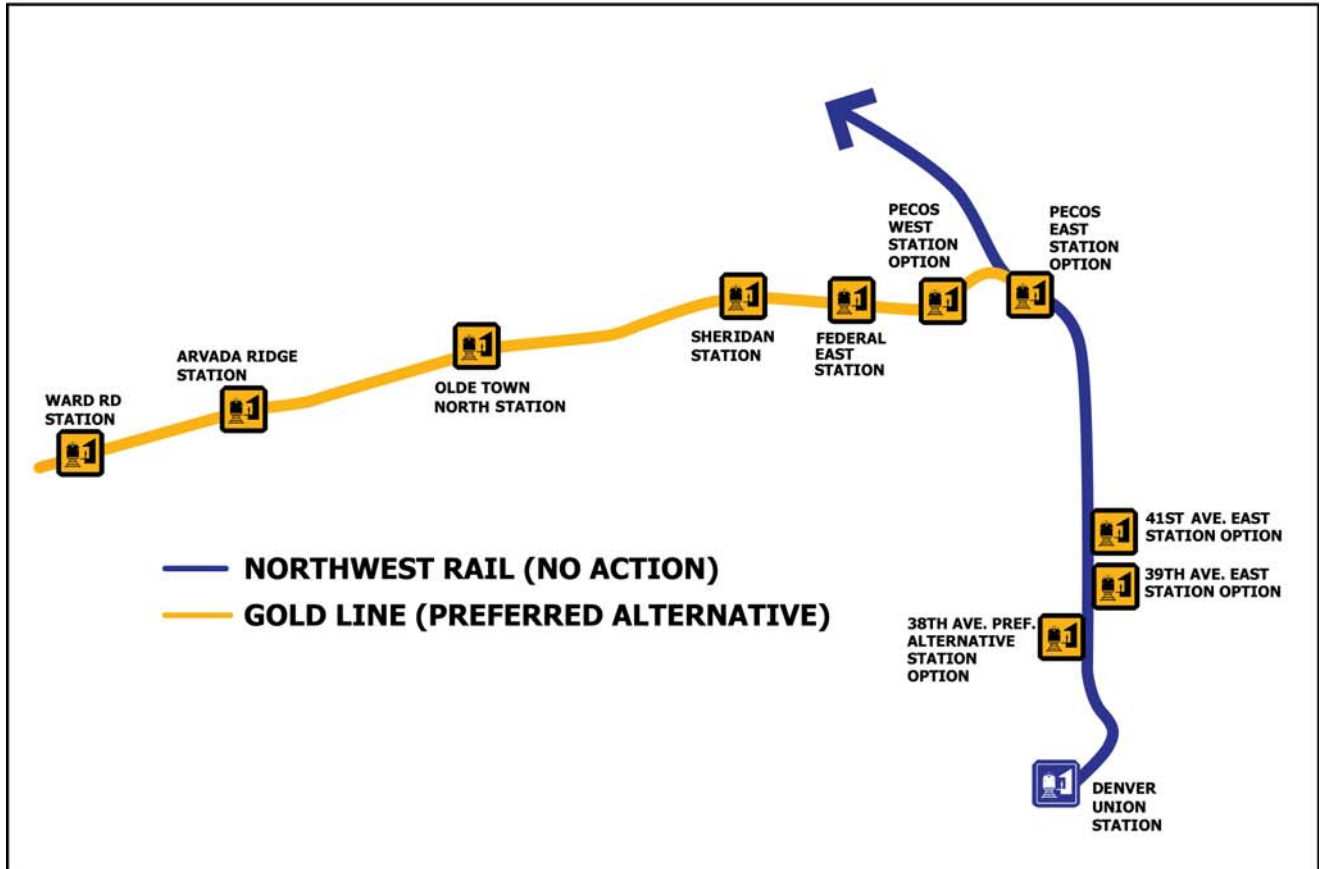




PROJECT ELEMENTS IN THE NORTHWEST RAIL (NO ACTION) AND GOLD LINE (PREFERRED ALTERNATIVE), DUS TO PECOS STREET



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

1.0 Purpose and Need

1.1 Introduction

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

The Gold Line Draft Environmental Impact Statement (DEIS) addresses one potential project that is part of the RTD FasTracks Plan. This DEIS for the Gold Line project has been prepared in accordance with the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500) and the joint Federal Transit Administration (FTA)/Federal Highway Administration (FHWA) regulations (23 CFR 771). It examines a range of alternatives, their respective environmental consequences, and mitigation measures to provide fixed-guideway transit service in the Gold Line study area from Denver Union Station (DUS) in downtown Denver to Ward Road in Wheat Ridge (Figure 1-1).

The Gold Line alternatives considered began with the *I-70 Denver to Golden Major Investment Study* (MIS) (RTD, 2000) and added conceptual alternatives proposed during the current Gold Line DEIS public and agency scoping process in August 2006. The Locally Preferred Alternative (LPA) for the MIS consisted of Light Rail Transit (LRT) on the 11.2-mile BNSF Railway Company/Union Pacific Railroad (BNSF/UP) alignment using the existing BNSF Railway Company and UP right-of-way (ROW) from DUS to Ward Road.

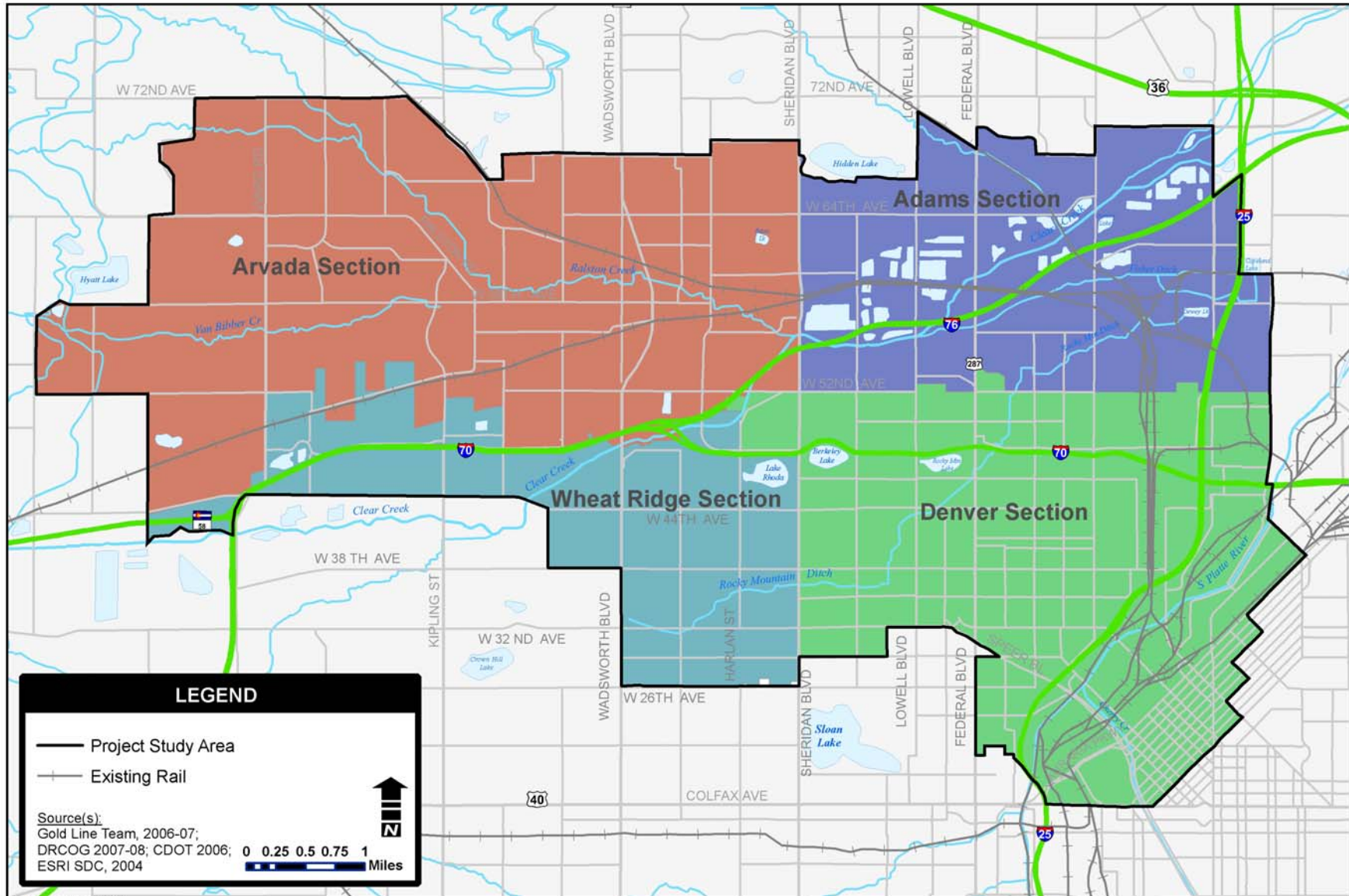
1.2 Purpose of this Chapter

This chapter documents the development of the project's Purpose and Need and related goals. The Purpose and Need was developed, reviewed, and refined by the project team, the project's joint lead and cooperating agencies, and the public through a series of public workshops. The Purpose and Need defined the overall problem to be solved in the Gold Line study area. In addition, the Purpose and Need guided the selection of the best project given a balance of environmental, community, and cost-effectiveness objectives. The Purpose and Need was used to define the evaluation criteria for comparing and selecting alternatives and to guide the development of alternatives during the alternatives evaluation process for this environmental study. The alternative that best met the Purpose and Need, as well as the supporting goals and objectives, was ultimately selected as the Preferred Alternative (see Chapter 2, Alternatives Considered).

1.3 Purpose and Need for Transportation Improvements

The Purpose and Need for the project and the goals of the Gold Line project are presented in this chapter.

FIGURE 1-1
Gold Line Study Area



Map Created: 11/20/2007

1.3.1 Project Purpose

The purpose of the Gold Line project is to implement fixed-guideway transit service within the Gold Line study area between DUS in downtown Denver and Ward Road in Wheat Ridge.

1.3.2 Transportation Needs

A fixed-guideway transit improvement in the Gold Line study area would help meet a number of specific needs:

- The need for mobility improvements, including:
 - Improved travel times over single occupancy vehicle travel time in the Gold Line study area in 2030.
 - The provision of travel options.
 - Improvements to the regional transit system and rail system interconnectivity.
- The need to serve both traditional transit users and new transit users.
- The need to provide environmental benefits to the Gold Line study area and the Denver metropolitan region.
- The need to be cost effective and financed within the FasTracks Plan.
- The need to meet the voter mandate of the FasTracks Plan.

The following sections provide further information regarding these needs.

1.3.2.1 Need for Mobility Improvements

Given forecasts of increasing population, employment, and congestion in the Gold Line study area, there is a need to provide both transit and highway improvements (Denver Regional Council of Governments [DRCOG], 2005a). As detailed below, automobile and bus travel times in the study area will increase in 2030 by approximately 35 percent. Rail transit would provide a reliable travel option to offsetting projected increases in highway travel time, which will also affect bus travel time. Fixed-guideway transit would connect citizens in the study area to the regional public transit system, as part of the RTD FasTracks Plan.

Travel Time Savings. Existing data and projected population and employment estimates indicate that the Denver metropolitan regional population will reach 4 million people by 2030 (an increase of 54 percent from the current level of 2.6 million), with 800,000 new jobs created (an increase of 53 percent from 1.5 million to 2.3 million) (DRCOG, 2005a). In addition, by 2030:

- Population in the Gold Line study area is forecast to increase by 34 percent.
- Employment in the Gold Line study area is projected to increase by 45 percent.
- Regional person trips will increase by 45 percent.
- Regional vehicle miles traveled (VMT) will increase by 61 percent.
- Regional roadway lane miles with more than 3 hours per day of severe congestion will increase by 75 percent.

- Regional vehicle hours of delay will increase 160 percent.
- Automobile and bus travel times from Ward Road to DUS will increase from 20 minutes in 2005 to 27 minutes in 2030, an increase of 35 percent.

DRCOG's *Metro Vision 2030 Plan* states that in 2004, the Denver metropolitan region's high growth in VMT, with little commensurate increase in highway capacity, resulted in about 250 lane miles of freeways and arterials having pervasive, severe, 3-hour congestion every weekday (DRCOG, 2005a). The number of congested lane miles is expected to more than double between 2005 and 2030. In response to these congestion issues, reliable alternative modes of travel that provide travel time savings are needed, especially in light of the inability to widen existing highways in the Gold Line study area without adverse impacts and the current lack of available highway funding.

Travel Options. There are no anticipated funding sources for major, east-west roadway projects in the Gold Line study area. According to DRCOG's fiscally constrained *2030 Metro Vision Regional Transportation Plan* (RTP), the following roadway projects in the Gold Line study area will be included in the No Action Alternative for this project (DRCOG, 2005b):

- The addition of new lanes on Sheridan Boulevard between 52nd Avenue and Interstate 76 [I-76] (100 percent local funding).
- Reconstruction of the I-70/Kipling interchange (eligible for Transportation Improvement Plan [TIP] funds).
- The addition of new lanes on Wadsworth Boulevard between 36th Avenue and 46th Avenue (eligible for TIP funds).

Because the Denver metropolitan region and the Gold Line study area face continuing pressures from population growth, travel options are necessary to accommodate anticipated growth and related congestion beyond planned roadway projects.

As detailed in Figure 4-7 in Chapter 4, Transportation Systems, most of I-70 through the Gold Line study area will experience "pervasive congestion" by 2030 (DRCOG, 2005b). Some of the most congested roadways in the Denver metropolitan region (I-25, Wadsworth Boulevard, Sheridan Boulevard, and parts of Federal Boulevard) are located in the Gold Line study area (DRCOG, 2007). Any transportation improvements recommended for the Gold Line project must provide convenient and reliable alternatives to congested roadways for Gold Line study area residents and employees.

Regional Connectivity. Currently, the Denver metropolitan region has gaps in multi-modal regional transit connectivity. FasTracks is primarily a plan to fill major gaps with fixed-guideway transit. Residents and employees in the Gold Line study area have limited transit access to many other parts of the region. Current access is mainly provided through local and regional bus service, which is forced to use the increasingly congested roadways. The Gold Line project would allow residents and employees in the Gold Line study area to connect with major regional activity centers and other transit corridors through connections to all other rail service in the region at DUS. As one critical component of the system, the Gold Line would link with nine other RTD rail and bus rapid transit (BRT) corridors as shown in Figure 1-2.

1.3.2.2 Need to Serve Traditional Transit Users and New Users

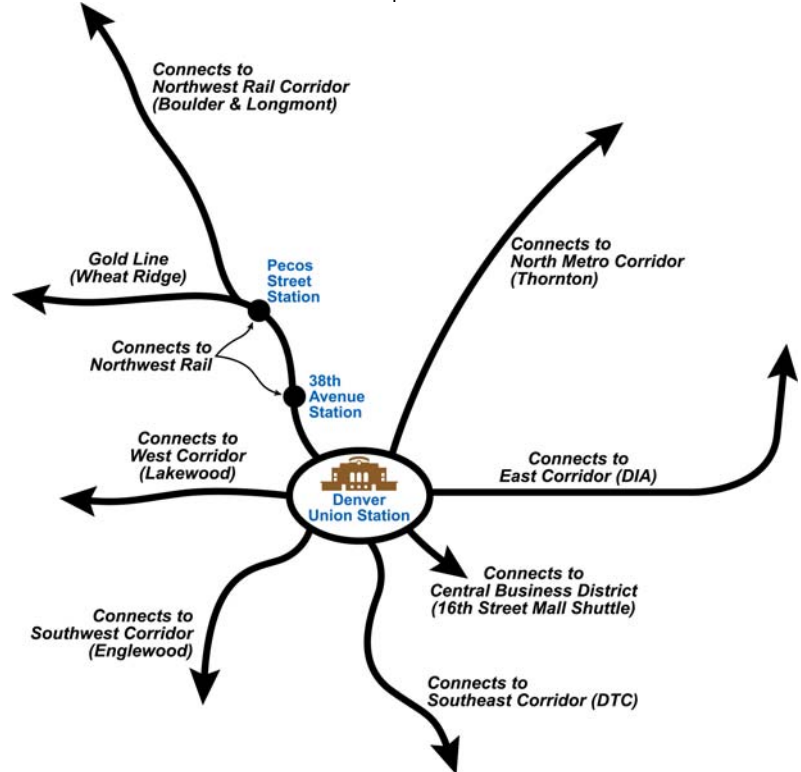
Number of Traditional Transit

Users Served. More than 25 percent of the Denver population will be over the age of 60 by 2030 (DRCOG, 2005a). The older population could be well served by providing transit as an alternative to the private motor vehicle. The highest concentration of persons over 60 in the Gold Line study area is in the Regis University neighborhood north of I-70 and west of Sheridan Boulevard. The Gold Line study area also contains other populations of traditional transit users that would benefit from additional access to employment centers and travel time savings. The highest concentration of minority population in the Gold Line study area is located in northwest Denver, generally south of I-70, including the Globeville, Sunnyside, and Highland neighborhoods. The highest concentration of low-income

households in the Gold Line study area is in the Sunnyside neighborhood near I-25 and I-70. The Gold Line project would provide convenient and reliable transit service and regional connections to these populations beyond the services provided today. A total of 5,547 minority people, 493 zero-auto households, and 2,084 low-income households are located within 0.5 mile of the proposed transit stations.

New Transit Users. In addition to providing services to traditional transit users, transportation improvements would provide an opportunity and incentive for new users to take advantage of transit services. Many parts of the Gold Line study area include redeveloping areas such as the area around DUS, portions of northwest Denver, and the new mixed-use residential neighborhoods in place or planned in southeast Arvada, Olde Town Arvada, the Ridge Home area, and Wheat Ridge. The cities of Arvada, Wheat Ridge, and Denver as well as Adams County are planning for mixed-use developments in areas designated as potential station sites in the FasTracks Plan. Transportation improvements in the Gold Line study area would provide convenient and reliable local and regional transit connections to increase ridership, system productivity, and regional connectivity.

FIGURE 1-2
Gold Line Link to RTD Rail and Bus Rapid Transit Corridors



Source: Gold Line Team, 2007

1.3.2.3 Need to Provide Environmental Benefits for the Gold Line Study Area and Region

When assessing the potential impacts of transportation projects, the pollutants of primary concern are carbon monoxide (CO), ozone (O₃), and particulate matter 10 microns in diameter or smaller (PM₁₀). The United States Environmental Protection Agency (USEPA) defines the Denver metropolitan area as an attainment/maintenance area for PM₁₀ and CO, nonattainment for the 1-hour ozone standard, and currently in attainment for the other

criteria pollutants. The Regional Air Quality Council (RAQC), in cooperation with the State of Colorado, prepared a maintenance plan for ozone. On October 11, 2001, the USEPA approved the Denver 1-hour ozone standard redesignation request, the maintenance plan, and the volatile organic compounds (VOC) and summertime nitrogen oxide (NO_x) conformity budgets. However, in 2002 and 2003, Denver had measured violations of the 8-hour ozone standard. As a result, the Denver area has been declared nonattainment for the 8-hour ozone standard by USEPA. The improvements recommended in the Gold Line project would result in reductions in air pollutant emissions, greenhouse gas emissions, and energy consumption over the No Action and Transportation System Management (TSM) Alternatives.

1.3.2.4 Need to be Cost-Effective and Financed within the FasTracks Plan

The FasTracks financial plan projected costs and financing for each of the FasTracks corridors and projects, and reflected the adopted FasTracks implementation schedule for each corridor. Each year, RTD evaluates the financial plan to reflect actual program progress, expenditures, and receipts. Recent increases in the costs of materials have caused RTD to review and revise the FasTracks financial plan. In addition, the FasTracks financial plan designated the Gold Line study area as one of three FasTracks corridors that would seek federal funding (from an FTA program called “New Starts”).

Transportation improvements in the Gold Line study area must be planned and designed to meet not only mobility and environmental needs, but also the financial constraints of the FasTracks Plan and its federal funding requirements. The Preferred Alternative must be both affordable and cost effective at serving the transportation and other needs of the Gold Line study area.

Affordability. In 2004, the FasTracks Plan allocated \$463.5 million for capital costs (in year of expenditure dollars) of the overall \$4.7 billion system-wide budget to the Gold Line study area. The recently adopted RTD Annual Program Evaluation forecasts the revised Gold Line study area costs at \$552.5 million (in year-of-expenditure dollars). Any improvements must be affordable, generally defined as within 10 percent of the FasTracks budget.

Cost-Effectiveness. A transit project’s cost-effectiveness is generally defined by its cost per user, including capital and operating costs. In FTA’s “New Starts” federal funding process, cost effectiveness is defined as a cost per hour of transit system user benefit (including a quantitative measure of travel time savings for new and traditional transit users). Because the Gold Line study area is designated by the FasTracks financial plan as one that may potentially be eligible for federal funding, its cost effectiveness would contribute to positive ratings in the New Starts evaluation process. This need is consistent with the commitment to fiscal constraint outlined in the FasTracks Plan above.

1.3.2.5 Need to Meet the Voter Mandate of the FasTracks Plan

The goal of the FasTracks Plan is to provide a regional system of transit infrastructure to provide connections throughout the Denver metropolitan region.

The FasTracks financial plan states, “Unlike typical transit development strategies, which are pursued one corridor at a time and can take decades to accomplish, the Plan offers a comprehensive, region-wide approach to transit development. Integral to the Plan is the ability to simultaneously improve mobility throughout the region. This approach will not only address congestion needs, but will also provide an unprecedented economic stimulus to the region, providing a measure of protection against recession through 2017.” The Plan assumes that the Gold Line would be constructed and operating in 2015, virtually simultaneously with other new transit corridors in the region. To meet the financial and

schedule requirements of the FasTracks Plan, the Gold Line transportation improvements must be practical and implementable.

Practical Improvements: The Gold Line study area transportation improvements must be reasonable and within the range of traditional transit improvements. Any improvement recommended by the Gold Line project would be a transit technology that is in use in everyday revenue line-haul service somewhere in North America or other similar environments. While new and experimental transit technologies hold promise for the future, only more traditional transit technologies that have been used in corridors similar to the Gold Line would be appropriate and necessary to meet the financial and schedule requirements of the FasTracks Plan.

Implementable Improvements: Any transportation improvement recommended for the Gold Line study area must be able to be constructed and operated within the financial and schedule constraints of the overall FasTracks Plan. While the environmental process will note where mitigation issues must be addressed, the Preferred Alternative must avoid difficult and costly construction and operational issues if it is to meet the budget and schedule.

1.4 Project Goals

The project goals for the Gold Line study area were developed, reviewed, and refined during the project scoping phase. These goals, which help define the evaluation criteria used in screening, are described in Table 1-1.

TABLE 1-1
Gold Line Project Goals

Goal	Objective	Description
Goal 1	Best Value	Providing a cost-effective transit option in the Gold Line study area
Goal 2	High Reliability and Performance	Providing a high-quality and reliable transit service that reduces travel times, reduces delays, and increases travel comfort in order to encourage travel by more efficient and environmentally sensitive means than motor vehicle travel
Goal 3	Improved Efficiency	Providing system linkage with other FasTracks corridors
Goal 4	Sustainable Land Use	Fulfilling existing land use and transit-oriented development (TOD) plans in the Gold Line study area
Goal 5	Improved Local Economy	Enhancing access to jobs, entertainment, recreation, and shopping for existing and future residents of the Gold Line study area
Goal 6	Equal Opportunity	Providing equitable transit opportunities regardless of financial means
Goal 7	Environmental Protection	Minimizing environmental impacts
Goal 8	Sustainable Communities	Improving environmental sustainability and development of sustainable communities

Source: Gold Line Team, 2006