. The proposed rail line would contribute to these visual effects by adding additional rail and industrial infrastructure near Myton and Leland Bench. Because the terminals would be located on private land and in areas where oil and gas industry-related infrastructure already exists on the landscape, impacts on visual resources would be limited. OEA concludes that the proposed rail line, when combined with construction and operation of the terminals, would not result in significant cumulative impacts.

Other Projects and Actions

The proposed rail line would combine with impacts from other projects and actions in the cumulative impacts study area to result in cumulative impacts on visual resources. Construction of new rail terminals and other projects in the cumulative impacts study area, including the *Duchesne County Watershed Plan* (NRCS Utah 2020), the Duchesne County Myton Main Street project, the U.S. Highway 40 improvement project, the removal of the Indian Canyon Guard Station, Ashley National Forest grazing allotments, ~~and~~ the Gateway South Transmission Line, and the Uintah Advantage Energy Associates crude oil processing facility would contribute to impacts on visual resources. Each of these projects and plans would be within 10 miles of the Action Alternatives and would be visible within the foreground to background views from the proposed rail line. Impacts on visual resources from other projects and actions would primarily include construction activities, with the exception of the Gateway South Transmission Line and the Uintah Advantage Energy Associates crude oil processing facility, which would also contribute impacts post-construction. Impacts on visual resources associated with the Duchesne County Myton Main Street Project, U.S. Highway 40 improvement project, and removal of the Indian Canyon Guard Station would be temporary and would decrease to negligible impacts post-construction as the infrastructure for these projects is already present. Temporary impacts on visual resources from these projects could result from increased dust, the presence of construction equipment, and increased traffic. The overall

landscape features would likely not be noticeable to the casual observer because the basic elements of form, line, color, and texture would likely remain post-construction.

As stated in Section 3.12, Visual Resources, direct impacts resulting from the proposed rail line under the Indian Canyon Alternative and the Whitmore Park Alternative would conflict with the existing Ashley National Forest visual quality objective designations. OEA is therefore recommending mitigation requiring the Coalition follow the reasonable requirements of any Forest Service decision permitting the proposed rail line within Ashley National Forest, should the Board approve either the Indian Canyon Alternative or the Whitmore Park Alternative, and to ensure that construction and operation on Forest Service lands comply with the Ashley National Forest Land Management Plan (Forest Service 2017a). The Forest Service may need to amend the Ashley National Forest Land Management Plan to update visual quality objective designations to permit the proposed rail line.

The *Duchesne County Watershed Plan* (NRCS Utah 2020), ~~and~~ the Gateway South Transmission Line, and the Uintah Advantage Energy Associates crude oil processing facility would contribute to visual impacts in the cumulative impacts study area during construction and post-construction of those projects. Similar to the description of the temporary impacts from other projects above, impacts on visual resources from these projects could result from increased dust, the presence of construction equipment, and increased traffic. Long-term impacts that could result post-

construction include vegetation clearing and the introduction of infrastructure and humanmade features (such as transmission lines and associated infrastructure, canals, flood-control elements, ~~and~~ irrigation elements, and industrial buildings and facilities associated with crude oil processing). The introduction of these features could result in changes in the basic elements of form, line, color, and texture, and would remain post-construction. The Uintah Advantage Energy Associates crude oil processing facility would be located on private land near the proposed rail line terminus at Leland Bench, in an area of the Basin with substantial past, present, and future oil and gas development. The proposed rail line and the crude oil processing facility would add new industrial facilities to an area where oil and gas industry-related infrastructure already exists on the landscape; therefore, impacts on visual resources would be limited.

The Ashley National Forest grazing allotments are within the cumulative impacts study area. The effects of grazing livestock are apparent in the area, such as fences, troughs and small water developments, but the water developments and fences are generally masked by vegetation and are not easily noticeable (Forest Service 2017b). Because these grazing allotments are currently present, and no additional improvements or changes are proposed for the allotments, no additional impacts are anticipated.

Cumulative projects including the Gateway South Transmission Line, *Duchesne County Watershed Plan* (NRCS Utah 2020), Myton Main Street Project, U.S. Highway 40 improvement project, and removal of the

Indian Canyon Guard Station could be under construction during the same time as the proposed rail line. Rail terminals could also be constructed during the same time frame as the proposed rail line, which would result in cumulative impacts on visual resources. OEA concludes that the impacts from the proposed rail line, when combined with impacts from past, present, and reasonably foreseeable actions, would not result in significant cumulative impacts on visual resources due to the additional visual disturbances these actions would introduce into the landscape.

3.15.5.13 Socioeconomics

Cumulative Impacts Study Area

OEA defined the cumulative impacts study area for socioeconomics as the four-county area that includes Carbon, Duchesne, Uintah, and Utah Counties. The cumulative impacts study area for socioeconomics is the same as for the analysis of direct and indirect effects.

Cumulative Impacts

Potential socioeconomic impacts of the proposed rail line could result from property acquisitions and displacements, displaced economic activity, adverse effects on nonmarket social values[5] and quality of life, benefits to the local economy, and increased tax revenue. Other past, present, and reasonably foreseeable future actions would contribute to or offset

[5] Nonmarket social values include appreciation for areas that are ecologically or culturally unique or sensitive, scenic, undisturbed, and free of pollution and areas that provide opportunities for quiet recreation, or that convey a sense of place.

socioeconomic impacts of the proposed rail line as described below.

Oil and Gas Development

Construction of the proposed rail line would increase transportation capacity to ship an additional 130,000 to 350,000 barrels of oil on average each day from existing oil fields in the study area (Figure 3.15-1). To produce a steady state volume of oil to meet the planned transportation capacity of the proposed rail line, OEA estimates that oil and gas companies would need to drill between 49 and 131 new wells annually and would need to construct ancillary facilities for oil field development (i.e., access roads, electric power distribution lines, well pads, and storage tanks). This estimated increase in annual oil production would generate long-term employment, labor income, and increased direct, indirect, and induced spending on goods and services in the cumulative impacts study area and would generate increased state and local revenue through income taxes and sales and use taxes. New wells drilled on state land or accessing state minerals would also generate additional revenue for the state through royalties and lease payments.

Economic benefits related to direct, indirect, and induced spending would extend to members of the Ute Indian Tribe who reside in the cumulative impacts study area and to Indian-owned businesses that would benefit from indirect and induced spending. Other revenue streams associated with oil and gas development that would directly benefit the Ute Indian Tribe include royalties and lease payments associated with oil well development on Tribal trust lands, compensation for water use agreements to

provide water for drilling, direct and indirect employment to support oil and gas development on Tribal trust lands, and payment of taxes and business fees to the tribe.

Employment for oil field development could result in short-term or long-term jobs depending on the pace of development over time, with more steady state employment leading to longer-term jobs and more uneven cycles of employment resulting in shorter-term employment. Forecast increases in employment for oil field development would increase demand for housing and public services in the cumulative impacts study area for as long as the rail line is in operation.

In the event the proposed rail line is authorized and constructed, rail terminals would be needed to transfer commodities between truck and rail transportation modes. Construction of the rail terminals would generate employment and labor income and would increase direct, indirect, and induced spending on goods and services within the cumulative impacts study area. Construction of the rail terminals would also generate increased state and local revenue through income taxes and sales and use taxes. These economic benefits would extend to tribal members that reside in the cumulative impacts study area and to Indian-owned businesses that would benefit from indirect and induced spending.

OEA estimated that peak employment for construction of the rail terminals would be 300 workers for each facility, or up to 600 workers if the facilities are constructed concurrently. Construction employment for the rail terminals would be additive to construction employment for the proposed rail line

and would further increase demand for temporary housing and public services in communities located within a commuting distance to each job site. However, if dedicated construction camps are used for construction of the rail terminals, the demand for temporary housing would be reduced.

During operations, OEA estimated that each of the two rail terminals would employ 50 to 125 personnel for operations. Long-term employment for operation of the rail terminals could be filled by local workers or nonlocal workers that migrate to the study area and increase demand for public services and long-term housing. OEA estimated that between 622 and 1,675 truck trips per day would be needed to transport oil from oil fields in the Basin to the rail terminals during operations, which would increase employment for short-haul trucking in the study area. OEA anticipates that long-haul trucking would continue to serve oil refineries in the Salt Lake City area during rail operations.

In 2017, over 2,000 temporary accommodations and over 2,500 vacant housing units were available in the communities of Helper, Price, Wellington, Myton, Roosevelt, Duchesne, Ballard, Vernal, and Naples in Utah (Section 3.13, *Socioeconomics*, Table 3.13-2), and OEA anticipates that cumulative demand for short-term and long-term workforce housing would not exceed available capacity during construction or operation of the proposed rail line.

Conversion of land in the Basin for additional oil production and construction of the rail terminals would add industrial facilities, construction noise, truck traffic, and air quality emissions, which would

result in adverse effects for nonmarket social values and quality of life for populations, including tribal members, that reside in proximity to oil fields and the proposed locations for the rail terminals. These effects would be additive to adverse effects on nonmarket social values and quality of life from construction and operation of the proposed rail line.

The economic benefits of the cumulative actions would generally be regional while the adverse economic effects would be more localized. OEA concludes that, as a whole, the impacts from the proposed rail line, when combined with impacts from past, present, and reasonably foreseeable oil and gas development, would not result in significant adverse cumulative impacts on socioeconomics.

Other Projects and Actions

Other reasonably foreseeable future actions including implementation of watershed improvement projects, road improvements, facility and other infrastructure improvements, ~~and~~ construction of interstate electric power transmission lines, and a crude oil processing facility would generate construction employment, labor income, and increased direct, indirect, and induced spending on goods and services within the cumulative impacts study area. Construction employment and spending would also generate increased state and local revenue through income taxes and sales and use taxes. Increases in employment and revenue generation would be additive to the Action Alternatives.

OEA expects that workers employed for construction of local infrastructure improvement projects would be sourced locally, while construction

of the interstate transmission lines would employ a mix of local and nonlocal workers that would move along the transmission lines as they are constructed. Temporary construction workers that do not reside locally would increase demand for public housing and services in the study area. The Uintah Advantage Energy Associates crude oil processing facility would require temporary construction workers to build the facility and a permanent skilled workforce to operate and maintain the facility. OEA anticipates that the operations workforce would reside and contribute to spending in local communities located near the processing facility. To the extent that operations jobs for the proposed rail line and other cumulative projects would be filled by nonlocal workers, the influx of workers to the study area would increase demand for local housing and public services. Road improvements and other facility and infrastructure improvements (i.e., Roosevelt airport and library expansions, Port of Entry improvements, stormwater infrastructure improvements) would increase the capacity or quality of public facilities in the study area, which would be beneficial for meeting the increased demand for those services by nonlocal construction workers.

Acquisition of land for other reasonably foreseeable future actions would be negotiated between the project proponent and landowner, and OEA does not expect there would be cumulative effects related to land acquisition and displacement, or displacement of economic activity. OEA does not expect that cumulative projects on private land that are in areas with existing infrastructure development, such as the Uintah Advantage Energy Associates

crude oil processing facility, would substantively alter the landscape or affect recreational setting or wildlife habitat that contribute to quality of life in the study area. Construction of two interstate electric power transmission lines (Gateway South and TransWest) would add large-scale utility infrastructure to the landscape with further deterioration of the scenic, recreational, environmental, and wilderness aspects of lands in the study area. Other existing and reasonably foreseeable future actions offer offsetting benefits for maintaining these qualities in the landscape. For example, large areas within the cumulative impacts study area are managed as public lands administered by BLM and the Forest Service. As such, BLM and Forest Service land management plans and associated land use designations comprise the principal mechanism for maintaining land uses that support nonmarket values and quality of life in the study area. Continued federal management of public lands with special designations (i.e., ACECs, Special Recreation Management Areas, Lands with Wilderness Characteristics, and IRAs) in accordance with BLM and Forest Service land management plans would have offsetting benefits for the maintenance of scenic, recreational, environmental, and wilderness aspects of lands in the study area. In summary, OEA expects that the beneficial impacts from increased employment and spending would offset the adverse impacts from the deterioration of scenic, recreational, environmental and wilderness aspects of lands within the study area. Therefore, OEA concludes that the impacts from the proposed rail line, when combined with impacts from past, present, and reasonably

foreseeable actions, would not result in significant adverse cumulative impacts on socioeconomics.

3.15.5.14 Environmental Justice

Cumulative Impacts Study Area

OEA defined the cumulative impacts study area for environmental justice as the four-county area that includes Carbon, Duchesne, Uintah, and Utah Counties. The cumulative impacts study area for environmental justice is the same as for the analysis of direct and indirect effects.

Cumulative Impacts

OEA reviewed the cumulative impact analyses for all resource areas analyzed in Section 3.14, *Environmental Justice*, to identify any high and adverse cumulative impacts related to construction and operation of the proposed rail line in combination with other past, present, and reasonably foreseeable future actions. For the cumulative environmental justice analysis, OEA identified high and adverse impacts where cumulative impacts would be significant under NEPA or above generally accepted norms and have the potential to adversely affect minority populations, low-income populations, or American Indian tribes. These high and adverse impacts include increases in vehicle delay on local roads that would be used for rail terminal operations, and cumulative impacts of oil and gas development on land use, recreation, and air quality.

OEA also reviewed other adverse impacts that the Ute Indian Tribe identified as areas of concern, to determine if impacts would be otherwise high and adverse for tribal members specifically. Through

consultation with the Ute Indian Tribe, OEA identified impacts related to air emissions, vehicle safety and delay, rail operations safety, big game habitat and movement~~igration~~ corridors, impacts on habitat for Pariette cactus and Uinta Basin hookless cactus, and protection of cultural resources as areas of concern to the tribe.

Where OEA identified high and adverse cumulative impacts that would affect minority populations, low-income populations, or American Indian tribes, OEA evaluated whether those impacts would be disproportionately high and adverse. To make this determination, OEA considered whether the affected minority populations, low-income populations, or American Indian tribes would experience exposure to an adverse effect that would be appreciably more severe or greater in magnitude than the adverse effect that the general population in the affected area would experience. In making its determinations, OEA considered the totality of the circumstances, including the benefits that could result from the proposed rail line in combination with other past, present, or reasonably foreseeable future actions.

Oil and Gas Development

Vehicle Safety and Delay

Construction and operation of any of the Action Alternatives would—along with oil and gas development activities in the Basin and construction and operation of the rail terminals—contribute to increased vehicle trips in the cumulative impacts study area.

OEA anticipates that construction of the proposed rail line would occur during the same time period as terminal construction and that both activities would contribute additional vehicle trips on study area roads. The major roadways in the study area all have substantial additional capacity. Vehicles would also use a network of local roads near the terminal locations during construction of the terminals. Construction traffic would increase vehicle trips and could result in delays and localized road damage. This impact would be temporary during the construction period. OEA expects that damage to local roads caused by construction activities would be addressed through road use or easement agreements. Because of the ample roadway capacity in the study area and temporary nature of the impact, traffic from construction of the proposed rail line, when combined with traffic from terminal construction would not result in significant impacts on vehicle delay.

Once the proposed rail line and the terminals are constructed, additional vehicle trips would be generated for development and maintenance of oil wells, transporting oil from oil fields to the terminals, and for operation of the proposed rail line and rail terminals, including vehicle trips for employee commuting. Traffic generated for oil field development and maintenance, and for transporting oil out of the field, would be dispersed across the major roadways and other local public and private roadways used to access oil fields in the Basin (Figure 3.15-1).

OEA concludes that because of ample roadway capacity and the dispersion of the increased traffic from oil and gas development, impacts on major

roadways from the proposed rail line, when combined with traffic from oil and gas development would not result in significant cumulative impacts on vehicle delay. Local roads, however, have smaller roadway capacity, and an increase in traffic on local roads used to serve the terminals would result in locally significant cumulative impacts on vehicle delay. Local roads near the rail terminals include Leland Bench Road, 7500 E~~,~~ /AR-88, and Sandwash Road/6000 W/~~5888~~5880 W. Increases in traffic to support terminal operations on these roads could be substantial, and without road improvements such as additional turning lanes, could result in vehicle delays. The rail terminals are located in an area where minority and low-income populations and American Indian tribal members live. Because high and adverse effects related to vehicle delay on local roads near the terminals would affect communities where these populations are present, and would not occur elsewhere, OEA determined that impacts on local roads from terminal operation would result in a disproportionately high and adverse effect on minority and low-income populations, and the Ute Indian Tribe.

Rail Operations and Safety

Terminal operations involve heated storage tanks, loading and unloading racks, and train tracks for active loading that have the potential for accidents involving injuries to workers; damage to rail cars, trucks, and equipment on site; or possibly oil spills resulting from equipment failures, human errors, or external events (such as vandalism or extreme weather). The terminal operator's use of proper

procedures, protective equipment, and training would limit the likelihood of injury or damage. Constructing and operating the rail terminals in compliance with applicable local, state, and national standards and guidelines would minimize both the potential for accidents of any kind and the potential consequences of accidents. OEA determined that the cumulative impact of operating the proposed rail line and rail terminals would not be high and adverse. Therefore, impacts related to rail operations and safety would not result in disproportionately high and adverse impacts on minority and low-income populations, or American Indian tribes.

Air Quality

Ambient pollutant concentrations in the cumulative impacts study area are influenced by numerous emissions sources spread throughout the study area and beyond, as well as by regional meteorology and topography. Oil and gas development would result in air emissions from construction equipment, drilling equipment, and vehicles used in well development. Once a well is producing, emissions occur from operations and maintenance activities, which generate truck trips to the well site, and from trucks that transport the crude oil to the rail terminals. Emissions also occur from venting, flaring, equipment leaks, and engine exhaust from equipment located at operating wells. USEPA has designated the Basin as nonattainment for ozone and OEA expects that existing exceedances of the ozone NAAQS would continue if the proposed rail line was constructed and operated in combination with ongoing oil and gas development in the cumulative impacts study area.

Air emissions from oil and gas development would occur throughout the study area within oil fields shown on Figure 3.15-1 and impacts on air quality would not be disproportionately borne by minority or low-income populations, or the Ute Indian Tribe.

The rail terminals are located in an area where OEA has identified the presence of minority and low-income populations, and the Ute Indian Tribe. OEA anticipates that air emissions from terminal construction and operation would not lead to ambient concentrations that could exceed the NAAQS in the local areas of the terminals. In addition, OEA does not expect that the cumulative impact of terminal operations and rail operations on the track to the terminal would exceed the NAAQS. The terminals would require air quality permits. As part of the permit application process the terminal developer must demonstrate to the satisfaction of Utah DEQ that the facility would not cause concentrations to exceed the NAAQS. Locomotives are mobile sources and would only intermittently contribute to ambient pollutant concentrations at the terminals, which are stationary sources.

OEA concludes that cumulative impacts on air quality resulting from construction and operation of the proposed rail line and rail terminals would not be high and adverse, and therefore would not result in disproportionately high and adverse effects on minority or low-income populations, or the Ute Indian Tribe.

Biological Resources

Sclerocactus

Construction of any of the Action Alternatives would temporarily disturb and permanently remove suitable habitat for Pariette cactus and Uinta Basin hookless cactus. The amount of temporary disturbance and permanent removal of suitable habitat would be greatest under the Wells Draw Alternative. The Indian Canyon Alternative and Whitmore Park Alternative could also temporarily disturb or permanently remove habitat in a Core 2 Conservation Area[6] on Tribal trust lands. Oil and gas fields in the cumulative impact study area overlay close to 350,000 acres of suitable habitat for Sclerocactus and more than 94,000 acres of Core Conservation Area, and future oil and gas development in the Basin would likely remove additional suitable habitat for Pariette cactus and Uinta Basin hookless cactus.

Pariette cactus and Uinta Basin hookless cactus are both listed as threatened under ESA. To address impacts of the Action Alternatives on the Pariette cactus and Uinta Basin hookless cactus, OEA is consulting with USFWS to develop appropriate mitigation for those species, pursuant to ESA Section 7. Future oil and gas development involving federal surface or federal minerals in the cumulative impact study area would also trigger consultation with USFWS under Section 7. This would reduce the

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[6] A *Core 2 Conservation Area* for cactus is an area that contains the densest concentrations of cactus with a 1,000-meter buffer using a kernel density analysis.

impacts of future oil and gas development on Pariette cactus and Uinta Basin hookless cactus where there is a federal nexus. OEA also expects that oil and gas development on Tribal trust lands would be conducted in accordance with the tribe's Sclerocactus management planning, which may include undertaking soil assessments, complying with mitigation measures to be developed in consultation with the tribe, and contributing to a conservation mitigation fund.

These measures would reduce but not completely avoid adverse effects to these ESA-listed species, particularly in areas that do not involve federal surface, federal minerals, or Tribal trust lands. Of the nearly 350,000 acres of suitable habitat that overlay oil and gas fields in the study area, approximately 281,000 acres are located in areas with federal or tribal jurisdiction, while over 68,000 acres have no federal or tribal jurisdiction. Because Pariette cactus and Uinta Basin hookless cactus are culturally important to the Ute Indian Tribe and the cumulative oil and gas development scenario involves substantial potential for disturbance or removal of suitable habitat, OEA believes that cumulative adverse effects on Pariette cactus and Uinta Basin hookless cactus would be a disproportionately high and adverse effect for the Ute Indian Tribe.

Big Game Habitat and Migration

Big-game species (i.e., bighorn sheep, elk, moose, mule deer, and pronghorn antelope) all have yearlong substantial and/or crucial habitat in the cumulative impact study area. Construction of any of the Action Alternatives would temporarily disturb or

permanently remove big-game habitat in the project footprint and could potentially disrupt movement~~igration~~ corridors.

Ongoing and future oil and gas development and construction of the rail terminals would contribute to cumulative impacts on wildlife, including big game species by causing habitat loss, degradation, and alteration, as well as potentially causing injury or mortality of wildlife, and wildlife avoidance from increased human activity. The extent of potential cumulative impacts would depend on the location of the oil and gas development relative to the proposed rail line, with a greater potential for a cumulative impact if the activity is closer to the proposed rail line.

The Ute Indian Tribe has strong hunting traditions that are still practiced today and that are important to tribal members' way of life. Impacts on big game from habitat disturbance and noise could diminish hunting opportunities and adversely affect tribal hunting traditions. Because this effect would be experienced only by tribal members, OEA concludes that it would represent a disproportionate effect for the Ute Indian Tribe. OEA has concluded, however that the effect would not be high and adverse. Therefore, OEA concludes that cumulative impacts on big game would not result in disproportionately high and adverse effects on minority or low-income populations, or the Ute Indian Tribe.

Cultural Resources

Oil and gas development would result in ground disturbance for the drilling of new wells and the construction of well pads, pipelines, electric power distribution lines, access roads and other associated

infrastructure. To the extent that they are present, archaeological resources could be disturbed by construction activities that involve excavation, grading, and other earthwork. Because the cumulative impact study area has not been surveyed comprehensively, OEA concludes that additional cultural resources, such as previously unidentified archeological sites and rock imagery sites, are likely to be present in the study area. It is likely that many of these unidentified cultural resources are of cultural significance to the Ute Indian Tribe and that adverse effects to those resources would, in the absence of mitigation, be a disproportionately high and adverse impact on the tribe.

Where there is a federal nexus (i.e., use of federal surface or extraction of federal minerals), oil and gas development activities would be subject to NHPA Section 106 consultation and OEA expects that adverse effects would be avoided, minimized, or mitigated through the Section 106 process. Similarly, oil and gas development with a State nexus (i.e., use of State lands or extraction of State-owned minerals) would be subject to state regulations that govern the protection of cultural resources, and development of Tribal trust lands would be subject to consent of the Ute Indian Tribe.

OEA expects that the Ute Indian Tribe would be engaged to resolve adverse effects on cultural resources that are important to the tribe where there is a federal, state, or tribal nexus, such that adverse effects would be less than significant. Oil and gas development on private surface and accessing private minerals would not be subject to the same of level of

protection, although a more limited review may be undertaken for a specific activity that requires a federal or state permit, approval, or license. Because there is a lower level of cultural resource protection on private surface accessing private minerals, OEA expects that adverse effects of future oil and gas development on private surface with private minerals could result in a disproportionately high and adverse effect to the Ute Indian Tribe.

Socioeconomics

As described in Section 3.15.5.13, *Socioeconomics*, construction and operation of the proposed rail line and rail terminals, and projected oil field development to meet the transportation capacity of the rail line, would all generate employment, labor income, and spending on goods and services in the cumulative impacts study area. Economic benefits related to direct, indirect, and induced spending would extend to members of the Ute Indian Tribe who reside in the cumulative impacts study area and to Indian-owned businesses that would benefit from indirect and induced spending. Other revenue streams associated with oil and gas development that would directly benefit the Ute Indian Tribe include royalties and lease payments associated with oil well development on Tribal trust lands, compensation for water use agreements to provide water for drilling, direct and indirect employment to support oil and gas development on Tribal trust lands, and payment of taxes and business fees to the tribe.

Conversion of land in the Basin for additional oil production and construction of the rail terminals would add industrial facilities, construction noise,

truck traffic, and air quality emissions, which would result in adverse effects for nonmarket social values and quality of life for populations, including tribal members, that reside in proximity to oil fields and the proposed locations for the rail terminals. These effects would be additive to adverse effects on nonmarket social values and quality of life from construction and operation of the proposed rail line. These adverse effects would be offset by economic benefits that would be realized locally and regionally within the four-county study area.

OEA concludes that, as a whole, the impacts from the proposed rail line, when combined with impacts from construction and operation of the rail terminals, and reasonably foreseeable oil and gas development, would not result in high and adverse effects on socioeconomics. Therefore, OEA concludes that cumulative impacts on socioeconomics would not result in disproportionately high and adverse effects on minority or low-income populations, or American Indian tribes.

Other Projects and Actions

The Uintah Advantage Energy Associates crude oil processing facility would be constructed near the proposed rail line terminus at Leland Bench and one of the rail terminals, in an area where minority and low-income populations and American Indian tribal members live. Construction and operation of the crude oil processing facility would primarily contribute to the cumulative effects of increased vehicle traffic, air emissions, and economic benefits from employment, labor income, and increased direct, indirect, and induced spending on goods and services. These effects

would be additive to those described previously from construction and operation of the proposed rail line when combined with the rail terminals and oil field development and could continue to disproportionately high and adverse impacts on minority and low-income populations related to vehicle safety and delay.

Except for the Uintah Advantage Energy Associates crude oil processing facility, ~~T~~the other projects and actions considered in this cumulative impact analysis are not concentrated in areas where OEA determined minority or low-income populations, or the Ute Indian Tribe to be present. In addition, the cumulative impact analyses presented in Sections 3.15.5.1 through 3.15.5.13 do not identify any other high and adverse cumulative impacts related to construction and operation of the proposed rail line in combination with other projects and actions. Therefore, OEA concludes that the other projects and actions would not contribute to disproportionately high and adverse effects on minority or low-income populations, or American Indian tribes.

Appendix C, *Unita Basin Railway, Final Environmental Impact Statement*, STB Docket No. FD 36284 (Aug. 2021)

Downline Analysis Study Area and Train Characteristics

Introduction

This appendix describes how the Surface Transportation Board's (Board's), Office of Environmental Analysis (OEA) identified the study area for downline impact analysis and provides information on the characteristics of existing rail traffic in the downline study area. Appendix B, *Applicable Regulations*, summarizes regulations and guidance related to the downline impact analysis. The resource sections in Chapter 3, *Affected Environment and Environmental Consequences*, provide additional information describing the various downline analyses.

The Board's regulations establish thresholds for environmental review of potential downline impacts (49 Code of Federal Regulations [C.F.R.] § 1105.7(e)(11)(v)). The threshold for analysis of potential air quality impacts (C.F.R. § 1105.7(e)(5)) is generally an increase of at least eight trains per day in areas designated as in attainment under the Clean Air Act, or three trains per day in nonattainment areas. The threshold for analysis of potential noise impacts (C.F.R. § 1105.7(e)(6)) is generally an increase of at least eight trains per day combined with an incremental increase in noise levels, as measured by a day-night average noise level (DNL), of 3 A-weighted decibels (dBA) or more and an increase to a noise level of 65 DNL or more. The thresholds for analysis of potential energy impacts (C.F.R. § 1105.7(e)(4)) are

specific to diversion of freight shipments from rail to motor carriage; therefore, they are not relevant in this case. Based on its experience applying the thresholds for air and noise on freight rail construction and operation projects, OEA has determined that these thresholds should also apply to freight rail safety and grade-crossing safety and delay.

As described in Chapter 2, Section 2.1, *Proposed Action*, the Seven County Infrastructure Coalition (Coalition) estimates that, on average, as few as 3.68 trains per day (low rail traffic scenario) or as many as 10.52 trains per day (high rail traffic scenario) could operate on the proposed rail line, depending on future market conditions. That estimate includes between 3.68 and 9.92 crude oil trains, including both unloaded trains entering the Uinta Basin (the Basin) and loaded trains leaving the Basin, and between 0 and 0.6 frac sand trains, including both loaded trains entering the Basin and unloaded trains leaving the Basin. This rail traffic would connect to the national freight rail network near Kyune, Utah, and from there could be transported to and from multiple destinations.

There are many factors that determine possible destinations for loaded crude oil trains originating in the Basin and the routes those trains could take within the national (downline) freight rail network to reach those destinations. The possible destinations and routes then determine where the estimated increase in rail traffic could warrant analysis based on the Board's thresholds. OEA determined the downline study area by first considering the likely destinations for crude oil that would be transported by the proposed rail line. OEA then considered potential routing to

those destinations and where the estimated project-related rail traffic would exceed the analysis thresholds.

Destination Alternatives

Currently, most crude oil produced in the Basin (known as Uinta Basin crude oil) is transported by truck to refineries in the Salt Lake City area. If the Coalition were to construct and operate the proposed rail line, OEA does not expect that trains from the proposed rail line would transport Uinta Basin crude oil to Salt Lake City refineries because those refineries do not currently have the ability to receive crude oil shipments by rail. OEA expects that trains originating on the proposed rail line would transport crude oil to markets in other regions of the United States. The final destinations of the trains would depend on the ability and willingness of refineries in other markets to receive rail cars carrying Uinta Basin crude oil and process the oil in their refineries. In November 2019, the Coalition confirmed the following refineries represent a reasonable list of potential target markets as identified in the *Pre-Feasibility Study of a Prospective Railroad Connecting the Uinta Basin to the National Rail Network* (R.L. Banks & Associates 2018) (R.L Banks study).

- Marathon in Anacortes, Washington
- Marathon in Catlettsburg, Kentucky
- Calumet in Shreveport, Louisiana
- Exxon Mobil in Baton Rouge, Louisiana
- Marathon in Garyville, Louisiana
- Chevron in Pascagoula, Mississippi

- ExxonMobil in Baytown, Texas
- Shell in Deer Park, Texas
- Marathon in Galveston Bay, Texas
- Valero in Port Arthur, Texas

The R.L. Banks study discussed with these refineries the possibility of purchasing and refining Uinta Basin crude oil. It is likely that some of these refineries would purchase Uinta Basin crude oil if they found the price attractive. Other refineries could also likely evaluate and potentially purchase Uinta Basin crude oil.

Because other refineries could be interested in processing Uinta Basin crude oil in addition to those identified in the R.L. Banks study, OEA elected to take a regional, refining, market-centered approach for considering the potential destinations for Uinta Basin crude oil. In doing so, OEA focused on the specific geographic refining market centers shown in Table C-1.

Table C-1. Potential Geographic Refining Market Centers for Uinta Basin Crude Oil

Location	Number of Refineries	Capacity (b/d)
Texas Gulf Coast	15	4,137,000
Louisiana Gulf Coast	16	3,696,000
Puget Sound	5	651,700
Total	**36**	**8,484,000**

Notes:
b/d = barrels per day

OEA found these locations to be the most likely destinations for several reasons.

- The average size of the Gulf Coast refineries is about 250,000 barrels per day (b/d). This provides capability to blend in periodic unit trains of Uinta

Basin crude oil into blended/heated storage at low percentages of total crude oil.

- There is already rail infrastructure in place along the Gulf Coast to receive Canadian and Permian Basin crude oil, although Uinta Basin crude oil may require some off-loading facilities to modify equipment.
- Four of the five Puget Sound refineries already receive unit trains of crude by rail and may be able to accommodate Uinta Basin crude oil with modifications to some storage and off-loading tanks and equipment.

In considering potential target geographic refining market centers, OEA also identified the following regions that appear to currently be unlikely viable markets.

- California refineries likely have the ability to process Uinta Basin crude oil. However, various project proponents' requests for permits for developing rail offloading facilities in California to unload Bakken or Canadian oil sands crudes have not been approved.
- Refineries on the East Coast, including Catlettsburg, Kentucky, are a significant distance from the Basin. It is likely these refineries would require a more significant cost discount than Gulf Coast or Puget Sound refineries to process Uinta Basin crude oil, leading Uinta producers to look for better return from the Gulf Coast or Puget Sound options.
- Refineries in Corpus Christi, Texas, have significant crude oil supply available to them from

the Permian and Eagle Ford Basins via pipelines. Corpus Christi is also a key crude oil export hub. The currently available crude oil is two to three times the capacity of the Corpus Christi refineries, and it may be difficult for Uinta Basin crude oil to penetrate this market without offering a substantial price discount.

Outside Salt Lake City, refineries in the Rocky Mountain area (Petroleum Administration for Defense District [PADD] 4) (EIA 2012) and other relatively close refineries may have interest in Uinta Basin crude oil. These other markets, such as the Texas Inland, New Mexico, Oklahoma, Kansas, and North Louisiana/Mississippi refineries may also be able to process Uinta Basin crude oil. There are 39 refineries in these states (excluding Salt Lake City) with a total capacity of 2,531,000 b/d. However, the average size of these refineries is only 66,000 b/d, and most of these locations would need to invest in rail and processing equipment to handle the Uinta Basin crude, as Salt Lake City refiners did.

It is nevertheless possible that some of the larger refineries in these markets may be interested in processing Uinta Basin crude oil, since railcar transportation cost would be comparatively low, and larger refineries may be able to accommodate Uinta Basin crude oil by blending it with other crude oils. The Kansas/Oklahoma regional market has three refineries well over 100,000 b/d. This market also has two adjacent HollyFrontier refineries in Tulsa, Oklahoma and HollyFrontier also processes Uinta Basin crude oil in Salt Lake City.

OEA examined U.S Energy Information Agency (EIA) reporting of crude-by-rail movements for 2016 through 2018 and noted that the bulk of rail movements out of the Rocky Mountain region (PADD 4), including Utah, are to the PADD 3 (primarily Texas/Louisiana) market. These rail movements average about 30,000 b/d, with about 7,000 b/d moving to PADD 5 (West Coast) and about 1,000 b/d to PADD 2 (Midwest). These volumes are higher than surplus Uinta Basin crude oil production (volumes above what Salt Lake City refineries can process) because some other crude oils (e.g., Niobrara) also move by rail.

Based on these considerations and data, OEA concluded that a reasonable estimated distribution of destinations for Uinta Basin crude oil transported on the proposed rail line would be 50 percent to Houston/Port Arthur, 35 percent to Louisiana Gulf Coast, 10 percent to Puget Sound, and 5 percent to PADD 2 refineries in Kansas and Oklahoma. EIA data trends for rail movements in recent years support these relative volumes. The Texas Gulf refineries are about 20 percent larger than the Louisiana Gulf Coast refineries on average, and also tend to have more direct rail access than some Louisiana Gulf Coast refineries. Therefore, the Texas refineries are likely to be more feasible outlets.

Table C-2 shows the estimated distribution of rail traffic to and from these geographic region refinery markets. To be conservative, OEA included the relatively small number of estimated of frac sand trains in the train count for the high rail traffic scenario. OEA recognizes that that the ultimate origins and destinations of frac sand trains would not

be the same as crude oil trains, but both types would need to traverse the same existing rail line to which the proposed rail line would connect at Kyune.

Table C-2. Estimated Distribution of Uinta Rail Traffic by Geographic Region

Production Scenario	Average Trains per Day[a]				
	Total	Puget Sound	Houston/ Port Arthur	Louisiana Gulf Coast	PADD 2
High rail traffic	10.52	1.05	5.26	3.68	0.53
Low rail traffic	3.68	0.37	1.84	1.29	0.18

Notes:
[a] Includes loaded and empty trains.
PADD = Petroleum Administration for Defense District

Potential Rail Routes

OEA used PC Rail Miler's routing program to develop route mileage using Union Pacific Railway (UP) and BNSF Railway (BNSF) rail lines as originating carriers to the example refineries in each of the geographic markets identified above that are located to the east of Kyune (OEA 2020). OEA did not analyze route mileage and refinery locations west of Kyune because project-related traffic to/from western destinations is estimated to be approximately one train per day or less and, thus, far lower than the Board's analysis thresholds.

OEA used two PC Rail Miler routing functions to identify the shortest route and the "most practical" route from the Basin to example refineries, where the most practical routing simulates the most likely movement of general merchandise train traffic with preference given to main lines over branch lines. All rail traffic moving from Kyune to destinations in the east would travel over the existing rail line between Kyune and Denver, Colorado. From Denver, many different routings could be used for rail traffic to/from

the identified refining regions. For this analysis, OEA elected to use the most practical routing results from the PC Miler analysis to estimate the rail traffic distribution percentages (Table C-3).

Table C-3. Estimated Distribution of Uinta Rail Traffic East of Denver

Direction to/from Denver	Route Distribution by Region (%)		
	Houston/Port Arthur	Louisiana	PADD 2
North	60	100	86
East	20	--	--
South	20	--	14

Notes:
PADD = Petroleum Administration for Defense District

OEA applied the percentages shown in Table C-3 to the project-related train traffic levels shown in Table C-2 to calculate the estimated train traffic distribution east of Denver (Table C-4).

Table C-4. Estimated Project-Related Uinta Rail Traffic East of Denver

Direction to/from Denver	Average Trains per Day[a]			
	Houston/Port Arthur	Louisiana	PADD 2	Total
High Rail Traffic Scenario				
North	3.16	3.68	0.45	7.29
East	1.05	--	0.08	1.13
South	1.05	--	--	1.05
Total	5.26	3.68	0.53	9.47
Low Rail Traffic Scenario				
North	1.10	1.29	0.16	2.55
East	0.37	--	0.03	0.39
South	0.37	--	--	0.37
Total	1.84	1.29	0.18	3.31

Notes:
[a] Includes loaded and empty trains.
PADD = Petroleum Administration for Defense District

Downline Study Area

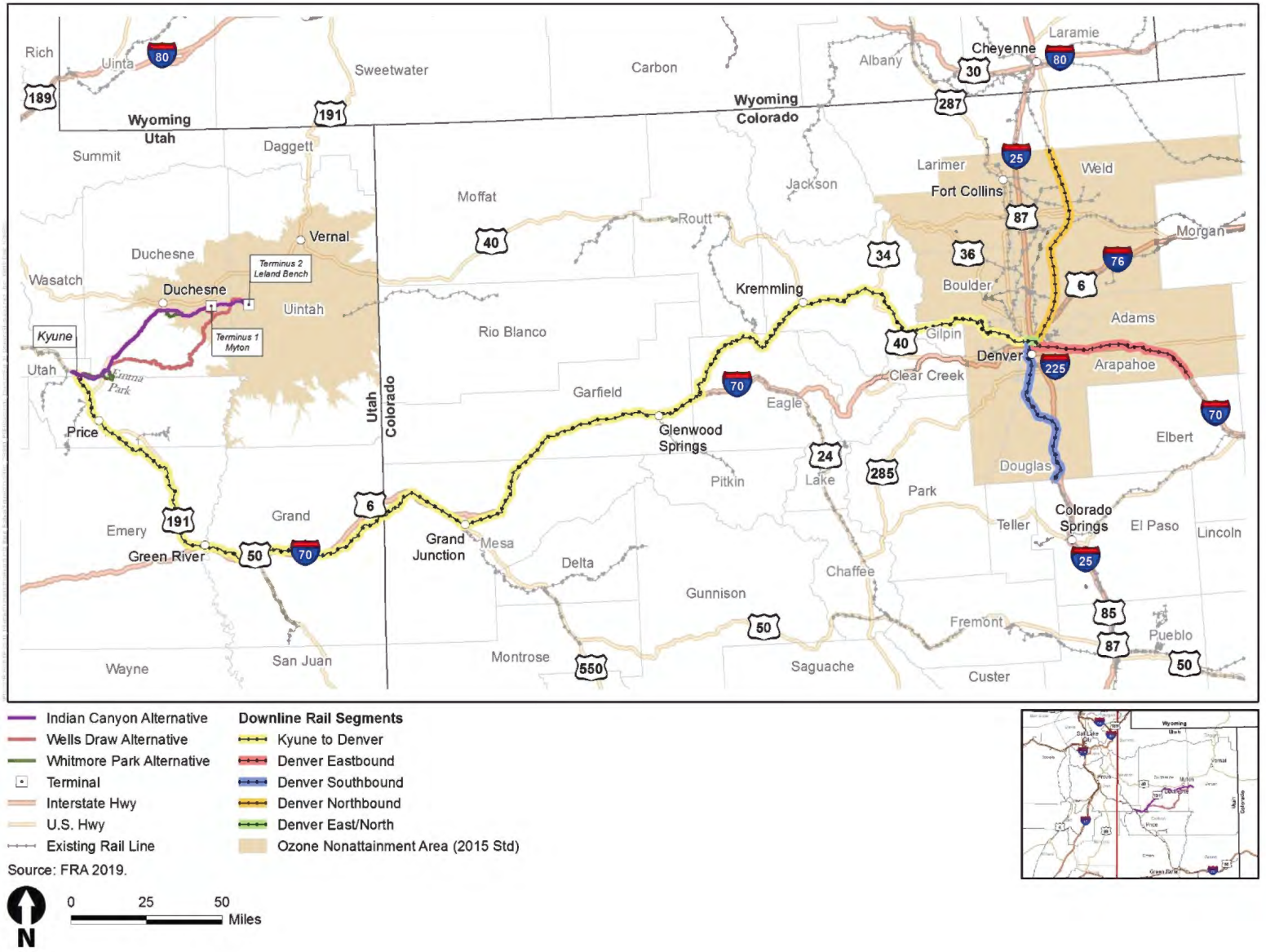
Based on the estimated distribution of project-related rail traffic described in Table C-4, OEA anticipates that project related rail traffic could exceed the Board's downline analysis threshold of

eight trains per day for project-related rail traffic between Kyune and Denver. Because the Denver metropolitan area is an air quality nonattainment area where the analysis threshold is three trains per day, the Board's downline analysis threshold would also be exceeded for the high rail traffic scenario within the Denver Metro/North Front Range air quality nonattainment area on the northbound route to/from Denver that runs through Greeley, Colorado. Given that there is some uncertainty associated with the estimated distribution of rail traffic and that the estimated traffic is close to the three-trains-per-day threshold on the northbound route for the low rail traffic scenario, OEA has elected in this case to examine potential downline impacts associated with all estimated project-related rail traffic between and Kyune, Utah, and Denver, Colorado, and within the Denver Metro/North Front Range air quality nonattainment area shown in Figure C-1.

Figure C-1. Downline Study Area Rail Segments

(see foldout on next page)

Figure C-1. Downline Study Area Rail Segments



Train Characteristics

Analysis of some potential downline impacts requires information on the characteristics—both train volume and the number of cars and locomotives—of existing rail traffic on existing rail lines. Chapter 2, *Proposed Action and Alternatives*, of this EIS describes the average characteristics of project-related trains. For information on the average daily volume of rail traffic on the existing rail lines in the downline study area, OEA used the information included in the Federal Railroad Administration (FRA) database of road-rail crossings in Colorado and Utah (FRA 2020).

The FRA data show that rail traffic on some rail lines in the downline study area includes both passenger and freight traffic. The existing passenger traffic is the Amtrak California Zephyr, with an average of one train per day in each direction. OEA estimated the characteristics of these passenger trains based on information from Amtrak. The existing freight traffic includes trains operated by UP and BNSF. Competitive consideration limit the availability of public information on the specific composition of freight trains. For this analysis, OEA used information provided for a previous case by BNSF on the average characteristics of freight trains in the Northwest and Upper Midwestern United States (Hudak pers. comm.). OEA recognizes that the characteristics of current freight trains in the downline study area may be different, but believes this information is reasonable and the most appropriate information available.

For several grade crossings to the west and east of Denver, the freight rail lines OEA used for Amtrak and freight rail traffic are adjacent to a Denver Regional Transportation District (RTD) transit line; the A Line on the east side and the G Line on the west side. Because this transit line traffic is also relevant to some analyses, OEA characterized the transit traffic based on information from RTD. Table C-5 summarizes the resulting characteristics of existing freight (BNSF and UP), passenger (Amtrak), and transit (RTD) traffic in the downline study area.

Table C-5. Existing Rail Traffic Characteristics in the Downline Study Area

Train Type	Number of Locomotives	Number of Cars	Total Train Length (feet)
Freight	2.2	114	6,135
Amtrak	2	13	1,245
RTD A line	NA	4	340
RTD G line	NA	2	170

* * *

Appendix E, *Unita Basin Railway, Final Environmental Impact Statement*, STB Docket No. FD 36284 (Aug. 2021)

Rail Accident Rates

Accident Rates

For the analysis described in Chapter 3, Section 3.2, *Rail Operations Safety*, OEA used both qualitative and quantitative methods to estimate rail accident rates and potential consequences. OEA estimated the number of train accidents (primarily collisions and derailments) that could occur during rail operation based on accidents rates from the Federal Railroad Administration (FRA) (2020). OEA analyzed the rates in combination with the specifics of the proposed rail line operation (e.g., number of trains, route length, track class) to estimate the number of accidents per year. The analysis used predicted rates based on data for all railroads, informed by rates for BNSF Railway Company (BNSF) and Union Pacific (UP) rail traffic as both are likely to connect the Uinta Basin (the Basin) to other national destinations, using accidents per million train miles (Table E-1).

Table E-1. Nationwide Train Accident Rates

Year	All Railroads (Passenger and Freight Trains)	All Railroads (Main Line and Sidings)	BNSF (Freight Trains)	UP (Freight Trains)
2016	2.50	0.89	2.07	3.24
2017	2.53	0.91	2.01	3.35
2018	2.73	0.94	2.10	3.71
2019	2.74	1.00	2.11	4.47

Train accident rates are generally distinguished only by freight versus passenger service, not by specific cargoes. In estimating accident rates, OEA considered both loaded and unloaded crude oil trains.

Given that the rail line would primarily operate unit trains that would travel from the Basin to the end markets with only a few manifest cars being separated out, trains would generally pass around or straight through most yards on their travel. Thus, OEA focused the analysis for the project study area on accidents on the alignments of the Action Alternatives (main lines and sidings). Similarly, the downline analysis focused on the main lines and sidings, rather than rail yards. OEA calculated the predicted number of accidents per year by multiplying segment lengths by the number of trains per year by the appropriate accident rate for the track class on that segment.

Accident rates have been shown to vary considerably by track class, with higher accident rates occurring on lower track classes that require lower train speeds due to the standards to which they are built and maintained.[1] Liu et al. (2011) derived derailment rates by track class, starting with baseline rates provided by Anderson and Barkan (2004). They found that the derailment rates for Track Class 3 were twice the overall average and derailment rates for Track Class 2 were six times the overall average (accident rates increase with lower track classes due to lower track standards/quality). Conversely, derailment rates for Track Class 5 were roughly a third of the overall average rates (accident rates decrease with higher track classes due to higher track standards/quality and other factors). Anderson and

[1] Train accidents are more likely to occur on lower track classes (which have lower allowable speeds) because lower track classes are not designed and maintained to the same standards as higher track classes.

Barkan (2004) found that the overall accident rate (collisions, derailments, and other types) on Track Class 3 was roughly twice the total rate for all track classes, and the overall rate on Track Classes 4 and higher was roughly half the total rate for all track classes.

OEA used data on accident rates by track class to generate a base accident rate for all of the Action Alternatives, which would operate on Track Class 3 in the Basin at an average of 15 miles per hour (mph) based on information provided by the Coalition. The allowable operating speeds are up to 40 mph on Track Class 3, but lower anticipated speeds reflect the geometry, tunnels, bridges, and steep grades on the proposed rail line. OEA started with the nationwide rates over the last 2 years of about 2.7 accidents per million train miles for all railroads and types of track (Table E-1) as the basis for predicting accident rates. OEA also reviewed the combined total for main lines and sidings (i.e., not including yards and industry track) for all railroads, which gave an average of 0.97 accident per million train miles for 2018 and 2019. This was rounded to 1 accident per million train miles (the same as the value for 2019). Using the multiplier of two for Track Class 3, as indicated by Anderson and Barkan (2004) and Liu et al. (2011), OEA predicted and applied a rate of 2.0 accidents per million train miles for the Action Alternatives.

For the downline analysis, OEA reviewed the maximum allowable speeds on the different segments and found that the likely track classes involved were primarily Track Classes 3, 4, and 5. OEA used Track Class 3 in the analysis for Kyune to Grand Junction

and used Track Class 4 or higher for the other downline segments. For the Action Alternatives, OEA applied the Track Class 3 ~~had a~~ rate of 2.0 accidents per million train miles. Using the findings of Anderson and Barkan (2004), OEA estimated the rate for the other downline segments as 0.5 per million train miles, or one-half that for the average across all track classes—OEA used this rate for the other downline segments within the area of analysis.

Spill Sizes and Release Probabilities

~~To understand the potential~~For context on the historic severity of train accidents during rail operations in Utah, OEA reviewed accidents that have occurred on existing rail lines in Utah. Based on FRA data (2020), eight main line accidents occurred in Utah in 2019, five involving derailments; there were no collisions. One of the derailments involved 25 cars with releases from two propane cars. There were two accidents on siding track, both derailments, one due to a broken flange and one attributed to the roadbed being soft or having settled. OEA considered and expanded on this information with additional national data to obtain a broader base of potential accident severity.

In the past, rail accidents involving crude oil or other hazardous materials typically resulted in small releases. However, recent accidents in Lac-Mégantic, Québec; Casselton, North Dakota; Aliceville, Alabama; Lynchburg, Virginia; and Ontario, Canada, among others, have been more significant and generated additional attention on crude by rail transportation. For additional context, OEA summarized a few of these larger events below.

Lac-Mégantic, Québec, July 6, 2013

After hand and air brakes on a parked train failed, the train rolled downhill reaching a speed of 65 mph before derailing. Almost all of the 63 derailed tank cars were damaged in some way; many had large failures. Roughly 1.6 million gallons (38,000 barrels) of oil were released. Fires and explosions caused 47 fatalities and massive property damage. All cars were DOT-111s. (Transportation Safety Board of Canada 2013; NTSB 2014a).

Casselton, North Dakota, December 30, 2013

A crude oil train collided with a previously derailed grain car on an adjacent main line track at roughly 42 mph. Twenty tank cars derailed and 18 were punctured, releasing more than 420,000 gallons (10,000 barrels) of crude oil. No injuries were reported (NTSB 2014b). Aliceville, Alabama, November 7, 2013 Derailment of this accident occurred at 38 mph, with 26 cars derailed. The accident caused a loss of 630,000 gallons (15,000 barrels) of crude oil, which contaminated some wetlands (NTSB no date).

Lynchburg, Virginia, April 30, 2014

This accident involved the derailment of 17 cars, with one car failing, which led to a fire. Three of the derailed crude oil cars ended up in the James River, spilling up to 30,000 gallons (714 barrels) of crude oil into the river. Later clarification noted that the fire involved a CPC-1232 rail car (NTSB 2016).

Gogama, Ontario, March 7, 2015

This accident involved a derailment of 39 cars following a train-initiated emergency brake application. About 690,000 gallons of crude oil were

released (from 33 cars). Some of the product ignited and caused explosions and some entered the Makami River. A rail bridge over the Makami River and about 1,000 feet of track were destroyed. This accident occurred only 3 weeks after another major derailment in the nearby town of Gladwick. (Transportation Safety Board of Canada 2017)

Application of Data

Many of the~~se~~ accidents described above involved tank cars that do not meet present-day standards. ~~Additionally, the Uinta Basin crude oil does not have the same volatility as the crude oil involved in the accidents cited above, such that explosions are much less likely even in the event of large spills.~~ Even more rigorous standards will be fully implemented by May 2025—see the PHMSA and FRA 2015 rule on tank car standards, *Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains*, which is on schedule to meet the May 2025 date (*Federal Register* 2015). For the most part, the activities in the Basin are expected to use the 117 or 117R (retrofit) tank cars, with a limited number of CPC-1232 cars until May 2025. The DOT 117 standard included a jacketed thermal protection system, full-height head shields, and other protective features. These are all designed to reduce the chance of rail cars breaching in an accident or from exposure to a fire if nearby cars are breached. Additional safety precautions, including reduced speeds, are also in place for crude oil (and other flammable cargo) trains. Additionally, the Uinta Basin crude oil does not have the same volatility as the crude oil involved in the

accidents cited above, such that explosions are much less likely even in the event of large spills.

A detailed hazardous materials rail transportation model develop by Arthur D. Little, Inc. for the American Association of Railroads (AAR), the Railway Progress Institute (RPI), and the then Chemical Manufacturers Association considered a range of release sizes to try and bracket the potential range of consequences and allow for the frequencies of different-sized releases to be determined (Arthur D. Little 1996). That model used data from the RPI-AAR Railroad Tank Car Safety Research and Test Project on the relative frequencies of various release sizes from individual cars as a function of the number of cars derailed in an incident. It then considered the possible combination of releases from multiple cars to select representative spill sizes for the model. In particular, the following spill sizes were used, eliminating the very small releases, as they do not contribute much to overall risk.

- 30 gallons per minute for 10 minutes (300 gallons)
- 300 gallons per minute for 10 minutes (3,000 gallons)
- Single rail car volume spilled instantaneously
- Three rail cars spilled instantaneously
- Five rail cars spilled instantaneously

Given the uncertainty over the likely spill size, OEA considered in this analysis a range of potential release sizes and their associated chance of occurrence using the same ranges of spill sizes listed above; however, the first two categories were combined into one spill size of 1,000 gallons. Additionally, OEA

added an extreme case of 450,000 to 900,000 gallons, to put such extreme spills in perspective, and to acknowledge the larger spills that have occurred with crude oil in cases like those described above.

In terms of the number of cars derailed, the *Washington State 2014 Marine and Rail Oil Transportation Study* (Washington State Department of Ecology 2015) reported the number of derailed tank cars per major crude oil accident in 2013 and 2014 ranged from 6 to 30 in the United States and 4 to 63 in Canada. The number of cars that spilled their contents was 1 to 20 in the United States and 0 to 5 in Canada; however, the two spills in Ontario in 2015 discussed previously involved releases from more rail cars. When looking at derailments, a larger set of accidents involving a variety of hazardous materials can be examined to understand the outcomes because the specific cargo type does not generally affect the chance of a train accident. Also, in general, slower speeds result in fewer cars derailed (Liu et al. 2012, 2014).

Data from the RPI-AAR Railroad Tank Car Safety Research and Test Project ~~also~~ provided information on the probabilities of release for rail cars of different designs and the detailed analysis and modeling to determine the chance of different numbers of cars derailing and releasing different quantities of the product carried. Liu et al. (2014) provides an updated description of this approach and gives some representative results. For Class I railroads, 24 percent of derailments involved one car, 50 percent involved five or fewer cars, and the overall average was about nine cars. As a group, the Class I railroads

operate largely on Track Class 4 or 5, with the associated higher speeds.

More recently, analyses from the Railway Supply Institute (the former RPI) suggest that the chance of a release per car for CPC-1232 cars is roughly half that for the old 111 cars (at about 0.05 to 0.10), DOT 117 cars would be 0.03, and the 117R would be 0.04 to 0.08 (RSI 2019). These are for certain configurations of cars in trains and ~~show~~demonstrate the decreasing chances of releases in the better-protected rail cars.

OEA used ~~a combination of these and other~~the data and modeling approaches from the Railway Supply Institute, Liu et al., and Arthur D. Little combined with OEA's professional judgment to determine representative distributions of release sizes for the types of rail cars addressed in the assessment of the Action Alternatives, predominantly the DOT-117 cars, given that a derailment or collision has occurred on the proposed rail line.

- Minor spill from collision/derailment (1,000 gallons): 7 percent
- Collision/derailment release of 30,000 gallons: 17 percent
- Collision/derailment release of 90,000 gallons: 2 percent
- Collision/derailment release of 150,000 gallons: 0.07 percent
- Extreme collision/derailment release of 450,000 to 90,000 gallons: 0.005 percent

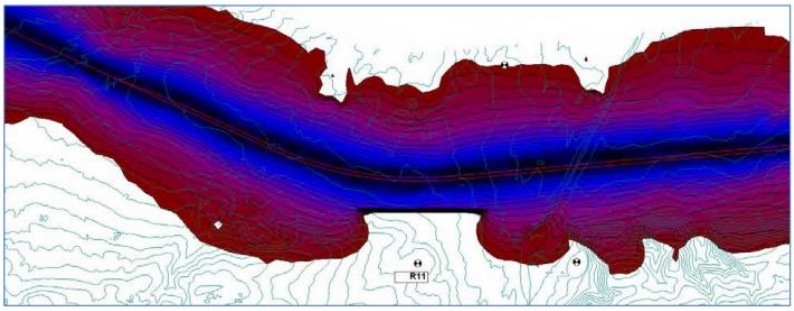
Total: 26.075 percent

Taken together, this distribution suggests that 26 percent or roughly one in four accidents, most of which would be derailments, would have some sort of release, and most of the time the release would be equivalent to one car or less.

Appendix L Excerpts, *Unita Basin Railway, Final Environmental Impact Statement*, STB Docket No. FD 36284 (Aug. 2021)

* * *

Figure L-3. Example Noise Barrier Acoustic Model



The modeled reduction in noise level (or "insertion loss") is 5.1 dBA. Assuming a $35 per square foot cost, this noise barrier would cost approximately $444,964. The cost/(dBA x dwelling units) would be $87,248. One of the reasons that this cost is so high is because this barrier would only protect one receptor. This issue applies to all the receptors in Table L-5.

This example analysis shows that noise barriers may not be a reasonable and feasible option for the proposed rail line.

Downline Noise Analysis

OEA used information on train composition, frequency, length, and speed provided by the Coalition for project-related rail traffic and information from multiple sources, as described in Appendix C, *Downline Analysis Study Area and Train Characteristics*, for rail traffic on the existing rail lines in the downline study area.

Using the equations in the previous sections, Table L-6 shows calculated increases in noise levels along existing downline rail lines. These increases are a function of existing and proposed rail line train volumes, speeds, and specific train composition. In general, noise level increases greater than 3 dBA would be noticeable depending on several factors including a receptor's proximity to the rail line.

Table L-6. Downline Rail Noise Analysis Results

Object ID	Rail Line Segment	Railroad	Passenger Count[a]	Baseline Freight (trains per day)	High Rail Traffic Scenario (trains per day)	Total dB increase	Avg. Train Speed (mph)	Transit Speed (mph)
124	Denver East/North	UP	0	25	8.4	3.2	15	N/A
114	Denver East/North	UP	0	25	8.4	3.2	15	N/A
132	Denver Eastbound	UP	0	10	1.1	1.3	15	N/A
287	Denver Eastbound	UP	0	3	1.1	3.6	11	N/A
286	Denver Eastbound	UP	0	3	1.1	3.6	15	N/A
55	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
56	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
57	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
61	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
62	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
63	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
64	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
65	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
58	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
346	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
347	Denver Eastbound	RTDC	146	3	1.1	1.1	27.5	45
332	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
331	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
344	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
342	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
340	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
339	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
338	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
336	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
335	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
334	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
333	Denver Eastbound	UP	0	4	1.1	1.0	36.5	N/A
365	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
362	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
359	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
357	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
358	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
356	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
352	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A

Object ID	Rail Line Segment	Railroad	Passenger Count[a]	Baseline Freight (trains per day)	High Rail Traffic Scenario (trains per day)	Total dB increase	Avg. Train Speed (mph)	Transit Speed (mph)
353	Denver Eastbound	UP	0	3	1.1	1.0	36.5	N/A
50	Kyune to Denver	UP	2	6	9.5	4.5	22.5	N/A
49	Kyune to Denver	UP	2	6	9.5	4.5	22.5	N/A
48	Kyune to Denver	UP	2	10	9.5	3.8	22.5	N/A
34	Kyune to Denver	UP	2	6	9.5	4.8	40	N/A
33	Kyune to Denver	UP	2	6	9.5	5.0	37.5	N/A
32	Kyune to Denver	UP	2	6	9.5	5.4	32.5	N/A
30	Kyune to Denver	UP	2	6	9.5	5.4	32.5	N/A
29	Kyune to Denver	UP	2	6	9.5	5.4	32.5	N/A
28	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
6	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
26	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
23	Kyune to Denver	UP	2	6	9.5	4.8	41	N/A
45	Kyune to Denver	UP	2	6	9.5	4.7	42.5	N/A
43	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
42	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
41	Kyune to Denver	UP	2	6	9.5	6.0	26	N/A
11	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
9	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
8	Kyune to Denver	UP	2	6	9.5	4.8	41	N/A
20	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
21	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
19	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
16	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
17	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
164	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
147	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
146	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
145	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
143	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
142	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
141	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
197	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
195	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
194	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A

Object ID	Rail Line Segment	Railroad	Passenger Count[a]	Baseline Freight (trains per day)	High Rail Traffic Scenario (trains per day)	Total dB increase	Avg. Train Speed (mph)	Transit Speed (mph)
184	Kyune to Denver	UP	2	6	9.5	4.5	45	N/A
283	Kyune to Denver	UP	0	0	9.5	N/A	7.5	N/A
272	Kyune to Denver	UP	0	0	9.5	N/A	7.5	N/A
270	Kyune to Denver	UP	2	9	9.5	4.9	27.5	N/A
269	Kyune to Denver	UP	2	9	9.5	4.9	27.5	N/A
266	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
263	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
262	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
259	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
258	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
255	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
252	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
251	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
250	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
249	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
247	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
248	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
245	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
246	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
96	Kyune to Denver	UP	2	9	9.5	5.0	26	N/A
94	Kyune to Denver	UP	2	9	9.5	4.7	30	N/A
89	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
189	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
238	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
237	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
236	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
235	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
231	Kyune to Denver	UP	2	9	9.5	4.7	30	N/A
208	Kyune to Denver	UP	2	9	9.5	5.3	22.5	N/A
322	Kyune to Denver	UP	2	9	9.5	5.3	22.5	N/A
319	Kyune to Denver	UP	2	9	9.5	4.7	30	N/A
307	Kyune to Denver	UP	2	9	9.5	3.4	52.5	N/A
306	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
303	Kyune to Denver	UP	2	9	9.5	3.4	52.5	N/A
301	Kyune to Denver	UP	2	9	9.5	3.4	52.5	N/A

Object ID	Rail Line Segment	Railroad	Passenger Count[a]	Baseline Freight (trains per day)	High Rail Traffic Scenario (trains per day)	Total dB increase	Avg. Train Speed (mph)	Transit Speed (mph)
181	Kyune to Denver	UP	2	9	9.5	3.9	40	N/A
299	Kyune to Denver	UP	2	9	9.5	5.0	26	N/A
296	Kyune to Denver	UP	2	9	9.5	3.7	45	N/A
290	Kyune to Denver	UP	2	9	9.5	3.8	42.5	N/A
108	Kyune to Denver	UP	2	9	9.5	3.8	42.5	N/A
109	Kyune to Denver	UP	2	9	9.5	5.7	18.5	N/A
106	Kyune to Denver	UP	2	9	9.5	3.9	41	N/A
84	Kyune to Denver	UP	2	9	9.5	5.1	25	N/A
82	Kyune to Denver	UP	2	9	9.5	4.3	35	N/A
176	Kyune to Denver	UP	2	9	9.5	4.7	30	N/A
177	Kyune to Denver	UP	2	9	9.5	3.4	52.5	N/A
76	Kyune to Denver	UP	2	9	9.5	5.1	25	N/A
171	Kyune to Denver	UP	2	9	9.5	5.7	18.5	N/A
98	Kyune to Denver	UP	2	9	9.5	4.4	33.5	N/A
71	Kyune to Denver	UP	2	9	9.5	4.4	33.5	N/A
70	Kyune to Denver	UP	2	9	9.5	4.4	33.5	N/A
69	Kyune to Denver	UP	2	9	9.5	4.4	33.5	N/A
72	Kyune to Denver	UP	2	9	9.5	4.4	33.5	N/A
68	Kyune to Denver	UP	2	9	9.5	4.4	33.5	N/A
120	Kyune to Denver	UP	2	9	9.5	4.4	33.5	N/A
118	Kyune to Denver	UP	2	9	9.5	4.4	33.5	N/A
186	Kyune to Denver	UP	2	9	9.5	4.4	33.5	N/A
110	Kyune to Denver	RTDC	134	9	9.5	4.4	33.5	38
111	Kyune to Denver	RTDC	134	9	9.5	4.4	33.5	38
278	Denver Northbound	UP	0	10	7.3	4.5	26	N/A
280	Denver Northbound	UP	0	10	7.3	4.5	26	N/A
281	Denver Northbound	UP	0	10	7.3	4.5	26	N/A
329	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
88	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
420	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
421	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
448	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
423	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
424	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
412	Denver Northbound	UP	0	10	7.3	3.3	45	N/A

Object ID	Rail Line Segment	Railroad	Passenger Count[a]	Baseline Freight (trains per day)	High Rail Traffic Scenario (trains per day)	Total dB increase	Avg. Train Speed (mph)	Transit Speed (mph)
529	Denver Northbound	UP		0	7.3	N/A	0	N/A
414	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
415	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
416	Denver Northbound	UP	0	10	7.3	3.7	37.5	N/A
417	Denver Northbound	UP	0	10	7.3	3.7	37.5	N/A
418	Denver Northbound	UP	0	10	7.3	3.7	37.5	N/A
419	Denver Northbound	UP	0	10	7.3	3.7	37.5	N/A
425	Denver Northbound	UP	0	10	7.3	3.7	37.5	N/A
426	Denver Northbound	UP	0	10	7.3	3.5	40	N/A
427	Denver Northbound	UP	0	10	7.3	3.5	40	N/A
525	Denver Northbound	UP	0	10	7.3	3.5	40	N/A
447	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
433	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
450	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
434	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
436	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
437	Denver Northbound	UP	0	10	7.3	3.7	37.5	N/A
438	Denver Northbound	UP	0	10	7.3	3.7	37.5	N/A
439	Denver Northbound	UP	0	10	7.3	3.7	37.5	N/A
440	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
441	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
443	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
444	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
451	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
445	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
428	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
526	Denver Northbound	UP	0	0	7.3	N/A	0	N/A
429	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
449	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
432	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
466	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
467	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
468	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
471	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
470	Denver Northbound	UP	0	10	7.3	3.3	45	N/A

Object ID	Rail Line Segment	Railroad	Passenger Count[a]	Baseline Freight (trains per day)	High Rail Traffic Scenario (trains per day)	Total dB increase	Avg. Train Speed (mph)	Transit Speed (mph)
469	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
527	Denver Northbound	UP		0	7.3	N/A	0	N/A
472	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
474	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
475	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
476	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
477	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
478	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
479	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
480	Denver Northbound	UP	0	10	7.3	3.3	45	N/A
481	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
482	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
483	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
484	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
519	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
486	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
487	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
488	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
489	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
490	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
491	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
497	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
493	Denver Northbound	UP	0	14	7.3	2.9	37.5	N/A
494	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
495	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
496	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
528	Denver Northbound	UP	--	0	7.3	N/A	0	N/A
499	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
498	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
500	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
501	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
502	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
503	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
504	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
505	Denver Northbound	UP	0	14	7.3	2.6	45	N/A

Object ID	Rail Line Segment	Railroad	Passenger Count[a]	Baseline Freight (trains per day)	High Rail Traffic Scenario (trains per day)	Total dB increase	Avg. Train Speed (mph)	Transit Speed (mph)
515	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
516	Denver Northbound	UP	0	12	7.3	2.9	45	N/A
517	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
518	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
507	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
514	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
513	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
512	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
511	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
509	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
508	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
506	Denver Northbound	UP	0	14	7.3	2.6	45	N/A
59	Denver Southbound	DRIR	0	0	1.1	N/A	5.5	N/A
60	Denver Southbound	DRIR	0	0	1.1	N/A	5.5	N/A
66	Denver Southbound	DRIR	0	0	1.1	N/A	5.5	N/A
131	Denver Southbound	BNSF	0	38	1.1	0.4	10.5	N/A
168	Denver Southbound	BNSF	0	38	1.1	0.4	15.5	N/A
167	Denver Southbound	BNSF	0	38	1.1	0.4	15.5	N/A
129	Denver Southbound	BNSF	0	38	1.1	0.4	15.5	N/A
128	Denver Southbound	BNSF	0	38	1.1	0.4	15.5	N/A
127	Denver Southbound	BNSF	0	38	1.1	0.4	15.5	N/A
375	Denver Southbound	UP	0	20	1.1	0.5	33.5	N/A
371	Denver Southbound	UP	0	20	1.1	0.5	33.5	N/A
372	Denver Southbound	UP	0	20	1.1	0.6	26	N/A
373	Denver Southbound	UP	0	20	1.1	0.6	26	N/A
401	Denver Southbound	BNSF	0	20	1.1	0.5	33.5	N/A
400	Denver Southbound	BNSF	0	20	1.1	0.5	33.5	N/A
399	Denver Southbound	BNSF	0	20	1.1	0.5	33.5	N/A
398	Denver Southbound	BNSF	0	20	1.1	0.5	33.5	N/A
397	Denver Southbound	BNSF	0	20	1.1	0.5	33.5	N/A
404	Denver Southbound	BNSF	0	20	1.1	0.5	33.5	N/A

Notes:

[a] Counts include baseline transit and/or Amtrak.

dB = decibel; mph = miles per hour; UP = Union Pacific Railroad; RTDC = Regional Transportation District Commuter; DRIR = Denver Rock Island Railroad; BNSF = BNSF Railway; N/A = not applicable

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Appendix S Excerpts, *Unita Basin Railway, Final Environmental Impact Statement*, STB Docket No. FD 36284 (Aug. 2021)

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Table S-3. Section 106 Consulting Parties—Dates of Written Correspondence

Consulting Party	Dates of Written Correspondence
Federal Agencies	
Bureau of Indian Affairs, Uintah and Ouray Agency	OEA to BIA, Uintah and Ouray Agency: 6/19/2019 OEA to BIA, Uintah and Ouray Agency: 1/6/2020 OEA to BIA, Uintah and Ouray Agency: 3/11/2021 OEA to BIA, Uintah and Ouray Agency: 3/26/2021
Bureau of Indian Affairs, Western Agency	OEA to BIA, Western Agency: 6/19/2019 OEA to BIA, Western Agency: 1/6/2020 OEA to BIA, Western Agency: 3/11/2021 OEA to BIA, Western Agency: 3/26/2021
Bureau of Land Management, Price Field Office	OEA to BLM Price: 6/19/2019 OEA to BLM Price: 1/6/2020 OEA to BLM Price: 3/11/2021 OEA to BLM Price: 3/26/2021
Bureau of Land Management, Vernal Field Office	OEA to BLM Vernal: 6/19/2019 OEA to BLM Vernal: 1/6/2020 OEA to BLM Vernal: 3/11/2021 OEA to BLM Vernal: 3/26/2021
Federal Highway Administration	OEA to FHWA: 6/19/2019 FHWA to OEA: 6/25/2019 OEA to FHWA: 10/25/2019
Federal Railroad Administration, Office of Program Delivery	OEA to FRA: 6/19/2019 OEA to FRA: 1/6/2020
National Park Service, Cultural Resources Intermountain Region	OEA to NPS: 6/19/2019
U.S. Army Corps of Engineers	OEA to Corps: 6/19/2019 Corps to OEA: 8/26/2019 OEA to Corps: 1/6/2020 OEA to Corps: 3/11/2021 OEA to Corps: 3/26/2021
U.S. Environmental Protection Agency	OEA to EPA: 1/6/2020 OEA to EPA: 3/11/2021 OEA to EPA: 3/26/2021
U.S. Forest Service, Ashley National Forest, Duchesne/Roosevelt Ranger District	OEA to Forest Service: 6/19/2019 OEA to Forest Service: 1/6/2020 OEA to Forest Service: 3/11/2021 OEA to Forest Service: 3/26/2021
Advisory Council on Historic Preservation	
Advisory Council on Historic Preservation	OEA to ACHP: 1/6/2020 OEA to ACHP: 2/24/2020
State Historic Preservation Offices	
Colorado Office of Archaeology and Historic Preservation (SHPO)	OEA to Colorado SHPO: 6/19/2019 Colorado SHPO to OEA: 6/25/2019
Utah Division of State History (SHPO)	OEA to Utah SHPO: 6/19/2019

Consulting Party	Dates of Written Correspondence
	OEA to Utah SHPO: 1/6/2020 OEA to Utah SHPO: 3/11/2021 OEA to Utah SHPO: 3/26/2021
Ute Indian Tribe of the Uintah and Ouray Reservation	
Ute Indian Tribe of the Uintah and Ouray Reservation	OEA to Ute Indian Tribe: 6/14/2019 OEA to Ute Indian Tribe: 6/19/2019 OEA to Ute Indian Tribe: 1/6/2020 OEA to Ute Indian Tribe: 3/11/2021 OEA to Ute Indian Tribe: 3/26/2021
Other Tribes	
Apache Tribe of Oklahoma	OEA to Apache Tribe: 6/19/2019 OEA to Apache Tribe: 12/16/2019 OEA to Apache Tribe: 1/6/2020
Confederated Tribes of Goshute Reservation, Nevada and Utah	OEA to Confederated Tribes of Goshute Reservation: 6/19/2019 OEA to Confederated Tribes of Goshute Reservation: 11/25/2019 OEA to Confederated Tribes of Goshute Reservation: 1/6/2020
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming	OEA to Eastern Shoshone Tribe: 6/19/2019 OEA to Eastern Shoshone Tribe: 10/29/2019 OEA to Eastern Shoshone Tribe: 1/6/2020
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana	OEA to Fort Belknap Indian Community: 6/19/2019 OEA to Fort Belknap Indian Community: 10/29/2019 OEA to Fort Belknap Indian Community: 1/6/2020
Navajo Nation, Arizona, New Mexico, and Utah	OEA to Navajo Nation: 6/19/2019 OEA to Navajo Nation: 11/25/2019 Navajo Nation to OEA: 12/2/2019
Paiute Indian Tribe of Utah	OEA to Paiute Indian Tribe: 6/19/2019
Shoshone-Bannock Tribes of the Fort Hall Reservation, Idaho	OEA to Shoshone-Bannock Tribe: 6/19/2019 Shoshone-Bannock Tribe to OEA: 7/2/2019
Skull Valley Band of the Goshute Indians	OEA to Skull Valley Band of the Goshute Indians: 6/19/2019
The Hopi Tribe of Arizona	OEA to The Hopi Tribe: 6/19/2019 The Hopi Tribe to OEA: 6/26/2019 OEA to The Hopi Tribe: 1/6/2020 OEA to The Hopi Tribe: 3/11/2021 OEA to The Hopi Tribe: 3/26/2021
The Northwestern Band of the Shoshone Nation, Utah	OEA to the Northwestern Band of the Shoshone Nation: 6/19/2019 OEA to the Northwestern Band of the Shoshone Nation: 12/16/2019 OEA to the Northwestern Band of the Shoshone Nation: 1/6/2020
White Mesa/Ute Mountain Ute Indian Tribe, Utah and Colorado	OEA to White Mesa/Ute Mountain Ute Indian Tribe: 6/19/2019

Consulting Party	Dates of Written Correspondence
Local Government	
Carbon County	OEA to Carbon County: 6/19/2019 OEA to Carbon County: 1/6/2020 OEA to Carbon County: 3/11/2021 OEA to Carbon County: 3/26/2021
Duchesne County	OEA to Duchesne County: 6/19/2019 Duchesne County to OEA: 6/24/2019 OEA to Duchesne County: 1/6/2020 OEA to Duchesne County: 3/11/2021 OEA to Duchesne County: 3/26/2021
Moffat County	OEA to Moffat County: 6/19/2019
Public Lands Policy Coordinating Office	OEA to PLPCO: 1/6/2020 OEA to PLPCO: 3/11/2021 OEA to PLPCO: 3/26/2021
Rio Blanco County	OEA to Rio Blanco County: 6/19/2019
School and Institutional Trust Lands Administration	OEA to SITLA: 6/19/2019 SITLA to OEA: 6/26/2019 OEA to SITLA: 1/6/2020 OEA to SITLA: 3/11/2021 OEA to SITLA: 3/26/2021
Uintah County	OEA to Uintah County: 6/19/2019 Uintah County: 7/2/2019 OEA to Uintah County: 1/6/2020 OEA to Uintah County: 3/11/2021 OEA to Uintah County: 3/26/2021
Utah Department of Transportation	OEA to UDOT: 4/21/2020 OEA to UDOT: 3/11/2021 OEA to UDOT: 3/26/2021
Utah County	OEA to Utah County: 6/19/2019 OEA to Utah County: 1/6/2020
Additional Consulting Parties	
Colorado Plateau Archaeological Alliance	OEA to CPAA: 6/19/2019 OEA to CPAA: 10/20/2019 CPAA to OEA: 11/8/2019 OEA to CPAA: 1/6/2020 OEA to CPAA: 3/11/2021 OEA to CPAA: 3/26/2021
Colorado Preservation, Inc.	OEA to Colorado Preservation, Inc.: 6/19/2019 OEA to Colorado Preservation, Inc: 1/6/2020
National Trust for Historic Preservation	OEA to National Trust for Historic Preservation: 6/19/2019
Nine Mile Canyon Coalition	OEA to Nine Mile Canyon Coalition: 6/19/2019 OEA to Nine Mile Canyon Coalition: 1/6/2020 OEA to Nine Mile Canyon Coalition: 3/11/2021 OEA to Nine Mile Canyon Coalition: 3/26/2021

Consulting Party	Dates of Written Correspondence
Preservation Utah	OEA to Preservation Utah: 6/19/2019 OEA to Preservation Utah: 10/29/2019 OEA to Preservation Utah: 1/6/2020
Seven County Infrastructure Coalition	OEA to Coalition: 1/6/2020 OEA to Coalition: 3/11/2021 OEA to Coalition: 3/26/2021
Southern Utah Wilderness Alliance	OEA to SUWA: 6/19/2019 OEA to SUWA: 1/6/2020
Utah Professional Archaeological Council	OEA to UPAC: 7/2/2020
Utah Rock Art Research Association	OEA to URARA: 4/21/2020 URARA to OEA: 4/21/2020 OEA to URARA: 3/11/2021 OEA to URARA: 3/26/2021

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Appendix T Excerpts, *Unita Basin Railway, Final Environmental Impact Statement*, STB Docket No. FD 36284 (Aug. 2021)

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5.1 Summary Responses

5.1.1 Summary Response 1: Downline Impacts Analysis Methods

OEA received comments suggesting that OEA incorrectly defined the study area for downline impacts. Downline impacts are impacts that could occur along existing rail lines as a result of increased rail traffic due to the addition of new trains originating or terminating on the proposed rail line. In the Draft EIS, OEA analyzed potential downline impacts associated with vehicle safety and delay (Section 3.1, *Vehicle Safety and Delay*), rail operations safety (Section 3.2, *Rail Operations Safety*), noise and vibration (Section 3.6, *Noise and Vibration*), and air quality and greenhouse gases (Section 3.7, *Air Quality and Greenhouse Gases*). Because the Coalition does not and would not operate existing rail lines downline of the proposed rail line, the Coalition cannot control how trains would be routed on those existing rail lines. Although some downline impacts are reasonably foreseeable, the Board cannot impose mitigation on the Coalition that would address downline impacts because the Coalition does not and would not operate the downline segments and because the operators of the downline segments do not and would not need to seek Board authority to handle trains originating or terminating on the proposed rail line.

As described in Appendix C, *Downline Analysis Study Area and Train Characteristics*, the Board's

regulations at 49 C.F.R. § 1105.7(e)(11)(v) establish thresholds for environmental review of potential downline impacts. The threshold for analysis of potential air quality impacts at 49 C.F.R. § 1105.7(e)(5) is generally an increase of at least eight trains per day in areas designated as in attainment under the Clean Air Act, or three trains per day in nonattainment areas. The threshold for analysis of potential noise impacts at 49 C.F.R. § 11-5.7(e)(6) is generally an increase of at least eight trains per day combined with an incremental increase in noise levels, as measured by a day-night average noise level, of 3 A-weighted decibels or more and an increase to a noise level of 65 DNL or more. The thresholds for analysis of potential energy impacts at 40 C.F.R. § 1105.7(e)(4) are specific to diversion of freight shipments from rail to motor carriage; therefore, they are not relevant in this case. Based on its experience applying the thresholds for air and noise on freight rail construction and operation projects, OEA has determined that these thresholds should also apply to freight rail safety and grade-crossing safety and delay and has regularly applied the thresholds to define downline study areas for rail line construction and operation proposals. *See Tongue River Railroad Company—Construction and Operation—in Custer, Powder River, and Rosebud Counties Mont.*, FD 30186.

Pursuant to the Board's regulations, OEA identified existing rail lines that could experience an increase in rail traffic of three trains per day or more for areas in nonattainment under the Clean Air Act or eight trains per day or more in attainment areas, pursuant to the thresholds at 49 C.F.R. § 1105.7(e)(5).

To identify those existing rail lines, OEA first identified potential destinations for crude oil produced in the Uinta Basin. Because it is not possible to identify the specific refineries that would receive shipments of crude oil from the Uinta Basin, OEA used a regional market-centered approach for considering the potential destinations for Uinta Basin crude oil. OEA identified the following specific geographic refining market centers that could receive Uinta Basin crude oil: the Houston/Port Arthur area, the Louisiana Gulf Coast area, the Puget Sound area, and refineries in Kansas and Oklahoma. Based on the existing capacity of those geographic refining market centers and data trends in crude oil movements from the Energy Information Administration (EIA), OEA estimated that approximately 50 percent of crude oil would move to the Houston/Port Arthur market center, 35 percent would move to the Louisiana Gulf Coast, 10 percent would move to Puget South, and 5 percent would move to PADD 2 refineries. These estimates correspond to average daily train traffic of 1.84 to 5.26 trains for Houston/Port Arthur, 1.29 to 3.68 trains for the Louisiana Gulf Coast, 0.37 to 1.05 trains for Puget Sound, and 0.18 to 0.53 trains for PADD 2 refineries, including loaded and unloaded trains.

Because no more than 1.05 trains per day, on average, are expected to head west from the proposed rail line to the regional refining market center at Puget Sound and because 1.05 trains per day is below OEA's analysis thresholds for downline analysis, OEA did not conduct any downline analysis for westbound train traffic. For eastbound traffic, OEA used the PC Rail Miler computer program to calculate the most

practical routes between the proposed rail line terminus near Kyune, Utah and the Houston/Port Arthur area, the Louisiana Gulf Coast, and PADD 2 refineries in Kansas and Oklahoma. The PC Rail Miler program considers the capacity of rail lines over which freight would move and can be used to identify the shortest route in terms of mileage and the most practical route in terms of mileage and capacity. The model results identified the Union Pacific Railroad Company (UP) mainline from Kyune to Denver, Colorado as the only practical route for all rail traffic moving eastward from the Uinta Basin Railway to the Houston/Port Arthur area, the Louisiana Gulf Coast, and PADD 2 refineries. Therefore, OEA concluded that all rail traffic heading east would use this route.

Within the Denver metropolitan area, there are three practical routes that trains could follow. These are the northbound UP mainline, the southbound BNSF Railway Company (BNSF) mainline, and the eastbound BNSF mainline. Based on the estimated rail traffic on the proposed rail line and the potential destinations for that traffic, OEA predicted that two of the practical routes in the Denver metropolitan area could experience an increase in rail traffic of less than three trains per day and one (the northbound UP mainline) could experience an increase in rail traffic of more than three but fewer than eight trains per day. Because the Denver metropolitan area is classified as a nonattainment area under the Clean Air Act, OEA concluded that increased traffic on the northbound UP mainline could exceed OEA's thresholds for downline analysis. Because there is some uncertainty associated with the estimated distribution of rail traffic, OEA included the southbound BNSF mainline,

and the eastbound BNSF mainline in the downline study area in addition to the northbound UP mainline even though OEA believes it is unlikely that traffic on those lines would exceed OEA's analysis thresholds. This is a conservative approach that resulted in a larger downline study area than is warranted under either the Board's regulations or under NEPA. Accordingly, as discussed in the Draft EIS and shown in Figure T-1, the downline study area extends eastward from Kyune to the northern, southern, and eastern edges of the Denver Metro/North Front Range air quality nonattainment area.

Outside of this downline study area, there are many potential final destinations for trains originating on the proposed rail line and many practical routes that trains could take to reach those destinations. For example, trains travelling to refineries in the Houston/Port Arthur area could follow UP mainlines from Denver north to Cheyenne, Wyoming, then east to Topeka, Kansas, and then through Oklahoma to Houston, Texas. Alternatively, trains could follow BNSF mainlines south from Denver to Amarillo, Texas and then travel to Houston via Dallas, Texas. In addition to these practical routes, there are also other routes that trains could take to reach Houston/Port Arthur. Within the Houston/Port Arthur market center, OEA identified 15 different refineries that could be interested in receiving crude oil from the Uinta Basin, and there are multiple possible routes within the area to reach each of those different refineries. Other refineries in the region may also accept trains originating on the proposed rail line. Because of the many different potential destinations and the many different practical routes available to

reach those destinations, OEA concluded that rail traffic outside of the downline study area would be dispersed and that no individual rail lines outside of the downline study area can reasonably be expected to experience an increase in rail traffic in excess of OEA's analysis thresholds. Therefore, analysis of downline impacts on existing rail lines outside of the downline study area would not be appropriate.

Figure T-1. Downline Study Area

(see foldout on next page)

Figure T-1. Downline Study Area

5.1.2 Summary Response 2: Rail Accident Analysis Methodology

OEA received comments requesting clarification of the methods that OEA used to assess impacts related to rail operations safety. As discussed in the Draft EIS, operation of the proposed rail line would introduce the possibility of a rail-related accident in the project study area and increase the likelihood of a rail-related accident in the downline study area due to the increased rail traffic on existing rail lines in the downline study area. As discussed in Section 3.2, *Rail Operations Safety*, OEA conducted a rail accident analysis to assess rail safety impacts that would allow a comparison of the Action Alternatives and inform the Board's decision on whether to authorize the proposed rail line. The analysis focuses on the likelihood and size of accidents, which informs the assessment of consequences should there be accidents and spills along the proposed rail line or downline routes, such as an oil spill near a water body. OEA did not conduct a quantitative risk assessment, and NEPA does not require such an assessment.

As presented in Subsection 3.2.13, *Analysis Methods*, OEA identified potential accidents that could occur during rail operations and estimated both the likelihood of occurrence (the frequency) and the potential impacts of potential accidents, including spills of crude oil or other bulk liquids. OEA conducted a separate analysis for each of the Action Alternatives to develop representative frequencies and potential impacts associated with a set of representative release scenarios in the study area and the selected downline areas. The resulting estimates are most meaningful

when compared to each other, as opposed to considering them as predicting absolute frequencies or potential impacts. Likewise, the examination of consequences was focused on the size of potential releases and the identification of the types of consequences including spills and fires. The purpose of the analysis is to estimate the relative likelihood of different types of potential accidents, not to make predictions of the potential for various impacts or outcomes occurring in specific locations; this level of detail is more commonly found in detailed quantitative risk assessments.

Train accident rates available from the Federal Railroad Administration generally only distinguish between freight and passenger service, not by specific cargoes or designations of manifest versus unit trains. In conducting its analysis, OEA considered accident rates on mainlines and sidings accounting for track class on the Action Alternatives and downline segments in the project study area. OEA's use of track classes to develop accident rates accounts for both train speed (because different track classes have different speed limits) and segment-specific factors, such as curvature, grade, the presence of signaling equipment, track condition, and the presence of at-grade road crossings (because these factors are used to determine the track class). Appendix E, *Rail Accident Rates*, provides the estimated accident rates, as well as descriptions of some large historical rail accidents for context.

Analyses of site-specific track conditions for the proposed rail line is not possible during the EIS phase because the actual track location has not yet been

specified and the track has not been designed or constructed. Analyses of local geographical conditions and features would be part of the final engineering and design phase. OEA is recommending a new mitigation measure (ROS-MM-2) that would require the Coalition inspect, as part of routine rail inspections or at least twice annually, both track geometry (using appropriate technology) and local terrain conditions. Implementation of this measure would minimize the potential for problems with the track or track bed that could lead to accidents. Insufficient data were found on accident rates for unit trains carrying crude oil, particularly trains carrying waxy crude oil, to allow these factors to be explicitly analyzed for changes in accident rates; however, such changes would be common to all of the Action Alternatives.

Because the proposed rail line is anticipated to primarily transport crude oil, OEA focused on this commodity in its analysis of potential spills. OEA estimated the probability of crude oil releases (spills) and the amount of crude oil that could be released based on the anticipated rail car types and numbers of cars per train, as well as previous studies and models of spill probabilities for other rail projects in a number of industries. OEA did not assess the possibility of releases of other commodities in detail because OEA anticipates that the volumes of commodities other than crude oil would be low. As described in Chapter 2, *Proposed Action and Alternatives*, other commodities would be transported in manifest rail cars added to the oil trains and would not require dedicated trains.

5.1.3 Summary Response 3: Consideration of Impacts from Oil and Gas Development as Cumulative Impacts

During the public comment period for the Draft EIS, OEA received comments suggesting that OEA should have treated potential environmental impacts that could result from potential future, as yet unplanned, oil and gas development projects in the Basin as direct or indirect impacts of the proposed rail line, rather than treating those oil and gas development projects as reasonably foreseeable future actions that could contribute to cumulative impacts, as was done in the Draft EIS. OEA notes that the proposed action before the Board is the Coalition's proposal to construct and operate a new common-carrier rail line in Carbon, Duchesne, Uintah, and Utah Counties, Utah. The Coalition does not propose to undertake any oil and gas development projects, and the Board would have no role in assessing, authorizing, or regulating any such projects. However, because oil and gas development has the potential to affect some of the same resources as the proposed rail line near in time to the construction and operation of the proposed rail line, OEA appropriately assessed future oil and gas development projects as part of the cumulative impacts analysis in the Draft EIS. After reviewing the comments on the Draft EIS, OEA continues to believe that future oil and gas development projects should be included only as part of the analysis of cumulative effects, for the following reasons.

First, the Coalition has sought Board authority only to construct and operate the proposed rail line,

not for any oil and gas development projects. Therefore, treating future oil and gas development projects as part of the proposed action, or impacts from those projects as impacts of the proposed action, would not inform the Board's decision on the Coalition's petition to construct and operate the proposed rail line. The purpose of OEA's environmental review process is to ensure the Board's compliance with NEPA, 42 U.S.C. § 4321 et seq. and related environmental laws and regulations, as specified in the Board's rules at 49 C.F.R. Part 1105. The purpose of NEPA is to focus the attention of the government and the public on the likely environmental consequences of a proposed agency action by disclosing potential environmental impacts before an action is implemented in order to minimize or avoid potential negative environmental impacts. *See Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989). NEPA's EIS requirement has two purposes: "First, 'it ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts.'…Second, it 'guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision.'" *Department of Transp. v. Public Citizen*, 541 U.S. 752, 768 (2004) (Public Citizen) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)). Thus, information that does not inform the agency's decision need not be included in an EIS. "NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.

Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action." 40 C.F.R. §§ 1500.1 (b)-(c). The Board has jurisdiction over rail transportation by rail carriers. *See* 49 U.S.C. § 10501. In the case at hand, the Coalition has petitioned the Board, under 49 U.S.C. § 10502, for authority to construct and operate a new rail line in Carbon, Duchesne, Uintah, and Utah Counties in Utah. After completion of the environmental review process, the Board will decide whether to authorize, deny, or authorize with conditions the Coalition's proposal. Thus, the EIS must include information that the Board needs to issue an informed decision on the Coalition's proposal to construct and operate the proposed rail line. Oil and gas development is not part of the Coalition's proposed action before the Board, and is subject to the approval processes of other federal, state, local, and tribal agencies, not the Board.

Second, the Board has no authority or control over potential future oil and gas development in the Basin. According to court decisions, the degree of legal or factual control over an action or project asserted by an agency is an important factor in determining whether to consider that action in the environmental review process. The courts have stated that an agency exercises control over a project when: "(1) it exercises discretion over the project; (2) has given any direct financial aid to the project; and (3) the overall Federal involvement with the project is sufficient to turn essentially private action into Federal action." See *Citizens Against Rails-to-Trails v. STB*, 267 F.3d 1144 (D.C. Cir, 2001); *Goos v. ICC*, 911 F.2d 1283 (8th Cir.

1990); *NAACP v. Medical Center, Inc.*, 584 F.2d 619, 629 (3d Cir. 1978). Applying these standards here, it is clear that the Board lacks sufficient control over future oil and gas development projects to make those projects part of the proposed action assessed in the EIS. The only action before the Board is the construction and operation of the proposed rail line, which is not a condition precedent to future oil and gas development in the Basin, and the proposed rail line and any future oil and gas development projects are not two phases of a single action. The Board has given and would give no financial aid to any future oil and gas development projects and lacks regulatory authority over those potential future projects.

Third, the Board has no authority to prevent or mitigate potential harms from potential future oil and gas development in the Basin. While OEA believes that the availability of a rail transportation option would benefit the oil and gas industry in the Basin, that industry is already well-established and would continue regardless of whether the Coalition were to construct and operate the proposed rail line. Thus, the proposed rail line and any future oil and gas development projects are separate, independent projects. The Board can only impose conditions that are consistent with its statutory authority over rail transportation by rail carriers under the Interstate Commerce Act, as amended by the ICCTA. Accordingly, any conditions the Board imposes must relate directly to the project before it, must be reasonable, and must be supported by the record before the Board. In this proceeding, the Board's power to impose mitigation extends only to the Coalition, as the railroad applicant, and to potential

impacts that could be caused by the Coalition's proposed rail line. The Board does not have authority to regulate oil and gas development projects and thus could not impose mitigation to reduce potential harms resulting from those projects. Therefore, an environmental analysis of the potential impacts of oil and gas development projects beyond that presented in the cumulative impacts analysis is not properly part of the EIS in this rail construction case. See *Public Citizen*, 541 U.S. at 769.

Fourth, OEA's analysis of cumulative impacts contains an appropriate assessment of the impacts from potential future oil and gas development in the Basin that are relevant to the Board's decision-making. NEPA requires that agencies consider direct, indirect, and cumulative impacts in their environmental documents (CEQ 1997, 40 C.F.R. §§ 1508.7, 1508.8, and 1508.25). The cumulative impacts analysis provides information to decision makers about the potential incremental effects of its actions in conjunction with other reasonably foreseeable actions that may affect the same resources. In other words, the analysis allows the decision maker to see how much the proposed action before its agency would contribute to the cumulative impacts on a particular resource. Cumulative impacts result when the impacts of different actions combine to cause greater impacts on a particular resource than the impacts that would be caused solely by the proposal before the agency. *See Considering Cumulative Effects under the National Environmental Policy Act*, p. 7 (CEQ 1997). The analysis of cumulative impacts focuses on effects on specific resources. Thus, two actions that have different types of impacts, but affect one or more of the

same resources, need to be considered together in a cumulative impacts assessment. *See Considering Cumulative Effects under the National Environmental Policy Act*, p. 8 Table 1-2 (CEQ 1997). For example, construction of the Coalition's proposed rail line and potential future oil and gas development in the Basin would each result in impacts on vegetative communities and on wildlife habitat that, when combined, could have a cumulatively greater impact on vegetation and wildlife in the region. Therefore, OEA assessed the combined impacts on vegetation and wildlife of the Coalition's proposed rail line project with the other identified cumulative impact actions in the cumulative impacts analysis. The cumulative impacts assessment sets forth information regarding the combined environmental impacts of the Coalition's proposed rail line and the other identified cumulative projects. OEA notes that the environmental impact assessment of the identified cumulative impact actions was based on currently available information. In most instances, OEA was only capable of presenting cumulative environmental impacts from a qualitative perspective because most of the identified cumulative projects are speculative or are in the planning phase of project development. Without detailed construction plans or limits of disturbance, quantitative impact calculations are not possible.

Fifth, Board and judicial precedent support OEA's conclusion that potential future oil and gas development should not be viewed as part of the proposed action and that potential impacts of future oil and gas development projects should not be viewed as direct or indirect impacts of the proposed rail line. Information that does not inform the agency's decision

need not be included in an EIS. Moreover, courts defer to agency determinations on what the appropriate scope of the environmental review should be in particular cases. *See Sylvester v. U.S. Army Corps of Engineers*, 884 F.2d 394, 399 (9th Cir. 1989). The Board's environmental regulations do not set forth a specific test for determining whether and how to consider particular related actions in the environmental review process. However, the Supreme Court's decision in Public Citizen clarifies that under NEPA a "but for" causal relationship is not enough to make an agency responsible for a particular effect under NEPA and the relevant regulations. *See Public Citizen*, 541 U.S. at 767; *National Committee for the New River v. FERC*, 373 F.3d 1373 (D.C. Cir 2004) (rejecting argument that "but for" test requires EIS on a proposed pipeline extension to consider the impacts of two non-jurisdictional generating plants). Rather, NEPA requires analysis of an effect only where there is a reasonably close causal relationship between the environmental effect and the alleged cause, analogous to the doctrine of proximate cause from tort law. *See Public Citizen*, 541 U.S. at 767 (citing *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)). Furthermore, the Supreme Court has ruled that agencies may reasonably limit their analysis to issues within the agency's own decision-making process. *See Public Citizen*, 541 U.S. at 768. The Court has held that where an agency has no ability to prevent a certain effect due to its limited statutory authority over the relevant actions, the agency cannot be considered a legally relevant "cause" of the effect, and such effects need not be studied in the agency's environmental review document. See

Public Citizen, 541 U.S. at 770. Based on *Public Citizen* and other relevant precedent, OEA believes that, apart from analysis as a cumulative impact, the effects of related actions need only be considered in the environmental review process if the action for which agency approval is sought can reasonably be said to cause the related actions and the agency has the authority to prevent the related actions (and thus any effects caused by the related actions) from taking place. OEA does not believe that potential future oil and gas development projects meet this two-part test. The Coalition's proposed rail line is not a proximate cause of oil and gas development in the Basin, because such development may occur, and is already taking place, without the proposed rail line. More importantly, the Board has no regulatory authority over oil and gas development and, therefore, cannot control whether such development occurs and cannot mitigate any effects from such actions if they do.

Finally, commenters' arguments for treating potential impacts of future oil and gas development as direct or indirect impacts of the proposed rail line are not supported by the facts or the relevant case law. Commenters suggest that the purpose of the Coalition's proposal is to expand oil production in the Basin and that oil production would not increase if the Coalition did not construct the proposed rail line. However, as stated in the Draft EIS, the Coalition's purpose is to provide common carrier rail service connecting the Basin to the interstate common carrier rail network using a route that would provide shippers with a viable alternative to trucking. The Coalition's proposed rail line and any future oil and gas development projects are separate and independent

projects that each have independent utility. If the rail line were not built, oil production in the Basin would continue and could increase in the future, depending on market conditions, including local, regional, national, and global demand for crude oil. As discussed in the Draft EIS, crude oil produced in the Basin is currently transported by truck to refineries in the Salt Lake City area and to an existing rail terminal near Wellington, Utah. While there are currently limitations on the volume of crude oil that refineries in the Salt Lake City area can accept, it is possible that additional capacity could be added at those refineries in the future. If oil production in the Basin were to increase in the future in response to changes in oil prices, rail transportation of crude oil from the existing rail terminal near Wellington or other existing rail terminals within trucking distance of the Basin could also increase to handle the additional production. Such outcomes would be outside of the Board's authority to regulate and would depend on future market conditions, not the construction and operation of the proposed rail line.

Further, oil and gas development, as discussed in the EIS, does not refer to a single project, but rather to many separate and independent projects that have not yet been proposed or planned. Those projects could occur on private, state, tribal, or federal land and could range in scale from a single vertical oil well to a large lease involving many horizontal wells. The entities that would undertake the projects are also unknown, but could include local privately owned companies, tribal interests, oil producers from outside of the Basin, or other parties. Because it would not be possible to determine which of these as yet

unproposed, unplanned, and unsponsored projects would or would not proceed if the proposed rail line were or were not constructed, it is also not possible to conclude that any specific project would be proximately caused by the proposed rail line. OEA notes that, where an agency does not have jurisdiction over another project and the other project could proceed without the agency's approval of the project over which it does have jurisdiction, it is appropriate to limit the scope of the EIS to the project over which the agency does have jurisdiction. *See Native Ecosystem Council v. Dombeck*, 304 F.3d 886, 894-95 (9th Cir. 2002); *Wetlands Action Network v. U.S. Army Corps of Engineers*, 222 F.3d 1105, 1117 (9th Cir. 2000); *Highway Citizens Group v. Mineta*, 349 F.3d 938, 962-63 (7th Cir. 2003). Therefore, OEA cannot concur with commenters that environmental impacts that could potentially result from potential future oil and gas development projects should be treated as either direct or indirect impacts of the Coalition's proposal.

5.1.4 Summary Response 4: Approach to Analyzing Impacts from Oil and Gas Development and Rail Terminals

OEA received comments requesting that the Final EIS include an analysis of specific impacts from potential future oil production in the Basin. OEA notes that the Draft EIS included an analysis of impacts from future oil and gas development projects in Section 3.15, Cumulative Impacts. Please refer to Summary Response 3, *Consideration of Impacts from Oil and Gas Development as Cumulative Impacts*, for an explanation of why OEA's inclusion of oil and gas

development projects in the cumulative impacts discussion is appropriate. This summary response provides an additional explanation of OEA's approach to analyzing the cumulative impacts of the proposed rail line and other reasonably foreseeable future actions, such as oil and gas development projects and future rail terminals for loading and unloading trains.

As discussed in Section 3.15, *Cumulative Impacts*, OEA followed the guidelines outlined in the Council on Environmental Quality (CEQ) handbook, *Considering Cumulative Effects under the National Environmental Policy Act* (CEQ 1997) to evaluate whether cumulative impacts could result from adding the impacts of constructing and operating the proposed rail line to impacts of past, present, and reasonably foreseeable future projects. To be included as a cumulative project, planning and permitting for other actions should be advanced to the point that the action is reasonably foreseeable, which typically means that projects that have been generally discussed but for which no specific plans have been developed would not be included in the cumulative impacts analysis. However, OEA expanded the cumulative impacts analysis to also include potential future oil and gas development projects in the Basin and future rail terminals near the terminus points of the proposed rail line because, although there are currently no specific plans to undertake those projects, OEA believes they are reasonably foreseeable based on the projections of future rail traffic on the proposed rail line that the Coalition provided to OEA.

As discussed in the Draft EIS, the Coalition estimates that rail traffic on the proposed rail line

would range from 3.68 trains per day (low rail traffic scenario) to 10.52 trains per day (high rail traffic scenario), on average, depending on future market conditions. These future market conditions would include market conditions for Uinta crude oil, specifically, and any change in the current discount on Uinta crude oil prices.

To provide a framework for the analysis of potential cumulative impacts, OEA developed two potential scenarios for future oil and gas development in the Basin that correspond to the Coalition's estimated range of rail traffic. Under the low oil production scenario, total oil production in the Basin would increase by an average of 130,000 barrels per day compared to historical production levels. Under the high oil production scenario, total oil production in the Basin would increase by an average of 350,000 barrels per day. These scenarios are based on the Coalition's estimates of potential rail traffic on the proposed rail line. The scenarios are not based on any specific oil development proposals. While oil and gas development is considered reasonably foreseeable and, therefore, is included in the cumulative impacts analysis, details to inform the scenarios needed to analyze potential cumulative impacts are not a prediction of what may or may not happen.

For the purpose of the cumulative impacts analysis, OEA assumed that all oil transported on the proposed rail line would come from new production that would involve well drilling and construction and operation of related facilities in the Basin. This a conservative assumption that may tend to overstate impacts because it is possible that the proposed rail

line would displace truck transportation for at least some existing oil production. OEA estimated the number of oil wells that would need to be constructed and operated to satisfy the expected increased oil production low and high volume scenarios of 130,000 or 350,000 barrels per day, respectively, and the number of truck trips per day that would be needed to transport oil from oil fields to the terminals under those scenarios. In addition, OEA assumed that oil and gas operators would construct and operate any needed ancillary facilities, such as access roads, electric power distribution lines, well pads, surface or subsurface pipelines, and storage tanks to support oil field development. OEA also assumed that private sector terminal developers would construct any rail terminal facilities at the terminus points near Myton and Leland Bench to transfer commodities between trucks and rail cars.

The analysis of cumulative impacts considers the impact of other past, present, and reasonably foreseeable future actions in combination with impacts of the proposed rail line. These impacts may be additive or offsetting. Because the cumulative impacts analysis considers impacts that may add to or offset impacts of the proposed rail line, the scope of the cumulative impacts analysis is limited to those direct and indirect resource impacts that would be generated by construction and operation of the proposed rail line. Impacts of other past, present, and reasonably foreseeable future actions that do not interact with impacts of the proposed rail line are not within the scope of the cumulative impacts analysis for an EIS.

For example, OEA considered the cumulative impact of vehicle trips related to construction and operation of the proposed rail line in combination with vehicle trips for transporting oil from future oil and gas development projects to the future rail terminals because both the proposed rail line and future oil and gas development projects would involve new vehicular traffic that could affect safety and delay on local roads (Subsection 3.15.5.1, *Vehicle Safety and Delay*). To assess cumulative impacts on air quality and greenhouse gases, OEA added the estimated emissions from operation of the proposed rail line to estimated emissions from other reasonably foreseeable projects, including the oil and gas development that would be needed to meet the oil production scenarios, and estimated emissions from operation of the rail terminals (Subsection 3.15.5.7, *Air Quality and Greenhouse Gases*). The air quality analysis is inherently cumulative in nature; OEA used foundational information from the low and high oil production scenarios to inform the cumulative analysis. However, OEA did not assess cumulative groundwater impacts specifically because, as described in Section 3.3, Water Resources, OEA expects that the proposed rail line would not result in impacts on groundwater use (i.e., supply/drawdown), groundwater recharge, or groundwater quality. Therefore, the proposed rail line would not contribute to cumulative impacts on groundwater when combined with impacts from oil and gas development. The scope of the cumulative impacts analysis is described for each resource topic in Subsections 3.15.5.1 through 3.15.5.14.

This approach to the cumulative impacts analysis is consistent with the CEQ regulations that were in place at the time the Notice of Intent (NOI) for this EIS was published in the Federal Register. Per Section 1506.13 of the updated CEQ regulations, the new regulations apply to any NEPA process begun after its effective date of September 14, 2020. An agency may apply the regulations to ongoing activities and environmental documents that began before September 14, 2020. However, OEA has determined that the agency will not apply the updated CEQ regulations to this EIS that had an NOI publication date of June 19, 2019.

5.1.5 Summary Response 5: Tennessee Pass Line

OEA received comments regarding potential downline impacts on an existing rail line in Colorado known as the Tennessee Pass Line, which extends approximately 163.1 miles from Sage, Colorado to Parkdale, Colorado. The Tennessee Pass Line is owned by Union Pacific Railroad Company (UP) and has been out of service for many years. Commenters expressed concern that trains originating on the Coalition's proposed rail line and transporting crude oil produced in the Uinta Basin could travel on the Tennessee Pass Line and that this increased rail traffic could result in environmental impacts, including impacts related to noise, air quality, rail safety, vehicle safety, water resources, biological resources, and protected areas. In particular, commenters expressed concerns about potential downline impacts from increased rail traffic along the Tennessee Pass Line on Browns Canyon National

Monument and the Arkansas River and the Eagle River in Colorado.

As discussed in the Draft EIS and in detail in Appendix C, *Downline Analysis Study Area and Train Characteristics* and in Summary Response 1: *Downline Impacts Analysis Methods*, OEA identified routes that trains from the proposed rail line could take using the PC Rail Miler computer program. The Tennessee Pass Line was included as a potential route in the computer model, and the results indicated that the Tennessee Pass Line would not be a practical route for trains moving from the Uinta Basin to refineries on the Gulf Coast or any other potential destinations. Therefore, the Tennessee Pass Line was appropriately not included in the downline study area in the Draft EIS.

To the extent that comments may be referring to a proceeding that was previously before the Board and that was separate from the Uinta Basin Railway proposal, OEA notes that the notice in Docket No. FD 36471 has been rejected and the proceeding is no longer active. In that proceeding, Colorado, Midland, and Pacific Railroad Company (CMP) filed a verified notice of exemption under 49 C.F.R. § 1150.31 requesting Board authority to lease the Tennessee Pass Line from UP. Commenters noted that CMP is a subsidiary of Rio Grande Pacific Corporation (RGP), which is the proposed rail operator of the Uinta Basin Railway. On March 25, 2021, the Board issued a decision rejecting CMP's notice of exemption. See *Colorado, Midland & Pacific Railway Company—Lease & Operation Exemption Containing Interchange*

Commitment—Union Pacific Railroad Company, FD 36471, (served March 25, 2021).

On January 26, 2021, OEA received a verified statement from Mark Hemphill of RGP stating that RGP and CMP have no plans to transport oil originating from the Uinta Basin Railway along the Tennessee Pass Line, that it would not be practical or economical to transport oil on the Tennessee Pass Line, that the Tennessee Pass Line would be the highest-cost option for moving oil from the Uinta Basin to destination refineries anywhere east of Utah in terms of capital expenditures and operating expenditures, and that RGP's primary interest in leasing the Tennessee Pass Line was to provide passenger rail service (see Comment UBR-DEIS-00447-2). Based on information provided by the RGP and OEA's independent analysis, OEA has concluded that it is not reasonably foreseeable that oil trains originating on the proposed Uinta Basin Railway would travel over the Tennessee Pass Line. OEA understands that the Tennessee Pass Line has grades up to or in excess of three percent, which means that train would have to use more locomotives and consume more fuel to use that route compared to the UP mainline between Kyune and Denver. OEA believes that these high grades make this line an impractical and unlikely route for unit oil trains to use. OEA's computer modelling results and the verified statement from GRP support this conclusion. Accordingly, downline impacts on areas adjacent to the Tennessee Pass Line are not reasonably foreseeable and it would not be appropriate to analyze any such impacts in the Final EIS.

* * *

Table T-17. Comments and Responses—Section 3.11, Land Use and Recreation

* * *

project area. In other oil and gas basins, EPA has been contacted by concerned citizens in tribal communities about the potential for sidelined tanker cars leaking or venting in proximity to dwellings, waterbodies, or other sensitive locations. We recommend that the Final EIS identify specific siding locations that avoid impacts to tribal or environmental justice communities and to sensitive resources.	*Information*, Table A-1, respectively. The Coalition would not determine the exact locations of siding tracks until the final engineering and design phase, which would occur after the Board authorizes one of the Action Alternatives. To address this comment and concerns regarding potential impacts of railrelated infrastructure on tribal land, OEA is recommending a new mitigation measure (EJ-MM2) that would require the Coalition consult with the Ute Indian Tribe regarding the locations and designs of rail-related features to ensure that impacts on tribal members and land and resources under the

	tribe's jurisdiction would be minimized.
Duchesne County, Mike Hyde (UBR-DEIS-00436-48)	
Comment	**Response**
Page 3.14-13 Biological Resources: The Ute Indian Tribe has strong hunting traditions that are still practiced today and that are important to tribal members' way of life. Impacts on big game from habitat disturbance and noise could diminish hunting opportunities and adversely affect tribal hunting traditions. Because this effect would be experienced only by tribal members, OEA concludes that it would represent a disproportionate effect for the Ute Indian Tribe. [Bold: Comment: Diminished hunting opportunities would not be an effect experienced only by tribal members. There are many non-Indians in the Uinta	OEA analyzed impacts from construction and operation of the proposed rail line on hunting in general and in the context of environmental justice impacts specifically. Please refer to Subsection 3.14.3.2, Impact Comparison between Action Alternatives, which concludes that adverse effects on "tribal hunting traditions" would only be experienced by tribal members. Please refer to Section 3.11, Land Use and Recreation, for information regarding impacts on hunting in general. Therefore, no changes to the Draft EIS are warranted in response to this comment.

Basin who have strong hunting traditions.]	
Center for Biological Diversity, et al. Wendy Park (UBR-DEIS-00683-59)	
Comment	**Response**
Finally, there is no doubt that the proponents base the financial viability of the rail line project on shipping much—if not all—of the increased production of crude oil in the Uinta Basis to Gulf Coast refineries. For example, the rail line feasibility study states with regard to a range of forecasts that [i]n both the Higher and Lower cases, railroad volumes were assumed to ramp up in the early years of the forecast, driven by increased production of crude oil in the Basin and the inputs that enable same, as well as greater and greater acceptance of the Basin's crudes at various refineries, primarily located in Gulf Coast states. [Footnote 91: Id.	Please refer to Appendix C, *Downline Analysis Study Area and Train Characteristics*, which describes the thresholds for environmental review of potential downline impacts as established by the Board's regulations at 49 C.F.R. § 1105.7(e)(11)(v) and defines the downline study area for the EIS. As discussed in that appendix, OEA expects that some percentage of rail traffic originating on the proposed rail line would terminate at refineries along the Gulf Coast. However, outside of the downline study area, OEA expects that rail traffic on existing rail lines would not exceed OEA's thresholds for downline analysis. Therefore, OEA

at 16; see also id. at vii, xi, xiii and 56.] It is common knowledge that the areas around the Gulf Coast oil refineries are some of the most polluted in the nation and that nearby communities are already disproportionately plagued by high levels of toxic and criteria pollutants. Yet, the OEA makes no effort to assess the reasonably foreseeable cumulative impacts of the rail line and its freight of 350,000 barrels or more per year	concludes that environmental impacts along existing rail lines outside of the downline study area, such as existing rail lines near the Gulf Coast, would be negligible, and expanding the scope of the EIS to include those existing rail lines would not be appropriate. Accordingly, no changes to the Draft EIS are warranted in response to this comment.

* * *

Seven County Infrastructure Coalition, Mike McKee (UBR-DEIS-00666-26)	
Comment	**Response**
Accurately estimating downstream GHG emissions from crude oil production is a complex task involving numerous factors, including the amount of crude oil transported by the Uinta Basin Railway, how such oil would be distributed	Subsection 3.15.5.7, *Air Quality and Greenhouse Gases*, in Section 3.15, *Cumulative Impacts*, provides information about GHG emissions from the downstream end use of crude oil. Because the Board would have no role in approving

and used for energy or lubricating oils or petrochemicals, and the extent to which such oil would displace existing crude oil or fuel sources. The Coalition understands that OEA has chosen to simplify this complex task by making conservative assumptions that show the high-end of potential downstream emissions. However, it is important that the cumulative impacts analysis place these assumptions into context. The final EIS should make clear that the cumulative impacts analysis substantially overstates potential downstream GHG emissions and that, in reality, such emissions are likely to be much lower due to displacement of existing crude oil and fuel sources.	or regulating the production, refining, or use of crude oil, it would be inappropriate and speculative for OEA to attempt to predict the final end uses of crude oil transported on the proposed rail line or the percentage of that crude oil that could displace crude oil from other sources. Therefore, OEA calculated and reported the GHG emissions that would be associated with combustion of all crude oil that would be transported on the proposed rail line under the high oil production scenario. This approach assumes that all crude oil transported on the proposed rail line would be used as fuel and would not displace any crude oil from other sources. OEA acknowledges that this is a conservative assumption that may result in overstating downstream end use

	GHG emissions, and that downstream end use GHG emissions could be lower to the extent that crude oil transported on the proposed rail line would displace existing crude oil usage.
Center for Biological Diversity, et al., Wendy Park (UBR-DEIS-00683-1)	
Comment	**Response**
The draft EIS fails to acknowledge the very purpose of the project, which is to ramp up crude oil production in the Uinta Basin, by providing a new and cheaper means of transporting crude outside the Basin. As a result, the draft EIS fails to acknowledge the reasonably foreseeable effects of accelerated oil drilling and production throughout the Basin, while at the same time stating that up to 350,000 barrels of oil per day could be exported via the new rail to out-of-state refineries, an	Please refer to Section 3.15, *Cumulative Impacts*, for a discussion of the potential cumulative impacts of the proposed rail line and potential future oil and gas development in the Basin. Please refer to Summary Response 3: *Consideration of Impacts from Oil and Gas Development as Cumulative Impacts*, and Summary Response 4: *Approach to Analyzing Impacts from Oil and Gas Development and Rail Terminals*. Please also refer to Chapter 1, *Purpose and Need*, for a description of

amount far in excess of current production levels, and which, according to the SCIC, is not economically possible without the rail. By ignoring this reasonably foreseeable consequence of allowing a new crude oil transportation route, the draft EIS masks the air pollution, climate, and road safety impacts from increased oil drilling, production, and burning. Along similar lines, the draft EIS entirely fails to consider the reasonably foreseeable indirect and cumulative effects of increased tars sands and oil	the Coalition's purpose for the proposed rail line, which is to provide common carrier rail service connecting the Basin to the interstate common carrier rail network using a route that would provide shippers with a viable alternative to trucking. The EIS acknowledges that shippers would use the proposed rail line primarily to transport crude oil. Section 3.15, *Cumulative Impacts*, discusses how OEA identified reasonably foreseeable projects. OEA consulted with BLM, the Forest Service, and other

* * *

Table 3 Excerpts, Energy Information Administration, *Capacity of Operable Petroleum Refineries by State as of January 1, 2022* (2022)

(Barrels per Stream Day, Except Where Noted)

* * *

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day			Thermal Cracking			
	Operating	Idle	Operating	Idle	Vacuum Distillation	Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
Louisiana	**2,922,541**	**0**	**3,051,155**	**0**	**1,541,000**	**563,700**	**0**	**0**	**11,800**
Alon Refining Krotz Springs Inc Krotz Springs	80,000	0	83,000	0	36,200	0	0	0	0
Calcasieu Refining Co Lake Charles	135,500	0	137,000	0	36,000	0	0	0	0
Calumet Cotton Valley Refining LLC Cotton Valley	13,020	0	14,000	0	0	0	0	0	0
Calumet Princeton Refining LLC Princeton	8,300	0	8,655	0	7,000	0	0	0	0
Calumet Shreveport Refining LLC Shreveport	57,000	0	60,000	0	28,000	0	0	0	0
Chalmette Refining LLC Chalmette	190,000	0	197,000	0	169,000	42,000	0	0	0
Citgo Petroleum Corp Lake Charles	418,000	0	440,000	0	230,000	110,000	0	0	0
Exxel Paralubes Westlake	0	0	0	0	0	0	0	0	0
ExxonMobil Refining & Supply Co Baton Rouge	520,000	0	542,000	0	254,000	123,500	0	0	0
Marathon Petroleum Co LP Garyville	585,000	0	616,000	0	297,500	108,500	0	0	0
Phillips 66 Company Westlake	264,000	0	273,000	0	125,000	65,200	0	0	11,800
Placid Refining Co Port Allen	75,000	0	82,500	0	27,000	0	0	0	0
Shell Oil Products US Norco	236,721	0	250,000	0	91,300	28,500	0	0	0
Valero Refining - Meraux LLC Meraux	125,000	0	128,000	0	60,000	0	0	0	0
Valero Refining New Orleans LLC Norco	215,000	0	220,000	0	160,000	86,000	0	0	0
Michigan	**140,000**	**0**	**149,000**	**0**	**89,000**	**38,000**	**0**	**0**	**0**
Marathon Petroleum Co LP Detroit	140,000	0	149,000	0	89,000	38,000	0	0	0
Minnesota	**439,000**	**0**	**485,000**	**0**	**284,000**	**82,000**	**0**	**0**	**0**
Flint Hills Resources LP Saint Paul	335,000	0	375,000	0	234,000	82,000	0	0	0
St Paul Park Refining Co LLC Saint Paul	104,000	0	110,000	0	50,000	0	0	0	0
Mississippi	**393,340**	**0**	**415,000**	**0**	**354,875**	**104,000**	**0**	**0**	**0**
Chevron USA Inc Pascagoula	356,440	0	375,200	0	330,000	104,000	0	0	0
Ergon Refining Inc Vicksburg	26,500	0	27,300	0	18,000	0	0	0	0
Hunt Southland Refining Co Sandersville	11,000	0	12,500	0	6,875	0	0	0	0
Montana	**218,000**	**9,600**	**226,400**	**10,000**	**129,600**	**34,270**	**10,000**	**0**	**0**
Calumet Montana Refining LLC Great Falls	28,000	9,600	30,000	10,000	20,000	0	0	0	0

* * *

State/Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day			Thermal Cracking			
	Operating	Idle	Operating	Idle	Vacuum Distillation	Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
Pennsylvania	**266,000**	**0**	**289,800**	**0**	**113,000**	**0**	**0**	**0**	**0**
United Refining Co									
Warren	65,000	0	70,000	0	40,000	0	0	0	0
Tennessee	**180,000**	**0**	**185,000**	**0**	**0**	**0**	**0**	**0**	**0**
Valero Ref Company Tennessee LLC									
Memphis	180,000	0	185,000	0	0	0	0	0	0
Texas	**5,858,529**	**90,000**	**6,219,039**	**100,000**	**2,632,000**	**900,207**	**42,000**	**0**	**0**
Alon USA Energy Inc									
Big Spring	73,000	0	74,000	0	28,000	0	0	0	0
Buckeye Texas Processing LLC									
Corpus Christi	60,000	0	65,000	0	0	0	0	0	0
Citgo Refining & Chemical Inc									
Corpus Christi	167,500	0	177,839	0	85,300	45,127	0	0	0
Deer Park Refining LTD Partnership									
Deer Park	312,500	0	340,000	0	180,000	96,000	0	0	0
Delek Refining LTD									
Tyler	75,000	0	76,000	0	28,000	7,500	0	0	0
Diamond Shamrock Refining Co LP									
Sunray	195,000	0	200,000	0	50,000	0	0	0	0
Three Rivers	89,000	0	91,000	0	33,500	0	0	0	0
Equistar Chemicals LP									
Channelview	0	0	0	0	0	0	0	0	0
ExxonMobil Refining & Supply Co									
Baytown	560,500	0	584,000	0	297,000	54,000	42,000	0	0
Beaumont	369,024	0	384,400	0	148,800	46,500	0	0	0
Flint Hills Resources LP									
Corpus Christi East	73,500	0	75,000	0	0	0	0	0	0
Corpus Christi West	265,000	0	275,000	0	87,500	0	0	0	0
Hartree Channelview LLC									
Channelview	0	45,000	0	50,000	0	0	0	0	0
Houston Refining LP									
Houston	263,776	0	289,000	0	196,500	100,500	0	0	0
Kinder Morgan Crude & Condensate									
Galena Park	84,000	0	100,000	0	0	0	0	0	0
Lazarus Energy LLC									
Nixon	14,000	0	15,000	0	0	0	0	0	0
Magellan Processing LP									
Corpus Christi	42,500	0	50,000	0	0	0	0	0	0
Marathon Petroleum Co LP									
Galveston Bay	593,000	0	625,000	0	259,500	30,000	0	0	0
Motiva Enterprises LLC									
Port Arthur	626,000	0	659,700	0	331,800	178,000	0	0	0
Pasadena Refining Systems Inc									
Pasadena	112,229	0	115,700	0	38,000	0	0	0	0
Petromax Refining Co LLC									
Houston	25,000	0	27,500	0	0	0	0	0	0
Phillips 66 Company									
Sweeny	265,000	0	278,900	0	132,100	78,700	0	0	0

E. Secakuku Letter to M. Oberman, Ute Indian Tribe of Uintah and Ouray Reservation Support Statement (Sept. 22, 2021)

Dear Chairman Oberman,

The Ute Indian Tribe of the Uintah and Ouray reservation (the Ute Tribe) reaffirms its support for the Uinta Basin Railway project.

Oil and gas production on the reservation is the most significant source of revenue for the Ute Indian Tribe. Royalties derived from these minerals enable the Tribal government to provide critical services to its membership of almost 3,000 members. The highs and lows of commodity markets, economic cycles and geopolitical turmoil all pose risks to this vital source of funding used for education, health, policing, public works, housing, food services, natural resources and sovereign defense. The Uinta Basin Railroad enhances and expands access to both national and international markets which reduces these risks. Further, we assert that this is an appropriate example of the type of National infrastructure investment deemed vital by the Biden administration.

As a leader among energy producing Tribes, the Ute Tribe has developed a robust regulatory system that considers cultural and natural resources including threatened and endangered species. For almost 80 years oil and gas has been extracted from Ute Lands in a manner consistent with our values and consideration of our homeland. We have been and always will be the stewards of our land, air and water. Long before environmental justice became part of Federal permitting processes, the Ute people lived it, defined it, and today are most suitably equipped to

understand its application within our jurisdictional lands.

The views of the Tribe relating to oil and gas development on its reservation must take precedence over the views of outside persons and parties with no management or authorities over the Tribe's reservation.

It is my hope that the Surface Transportation Board will determine the Environmental Impact Statement has sufficiently satisfied statute and move swiftly with final approval and issuance of license.

On Behalf of the Ute Indian Tribe Business Committee,

[signature]

Edred Secakuku

Business Committee Vice-Chairman

Excerpts from Center for Biological Diversity's Supplemental Comments (Oct. 18, 2021)

* * *

A. The EIS Fails to Acknowledge the Railway's Impacts of Increasing Crude Production in the Uinta Basin

The EIS fails to acknowledge that the purpose of the rail is to increase crude oil production in the Basin by providing a cheaper alternative to shipping Uinta crude oil outside the Basin, and thereby increasing crude oil demand and production in the Basin. As a result, the EIS does not acknowledge various indirect impacts, including air pollution, water depletion and contamination, and wildlife habitat degradation from increased oil drilling, fracking, and oil production."

"Indirect effects" are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8.[1] "Indirect effects may include *growth inducing effects*

[1] This action is governed by the Council on Environmental Quality's 1978 regulations as amended and as in force in 2019, and so all references herein are to those rules. Although CEQ issued a final rulemaking in July 2020 fundamentally rewriting those regulations, the new rules apply only "to any NEPA process begun after September 14, 2020," or where the agency has chosen to "apply the regulations in this sub chapter to ongoing activities." 40 C.F.R. § 1506.13 (2020). The Uinta Basin Railway NEPA process was begun before September 2020, and the EIS nowhere indicates that it has chosen to apply the 2020 rules to this project. In addition, the changes made to the. rules are unlawful, and the current administration is now reviewing the illegitimacy of the 2020 regulations.

and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." 40 C.F.R. § 1508.8(b) (emphasis added). Comis have found that fossil fuel extraction and consumption induced by a federal action are reasonably foreseeable, indirect effects. *See, e.g.*, *N Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1081-82 (9th Cir. 2011) (finding that NEPA review must consider induced coal production at mines, which was a reasonably foreseeable effect of a project to expand a railway line that would cany coal, especially where company proposing the railway line anticipated induced coal production in justifying its proposal); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549-50 (8th Cir. 2003) (environmental effects of increased coal consumption due to construction of a new rail line to reach coal mines was reasonably foreseeable and required evaluation under NEPA).

Here, it is reasonably foreseeable that the railway will lead to increased oil production in the Uinta Basin. The SCIC pitched the project to Uinta Basin communities and Utah state agencies based on the economic gains that could be realized from increased oil production. For example, in its grant application to the Utah Pe1manent Community Impact Board (CIB) for funds to pay for the environmental review and pe1mitting process, the sere stated that "[a]ccess to alternate markets will raise the price paid for the Uinta Basin waxy crude and allow significant increases in oil production;" that "oil production would double, at a minimum" with access to markets outside Utah; and that "[a]ccess to multiple markets is the

best market force to reduce or eliminate the loss/discount on the Uinta crude."[2]

In an updated grant application to the same agency the SCIC provided findings from a study it commissioned by R.L. Banks & Associates ("R.L. Banks Study"),[3] touting that:

> The RL Banks repo1t believes that rail would *facilitate increased oil production* in the Uinta Basin increasing from approximately 80,000 to 90,000 bopd to 225,000 to 350,000 Bopd (Bopd = barrels of oil per day) [current production for Salt Lake City (SLC) refineries is capped near 80,000 to 90,000 Bopd][4]

In a May 2020 filing with the STB, the SCIC's Executive Director submitted written testimony highlighting the economic benefits of increased oil production from developing the rail:

> The Uinta Basin Railway also could increase royalties and tax revenues. Royalties and tax revenues are received by state, local and tribal sovereign governments. The Coalition's consultants estimate that, between 2007 and 2016, the lack of adequate transportation

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[2] Seven County Infrastructure Coalition, Feb. 2018 Grant Application Submitted to the Utah Permanent Community Impact Fund Board, at 9-10 of 20 (unnumbered pages).

[3] R.L. Banks & Associates, Inc., Pre-Feasibility Study of a Prospective Railroad Connecting the Uinta Basin to the National Rail Network (August 9, 2018) ("R.L. Banks Study").

[4] Seven County Infrastructure Coalition, Sept. 2018 Grant Application Submitted to the Utah Permanent Community Impact Fund Board, Attachment A at 3 of 10 (emphasis added).

> infrastructure in the Basin resulted in a discount paid for oil produced in the Uinta. Basin compared to the standard of West Texas Intermediate oil, which discount resulted in hundreds of millions of dollars of lost taxes and royalties to state and local governments. Tue development of the Uinta Basin Railway would give oil producers the opportunity to access new markets and *expand production* depending on adequate market conditions. Such *oil production expansion* would generate greater royalties and tax revenue.[5]

This statement strongly suggests that without the rail Uinta oil prices and production have been suppressed due to local producers' lack of adequate access to alternative markets, but that with the rail, oil production would no longer be capped and would increase. Local oil operators in the Uinta Basin suppo11ed the Project on the same grounds. For example, one of the Basin's largest producers Newfield Exploration Company urged the Utah Pe1manent Community Impact Board to subsidize the Project, because it was needed to spur Uinta crude production:

> Numerous studies have shown transportation to be an issue with major

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[5] SCIC, Petition for Exemption at 39-40 (May 29, 2020). *See also id.* at 41 ("The Uinta Basin Railway will provide a connection to the interstate rail network, giving shippers within the region an alternative to tacking. This rail option will provide these industries with the ability to access new markets and expand production ...)

> consequences even before production volumes exceed local refine1y capacity.
>
> Today, a number of operators in the Basin have reduced their drilling plans because of this challenge ....
>
> Although several large operators have intentions to increase production significantly in the Basin, based on the current transportation constraints these plans are not likely to be realized. The proposed railroad would . . . provide access to alternative refining markets and increase competition for this historically discounted crude ....[6]

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[6] SCIC, Industry Letters of Support for Uinta Basin Railway (2018). *See also id.* (Finley Resources: "Producers have few options beyond the five Salt Lake City area refineries because there are no pipelines or railroads to move this oil, and heated oil in insulated trucks cannot be hauled much farther than Salt Lake City. Uinta Basin waxy oil production has long been subject to significant discounts compared to other US oil. This issue is compounded by the fact that we are currently producing more oil than the Salt Lake refineries can process. And many of us would like to produce more. We need a permanent solution to our transportation problems that will allow access to alternate markets .... "); *id.* (Crescent Point Energy: "The SCIC's effort to bring a viable rail system to the Basin will ... create opportunities for the Basin to reach oil and gas markets that the Basin has not had the opportunity to reach in the past. … The successful completion of a Rail system in the Basin will continue to grow the opportunities of growth for the Vernal, Roosevelt and surrounding areas. "); *id.* (Benefit: "The transport of goods and commodities into and out of the Uinta Basin is severely limited by existing infrastructure. The Uinta Basin Rail Line would provide access for oil and gas producers—both conventional and unconventional—to markets outside of the region, increasing

Indeed, the economic viability of the project depends on the railway spurring increased oil production in the Basin. In 2018, the applicant commissioned a study by R.L. Banks & Associates analyzing the feasibility of an oil railway in the Uinta Basin ("RL. Banks Study").[7] According to the study, the "viability and competitiveness of the prospective railroad is directly related to the volumes of traffic which would be shipped over the line."[8] Further, "Basin oil producers will be able and motivated to extract, and market conditions *will encourage the extraction of, no less 225,000 bpd on a consistent basis if the railroad is built and operated as presently envisioned*."[9] This increase would be "almost a tripling of recent production volumes."[10] Under the R.L. Banks Study's "Higher" production forecast, Basin oil producers are projected to produce 350 000 barrels of oil per day in the Basin—quadruple current production volumes.[11] As STB Board chair Martin Oberman noted in his dissent from the Board's decision preliminarily granting the SCIC's petition for exemption: "[T]here can be no doubt that the singular rationale for constructing the proposed railroad is to provide rail transportation to stimulate an increase in oil production in the Basin. It is beyond contradiction

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competition and raising market prices for the Basin's high-quality products.").

[7] R.L. Banks Study *at* xiv.

[8] *Id.* at xiv.

[9] *Id.* at 15.

[10] *Id.*

[11] *Id.* at vi.

that without the hoped-for increase in oil production there is virtually no possibility the railroad would be financially viable."[12] Likewise, in state court proceedings challenging the legality of public funding for the rail, the court found that "a driving purpose behind the construction of the proposed railway is the increase in oil production in the region," and that "the proposed railway would only prove viable if oil production were to increase in the area."[13]

The EIS evades analysis of the increase in oil production facilitated by the rail by suggesting that increased production would depend solely on "global crude oil and capacity at oil refineries" and not on development of the railway:

> The actual volumes of oil that would move over the proposed rail line would depend on the *demand for crude oil from the Basin, which is determined by global crude oil prices and capacity at oil refineries.*

FEIS at 2-35. However, the EIS fails to acknowledge that demand for crude oil from the Basin would also be dete1mined by the price of *Uinta* crude, which is influenced in part by the costs of transporting it outside the Basin. The SCIC attributes the current Uinta crude price "discount" to the existing "lack of adequate transportation in the Basin," and has

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[12] Surface Transportation Board, Docket No. FD 36284S, Preliminary Exemption Decision at 14 (Jan 4, 2020).

[13] *Living Rivers v. Utah Permanent Community Impact Fund Board* No. 200904912, Ruling & Order Denying Motion for Summary Judgment at 32-33 (Salt Lake County Dist. Sept. 28 2021); *see also id.* at 4-5, 7-8, 12 (undisputed facts in support of these findings).

claimed that development of the rail would lead to expansion of production by eliminating this price discount.[14] Thus, the EIS must acknowledge that developing the rail would enable the desired price increase and demand and increased production of Uinta crude. However, the EIS's response to comments fail to reconcile the SCIC's claim that the rail will lead to increased oil production with the EIS 's claim that any additional production "would depend on future market conditions, not the construction and operation of the proposed rail line." *See Motor Vehicles Manufacturers Ass'n v. State Farm Mutual Automobile Ins. Co.,* 463 U.S. 29, 42-43 (1983) (agency action is arbitrary and capricious action if the agency has "offered an explanation for its decision that runs counter to the evidence before the agency").

In addition, even if oil and gas development were to increase with or without the project, the EIS fails to consider whether construction and operation of the rail could increase the *rate* of oil and gas development. For example, in *Davis v. Mineta,* 302 F.3d 1104, 1123 (10th Cir. 2002), the court invalidated an agency's finding under NEPA that economic development "will occur with or without [the highway project]," and that the project's impacts were not significant, because it failed to consider the potential that "enhanced transpo1ia.tion facilities will generate or enhance economic activity and development." *Id.* ("Defendants 'refusal to study the possibility that the relatively unspoiled nature of this local area might be due, *at*

[14] SCIC Petition for Exemption at 39-40.

least in part, to the present lack of a major roadway through it is arbitrary and capricious.").[15]

The failure to acknowledge this indirect effect infects the entire EIS, by masking significant impacts associated with expanded oil production in the Basin, which would be enabled by development of the rail. For example, the EIS's discussion of air quality impacts fails to analyze the exhaust emissions from increased local truck traffic between oil fields and the rail terminal, even while admitting that increased truck traffic would result from construction of the rail. Further, it illogically claims that an increase in exhaust emissions would only be caused by an increase in oil production and would be entirely independent of the rail:

> Depending on market conditions, including the price of crude oil, the production of crude oil in the Basin could increase significantly in the future. *If the proposed rail line were constructed, trucks would likely transport much of the additional crude oil to the rail terminals near Myton and Leland Bench. This would increase local truck traffic and truck exhaust emissions.* Because increased crude oil production in the Basin is not pa1t of the Coalition's proposed action and because the Board has no jurisdiction over and no way to

[15] No evidence in the EIS or record supports OEA's claim that Salt Lake refineries could increase refinery capacity in the future. *Cf* FEIS, Appendix T at T-44. In fact, it is difficult to see how additional capacity could be authorized in the Salt Lake region when ozone pollution already plagues this region and prevents it from meeting current air quality standards.

> predict future oil development in the Basin, an assessment of increased exhaust emissions from local truck traffic in the Basin would not be appropriate in this section.

FEIS 3.7-14 (emphasis added).

Oddly, however, in analyzing the project's rail traffic and operations, the EIS assumes that the rail would transport anywhere from 130,000 barrels and 350,000 barrels of oil per day—an amount that far exceeds existing production levels by roughly 30% to four times existing levels—and would entail "a daily average of3.68 to 9.92 and loaded and empty oil trains on the proposed rail line." FEIS at 2-35. These forecasts are inconsistent with the EIS's statement that the Board has "no way to predict future oil development in the Basin."

Moreover, for purposes of analyzing rail traffic, the EIS states that rail construction would result in up to 10 trains of oil train traffic along the rail each day, which necessa1ily assumes "increased crude oil production" in the Basin. *See id.* On the other hand, for purposes of analyzing air quality in1pacts, the EIS illogically assumes that any increases in local truck traffic to transport crude oil from oil fields to the rail terminal would not result from rail construction but from "increased oil production," which "is not part of the Coalition's proposed action." But increased oil production would be an *indirect effect* of the Coalition's proposed action, which in tum would generate *both* the truck traffic to the railway and the resulting oil train traffic out of the Basin. The EIS must be revised to correct its inconsistent assumptions and flawed reasoning.

The EIS 's cumulative impacts analysis, which discusses the impacts of higher levels of oil and gas development associated with transporting greater amounts of oil outside the Basin, does not cure the flawed analysis. This discussion treats the impacts from increased oil and gas development as if they would occur regardless of the project, especially with respect to air quality impacts as noted above.[16] With respect to socioeconomic impacts, however, the EIS suggests that the project would generate increased oil and gas development and increased tax revenues and economic activity.[17] The failure to clearly disclose the

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[16] For example, the EIS uses data from the Monument Butte project to calculate oil and gas emissions for the "reasonably foreseeable development" scenario that would be associated with transporting higher amounts of oil outside the Basin with the rail project—but then discounts the Monument Butte project itself from the reasonably foreseeable development scenario in the cumulative impacts analysis without reasoned explanation. *See* FEIS at 3.15-32 ("To assess cumulative impacts on air quality and greenhouse gases, OEA added the estimated emissions from operation of the proposed rail line to estimated emissions from other reasonably foreseeable projects, including the oil and gas development that would be needed to meet the oil production scenarios, and compared those combined emissions to the emissions for the maximum emissions year from the Monument Butte EIS. *OEA did not add the maximum emissions year emissions from the Monument Butte EIS to the cumulative emissions from the proposed rail line and reasonably foreseeable future projects because doing so would unreasonably overestimate potential future emissions from oil and gas development and cumulative air quality impacts in the study area.*").

[17] FEIS at 3.15-51 ("Construction of the proposed rail line would increase transportation capacity to ship an additional 130,000 to 350,000 barrels of oil on average each day from existing oil fields in the study area (Figure 3.15-1). To produce a steady state volume of oil to meet the planned transportation capacity of the

causal relationship between the project and increased oil and gas development fails to accurately inform the public of its full costs and benefits. *Cf High County Conservation Advocates v. United States Forest Serv.,* 52 F. Supp. 3d 1174, 1191 (D. Colo. 2014) (ignoring project's costs while touting its benefits is arbitrary).

OEA's reliance on *DOT v. Public Citizen* 541 U.S. 752 (2004), in its response to comments is misplaced. *See* FEIS, Appendix Tat T-43-55. Unlike in that case, where the agency did not have the ability to countermand the President's action lifting a moratorium on Mexican trucks from operating within the U.S. or prevent the effects of such operations, the STB has the authority to prevent the effects at issue here-increased oil and gas development- by denying the proposed exemption or permit for the project or imposing conditions to address certain effects.[18] *See Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (because FERC "could deny a pipeline certificate on the ground that the pipeline would be too harmful

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proposed rail line, OEA estimates that oil and gas companies would need to drill between 49 and 131 new wells annually and would need to construct ancillary facilities for oil field development. … This estimated increase in annual oil production would generate long-term employment, labor income, and increased direct, indirect, and induced spending on goods and services in the cumulative impacts study area and would generate increased state and local revenue through income taxes and sales and use taxes. New wells drilled on state land or accessing state minerals would also generate additional revenue for the state through royalties and lease payments.").

[18] For example, with respect to downstream greenhouse gas emissions, the STB could require conditions that would offset those emissions.

to the environment," the pipeline was a "legally relevant" cause of emissions from power plants that it would supply with gas).

Likewise, here, the Board has the autho1ity to "approve the proposed rail line, *deny* it, or approve it with mitigating conditions, including environmental conditions." FEIS, Dear Reader Letter at 2 (emphasis added); *see also Exemption of Out of Service Rail Lines,* 366 I.C.C. 885, 890, 1983 ICC LEXIS 37, *14 ("[U]se of this notice procedure may at times be conditioned upon compliance with environmental conditions."). And, where the project proponent's explicit purpose and intent of the railway is to increase oil production in the Uinta Basin, it would be arbitrary for the STB to find that the railway does not have a close causal relationship to spurring oil and gas development. *Sierra Club v. Sigler,* 695 F.2d 957, 979 (5th Cir. 1983) (bulk cargo activities a "selling point" for oil project, so EIS must consider them); *City of Davis v. Coleman*, 521 F.2d 661 , 676-77 (9th Cir. 1975) (EIS must include consideration of "growth-inducing effects" of proposed highway construction project, where those effects are the project's "raison d'etre"); *Sierra Club v. Marsh,* 769 F.2d 868, 879 (1st Cir. 1985) (where project proponents anticipated that development of causeway would stimulate industrial development, agency should have considered the potential growth in industrial development).

In sum, the EIS arbitrarily fails to disclose that the railway is intended to facilitate increased oil production and that its construction and operation could lead to quadrupling of oil production in the Uinta Basin. Consequently, the EIS fails to disclose

the reasonable foreseeably effects of this expansion in oil production, including increased

- milling and fracking of new wells;
- water pollution from runoff, sedimentation, leaks, and spills;
- water depletions for drilling and fracking of new wells;
- hazardous waste disposal (e.g., wastewater and mill cuttings);
- truck traffic on local roadways to transport oil to the railway;
- air pollution from construction, drilling, production, and trucking;
- greenhouse gas emissions from construction, drilling, and production, as well as downstream emissions from transporting, refining, and burning the extracted oil; and
- habitat destruction and fragmentation from development of new oil wells and related infrastructure.

Approval of the project without disclosing the relationship between the rail and oil and gas production in the Uinta Basin and these indirect effects would run afoul of NEPA.

B. The EIS Improperly Limits the Downline Analysis Area

The EIS confines the "downline study area" to "segments of existing rail lines outside of the Basin that could experience an increase in rail traffic above OEA's thresholds at 49 C.F.R. § 1105.7(e)(5) if the

proposed rail line were constructed." FEIS at 3.2-1. This area "extends from the proposed connection near Kyune to the northern, eastern, and southern edges of the Denver Metro/North Front Range air quality nonattainment area (Appendix C, *Downline Analysis Study Area and Train Characteristics,* Figure C-1)." *Id.*

The thresholds that OEA applies under 49 C.F.R. §l 105.7(e)(5), however, only apply to *air quality* impacts *from rail operations. See* 49 C.F.R. § 1105(e)(5)(i) (noting that where there is "[a]n increase in rail traffic of at least 100 percent," "an increase of at least eight trains a day on any segment of rail line affected by the proposal," or "[a]n increase in rail yard activity of at least 100 percent," the applicant shall "quantify the anticipated effect on air emissions"). The regulation is not intended to limit the STB's review of (1) downline public safety impacts or (2) air quality, environmental justice, and other impacts from the *processing* (rather than transport) of products transp01ted along the rail line, despite the OEA 's reliance on it for this purpose.

OEA appears to also rely on 49 C.F.R. § 1105.7(e)(11)(v) to limit its analysis of downline and indirect effects. This regulation provides that an applicant shall "Describe the effects, including indirect or down-line impacts, of the new or diverted traffic over the line if the thresholds governing energy, noise and air in1pacts in §§ 1105.7(e)(4), (5), or (6) are met. While the regulation may prescribe the minimum daily train operations that *necessarily* trigger analysis of indirect or down-line impacts, it does not follow that the agency is excused from analyzing indirect or

downline impacts if neither of these thresholds is met, but where other factors point to reasonably foreseeable adverse effects (including heavier two-mile long unit trains which are at higher risk of derailment, the hazardous nature of the transported product, or the highly polluting effects of refining crude oil). To the extent the regulation is inconsistent with NEPA's mandate that an agency disclose "the environmental impact of the proposed action" and "any adverse environmental effects which cannot be avoided should the proposal be implemented," 42 U.S.C.S. § 4332(2)(C)(i), (ii), NEPA's requirements prevail. *See United States v. Vogel Fertilizer Co.,* 455 U.S. 16, 26 (rejecting "suggestion that a regulation is to be sustained simply because it is not 'technically inconsistent' with the statutory language, when that regulation is fundamentally at odds with the manifest congressional design"); *see also Grand Canyon Tr. v. FAA,* 290 F.3d 339, 342 (2002) (courts "owe[] no deference to the [agency's] interpretation of NEPA or the CEQ regulations because NEPA is addressed to all federal agencies and Congress did not entrust administration of NEPA to [any agency] alone").

Three examples where the EIS improperly limits the analysis of downline and/or indirect effects based on this flawed reasoning are its discussion of public safety impacts, greenhouse gas emissions, and environmental justice consequences, which are addressed below.

1. Public Safety Impacts

With respect to downline public safety impacts, the EIS merely states in conclusory fashion: "Based on its experience applying the thresholds for air and

noise on freight rail construction and operation projects, OEA has dete1mined that these thresholds should also apply to freight rail safety and grade-crossing safety and delay." FEIS, Appendix C at C-1. It is unclear why this should be the case. OEA cannot limit NEPA review in this manner where NEPA requires the disclosure of indirect effects of a proposed action so long as they are caused by the action and reasonably foreseeable. 40 C.F.R. § 1508.8(b).

The EIS arbitrarily limits the downline study area for operational impacts to only those particular segments where train traffic is likely to increase by eight trains per day, or three trains per day in nonattainment areas, without reasoned explanation. There is no rational basis for why *two different thresholds* should apply for the analysis of public safety impacts, or why a lower threshold should apply in air quality nonattainment areas, when air quality does not affect train accident risk. At a minimum, the EIS should analyze the overall risk of an accident along the entire route between the Uinta Basin and eastern refineries. Focusing on limited segments of the rail between and within the Uinta Basin and the Denver nonattainment area ignores the vast majority of the downline rail route along which accidents, derailments, or other public health and safety risks could occur. And the greater number of miles traveled, the greater potential for accidents. *See* FEIS at 3.2-7 (noting that Wells Draw alternative "would have the highest chance of accidents," because it is "the longest of the Action Alternatives"). Further, the EIS's approach is contrary to 49 C.F.R. § 1105.7(e)(5), which requires analysis of "*any* effects of the proposed action on public health and safety" without limitation or

exclusion of downline effects; *see also* 40 C.F.R. § 1502.16(a)(1) (EIS's discussion shall include "environmental impacts of the proposed action and … the significance of those impacts").

2. Environmental Justice Consequences

OEA also arbitrarily limits the area of analysis for environmental justice consequences, despite having information that suggests significant environmental justice effects. OEA estimates that, as a result of the proposed railway, up to 175,000 barrels of oil per day will be delivered to the refineries in Houston/Port Arthur and 122,500 barrels per day will be transported to refineries on the Louisiana Gulf Coast for processing. FEIS, Appendix Tat T-37 ("Based on the existing capacity of those geographic refining market centers and data trends in crude oil movements from the Energy Information Administration (EIA), OEA estimated that approximately 50 percent of crude oil would move to the Houston/Port Arthur market center, 35 percent would move to the Louisiana Gulf Coast, 10 percent would move to Puget South, and 5 percent would move to PADD 2 refineries.").

Further, as we made clear in our comments, it is common knowledge that the areas around the Gulf Coast oil refineries are some of the most polluted in the nation and that nearby low income and minority communities are already disproportionately plagued by high levels of toxic and criteria pollutants.

For example, many Louisiana refineries, including those referenced specifically by the

feasibility study,[19] are located along the Mississippi River and the areas around them are some the poorest, slowest-growing sections of the state. This area of Louisiana is consistently ranked highest in the nation in toxic environmental releases and waste generation. Many communities of African Americans and other people of color are hemmed in by these oil refineries petrochemical plants and experience significantly higher adverse health impacts than the U.S. population as a whole.[20]

Port Arthur, Texas, another destination for the Uinta Basin crude[21] is a Gulf Coast city of 55,000 and home to a high number of industrial polluters and the largest oil refinery in the country. The area around Port Arthur hosts one of the highest concentrations of facilities in Texas that must report toxics release inventory (TRI) data. The city is predominantly inhabited by people of color. People living in this area are disproportionately impacted by industrial pollution:

The heavy presence of indust1y-a common theme an1ong poor and mostly black and brown communities across the county may be one reason residents of Port Arthur, in a region once dubbed "the cancer belt," have higher rates of cancer, asthma and cardiovascular disease when compared to state averages, according to

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[19] R.L. Banks Study at xi and xiii.

[20] Baurick, Tristan, Welcome to "Cancer Alley," Where Toxic Air Is About to Get Worse, ProPublica (Oct. 30, 2019), https://www.propublica.org/aiticle/welcome-to-cancer-alley-where-toxic-air-is-about-toget-worse.

[21] R.L. Banks Study at xi and xiii.

a 2016 report from Southeast Nonprofit Development Center.[22]

Thus, OEA's own numbers indicate that by virtue of transporting significant amounts of Uinta waxy crude oil to these already burdened communities, the proposed railway will have substantial direct, indirect and cumulative adverse and environmental justice consequences for these neighborhoods. However, the agency refused to examine these impacts and instead argued that its "Downline Impacts Analysis" indicates that the agency need not undertake this review. *E.g.* FEIS, Appendix T at T-38 (noting with regard to trains hauling Uinta waxy crude to Houston/Port Arthur that "[b]ecause of the many different potential destinations and the many different practical routes available to reach those destinations, OEA concluded that rail traffic outside of the downline study area would be dispersed and that no individual rail lines outside of the downline study area can reasonably be expected to experience an increase in rail traffic in excess of OEA's analysis thresholds."). It is on the basis of its downline impacts threshold, therefore, that OEA refused to address the environmental justice implications of and adverse impacts on disproportionately impacted communities surrounding the refineries where the Uinta waxy crude is bound.

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[22] Tigue, Kristoffer, Covid-19 and Climate Change Threats Compound in Minority Communities, Inside Climate News (April 17, 2020), https://insideclimatenews.org/news/17042020/coronavirus-climate-environmental-justice-oil-refinery-hunicanes-port-arthur-texas/

OEA's response to our comments underscores that the agency misses the point and means that the agency has nm afoul of NEPA. Specifically, when we noted that it was incumbent on OEA to extend its environmental justice analysis to the Gulf Coast communities where the Uinta waxy crude is bound for refining, OEA merely pointed to its downline analysis. FEIS, Appendix T at T-347 (sending the reader to response to comment UBR-DEIS-00683-59); *id.* at T-344. However, equating downline analysis with environmental justice analysis and consideration of the direct, indirect and cumulative impacts of the proposed project on disproportionately impacted communities is inappropriate under NEPA.

After all, to determine when to consider downline impacts, OEA applies various thresholds. FEIS, Appendix T at T-38. Yet, without analysis in the record OEA appears to apply these thresholds to a determination of whether to evaluate environmental justice in1pacts on already burden communities where OEA estimates up to 297,000 barrels of oil per day will be delivered for refining.

According to the agency itself, the daily delivery of 297,000 barrels of waxy crude per day is a reasonably foreseeable direct, indirect and cumulative impact of the proposed rail line. This determination, in turn triggers the need to undertake environmental analysis of these consequences. But, the agency refused to evaluate the consequences of these impacts on environmental justice and disproportionately impacted communities, citing its downline analysis. Particularly because there is no basis in the record to apply the downline thresholds to question of the

environmental justice impacts of refining 297,000 barrels of waxy crude per day and to ignore reasonably foreseeable direct, indirect and cumulative impacts, OEA's analysis does not pass scrutiny.

Thorough analysis of the environmental justice consequences and direct, indirect and cumulative impacts on EJ communities of the refining of 270,000 barrels of waxy crude along the Gulf Coast every day is especially warranted because refineries are a significant source of harmful pollution.[23] Refineries release toxic air pollution, which can cause cancer, birth defects and chronic conditions like asthma. Children are disproportionately exposed to the emissions and resulting health threats from refineries. Additionally, people of color, including African Americans and Hispanic Americans, have a higher cancer risk from toxic air emissions from refineries than the average risk for the national population, as do adults living below the poverty level.

Refineries reported releasing approximately 22,000 tons of hazardous air pollution to the U.S. Environmental Protection Agency (EPA) in 2010.

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[23] *E.g.* Williams, Stephen et al., Proximity to Oil Refineries and Risk of Cancer: A Population-Based Analysis, National Library of Medicine (2020), https://pubmed.ncbi.nlm.nih.gov/33269338/; Borasin, Santiago et al., Oil: A Life Cycle Analysis of its Health and Environmental Impacts, The Center for Health and the Global Environment Harvard Medical School, http://priceofoil.org/content/uploads/2006/05/OILHarvardMedfulreport.pdf; Hazardous Substance Research Centers/South & Southwest Outreach Program, Environmental Update #12, Environmental Impact of the Petroleum Industry (June 2003), available at https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.files/fileID/14522

However, underreporting is a serious problem. Studies have shown that actual toxic air emissions from many refinery sources, like flares, tanks, and cooling towers, can be 10 or even 100 times higher than what is reported to regulatory agencies. Emissions include a toxic soup of carcinogens, neurotoxins, and hazardous metals, such as benzene, hydrogen cyanide, and lead—to name a few.

Thus, OEA's refusal to even discuss the environmental justice consequences and the direct, indirect and cumulative impacts on disproportionately impacted communities of the refining of 270,000 barrels of waxy crude along the Gulf Coast every day violates NEPA and is not supported by the record. Limiting the scope of its environmental justice analysis and evaluation of the admitted direct, indirect and cumulative impacts of the rail line by applying the downline thresholds is improper and finds no support in the record.

3. Greenhouse Gas Emissions

Likewise, the EIS improperly excludes downline greenhouse gas transportation emissions beyond Denver on the grounds that the thresholds for analyzing local air quality impacts have not been triggered in this portion of the downline analysis area. FEIS, Appendix T at 278-79. Because the problem of climate change is a *global* phenomenon resulting from *cumulative* GHG emissions, the exclusion of GHG emissions along segments of the rail line beyond the Denver nonattainment area, on the grounds that the STB's thresholds for analyzing *local air quality* impacts have not been exceeded, is nonsensical and arbitrary. The EIS must calculate total emissions from

transporting oil to Gulf Coast refineries and other destinations, as well as emissions from refining, transporting, and burning the end product, and must acknowledge these emissions as "indirect" effects of the project.

* * *

SCIC, Industry Support Letters for Rail, 2018, cited in Center for Biological Diversity's Supplemental Comments (Oct. 29, 2018)

Re: Support for SCIC Crude Oil Railroad Planning Grant Funding

Dear Chairman Hardy and Board Members,

As the largest oil producer in Utah, and an active driller in the Uinta Basin, Newfield Exploration Company is tremendously interested in finding a solution to the crude oil transportation issues that have constrained oil production operations in the state for a number of years. At issue is the composition of the wax) crude oil. A solid at less than 100°F, the crude requires either heating or short-range transport to refine1ies.

In 2013-14 and 2018, production in the Basin exceeded capacity for the five refineries located in the Salt Lake City area—even after two of these refineries significantly expanded their capacity. When production outstrips SLC refining capacity, substantial volumes of Uinta Basin waxy crude have to be trucked to rail transloading facilities in Carbon County and moved to out-of-state refineries—at a significant cost disadvantage to operators like Newfield.

In November 2014, Uinta Basin oil production peaked at approximately 94,000 barrels of oil per day (bopd). Toward the end of 2014. crude oil prices collapsed and the rig count in the Basin declined from 25 operating rigs to zero by February 2016. By July

2016, oil production had plummeted more than one third to 60,000 bopd.

In response to higher crude prices and additional factors, Newfield and other operators resumed successful drilling programs in the Basin in 2016. Our success was a result of innovative advances such as longer horizontal lateral and the application of improved completion technologies. More than 20,000 bopd of Uinta Basin production was restored … utilizing just nine drilling rigs through the end of 2017. With oil production exceeding 80,000 bopd this past winter, Newfield and other operators began to explore for expensive alternatives to transport our crude to alternate markets with the capacity to handle.

Transportation issues are not unique to the Uinta Basin, but the composition of the crude oil is. The crudes in the Permian Basin and in the Bakken in North Dakota do not require heat to remain liquid, and can be transported easily by pipelines, unlike in Utah. Numerous studies have shown transportation to be an issue with major consequences even before production volumes exceeded local refinery capacity. Today, a number of operators in the Basin have reduced their drilling plans because of this challenge. Currently, the rig count is five.

Although several large operators have intentions to increase production significantly in the Basin, based on the current transportation constraints, these plans are not likely to be realized. The proposed railroad would not only provide access to alternative refining markets and increase competition for this historically discounted crude, it also would provide

inbound transportation for large volumes of other oilfield equipment and supplies like frac sand, oil field tubular goods, cement and other materials needed for the construction and completion of new wells. In addition, the railroad would have a tremendous economic development impact on the Uinta Basin, providing other industries like agriculture and manufacturing with a transportation outlet they have never been able to access before.

As Newfield's Director of Marketing. I have been involved for several years in efforts to develop solutions around the Uinta Basin's crude transportation issues. I urge you to move the SCIC railroad project forward by funding the present planning grant request.

Sincerely,

[handwritten: signature]

Randy Hairr, Director—Marketing

Newfield Exploration Company

J. Goodrich, Goodrich Mud Co., Letter to M. McKee, Executive Director, Seven County Infrastructure Coalition (Aug. 21, 2018)

Mike—

Per said letter, on behalf of The Goodrich Mud Company, I pledge to help the Seven County Infrastructure Coalition with two installments totaling $500,000.00. The First half being available by December 31, 2018 and the second half available by December 31, 2019. I understand that this commitment is conditional upon the successful award of the funding from PCIB.

I'd give more however; this commitment is a large portion of our annual net income. I truly do support the Rail into the Uinta Basin.

Regards,

[signature]

Jesse R. Goodrich

President

The Goodrich Mud Company

M. Decker, Altamont Energy, Letter to M. McKee, Executive Director, Seven County Infrastructure Coalition (Oct. 26, 2018)

Mike,

I am writing this letter on behalf of Altamont Energy LLC which supports the Uinta Rail Project.

The Uinta Basin has long needed a rail line to promote business within the area.

Obviously, the rail line will help the oil and gas industry by providing another means of moving oil out of the basin. But, it will also help by moving frac sand, tubulars and other oil and gas supplies closer to the source which now are being trucked from Craig, Colorado or Rifle, Colorado. The rail line will help the Uinta Basin to become much more competitive to other oil and gas basins (i.e. D J Basin) within the United States.

The Uinta Rail Project will also help the farming and ranching community by providing more efficient and economic means of delivering their supplies as well.

And just as important, the rail line will also help reduce truck traffic and congestion.

This is a project which will benefit the Uinta Basin community.

[signature]

Mike Decker

EVP/COO

Altamont Energy LLC

J. Finley, Finley Resources, Letter to J. Hardy, Chairman, Utah Permanent Community Impact Fund Board (Oct. 29, 2018)

Dear Chairman Hardy and Board Members,

Finley Resources, Inc. is a Fort Worth, TX-based oil and gas producer. We have been active in the Uinta Basin for several years and increased our commitment there approximately one year ago with our acquisition of the assets of the Bill Barrett Corporation. We currently produce about 10,000 barrels of oil per day and have plans to increase our production.

I am fully aware of the efforts of the Seven County Infrastructure Coalition to find transportation alternatives for the Basin's waxy high pour point crude oil. Producers have few options beyond the five Salt Lake City area refineries because there are no pipelines or railroads to move this oil, and heated oil in insulated trucks cannot be hauled much farther than Salt Lake City.

Uinta Basin waxy oil production has long been subject to significant discounts compared to other US oil. This issue is compounded by the fact that we are currently producing more oil than the Salt Lake refineries can process. And many of us would like to produce more. We need a permanent solution to our transportation problems that will allow access to alternate markets (Gulf Coast, West Coast) as well as better transportation to the Salt Lake refineries.

The proposed railroad makes sense on multiple levels. It is scalable, so if production doubles or triples in the next several years the transportation could be handled by simply adding cars. If the Uintah Advantage base oil plant is built in the Basin, the

railroad would be able to provide clean transport for that facilities high-value products, which could not be shipped in a crude oil pipeline. It will provide better and safer transportation for the materials that the oil and gas industry needs in the Basin. Frac sand, oil field tubular goods, and other materials come long distances to reach us. And it would ultimately have non-oilfield users both inbound and outbound.

The Uinta Basin is not as big an oil producer as the Permian Basin, D-J Basin or Bakken, but wells being drilled there are every bit as productive. Those larger areas have solved, or are solving, their own transportation problems. For Utah's most important producing area to compete, this issue must be dealt with.

I hope that the CIB Board will support the railroad proposal, as the railroad will allow the Uinta Basin to compete. Unsolved, the existing transportation constraints, Basin oil production will have a very difficult time growing above its present level. Please move this process along.

Sincerely,

[handwritten: signature]

James D. Finley, CEO

Finley Resources, Inc.

V. Memmott, Uintah Advantage, Letter to M. McKee, Executive Director, Seven County Infrastructure Coalition (Nov. 5, 2018)

Dear Mike,

As you are aware, Uintah Advantage is currently planning to construct a specialty refinery on the Leland Bench in Uintah County, Utah. This refinery will produce several premium feedstocks for lube and wax product production. These feed stocks will need to be transported by rail to lube and wax production facilities, primarily on the Gulf Coast and West Coast.

We strongly support the extension of rail facilities from Colorado into the Uintah Basin. This would be very beneficial to our project, which will provide around 150 full time high paying jobs as soon as it can be completed.

In addition 10 our project, we believe that rail will have a very significant impact on promoting job growth in the Uinta Basin. Rail access will remove limits on the growth of crude production in the Basin by providing logistical solutions for production in excess of local demands. Rail will also facilitate transport of tracking sand and other equipment required for high production horizontal well development.

Rail access in the Basin will provide the necessary infrastructure for significant job growth.

Regards,

[handwritten: signature]

Vincent J. Memmott

Chief Technology Office

A Baldwin, Crescent Point, Letter to M. McKee, Executive Director, Seven County Infrastructure Coalition (Nov. 5, 2018)

Dear Mr. McKee,

As the President of Crescent Point Energy U.S. Corp ("Crescent Point") I am writing to you in support of the Seven County Infrastructure Coalition's ("SCIC") intent to request Utah Community Impact Board ("CIB") funding of a Rail system into the Uintah Basin. Crescent Point has been a major producer in the Basin since 2011 and have a vested interest in its growth opportunities.

As you know, infrastructure needs related to oil & gas development activities are critical in Utah. The SCIC's effort to bring a viable rail system to the Basin will improve the economics for multiple industries in the basin as well as create opportunities for the Basin to reach oil and gas markets that the Basin has not had the opportunity to reach in the past.

To take full advantage of the economic development needs and opportunities in the Uinta Basin, Crescent Point supports this project. The successful completion of a Rail system in the Basin will continue to grow the opportunities of growth for the Vernal, Roosevelt and surrounding areas.

Thank you for your recent letter and communication of the rail project to Crescent Point and I look forward to hearing any updates from the SCIC.

Kind Regards,

[handwritten: signature]

Anthony Baldwin

President, Crescent Point Energy U.S. Corp

R. Clerico, Enefit, Letter to J. Hardy, Chairman, Utah Permanent Community Impact Fund Board (Nov. 2, 2018)

Dear Chairman Hardy and members of the Permanent Community Impact Fund Board,

Enefit American Oil ("Enefit") would like express our support for the Seven County Infrastructure Coalition in their request for funding associated with the Uinta Basin Rail Linc project. Enefit has acquired one of the largest tracts of privately-owned oil shale in the United States. and the largest in Utah. Enefit's resource holdings include private fee land; State leases; and Federal leases. totaling more than 27,000 acres and containing an estimated 2.6 billion barrels of recoverable shale oil. In 2016, Enefit announced 520 million barrels of proven and probable oil reserves, the first oil shale-to-shale oil project in the world to reach this development milestone. Enefit's Utah project would produce up to 50,000 barrels of oil per day for more than 30 years, bringing as many as 2,000 direct jobs to the region. Enefit has made substantial capital investments in the development of our Utah oil shale project, and the Uinta Basin Rail Line would serve to enhance the progress of the region's long-term economic growth.

Enefit's parent company, Eesti Energia AS (known internationally as Enefit), has industrial oil production experience that is unique in the industry, drawing from more than 35 years of commercially operating its patented technology. After decades of research, development. And operations, Enefit has designed and constructed the most efficient oil shale production technology available anywhere in the

world. Enefit's newest generation oil plant came online in 2012 in Estonia, more than doubling the company's oil production capacity in that country, and Enefit is currently preparing for an investment decision in 2019 on yet another oil plant. Enc fit desires to bring its knowledge and experience with oil shale to the Uinta Basin in Utah, Lo help America meet its domestic energy needs.

The transport of goods and commodities into and out of the Uinta Basin is severely limited by existing infrastructure. The Uinta Basin Rail Line would provide access for oil and gas producers—both conventional and unconventional—to markets outside of the region, increasing competition and raising market prices for the Basin's high-quality products. Further, the rail line would improve the ability to bring necessary goods and services into the region, particularly heavy industry equipment and materials. The rail line is a vital component to continuing economic growth in rural Utah, and progressing the engineering and permitting of this project is a logical and important next step in its development.

Enefit looks forward to continuing our support of the Seven Country Infrastructure Coalition as they achieve their mission of improving the quality of life in rural Utah through cooperative regional planning, increased economic opportunity and public services, and sustainable implementation. Please feel free to contact me directly at 801.363.0206 or

Ryan.Clerico@energia.ee if you have any questions regarding Enefit and our Utah oil shale project.

Kind regards,

[signature]

Ryan Clerico

Head of Development and Environment (Chief Executive Officer beginning January 2019)

Enefit American Oil

S. Simper, Coyote Tanks Inc., Letter to M. McKee, Executive Director, Seven County Infrastructure Coalition (Nov. 6, 2018)

Coyote Tanks, Inc., as a steel tank manufacturer in the Uintah Basin, would like to express our support and endorsement for the proposed railway. At Coyote Tanks, Inc., we feel that we, and many others, would benefit from the options that the railway would create. For example, the shipment of steel and materials is costly and increases the cost of goods we supply to our customers. As a company that supports the oil and gas industry, we would like to see this railway serve our community, not only for our benefit, but for the many customers we serve.

Shane Simper, President

Douglas Reynolds, Vice President