

10.0 EVALUATION OF ALTERNATIVES

This chapter summarizes the evaluation of the Preferred Alternative for the Central Corridor Light Rail Transit (LRT) Project, based on the information presented in the previous chapters. The Preferred Alternative is described in detail in Chapter 2. The purpose of this chapter is to evaluate the benefits, costs, and environmental consequences against the project's goals and objectives as presented in Chapter 1.

Section 10.1 presents an evaluation of the No-Build Alternative, the Central Corridor Alternatives Analysis and Draft Environmental Impact Statement (AA/DEIS) Locally Preferred Alternative (LPA) and the Preferred Alternative relative to project goals and objectives.

Section 10.2 describes an overview of the Federal Transit Administration (FTA) New Starts Criteria.

Section 10.3 presents a list of the issues to be resolved after circulation of the Final Environmental Impact Statement (FEIS).

10.1 Evaluation Relative to Project Goals and Objectives

In Section 1.4.1, a summary of the goals and objectives for the Central Corridor Transit Study was presented. The project goals include:

- Supporting economic opportunity and investment
- Preserving and enhancing communities and supporting a healthier environment
- Improving transportation and mobility

The AA/DEIS identified LRT as the alternative most consistent with the goals and objectives of the Central Corridor Project that are presented in Chapter 1 of this document. Based on this conclusion, the LPA adopted an LRT alignment connecting downtown St. Paul and downtown Minneapolis on University and Washington avenues.

Subsequent to the completion of the AA/DEIS for the Central Corridor LRT Project, several unresolved policy questions and design element options arose which required additional study. These design considerations responded to changed conditions within the corridor, technical, operational, and financial constraints, and major infrastructure requirements that were not fully documented in the AA/DEIS. A Supplemental Draft Environmental Impact Statement (SDEIS) was completed to assist the Metropolitan Council, resource agencies, and key project partners in understanding and resolving critical project elements within the context of the National Environmental Policy Act (NEPA). It provided an opportunity to document and disclose local decision-making related to project elements as they were refined during the preliminary engineering (PE) effort.

After the publication of the SDEIS and the closing of the formal comment period (August 25, 2008), the Metropolitan Council adopted a Preferred Alternative for Central Corridor LRT based upon the analysis undertaken during preliminary engineering and the comments received on the SDEIS. Table 10-1 summarizes differences in performance relative to the project goals and objectives for the No-Build Alternative, the AA/DEIS LPA and the Preferred Alternative.

Table 10-1 Summary of Effects Relative to Project Goals and Objectives

	No-Build Alternative	AA/DEIS LPA	Preferred Alternative
Alignment Length	N/A	11 miles (9.8 miles of new alignment, 1.2 on shared alignment)	10.9 miles (9.7 miles of new alignments, 1.2 on shared alignment)
Stations	N/A	16 new, five shared	15 new, five shared
Operations and Maintenance Facility	N/A	Existing Franklin Avenue Yard	New facility in Downtown St. Paul
Ancillary Facilities	N/A	Total number and locations not disclosed	13 traction power substations/system components
Capital Costs	N/A	\$990 Million (escalated to 2007 dollars)	\$914.9 Million (escalated to year of expenditure)

	No-Build Alternative	AA/DEIS LPA	Preferred Alternative
Goal 1: Support Economic Opportunity and Investment			
Compatible with Existing Land Use	Yes	Yes	Yes
Consistent with Comprehensive Plans	No	Yes	Yes
Compatible with Planned Development	No	Yes	Yes
Economic Effects	No beneficial economic effects	Expansion in payroll and employment is anticipated with construction spending and recurring O&M costs	Construction Spending will produce 7,075 person-year jobs and \$285 Million in payroll expansion. Long-term effects will include \$11.7 Million in local wages
Development Effects	Existing development trends should continue	Increases in commercial and residential development densities is expected	Same as AA/DEIS
Goal 2: Preserve and Enhance Communities and Support Healthier Environment			
Community Facility Impacts	No Impact	Access impacts and on-street parking impacts including at community facilities.	Similar impacts to AA/DEIS LPA.
Community Cohesion	No Impact	No impacts identified.	No significant impacts to community cohesion are anticipated. The project includes alterations to the streetscape that may enhance community cohesion.
Number of Property Acquisitions	None	114 partial, 11 total and 12 non-residential buildings	Private – 63 partial takes and 3 full takes, 7.65 acres, 4 non-residential buildings; Public – 42 partial takes, 26.67 acres
Potential Adverse Effects- Archeological	None	Undetermined; Phase II recommended	None anticipated

	No-Build Alternative	AA/DEIS LPA	Preferred Alternative
Potential Adverse Effects-Historic Properties	None	Undetermined; Phase II required	<p>Generally, the Central Corridor LRT project will have few adverse effects because the alignment, with few exceptions, follows existing streets. In addition, the project will not include substantive street widening or the demolition of numerous buildings.</p> <p>Some visual effects are anticipated, which include overhead catenary systems and the stations.</p> <p>Specific resources with potential direct impacts due to right-of-way changes include the Union Depot (National Register listed [NRL] and within the NRL Lowertown Historic District) and Leif Erikson lawn and Cedar Street lawn panels (within the NR eligible [NRE] State Capitol Mall Historic District). One building that falls within the period of significance for the St. Paul Urban Renewal Historic District [NRE] will be removed.</p> <p>Changes in traffic patterns and routes will affect the NRL University of Minnesota Old Campus Historic District and the NRE Prospect Park Residential Historic District. Modifications to the East River Parkway (NRE) will include turn lanes and signals.</p>

	No-Build Alternative	AA/DEIS LPA	Preferred Alternative
Section 4(f) Impacts	No impact	None anticipated	Potential permanent use of St. Paul Urban Renewal Historic District, Lowertown Historic District, Capitol Mall Historic District, and the St. Paul Union Depot. Potential <i>de minimis</i> use of Leif Erikson Lawn.
Potential Visual Effects	No impact	Temporary construction impacts; introduction of overhead contact system (OCS) and new station facilities	Same as AA/DEIS LPA with the additional of visual changes due to at-grade Transit/Pedestrian Mall at the U of M
Disproportionate Impacts to EJ Communities	Minority, low-income and transit dependent populations would not be served	None anticipated	Three Census blocks near Western Avenue would experience a decrease in overall transit service; mitigation is committed
Groundwater Effects	No impact	Potential construction impacts	Same as AA/DEIS LPA
Wetlands (Acres)	No impact	No impact	Same as AA/DEIS LPA
Floodplains (# of 100-year floodplain crossings)	No impact	No impact; permit required	Same as AA/DEIS LPA
Effects to Habitat and Biota	N/A	Minor impact	Same as AA/DEIS LPA
Effects to Threatened and Endangered Species	N/A	No impact	No impact
Contribution to Regional Air Quality Goals	Higher emissions due to increased traffic congestion	No estimated concentrations of CO would exceed the current 1-hour or 8-hour NAAQS.	Same as AA/DEIS LPA
Noise Impacts	N/A	11 severe Category 2 impacts, One severe Category 3 impact	16 severe Category 2 noise impacts before mitigation; with committed mitigation, 1 severe Category 2 noise impact.
Vibration Impacts	No impact	None anticipated	14 structures, and 7 U of M buildings have vibration impacts; mitigation is committed

	No-Build Alternative	AA/DEIS LPA	Preferred Alternative
Hazardous/Regulated Materials	No impact	Potential impact to 10 sites (High/Medium rating)	37 hazardous/regulated material sites will be investigated in a Phase II Site Assessment
Goal 3: Improve and Increase Transportation and Mobility			
Peak Period Headways (minutes)	N/A	7.5	7.5
Off-Peak (midday) Period Headways (minutes)	N/A	10	10
Forecast Year Total LRT Ridership	N/A	38,100	41,690
Capacity Improvements	N/A	2-car trains 2-car train platforms	3-car trains (2030) 3-car train platforms
Travel Times (minutes)	N/A	43	39.6
Annual O&M Costs (2007 dollars)	N/A	\$60.7 Million	\$53.9 Million
Number of Intersections at LOS E-F (PM)	11 (2030 - horizon)	12 (2020- horizon)	14 (2030 - horizon)
Bike/Pedestrian Facility Effects	N/A	Short-term construction effects	Short-term construction effects

10.1.1 No-Build Alternative

The No-Build Alternative would not meet the goal of supporting economic opportunities and development in the Central Corridor LRT Study Area. The No-Build Alternative would be inconsistent with local and regional comprehensive plans, which specifically identify LRT as a critical element in shaping development in the Central Corridor LRT Study Area and supporting regional economic development goals. This alternative would avoid potential disruption to neighborhoods, commercial districts, and historic areas in the corridor. The No-Build Alternative would not include potential improvements to community character or improved transit service with connections to major destinations. The No-Build Alternative would not meet the goal of improving and increasing transportation and mobility in the Central Corridor LRT Study Area. It would not improve regional transit system connectivity, nor would it increase transit ridership.

10.1.2 AA/DEIS LPA

The AA/DEIS LPA represents a permanent transit investment in the Central Corridor LRT Study Area that could act as a catalyst in furthering community development plans for the area. The AA/DEIS LPA would serve previous development investments and is close to developable and redevelopable land. It would provide potential improvements to community character including superior transit service and connections to major destinations and new transit-oriented development. Traffic congestion would increase at a slower rate as transit ridership increases, further improving community character. The AA/DEIS LPA would

maximize regional transit system connectivity between downtown St. Paul and Minneapolis and transit ridership would increase in the Central Corridor LRT Study Area.

10.1.3 Preferred Alternative

The Preferred Alternative is consistent with the goals and objectives developed for the Central Corridor LRT Study Area. Similar to the AA/DEIS LPA, the Preferred Alternative represents a permanent transit investment in the Central Corridor LRT Study Area; therefore, the evaluation relative to the project goals and objectives is consistent with the evaluation for the AA/DEIS LPA.

10.2 New Starts Evaluation Process

The Section 5309 “New Starts” program is the Federal government’s primary program for providing financial support to locally planned, implemented, and operated fixed guideway transit major capital investments. The New Starts evaluation process is used in conjunction with the evaluation process under NEPA, for which this EIS is being prepared. This section describes how FTA evaluates projects for its New Starts funding recommendations. The Central Corridor light rail transit project is seeking New Starts funds and therefore, will be subject to this evaluation and rating process.

Each year the FTA submits its Annual Report on Funding Recommendations to Congress as a companion document to the annual budget submitted by the President. The report provides recommendations for the allocation of New Starts funds under Section 5309 of Title 49 of the United States Code. As required by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the FTA uses the following project justification criteria to evaluate New Starts projects: mobility improvements; environmental benefits; cost effectiveness; operating efficiencies; transit-supportive existing land use, policies and future patterns; and other factors. The FTA must also consider the local financial commitment for the proposed project. In total, the criteria are intended to measure the overall merits of the project and the sponsor’s ability to build and operate it.

FTA reviews the project justification and local financial commitment criteria for each candidate project and assigns a rating for each criterion. For some of the project justification criteria, the proposed project is compared against a New Starts “baseline alternative.” The New Starts baseline alternative consists of improvements to the transit system that are relatively low in cost and represent the “best that can be done” to improve transit without major capital investment in new guideway infrastructure. As such, it is different than the baseline (represented by the no-build condition) against which environmental impacts are measured in the NEPA document.

A candidate project is given an overall rating of “High,” “Medium-High,” “Medium,” “Medium-Low,” or “Low” based on ratings assigned by the FTA to each of the project justification and local financial commitment criteria described above. These ratings are important, as the FTA considers them in its decision to recommend projects for New Starts funding. Specifically, the FTA will not recommend funding for projects which are rated “Medium-Low” or “Low.” It is important to note, moreover, that a “High,” “Medium-High,” or “Medium” rating does not automatically translate into a funding recommendation, although the potential for receiving New Starts funding is much greater.

Project evaluation is an ongoing process. FTA evaluation and rating occurs annually in support of budget recommendations presented in the Annual Report on Funding Recommendations and when projects request FTA approval to enter into preliminary engineering or final design. Consequently, as proposed New Starts projects proceed through the project development process, information concerning costs, benefits, and impacts is refined and the ratings are updated to reflect new information.

10.2.1 Current Ratings for Central Corridor Light Rail

Overall Rating: Medium-High

10.2.1.1 Project Justification

Rating: Medium-High

Mobility Improvements

Rating: Medium

In its evaluation of the mobility improvements that would be realized by implementation of a proposed project, the FTA evaluates four measures:

- User Benefits per Passenger Mile on the Project
- Number of Transit Dependents Using the Project
- Transit Dependent User Benefits per Passenger Mile on the Project
- Share of User Benefits Received by Transit Dependents Compared to the Share of Transit Dependents in the Region

User Benefits per Passenger Mile on the Project: User benefits essentially represent all of the travel time savings to transit riders in the forecast year that result from the New Starts project as compared to not building the project (the baseline alternative). They include reductions in walk times, wait times, transfers, and most importantly, in-vehicle times. In order to rate projects in comparison to other proposed New Starts, this measure is normalized by the annual passenger miles traveled on the New Starts project in the forecast year. The result is a measure of the intensity of the user benefits.

Number of Transit Dependent Individuals Using the Project and Transit Dependent User Benefits per Passenger Mile on the Project: These two measures represent the number of transit dependents affected by the project and the intensity of the benefit per passenger. The first is self-explanatory while the second is defined identically to the user benefits per passenger mile above, but for transit dependent passengers.

Share of User Benefits Received by Transit Dependents Compared to Share of Transit Dependents in the Region: This measure represents the extent to which the project benefits transit dependents compared to their regional representation. For example, if 10 percent of the user benefits for the project accrued to transit dependents, but they represented 20 percent of the region’s population, the measure would be 0.5, indicating that the project did not benefit transit dependents compared to their share of the region’s population.

Table 10-2 presents the mobility improvement measures for the Central Corridor Light Rail project.

Table 10-2 Mobility Improvement Measures

Measure	New Start versus Baseline
Transportation System User Benefits per Project Passenger Mile for All Riders (minutes)	2.6
Project Trips by Transit Dependents	5,858,700
Transit Dependent User Benefits per Passenger Mile for Transit Dependents (minutes)	2.6
Share of User Benefits Received by Transit Dependents Compared to the Share of Transit Dependents in the Region	3.8%

Source: Metropolitan Council, September 2008

Environmental Benefits

Rating: Medium

In its evaluation of environmental benefits that would be realized through the implementation of a proposed project, the FTA considers the current air quality designation by EPA. This measure is defined for each of the transportation-related pollutants (ozone, CO, PM10) as the current air quality designation by the EPA for the metropolitan area's noncompliance with the health-based EPA standard (NAAQS) for the pollutant, or its compliance with that standard. The FTA has found that information submitted in support of the environmental benefits criterion does not distinguish with any meaning the merits of competing New Starts projects. While the FTA reports the information submitted by project sponsors on environmental benefits to Congress in the Annual Report on Funding Recommendations, it does not formally incorporate this measure in its evaluation of New Starts projects.

Operating Efficiencies

Based upon its prior experience in evaluating New Starts projects, the FTA has previously determined that locally-generated and reported information in support of the operating efficiencies criterion does not distinguish in any meaningful way differences between competing major transit capital investments. The FTA further believes that the anticipated operating efficiencies of proposed New Starts projects are adequately captured under its measure for evaluating project cost effectiveness.

Cost Effectiveness

Rating: Medium

Significant among the project justification criteria is cost effectiveness, which is the annualized capital and operating cost per hour of user benefits for the forecast year. It captures the additional costs of the New Start project compared to the transportation benefits to transit riders. User benefits are defined identical to the measure used in the mobility improvement criterion.

New Starts projects must be rated "Medium" for cost effectiveness, in addition to receiving an overall "Medium" rating, in order to be considered by the FTA for New Starts funding.

Table 10-3 summarizes the Central Corridor Light Rail project's cost effectiveness.

Table 10-3 Central Corridor Light Rail Cost Effectiveness

Measure	New Start versus Baseline
Cost per Hour of Transportation System User Benefits	\$24.41
Cost per New Transit Trip	\$32.01

Source: Metropolitan Council, September 2008

Transit Supportive Land Use and Future Patterns

Rating: Medium-High

This criterion addresses the extent that transit-oriented development is likely to occur in the New Start project's corridor. The FTA explicitly considers the following transit-supportive land use categories and factors:

- Existing Land Use
- Transit-Supportive Plans and Policies, including the following factors:

- Growth Management;
- Transit-supportive corridor policies;
- Supportive zoning regulations near transit stations; and
- Tools to implement land use policies.
- Performance and Impacts of Policies, including the following factors:
 - Performance of land use policies; and
 - Potential impact of transit project on regional land use.

Other Factors

Consistent with SAFETEA-LU Section 5309(d) and (e), the FTA also includes a variety of other factors when evaluating project justification, including:

- Effect of the project on economic development;
- The nature and extent of the transportation problem or opportunity in the project corridor as described in the “Making the Case” document;
- If the project is a principal element of a congestion management strategy, in general, and an auto pricing strategy in particular; and
- Any other factor which the project sponsor believes articulates the benefits of the proposed major transit capital investment, but which is not captured within the other project justification criteria.

10.2.1.2 Local Financial Commitment

Rating: Medium

Proposed New Starts projects must be supported by evidence of stable and dependable financing sources to construct, operate, and maintain the transit system. The measures that FTA uses to evaluate local financial commitment are:

Local Share

Rating: Medium

The FTA examines the proposed share of total project costs from sources other than Section 5309 New Starts, including Federal formula and flexible funds, the local match required by Federal law, and any additional capital funding.

Strength of Capital Financing Plan

Rating: Medium

The FTA looks at the stability and reliability of the proposed capital financing plan, including the current capital condition of the project sponsor, the level of commitment of capital funds to the project, the financial capacity of the project sponsor to withstand cost overruns or funding shortfalls, and the reliability of the capital cost estimates and planning assumptions.

Strength of Operating Financing Plan

Rating: Medium

The FTA looks at the ability of the sponsoring agency to fund operation and maintenance of the entire system (including existing service) as planned, once the guideway project is built. This includes: an examination of the current operating condition of the project sponsor; the

level of commitment of operating funds for the transit system; the financial capacity of the project sponsor to operate and maintain all proposed, existing and planned transit services; and the reliability of the operating cost estimates and planning assumptions.

The quantitative measures listed below in Table 10-4 represent some of what the FTA relies on in rating a project's local financial commitment. The data listed below are for the Central Corridor Light Rail project.

Table 10-4 Capital Financial Plan

Measure (in Year of Expenditure Dollars)	Cost (Millions)
Total Capital Cost	\$914.89
Proposed Federal Section 5309 New Starts Share of Capital Costs	\$452.94
Proposed State Sources for Capital Funding	\$91.49
Proposed Local Sources of Capital Funding	\$365.96
Other Federal Sources	\$4.50
Estimated Annual Incremental Operating Costs in the Forecast Year (2030)	\$35.91

Source: Metropolitan Council, September 2008

Additional information on the financial plan for this project can be found in Chapter 8 (Financial Analysis) of this document.

10.2.2 Conclusion

This FEIS compares the No-Build Alternative to the Build Alternative and shows that the Build Alternative addresses the goals and objectives, and that the region would benefit from the construction and implementation of the Build Alternative. The evaluation findings are summarized in Table 10-1. The Build Alternative would provide opportunities that would enhance accessibility, improve mobility, and generate travel time savings with the implementation of LRT service directly connecting St. Paul and Minneapolis that would not be possible under the No Build Alternative:

- The LRT line would improve accessibility not only between the two downtowns, but other major activity centers, including the University of Minnesota and Midway District areas
- The LRT line would generate significantly more user benefits than the baseline alternative (limited stop buses) due to increased transit capacity that would provide a more reliable transit alternative at faster average speeds

The Federal New Starts evaluation process is used in conjunction with the evaluation process under NEPA. The FTA requires that projects proposed for New Starts funding be justified based on a comprehensive review of the following criteria: Mobility Improvements; Environmental Benefits; Operating Efficiencies; Cost Effectiveness; Transit-Supportive Land Use Policies and Future Patterns, and Local Financial Commitment.

The Central Corridor Light Rail project's overall New Starts rating for FY 2010 is Medium-High.

10.3 Issues to be Resolved

The FEIS will be distributed to appropriate federal, state, and local agencies, as well as to the public for review. Unresolved issues will continue to be addressed and closely coordinated with relevant agencies and key stakeholders such as:

- Coordination among Metropolitan Council, State of Minnesota, Hennepin and Ramsey counties, and the cities of Minneapolis and St. Paul regarding financial planning and funding; and
- Further coordination with local, state, and federal agencies regarding design, construction, and permitting requirements (included in Chapter 11).

This page left blank intentionally.