

Table of Contents

EXECUTIVE SUMMARY	ES-1
ES.01 Introduction	ES-1
ES.02 Longmont Diagonal Rail Project	ES-1
Corridor Setting	ES-2
Project Study Area	ES-3
Commuter Rail Technology	ES-5
Alternatives	ES-5
ES.03 Description of Transportation Problems in Area	ES-7
ES.04 Goals and Objectives	ES-8
ES.05 Participants	ES-8
ES.06 Station and Layover/Storage Facility Location Evaluation Process	ES-8
ES.07 Estimated Capital Costs	ES-9
ES.08 Environmental Evaluation Results	ES-10

Tables

Table ES.07-1	ES-9
Table ES.08-1	ES-112

Figures

Figure ES.02-1: Longmont Train Depot Building on the Existing BNSF Line	ES-2
Figure ES.02-2: Residence Adjacent to the Existing BNSF Line	ES-2
Figure ES.02-3: Flour Mill Located North of the Proposed 1 st /Terry Street Station	ES-2
Figure ES.02-4: Project Study Area	ES-4
Figure ES.02-5: Front Range Community College	ES-6
Figure ES.02-6: Downtown Longmont, 1 st /Terry Station Location	ES-6
Figure ES.02-7: Agricultural Use Along the Longmont Corridor	ES-7
Figure ES.08-1: Commercial Use Adjacent to the Longmont Corridor	ES-10

EXECUTIVE SUMMARY

ES.01 Introduction

In November 2004, voters in the Regional Transportation District (RTD) approved the FasTracks initiative, which is to expand and improve public transit service to metropolitan Denver communities over a 12-year period. Its comprehensive plan calls for the construction and operation of high-speed rail lines and improved bus service and park-n-Rides throughout the region.

The feasibility of the Longmont corridor proposal was established by RTD in 2005 in the Longmont Diagonal Rail Feasibility Study.

ES.02 Longmont Diagonal Rail Project

The Longmont Diagonal rail project is part of the RTD FasTracks program that proposes a commuter rail transit corridor connecting Denver Union Station to Boulder, then on to Longmont. The feasibility of extending rail through the Longmont corridor was established by RTD in 2005 in the *Longmont Diagonal Rail Feasibility Study*. Further analysis of extending rail to Longmont is provided in this Longmont Diagonal Environmental Evaluation document (Longmont EE).

In August 2003, RTD and CDOT began a joint EIS with the intent of evaluating multimodal alternatives in the US 36 travel corridor from Downtown Denver to Boulder. The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) served as the joint lead federal agencies for the EIS. The primary alternatives evaluated in the US 36 EIS were highway improvements on US 36 and commuter rail in the Burlington Northern Santa Fe rail corridor. In 2006, prior to the issuance of the draft EIS, FHWA and FTA determined that the rail and highway elements of the US 36 Corridor had independent utility and that NEPA analysis could be pursued independently for each element. One of the purposes of the Longmont EE process was to raise the Longmont Diagonal Rail Corridor level of environmental and engineering analysis to match the analysis reached by the US 36 Corridor draft EIS. The two rail corridors could then be merged into a single project and be later reviewed in a single NEPA process.

Local funds generated by RTD's FasTracks initiative will be used to construct the Northwest Rail project. Because RTD is using the local FasTracks funding source, the Federal Transit Administration (FTA) will not be the lead federal agency on this project. However, the U.S. Army Corps of Engineers (USACE) will assume the role of the lead federal agency because the project will potentially impact waters of the U.S. and an Individual Permit will be required from the USACE, per Section 404 of the Clean Water Act. The USACE will evaluate the project alternatives according to the NEPA process in an Environmental Assessment (EA) document for the Northwest Rail Corridor project.

Corridor Setting

The Longmont Diagonal travel corridor is located in Boulder County, Colorado. The 13-mile Longmont Diagonal, also designated as State Highway (SH) 119, connects the cities of Boulder and

Longmont. It is a four-lane divided highway.



Figure ES.02-1: Longmont Train Depot Building on the Existing BNSF Line

A single Burlington Northern Santa Fe (BNSF) railroad track parallels the highway throughout most of the corridor. The highway and rail corridor can be viewed in Figure ES.02-4 Project Study Area.



Figure ES.02-2: Residence Adjacent to the Existing BNSF Line



Figure ES.02-3: Flour Mill Located North of the Proposed 1st /Terry Street Station

Project Study Area

Environmental projects typically include multiple boundaries for study and analysis, including the following:

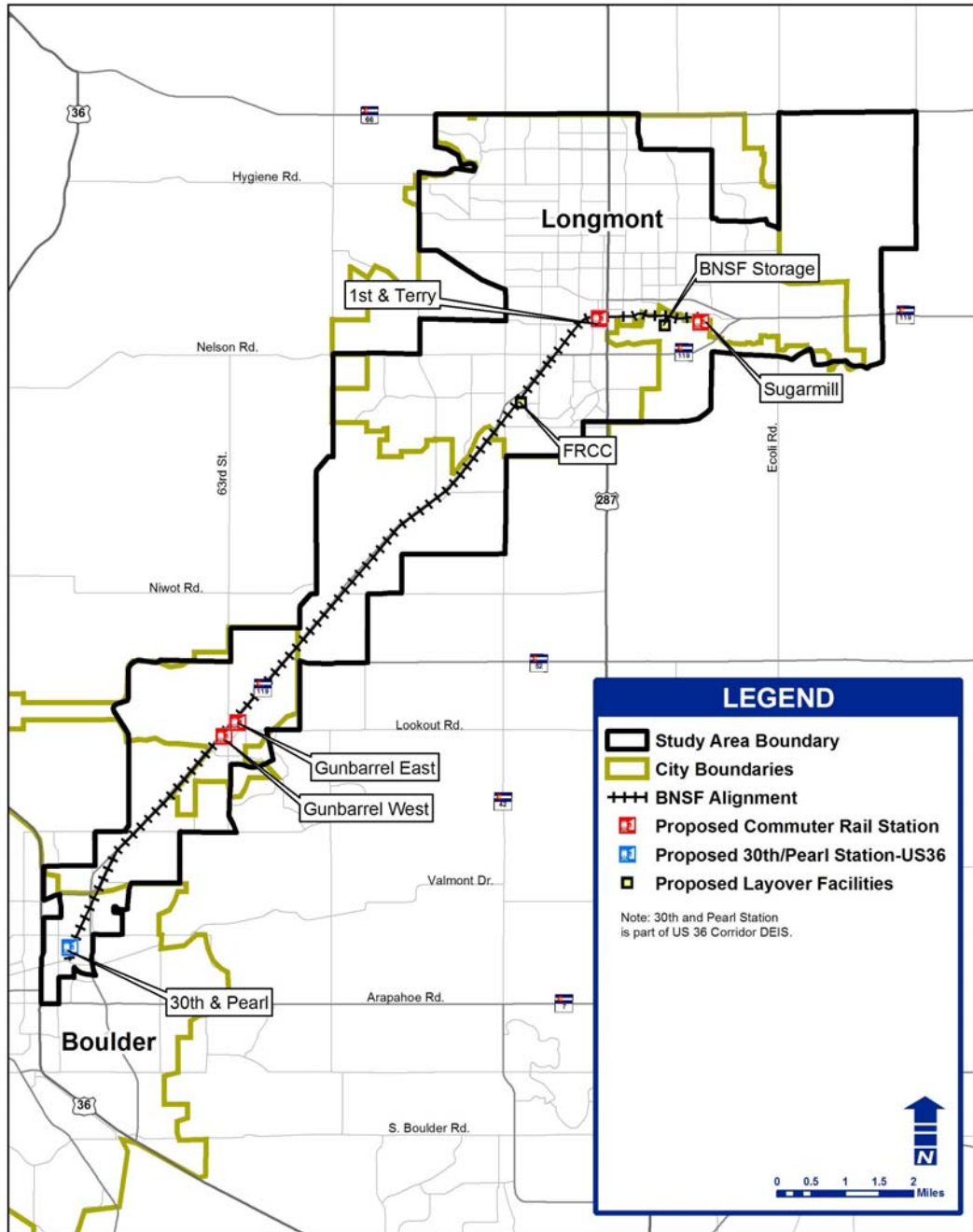
- **Project study area** – This is the broader area of a project’s indirect impacts. This area is typically equal to the area described in the affected environment for each environmental resource.
- **Project direct impact area** – This area is generally defined by direct impacts of the project, such as physical acquisition of property, and varies by environmental resource. The direct impact area is determined by using detailed aerial maps and overlaying the footprint needed to construct the project. For this project, the footprint includes the area needed to construct new track, the land grading associated with the construction, and the land required to construct the stations (including parking). Electronic mapping (Geographic information systems or GIS) is used to calculate the area of direct impact to various environmental resources, using this overlay method.

The study area for this project is based on recent regional traffic modeling for the year 2030. While impacts for many resources are localized to areas near the existing BNSF rail alignment (i.e., noise and vibration), others may not be as apparent and may extend beyond the alignment to the larger study area or region. For example, water resources are analyzed in the larger study area by watersheds, while air quality is a regional consideration.

It was determined that transportation analysis zones representing high and medium levels of traffic attracted to the station locations was a conservative boundary for the larger study area. Transportation analysis zones are defined geographic areas used for transportation modeling. Therefore, the project study area includes environs potentially impacted as a result of the project. The study area does not resemble the typical bubble shape of many environmental studies where the area is defined as a simple radius around the project without regard to geography and other important local features.

The southern boundary of the study area was developed to match the boundaries of the US 36 Corridor DEIS. However, to ensure complete analysis in this area with no gaps, some overlapping information exists for this area in both projects. This issue would be resolved in the next phase of study when the two rail components of the projects are joined. A similar approach to developing the study area used here would be applied to the US 36 rail corridor when it is combined with this project. Figure ES.02-4 depicts the project study area for the Longmont corridor.

FIGURE ES.02-4
Project Study Area



FRCC = Proposed Layover/Storage Facility Site at Front Range Community College
 BNSF Storage = Proposed Layover/Storage Facility Site at BNSF Storage Tracks Site

Commuter Rail Technology

The rail technology to be used in this corridor will be either diesel multiple unit (DMU) or electric multiple unit (EMU). RTD will recommend the technology in the second half of 2006. Each technology features self-propelled passenger cars. A distinguishing feature of the DMU is that diesel motors power the rail cars so no locomotive is required. The DMU can be a single car operation or a multiple unit train consisting of up to eight cars. In the multiple unit the power car would have motors and the passenger cars would have no power. One single-level DMU train set could contain approximately 400 seats. The EMU requires electric power from overhead wires or an electrified third rail (which RTD is not considering). No locomotive is required. Similar to the DMU, the EMU is a single car operation or a multiple unit train consisting of up to eight cars. One single-level EMU train set could contain approximately 360 seats. The maximum operating speed of each technology is 79 mph.

Alternatives

In an effort to improve mobility, state and local agencies have determined more practical and cost-efficient transportation alternatives should be developed and implemented to provide area residents and travelers with alternative transportation modes. Although increasing highway capacity improves mobility to a degree, the transportation improvement plans by the Colorado Department of Transportation (CDOT), Boulder County and the cities of Boulder and Longmont do not include increasing the capacity of SH 119.

RTD is proposing to add commuter rail service to the Longmont corridor by using the BNSF track and right-of-way. The new Longmont corridor service would extend the proposed Denver to Boulder commuter rail service from its terminus at the 30th Street and Pearl Street station in Boulder, to a Longmont station. The FasTracks plan anticipated the Longmont corridor end-of-line station at Hover Road and SH 119, near the Twin Peaks Mall. However, the *Longmont Diagonal Rail Feasibility Study*, completed in May 2005, determined that due to existing high traffic volumes, along with other issues, the 1st Avenue and Terry Street site in downtown Longmont would be a more suitable station site. Additional analysis in this EE has found that the costs for the extension of the corridor to 1st Avenue and Terry Street are similar to the costs associated with mitigating the traffic impacts created by a station at Hover Road and SH 119. An extension of service to the proposed Sugar Mill station site was also analyzed in this EE. After examining the estimated capital costs and impacts associated with extending the line from the vicinity of Twin Peaks Mall to the Sugar Mill, it is unlikely that FasTracks funds will be sufficient to cover the Sugar Mill extension. However, alternative funding sources could be used for construction of the Sugar Mill extension.

An intermediate station between Boulder and Longmont is also planned. RTD evaluated three intermediate station location sites, but eliminated the two sites proposed for Niwot and SH 52. RTD will continue evaluating Boulder's Gunbarrel neighborhood station options near the intersection of SH 119 and 63rd Street.

Four layover/storage facilities were also under consideration. RTD screened out two of them and will carry forward two for further analysis. One is just east of Hover Road in southeast Longmont near the Front Range Community College (FRCC) and the other is near an existing BNSF yard southeast of downtown Longmont.



Figure ES.02-5: Front Range Community College

No-Build Alternative

The No-Build Alternative serves as the basis for comparison of potential environmental effects associated with the Build Alternatives. It features the existing BNSF single-track alignment and the current highway alignment along SH 119. The length of this rail alternative is approximately 13 miles between the project termini at 30th and Pearl Streets in Boulder and the end-of-line in Longmont. There would be no change in roadway conditions or rail service under the No-Build Alternative.

The single-track BNSF alignment currently serves five to seven freight trains per day.

SH 119 is currently a four-lane divided highway. Except for the proposed addition of a grade-separated interchange at the existing SH 52 intersection with SH 119, and a redesigned intersection at SH 119 and 63rd Street, there are no improvements planned by CDOT, Boulder County or the City of Boulder for the highway in the foreseeable future. No HOV lanes are currently proposed for construction. New bicycle/pedestrian trails are being planned to generally parallel the alignment between the vicinity of 30th and Pearl in Boulder and Pike Road in Longmont.

The single-track BNSF alignment currently serves five to seven freight trains per day. It is not known if that service will increase in the foreseeable future or if BNSF plans to add more sidings or a second track along its alignment.

Alternative A: Double Track to West

The proposed Alternative A: Double Track to West would use the existing BNSF railroad right-of-way between the 30th and Pearl station in Boulder and an end-of-line station in Longmont. This alternative recommends adding a second track parallel to and on the west side of the existing mainline track, with universal crossovers strategically placed between the two tracks.

The end-of-line station in Longmont is to be determined. Two are proposed: one station at 1st/Terry near downtown, with a potential extension



Figure ES.02-6: Downtown Longmont, 1st/Terry Station Location

to the Sugar Mill site southeast of downtown. The concept for the proposed Sugar Mill Station includes an extensive elevated structure that would allow the commuter train to efficiently cross over a train-switching yard and local streets east of US 287 (Main Street) before arriving at the Sugar Mill site. The elevated structure would also allow the project to avoid wetland impacts. There would be no change in roadway conditions along SH 119 with this alternative other than possible minor improvements to facilitate traffic flow near roadway crossings.

The length of Alternative A would be approximately 13 miles, and track construction would generally stay within the existing railroad right-of-way, which is generally 100 feet wide but as much as 300 feet in some areas. The existing mainline track is in the center of the right-of-way. The centerline of the second track would likely be 25 feet west of the centerline of the existing mainline, with crossovers to the east as needed.

Alternative B: Double Track to East

The proposed Alternative B: Double Track to East would be similar to the Alternative A: Double Track to West, except this alternative proposes adding the second track parallel to the existing mainline track on the eastern side of the existing track. The centerline of the second track would likely be 25 feet east of the centerline of the existing mainline. The length of this alternative is approximately 13 miles.

Least Environmentally Damaging Practicable Alternative (LEDPA)

The alternative that may be the candidate for the Least Environmentally Damaging Practicable Alternative (LEDPA) will be identified in the future NEPA phase of this project. Chapter 5, Environmental Next Steps, details the applicability of the LEDPA and clarifies that the potential LEDPA has not been removed from consideration through the EE process.



Figure ES.02-7: Agricultural Use Along the Longmont Corridor.

ES.03 Description of Transportation Problems in Area

According to the *Longmont Diagonal Rail Feasibility Study, 2005*, traffic volumes are expected to double at key areas along the Longmont Diagonal between now and 2030. Commuter traffic comprises a large part of the traffic congestion.

The number of vehicle miles traveled (VMT) due to population and job growth in this area is contributing to traffic congestion to a point where it is negatively affecting mobility in this corridor and impacting the highway's level of service capacity. Increasing travel time and its effect on trip planning is also affecting the quality of life for travelers and residents along this corridor.

ES.04 Goals and Objectives

Given that this Longmont EE is a precursor to the NEPA process, the goals and objectives for the project, established by the *Longmont Diagonal Rail Feasibility Study, 2005*, were followed as opposed to a formal NEPA purpose and need. The purpose and need for the future NEPA phase of the project will be developed cooperatively with the lead federal agency, the USACE, and documented in the NEPA environmental document they determine.

The goals provide criteria for evaluating the project's alternatives. The goals are abbreviated here and further detailed in Chapter 1.

Goal 1: Improve transportation mobility between and through Longmont and Boulder and adjacent areas.

Goal 2: Minimize adverse impacts to the natural environment, and foster positive environmental impacts.

Goal 3: Support the land use vision and future development patterns in the DRCOG Vision Plan and local plans and policies.

Goal 4: Provide a cost-effective and efficient transportation investment strategy.

ES.05 Participants

The project team organized an advisory committee that included elected officials, agency representatives, and staff from the local governments, as well as any other interested stakeholders such as business interests, Front Range Community College representatives, and local citizens. The advisory committee was named the Longmont Diagonal Rail Advisory Committee (LDRAC). The advisory committee met in December 2005, and June 2006.

In addition to the LDRAC, two working groups were formed to assist the project team in evaluating and recommending the station locations and layover facility locations for the service. The working groups met in January 2006 and April 2006. The two groups were geographically organized to represent both ends of the study corridor. They were named the Longmont Working Group and the Diagonal Working Group. The working groups were a subset of the project's Longmont Diagonal Rail Advisory Committee.

The public also participated at public meetings held December 7 and 8, 2005, and June 21, 2006. Members of the public were encouraged to participate in either the Longmont Station Working Group or the Diagonal Station Working Group.

Detailed information regarding the public involvement activities and agency coordination are presented in Appendices A and B.

The public participated at public meetings held December 7 and 8, 2005, and June 21, 2006.

ES.06 Station and Layover/Storage Facility Location Evaluation Process

The candidate station locations and layover/storage facility sites were evaluated using evaluation criteria that addressed access, ridership, environmental impacts, rail configuration, site requirements, compatibility with adjacent land uses and economic development opportunities, among others.

Chapter 2 describes the process in more detail. From this analysis, recommendations were made regarding station locations and layover/storage facility locations.

There were initially four candidate intermediate station locations. As a result of this project’s analysis, two were recommended for detailed analysis in the future NEPA document and include Gunbarrel West, west of the 63rd Street intersection with SH 119, and Gunbarrel East, east of this intersection. The two stations proposed for the City of Longmont will also be advanced for further analysis in the NEPA document. They are the 1st/Terry Street and Sugar Mill sites.

The recommended layover/storage facility locations resulting from this project’s analysis include Location/Site #2, the site adjacent to the Front Range Community College (FRCC) in southwest Longmont, and Location/Site #4, the BNSF storage track site adjacent to the City of Longmont’s wastewater treatment facility east of town.

ES.07 Estimated Capital Costs

The project team has made an early effort at estimating the cost of constructing the new commuter rail system in the Boulder to Longmont corridor. The capital cost estimates are based upon the total cost of improvements for commuter rail service. For comparison to the double track costs, costs for the single track improvements with passing sidings are included in the following table. The double track costs assume full double track installation with no previous single-track improvement costs. The double track costs assume terminuses at the 30th and Pearl, 1st and Terry and Sugar Mill stations. The cost details are based upon the cost categories used for previous estimates. Where applicable, unit costs were revised to reflect **current** BNSF and other railroad industry prices.

TABLE ES.07-1
Capital Cost Estimates in 2006 Dollars

Total Construction Cost – 2006 Dollars		
Single-Track	Double-Track	Double-Track with Elevated Structure
30 th /Pearl to 1 st /Terry	30 th /Pearl to 1 st /Terry	30 th /Pearl to Sugar Mill
\$110,668,335	\$130,391,201	\$182,366,351

Source: URS 2006

Due to the small cost differential between the single and double track configuration, RTD is recommending double-track at this point. However, single vs. double track will be further analyzed during the NEPA process. Also, since the FasTracks budget envisioned the Longmont Extension terminating in the vicinity of the Twin Peaks Mall, it is unlikely that FasTracks funds will be sufficient to cover the Sugar Mill extension. However, alternative funding sources could be used for construction of the Sugar Mill extension and RTD will continue to refine the cost estimates to allow for this possibility.

ES.08 Environmental Evaluation Results

Table ES.08-1 summarizes the evaluation results of each environmental resource area potentially impacted by development of the alternatives, stations, and layover/storage sites. The results presented represent the best and worst case scenario for each double track alternative, a combination of stations, and a single layover/storage site.

The resources showing the greatest potential impacts per alternative include right-of-way and relocations, parks and open space, noise and vibration, wildlife habitat, and wetlands and other water features.

Alternative A (Double Track to the West) may require acquisition of between 48-66 acres for right-of-way, with 13 residential relocations and 14-17 business relocations, as opposed to acquisition of 62-81 acres for Alternative B (Double Track to the East), which also may require 14-15 residential relocations and 19-22 business relocations. Alternative A impacts less than one acre of parks and open space, but nine acres are impacted with Alternative B. The proposed commuter rail would increase noise levels and impact 11 properties with Alternative A and four properties with Alternative B. Depending on the train technology, vibration levels would impact up to seven properties with Alternative A and up to 4 with Alternative B. Four acres of moderate to high quality wildlife habitat would be affected by Alternative A, and seven acres with Alternative B. In Alternative A, 1-2 acres of direct permanent impact would occur to wetlands and other water features, whereas Alternative B would impact 2-3 acres of wetlands.

In the future NEPA process, a selection of one option for the intermediate station site at Gunbarrel will be made. Additionally, only one layover site will be selected for the final system. RTD also notes that while the proposed Sugar Mill station has been advanced for further review in the future NEPA document, it is unlikely that FasTracks funds will be able to cover the incremental cost of the extension.



Figure ES.08-1: Commercial Use Adjacent to the Longmont Corridor.

TABLE ES.08-1

Longmont Diagonal Rail Corridor Potential Impacts

Resource Area	Longmont Rail		
	No Build	Alt A: Double Track to West	Alt B: Double Track to East
3.02 Land Use	Incompatible with future land use plans that anticipate development of transit service. Without transit oriented development (TOD) it is probable that development will occur at lower densities, with more land consumed by urbanization.	Compatible with land use along rail alignment Property acquisitions at station and layover areas Indirect impacts include higher density residential development at station areas	
3.03 Economic Considerations	No change in employment or tax base. However, there would also be no opportunities for long-term growth of property tax base and revenues because of new TOD at stations.	10 – 23 commercial buildings with restricted access \$2.3 million – \$4.4 million in tax base loss \$159,000 – \$307,000 in tax revenue loss	12 – 26 commercial buildings with restricted access \$2.7 million – \$4.7 million in tax base loss \$191,000 – \$328,000 in tax revenue loss
3.04 Right-of-way and Relocations	No change	48-66 acres of acquisitions 13 residential relocations 14-17 business relocations 6 publicly owned property acquisitions	62-81 acres of acquisitions 14-15 residential relocations 19-22 business relocations 2 publicly owned property acquisitions
3.05 Social Impacts and Community Facilities	No change	Provides additional access and transit services Access to neighborhoods or community facilities would not be severed or degraded Increased access to community facilities with the addition of rail facilities Increased traffic volumes around station sites	
3.06 Environmental Justice/ Title VI	No change	No disproportionately high and adverse impacts are anticipated	
3.07 Cultural Resources	No change	Direct impacts to 5 historic sites	

Resource Area	Longmont Rail		
	No Build	Alt A: Double Track to West	Alt B: Double Track to East
3.08 Parks and Open Space	No change	Less than 1 acres impacted 3-4 parks or open spaces 3 trail crossings	9 acres impacted 16 parks or open spaces 3 trail crossings
3.09 Safety and Security	No change	Without proper mitigation, there is the opportunity for accidents at at-grade rail crossings due to higher train volume On-board crime expected to be similar to existing operating transit crime statistics and will increase proportionately to increases in transit service Traffic delays at Ken Pratt Boulevard at-grade rail crossing due to higher train volume	
3.10 Air Quality		Produces a greater amount of the calculated air pollutants than the no build alternative; however expected increases are small. Improvement in regional air quality with the build out of FasTracks.	
3.11 Noise and Vibration	No change	Electric Multiple Unit (EMU) train technology in year 2030 has 11 noise impacts (No impacts are categorized as severe by FTA) and 1 vibration impact Diesel Multiple Unit (DMU) train technology in year 2030 has 11 noise impacts (No impacts are categorized as severe by FTA) and 7 vibration impacts	Electric Multiple Unit (EMU) train technology in year 2030 has 4 noise impacts (No impacts are categorized as severe by FTA) and 1 vibration impact DMU technology in year 2030 has 4 noise impacts (No impacts are categorized as severe by FTA) and 4 vibration impacts
3.13 Wildlife, Threatened and Endangered Species	No change	1 acre of sensitive habitat impacted 4 acres of moderate to high quality habitat impacted Potential temporary impacts to aquatic habitat during construction of structures.	Less than 1 acre of sensitive habitat impacted 7 acres of moderate to high quality habitat impacted Potential temporary impacts to aquatic habitat during construction of structures.
3.14 Mineral Resources	No change	Potential loss of opportunity to mine or extract mineral resources Mitigation measures (construction practices) will avoid impacts due to unsatisfactory subgrade materials such as	

Resource Area	Longmont Rail		
	No Build	Alt A: Double Track to West	Alt B: Double Track to East
		swelling soils and bedrock, corrosive soils, and collapsible or compressible low-strength soils	
3.15 Farmlands	No change	No impact to important farmlands	Approximately 2 ½ acres of important farmlands impacted
3.16 Utilities	No change	9 – 10 utilities requiring relocation 17 utilities requiring adjustment	9 – 10 utilities requiring relocation 23 utilities requiring adjustment
3.17 Water Resources	No change	Construction staging, earthwork, construction of abutments and bridge supports, and installation of culverts would all have potential erosion and sediment effects at stream crossings. Increased impervious surface, increased runoff, erosion, and sedimentation. Increased erosion and sedimentation during construction.	
3.18 Wetlands and other Water Features	No change	1-2 acres of direct permanent impact to wetlands Less than ½ acre of impact to other water features	2-3 acres of direct permanent impact to wetlands Approximately ½ acre of impact to other water features