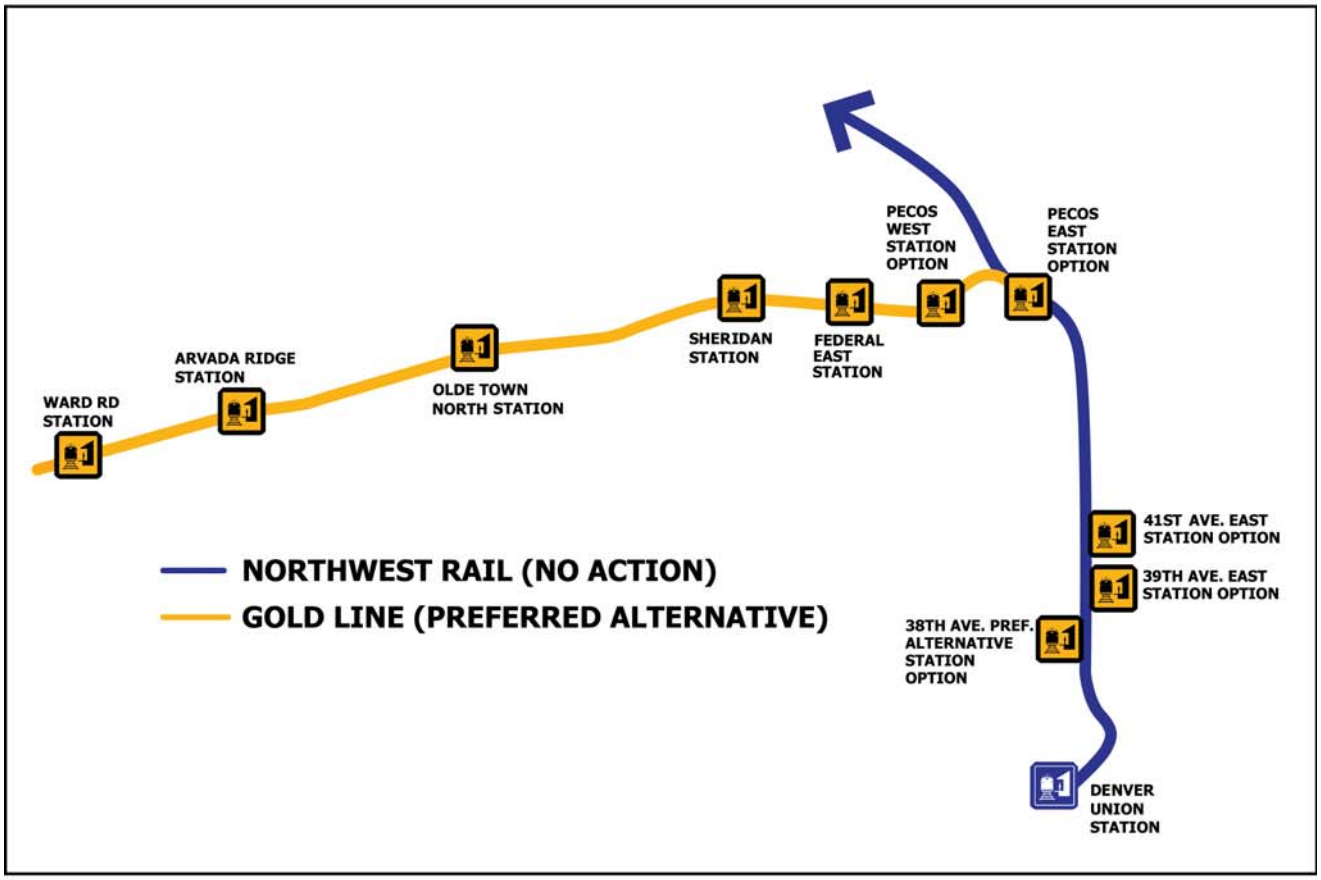

FASTTRACKS
goldline

PROJECT ELEMENTS IN THE NORTHWEST RAIL (NO ACTION) AND GOLD LINE (PREFERRED ALTERNATIVE), DUS TO PECOS STREET



Project Element - Shared Section	Northwest Rail (No Action)	Gold Line (Preferred Alternative)
Trackway	✓	
Structures: South Platte River, 38th Avenue, Jersey Cutoff, and Utah Junction	✓	
Electrification: Catenary and Electric Substation		✓
38th Avenue Station Options: 38th Avenue, 39th Avenue East, and 41st Avenue East		✓
Pecos Station Options: Pecos East and Pecos West		✓
Right-of-way for Alignment	✓	
Right-of-way for Stations		✓

Source: Gold Line Team, 2008

3.0 Affected Environment and Environmental Consequences

When a federal agency sponsors a major federal action that may have an effect on the quality of human or natural environments, that agency is required by NEPA to evaluate and communicate to the public the impacts that would result from the proposed action. This analysis provides a full and unbiased discussion of the environmental tradeoffs associated with the proposed action and presents alternatives to avoid or minimize these effects.

Project Study Area and Sections

The Gold Line study area is shown on Figure 3.0-1 and has been subdivided into four sections that align with the following political subdivisions in the area:

- Denver Section
- Adams Section
- Arvada Section
- Wheat Ridge Section

In some cases, the narrative is not presented by these sections. For example, the air quality analysis is regional and, therefore, the sections have been consolidated into one narrative.

The Gold Line study area is based on the area expected to draw the majority of the transit riders in this portion of the metropolitan region. Generally, the areas analyzed for individual resources are within the Gold Line study area. The impact area for analysis of each environmental resource varies. For example, analysis of the direct impacts on some resources, such as air quality, requires a regional approach, while others, such as wetlands, involve a much smaller analytical area, such as within 300 feet of the proposed alignment. The extent of the area evaluated for each resource is included under the methodology for the respective sections.

Resources Considered

Twenty-one environmental and socioeconomic resource areas were evaluated for the No Action Alternative and Preferred Alternative. Together, these resources define the human and natural environment around the proposed project.

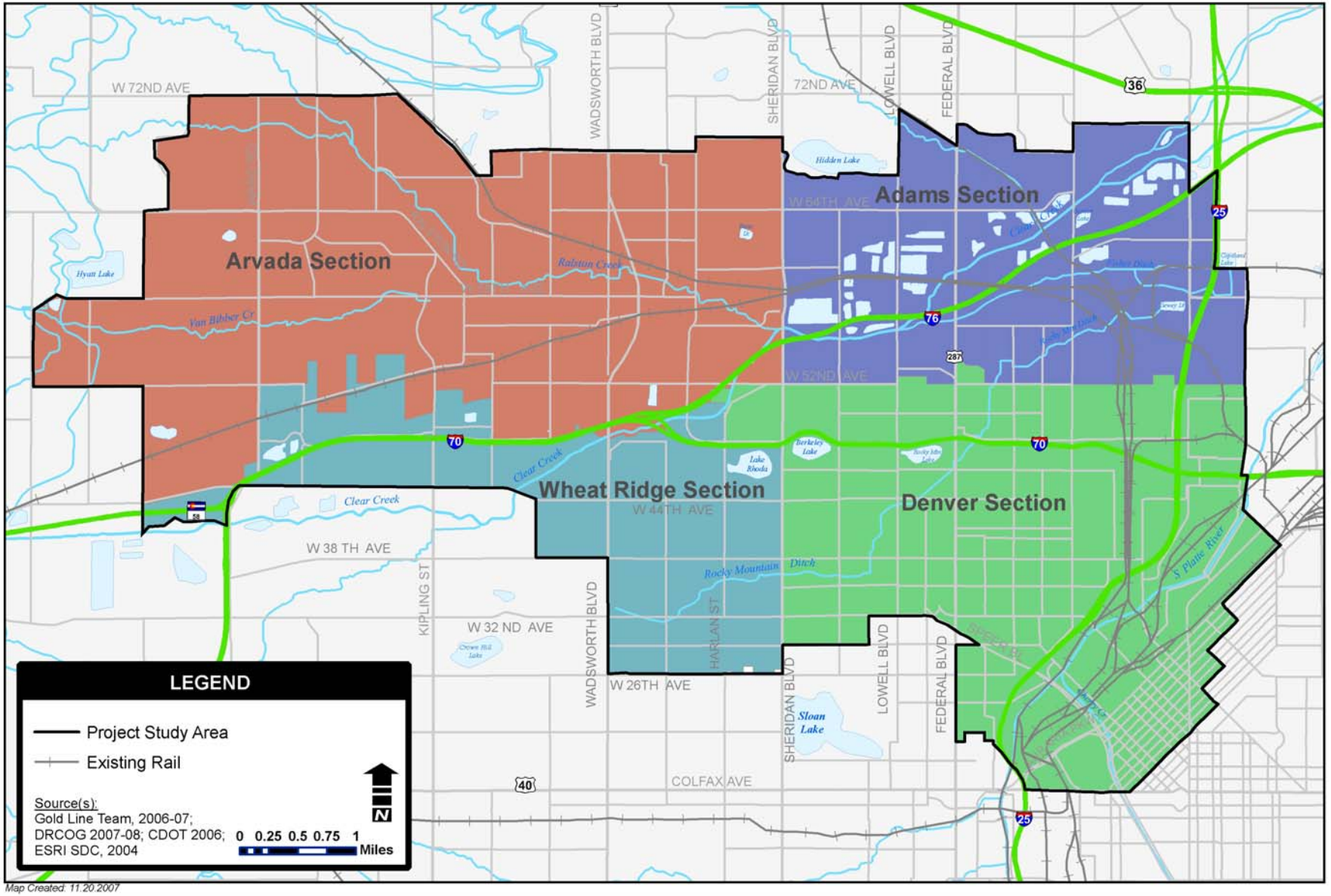
Alternatives Considered in this Chapter

Two alternatives are evaluated in this chapter: the No Action Alternative and the Preferred Alternative. Design options for the Preferred Alternative are discussed where relevant.

No Action Alternative

The No Action Alternative represents the projects in the Gold Line study area in 2030 as shown on Figure 3.0-2. This alternative provides a basis for comparison to the Preferred Alternative in the DEIS.

FIGURE 3.0-1
Gold Line Study Area



Roadway Projects

The No Action Alternative roadway network in the region, including within the Gold Line study area, is assumed to be the improvements included in DRCOG's *2030 Metro Vision Regional Transportation Plan* (DRCOG, 2005a; DRCOG, 2005b). These include:

- The addition of one new lane in each direction of Sheridan Boulevard between 52nd Avenue and I-76.
- Reconstruction of the I-70/Kipling interchange.
- The addition of one new lane in each direction on Wadsworth Boulevard between 36th Avenue and 46th Avenue.

Transit Improvements

The No Action Alternative includes transit service and facilities inside the Gold Line study area and existing and committed improvements, including improved bus service in the *2030 Metro Vision Regional Transportation Plan* (DRCOG, 2005b). It also includes the entire FasTracks Plan except for the Gold Line project. In addition, 5.5 miles of the Northwest Rail project are in the Gold Line study area. Approximately 3.5 miles of this track, from DUS to Pecos Street, are shared between the Northwest Rail and Gold Line projects. The remaining 2 miles of trackway are located from Pecos Street, northwest to approximately 72nd Avenue and Lowell Boulevard (see Figure 3.0-2). For the DUS to Pecos Street section, there are two alignment options:

1. Railroad Alignment – uses railroad ROW in the rail yards
2. East Direct Design Option – uses other private industrial property east of the rail yards

The Northwest Rail project is locally funded and would be constructed prior to the Gold Line project. This is another FasTracks project, with service from DUS to Longmont, Colorado. In effect, the impact of the track work, retained fill, and bridges in the DUS to Pecos Street section would occur regardless of the construction of the Gold Line project. The electrification and stations that support the Gold Line project would not be included in the No Action Alternative, as the Gold Line uses electric technology and the Northwest Rail project uses diesel technology. The stations and electrification features are evaluated under the Preferred Alternative. Table 3.0-1 presents the elements that are considered part of the No Action Alternative impact analysis.

TABLE 3.0-1
Project Elements in the No Action Alternative, DUS to Pecos Street

Project Element	Northwest Rail	Gold Line
Trackway	Included in No Action Alternative	
Structures at the South Platte River, 38th Avenue, Jersey Cutoff, and Utah Junction	Included in No Action Alternative	
Electrification: Catenary and Electric Substation		Included in the Preferred Alternative
38th Avenue Station Options: 38th Avenue, 39th Avenue East, and 41st Avenue East		Included in the Preferred Alternative
Pecos Station Options: Pecos East and Pecos West		Included in the Preferred Alternative
ROW for Alignment	Included in No Action Alternative	
ROW for Stations		Included in the Preferred Alternative

Source: Gold Line Team, 2008

TSM Alternative

The TSM Alternative is compared to the Preferred Alternative in Chapter 4, Transportation Systems, to disclose what would be accomplished from a traffic and mobility perspective without a major expenditure.

Preferred Alternative

Using EMU technology, the Preferred Alternative would begin at DUS in downtown Denver and extend along the BNSF/UP alignments to just east of Ward Road in Wheat Ridge as documented in Appendix C, Basic Engineering. As mentioned above, under the No Action Alternative there are two alignment design options from DUS to Pecos Street: the Railroad Alignment and the East Direct Design Option. There are different station options for the Preferred Alternative associated with each of these alignments, as presented in Table 3.0-2 below.

TABLE 3.0-2
Stations Associated with Alignment Design Options

Alignment Design Option	Station
Railroad Alignment	38th Avenue Station
East Direct Design Option	39th Avenue East Station
	41st Avenue East Station

Source: Gold Line Team, 2008

Including the 3.5 mile shared section from DUS to Pecos Street, the total proposed alignment would be 11.2 miles long and includes seven stations located near 38th Avenue (as discussed above) in Denver; at Pecos Street and Federal Boulevard in Adams County; at Sheridan Boulevard, Olde Town, and Arvada Ridge in Arvada; and east of Ward Road in Wheat Ridge.

Transit service would be provided at 7.5-minute headways in the morning and evening peak periods and at 15-minute headways at most other times. Table 4-3, included in Chapter 4, Transportation Systems, provides details of the Gold Line rail operations plan.

Impact Assessment Methodology

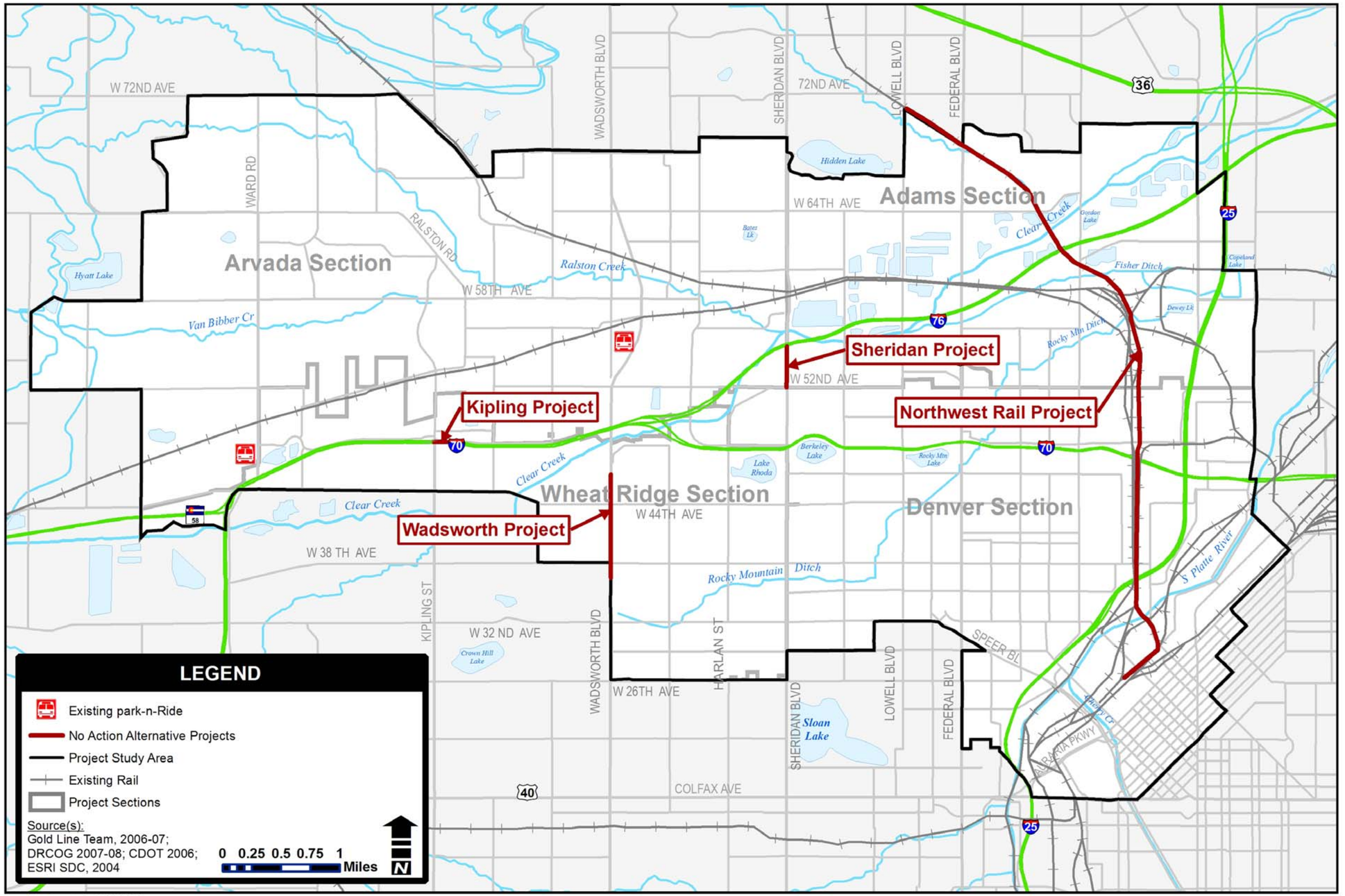
The study horizon year is based on the DRCOG's *2030 Metro Vision Regional Transportation Plan* (DRCOG, 2005a; DRCOG, 2005b). Accordingly, impacts are evaluated out to the 2030 condition. Where applicable, opening-day impacts were assumed and assessed as 2015. The No Action Alternative presents impacts to the 2030 timeframe relative to existing (2007) conditions. The impacts of the build elements within the No Action Alternative were compared to the Preferred Alternative.

Content and Organization

Each section of this chapter is organized as follows:

- **Introduction to Analysis.** Includes a summary of the results of the impact analysis for the resource area under study and describes the purpose of the analysis.
- **Affected Environment.** Summarizes the conditions that existed in the Gold Line study area at the time the analysis was prepared. Each section describes the boundaries of the impact assessment for the resource area, which may vary.

FIGURE 3.0-2
No Action Alternative Roadway and Northwest Rail Improvements



Map Created: 11.30.2007

- **Impact Evaluation.** Provides a summary of the impact findings for the resource. The impact evaluation includes:
  - **Direct Impacts:** Effects that occur immediately with implementation of the proposed action.
  - **Indirect Impacts:** Impacts caused by the proposed action later in time or impacts further removed in distance but reasonably foreseeable. For example, TOD may develop over time near stations to serve the needs of transit commuters.
  - **Temporary Construction Impacts:** Temporary construction impacts have been included for consideration in this analysis. These impacts result from the actual construction of the proposed action and include noise, dust, destruction of environmental resources as the result of clearing and excavation, visual degradation, and traffic congestion from construction equipment.
  - **Cumulative Impacts:** Results of the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or organization undertakes those other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. For this analysis, activities include development in the Denver metropolitan area between 1950 and 2030.

    The FasTracks Programmatic Cumulative Effects Analysis (PCEA) was used as a primary reference source in the development of cumulative impacts for the corridor. The PCEA evaluated the broad ecosystem-wide cumulative effects of the overall FasTracks program. The Gold Line analysis extracted relevant cumulative information directly from the PCEA and also presents the Gold Line project's specific impacts contributing to the overall cumulative impacts of the FasTracks program in the region. Each environmental section in this chapter presents the cumulative impacts of each individual resource. The conclusions from the PCEA analysis are presented in Table 3.0-3 below. The PCEA document is included as Appendix G.
  - **Mitigation Measures:** Describes mitigations that will be implemented to avoid, minimize, or compensate for impacts.

TABLE 3.0-3
PCEA – FasTracks Summary of Cumulative Impacts

Indicator	Current Conditions	Future Without FasTracks	FasTracks Impacts
Economic			
Employment	Employment growth	Employment growth of one percent each year until 2030	Same growth trend plus additional 1,100 workers on FasTracks program plus multiplier effect for related and support services
Employment areas	Vibrant employment areas	Employment areas with corresponding growth minus constraints of reduced mobility and increased congestion	Candidate pool becomes more diverse as accessibility increases; region more attractive for new businesses

Indicator	Current Conditions	Future Without FasTracks	FasTracks Impacts
Economic base	Economic base of telecommunications, technology, and tourism	Economic base remains the same but sector distribution may change	Same as future without FasTracks
Property values	Increasing single-family home values in past 3 years (over 6 percent)	Property value increases flatten over short term	Values improve due to attractiveness of the region
Jobs/housing ratio	Balanced jobs/housing ratios with most counties having more jobs than housing	No substantial change in ratios	Changes will be influenced by local zoning decisions
Cost of congestion	Rising	Continues to rise	Slight decrease possible
Land Use			
Development	Ongoing development	Undeveloped areas fill in; more development occurs at existing rail corridor end-of-lines	TOD opportunities at station areas
Natural land	Conversion of natural land covers to impervious surfaces	No change to existing trend of conversion	Less converted to development due to dense TOD development patterns
Residential and employment locations	Distribution becoming increasingly unbalanced	Population and employment growth	Number is similar to future without FasTracks; however, distribution different Increased population and employment numbers and densities near station areas
Water Quality			
Impacts due to development (impervious surfaces)	Degraded water resources in agricultural areas Platte River Basin water quality generally good, but threatened by increasing runoff channeled directly into water resources (from urbanization and rapid growth)	Increase in direct impacts to water resources due to increase in urbanized areas and impervious surfaces[1]	280 acres of new impervious surface for parking facilities; 100 acres of new impervious surface for system components; TOD and densification at station areas contributing to less land conversion regionally
Impacts due to pollutants	Nitrates and salinity in groundwater Salinity and sediment in surface water	Increase in petroleum-based pollutants[1]	Similar to future without FasTracks

Indicator	Current Conditions	Future Without FasTracks	FasTracks Impacts
Air Quality			
Mobile source air toxics	65 percent decrease compared to historic levels due to new regulations	Decline will continue due to increasingly-strict requirements	Slightly larger decline due to slight reduction in passenger traffic
Visibility	54 percent of the time judged as "good to fair"	Growth in private automobile passenger traffic of 163.3 percent by 2030	Reduction in automobile passenger traffic
Greenhouse gases	43 percent increase in CO due to increase in fossil fuel emissions 28 percent increase in methane due to increase in population and waste generation		
Nitrogen deposition	23 percent reduction expected by 2012 due to new regulations		
Energy			
VMT and Btu		Increasing due to increase in passenger traffic	Increase slightly less due to reduction in passenger traffic
Wetlands			
Wetland quantity	Mitigations failing and principle of "no net loss" threatened	More than 50 acres of wetlands impacted due to large-scale and sprawling development	Up to 50 acres of wetlands impacted plus potential indirect impacts due to new construction and development around station areas
Wetland quality	Decreasing due to increase in direct impacts resulting from increase in impervious surfaces		No impact from new impervious surfaces due to drainage design; potential additional indirect impacts due to adjacent development
Environmental Justice/Social			
Demographics	Population and employment growth Increase of 68 percent in Hispanic population from 1990 to 2000 Slowing housing market	Population increase of 38 percent by 2025 Minority populations becoming larger proportion of total population No change in housing development pattern	No difference from future without FasTracks No difference from future without FasTracks Housing density will increase in station areas (creating a potential demand of up to 1,600 additional units at each station area)
Mobility	4.3 percent use transit to get to work 2.4 percent walk to work 0.7 percent bicycle to work	No potential for increase in use of alternate modes Congestion worsening, making automobile access more time-consuming	Better access to more parts of the region created for low-income, minority, and elderly population groups

Source: RTD, 2007b

[1]Increase will be less than proportional to the growth due to tighter regulations