



Final Report

Executive Summary

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RTD

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EXECUTIVE SUMMARY

INTRODUCTION

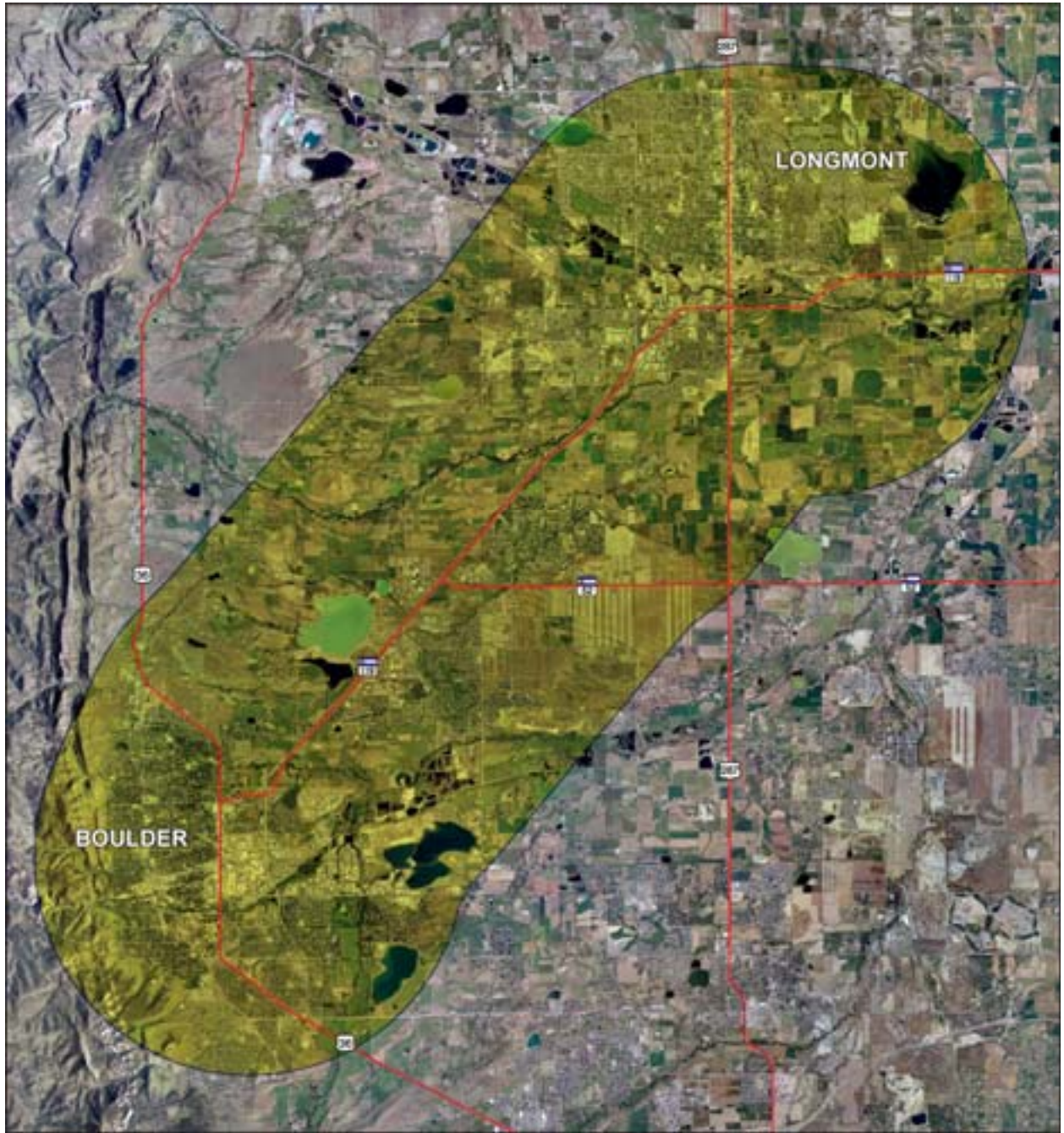
This study was conducted to determine the feasibility of potential commuter rail implementation in the Longmont Diagonal Corridor. The study area consists of the Burlington Northern Santa Fe (BNSF) railroad alignment from approximately 30th and Pearl Streets in Boulder to 119th Street and the SH 119 Extension, east of downtown Longmont. A map of the study area is presented in **Figure ES-1**. The Regional Transportation District (RTD) sponsored this study with a number of purposes in mind:

- To collect baseline data on population, employment, transportation systems, and environmental conditions in the study area;
- To develop a variety of implementation and operational scenarios to test the feasibility of extending commuter rail service in the corridor as a continuation of potential commuter rail service in the Denver-Boulder corridor (being examined concurrently as part of the US 36 Environmental Impact Statement process);
- To determine the capital and operations and maintenance costs of those scenarios; and
- To determine the potential locations of commuter rail stations in the corridor, with an added emphasis on examining Transit-Oriented Development (TOD) potential at stations in the City of Longmont (which contributed financially to this study).

The data collected for this report resulted in several conclusions about conditions in the Longmont Corridor that would influence the development of transportation improvements in the study area:

- According to DRCOG, the corridor’s population is forecast to experience strong growth rates over the next twenty years, increasing by 20% between now and 2025.
- According to DRCOG, employment in the study corridor is projected to increase faster than population growth, rising by 36% between now and 2025, indicating an increasing jobs-housing imbalance that will further strain the corridor’s transportation network.
- According to CDOT and DRCOG, traffic volumes are forecast to increase at an even faster rate than either population or employment, with traffic counts at key points along the corridor projected to increase by 100% or more between now and 2025. CDOT has no plans for significant improvements or expanding SH 119 (other than a grade-separated interchange at SH 52), and neither Boulder, Boulder County nor Longmont have expressed a desire or interest in increasing capacity on roadways leading into those two communities.
- According to DRCOG and the North Front Range Metropolitan Planning Organization, population growth in adjacent areas outside the study area (such as southwestern Weld County and southern Larimer County) will be drawn to employment and activity centers in the study corridor, further adding to traffic congestion.

Figure ES-1: Study Area



- Several RTD bus routes and park-n-Rides serve the study corridor. However, buses in the corridor receive no priority treatment or travel time advantage.
- Forty percent of the land in the corridor is classified as public or private open space. This will require careful consideration of commuter rail station sites and related facilities.
- The BNSF railroad corridor between Boulder and Longmont is a single-track mainline with one siding in Longmont, with several major freight trains traversing the corridor every day. In addition, it is “dark territory” with no train dispatching signalization, and with several speed restrictions and many grade crossings (though most are signalized). Implementation of commuter rail service in the corridor will require significant upgrades.
- A significant number of utilities cross or utilize the SH 119 or BNSF right-of-way, requiring investigation and potential costly relocations.
- The US 36 Environmental Impact Statement project is proceeding, with alternatives under consideration for commuter rail and Bus Rapid Transit linking Denver and Boulder, and a major intermodal terminal being considered for 30th and Pearl in Boulder. In addition, an Environmental Impact Statement is under way for the Denver-Fort Collins corridor, focused on I-25 (including the Longmont Diagonal in its study area). This project will need to address the plans being considered by the US 36 and North I-25 EIS projects and their potential for improving regional connections to and through Longmont.
- The entire Denver metro region (including the Diagonal corridor) is now designated as a “deferred non-attainment area” for ozone, which will require mitigation measures in the years ahead.

1. PURPOSE AND NEED FOR TRANSPORTATION INVESTMENTS IN THE LONGMONT CORRIDOR

As population and employment in the Longmont-Boulder Corridor and surrounding areas continue to increase between now and 2025, the major transportation facility in the corridor (SH 119) is projected to experience significant traffic growth (in some cases more than a 100% increase), resulting in increasing congestion, slower travel speeds, deteriorating air quality, and a decrease in safety for single-occupant autos and bus transit. Neither CDOT nor the jurisdictions in the study area (the Cities of Boulder and Longmont and Boulder County) desire or propose major single-occupant auto capacity increases for SH 119 in the foreseeable future. Therefore, one or more practical and cost-efficient transportation improvements—including commuter rail—should be developed, evaluated, and implemented to provide corridor residents and travelers with an alternative transportation mode, travel time savings, the ability to absorb a significant amount of excess demand from SH 119, and the opportunity for choice transit riders to access the regional transit system, including potential linkages to regional transportation networks being proposed for the Denver-Boulder and North Front Range corridors.

Goals and Objectives

Four major goals, and several corresponding objectives within each goal, were developed to further guide the analysis of issues along the Diagonal and to help craft transportation alternatives to resolve or mitigate those issues. These goals and objectives are used to help develop specific criteria for evaluating the project's alternatives.

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

Goal 2: Minimize adverse impacts to the socioeconomic and natural environments, 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

2. AFFECTED ENVIRONMENT

2.1 Introduction

The Affected Environment analysis summarized the social and environmental information collected in the study area in support of the Longmont Rail Diagonal Feasibility Study. This information will assist in the decision-making process by allowing project decision-makers to avoid and/or minimize social and environmental impacts early in the planning process. Additional information, and refinement of this information, will need to occur as the planning process proceeds.

2.2 Community Facilities

The majority of the community facilities identified along the Diagonal corridor are located further than 1,000 feet from the railroad centerline, or have only a portion of their buildings falling within the 1,000 foot area. Two sites fall within the 300-foot buffer.

2.3 Land Use

In general, the existing land uses through the Diagonal corridor appear to be compatible with potential impacts associated with increased rail traffic. If future proposals require additional right-of-way for double or triple tracking, land use areas such as 1st Avenue in Longmont may be impacted due to acquisition of right-of-way.

The proposed station at Niwot must be considered carefully to limit new development permitted in this area so that it remains consistent with the desired future land use plan of “semi-rural.”

Review of the future land use plans for the potential station at SH 52 does not indicate significant land use change from the current surrounding uses of office, light industrial, and open space. Therefore, future land use may conflict with typical land use patterns that develop around transit stations. The current significant developments in this area include the IBM campus and the Boulder Tech Center development. However, the surrounding area is agriculture and open space.

2.5 Threatened and Endangered Species

The results of this analysis indicate that federal and state threatened and endangered species (TES) occur or potentially occur within the project area. A more comprehensive evaluation for TES in the project area will be required to determine potential impacts.

2.6 Wetlands

Approximately 253 acres of wetlands, including open waters, fall inside the 1,000-foot Diagonal corridor area. The results of this analysis indicate that several, mostly small, wetlands and some open water features will likely be impacted by the project. However, it appears that most of the major wetland systems would be crossed on a perpendicular angle, thus minimizing impacts. If the project moves forward to preliminary design, consideration should be given to design features that limit impacts. Final impact evaluations cannot be completed until comprehensive wetland delineations are conducted.

2.7 Potential 4(f) Properties (Historic and Parks/Open Space)

It is assumed that potential direct impacts may occur within the 300-foot buffer, while limited secondary impacts may occur within the 1,000-foot buffer area.

Unless additional right-of-way is required, impacts would be limited to increased rail traffic adjacent to the parks, open space, and conservation easements. Due to the limited headway times for commuter rail, the impact would be minimal to no impact.

2.8 Environmental Justice

There is a small potential for disproportionate impacts to minority populations in two block groups near the proposed Sugar Mill Station and in the mobile home community across from the Flour Mill. However, these impacts could be outweighed by the additional access to transit provided at these locations should they become station areas.

2.9 Noise and Vibration

Most of the residential units and sensitive community locations that may be potentially impacted by noise and vibration caused by increased rail traffic are located on the northern outskirts of Boulder, in Niwot, or in the southern and central portions of Longmont. Of the community facilities identified along the Diagonal corridor, most are located outside the 1,000-foot buffer of indirect impacts. Future environmental analysis will assess the noise and ground-borne vibration impacts to residential unit and sensitive receptors. At that time these impacts can be quantified and noise abatement will be evaluated.

2.10 Social Considerations and Demographics

This study area is characterized by a projected population growth rate between 2001 and 2025 (20%) somewhat lower than the region's (at 40%), but with an employment growth rate (36%) that is commensurate with that of the region (43%). These demographics support the conclusions in the data collected for this study (and the resulting Purpose and Need statement) that there will continue to be a jobs/housing imbalance in the region that will strain the transportation system. Average population densities within ½ mile of proposed stations are

projected to increase by 40-89% in the southern part of the study area and by 16-17% in the northern part of the study area from 2001 to 2025.

The job mix in the study area indicates relatively high-value employment in the almost equal split of production/distribution and service employment. Retail employment is under 10 percent. The job mix is expected to remain the same in the future. The median income in the Longmont area is slightly higher than in the State as a whole but commensurate with the DRCOG regions. The low-income population ratio in this area (9-10%) is somewhat lower than in the DRCOG region (at 13-16%).

2.11 Safety

- Crime at transit stations is typically proportional to the crime experienced in the surrounding area. Longmont has a slightly higher incidence of crime than Boulder (for example, 323 incidents of auto theft in Longmont in 2003 vs. 197 in Boulder), so more aggressive security measures may need to be considered at those stations.
- Full or partial closures of at-grade crossings during construction may impact emergency response times.
- Increases in train frequency and additional tracks at the existing at-grade crossings may increase the potential for train/automobile accidents. Improvements to active warning devices should be considered.

2.12 Utilities

Potential utility impacts and a list of utility providers in the corridor will be used during preliminary engineering design, conflict identification, and for future coordination with utility providers before, after, and during construction. If the project ultimately moves forward for construction, potholing and a locator service should be performed to determine the exact location of the utilities facilities.

2.13 Floodplains, Drainage and Hydrology

There are a number of drainageways and ditches that the rail corridor crosses. The drainageway crossings should be designed to minimize potential floodplain impacts. Unavoidable changes to the regulatory floodplains may add cost to the project in the form of additional hydrologic and hydraulic modeling to support and justify floodplain revisions, as well as the time required to gain approval of any proposed changes. The rail corridor must minimize discharge of runoff into the ditch crossings to protect the quality of the water in these ditches. Typically this can be addressed as part of the normal efforts in the detailed design.

2.14 Farmland

Approximately 452 acres of farmlands are within 300 feet of the corridor and 1,410 acres are within 1,000 feet, which represents approximately 40 percent of the land adjacent to the corridor. All of the farmland of national significance is located in the northern half of the corridor adjacent to Longmont. The farmlands of local significance are interspersed throughout the corridor.

2.15 Hazardous Materials

Pinyon Environmental has conducted a Phase I Hazardous Materials analysis. Their report evaluated the presence or likely presence of any hazardous materials or petroleum products on properties in the 16.3 mile BNSF corridor between Boulder and Longmont that indicate an existing release, a past release, or a material threat of a release. Pinyon looked for these conditions within a 500-foot area on either side of the centerline of the rail line. Potential sites with Recognized Environmental Conditions (RECs) were divided into High, Moderate, and Low sites. In all, at least 25 sites were identified as ranked “high”, with more than 2,000 “moderate” sites. Pinyon anticipates the majority of the moderate sites will be eliminated once property acquisition and construction requirements are defined. Additional evaluation of the 25 high and the remaining moderate sites

will be necessary once the project is better defined. The complete analysis is included in a separate Phase I Hazardous Materials Report.

3. DETAILED EVALUATION AND RECOMMENDATIONS

3.1 Introduction

All detailed assumptions for the Longmont Diagonal rail project used the US 36 Environmental Impact Statement (EIS) project's assumptions for commuter rail as a starting point; this is the "No-Action" alternative for this project. The US 36 EIS Packages 4 and 5 include a double-track commuter rail alignment extending from Denver Union Station to 30th and Pearl in Boulder, a distance of approximately 28.6 miles. The reason for using US 36 EIS rail assumptions as a starting point is that the Boulder-Longmont commuter rail segment would not be constructed as a stand-alone segment; it depends on the implementation of the Denver-Boulder commuter rail segment before it can be constructed and operated. Therefore, much of the analysis of the Boulder-Longmont segment is conducted as a total system and an extension to an assumed Denver-Boulder segment.

3.2 System Ridership and Station Boardings

Transportation statistics presented in this section are based on results of the 2025 Denver Regional Travel Demand Model developed by the Denver Regional Council of Governments (DRCOG). The model uses projected population, employment, and transit and roadway network information to forecast future regional travel demand and impacts. Several model runs were conducted for the year 2025, comparing the transportation impacts that could result from each alternative. Operations experience and data from RTD were also used in this analysis. The DRCOG 2025 model is Compass Release 1.0, which was updated with "DRCOG Transit Revisions" dated June 2, 2004. The model forecasts used TransCAD version 4.7.

It is important to note that these forecasts are the best estimates available given the current knowledge and assumptions for land use projections, transportation technologies, and modeling software capabilities. The information behind these assumptions may likely change several times before the completion of construction of transportation improvements in the study corridor, but the analysis documented here (and the travel demand projections underlying that analysis) has been conducted in order to make transportation investment decisions based on the best available information at this time.

3.3 Travel Model Results

Seven model runs were conducted for the Longmont project (in all cases, the US 36 EIS rail component is assumed to be in place):

1. Boulder to downtown Longmont at 30-minute peak headways/60-minute off-peak headways in each direction (called model run L2-Build), resulting in 54 trains per day. The Boulder station was assumed at 30th and Pearl (the northern terminus of the US 36 EIS rail component). The downtown Longmont station was assumed at the intersection of 1st and Main (US 287). One intermediate station was assumed at the intersection of SH 119 and SH 52; this point was selected for the initial model run as it was the mid-point of the three stations under consideration for an intermediate station. This is similar to the RTD FasTracks assumptions for this corridor.
2. Boulder to downtown Longmont at 15-minute peak headways/30-minute off-peak headways in each direction (called L2-Build-a), resulting in 106 trains per day. The same station configurations described above applied to this model run. This model run is identical in service levels to the US 36 EIS rail component.
3. Boulder to downtown Longmont at 30-minute peak headways/no off-peak service (called L2-Build-b), resulting in 30 trains per day. The same station configurations described above applied to this model run. This run was designed to test the ridership and cost-effectiveness of peak-only service and to determine the extent of work-related commuting in the corridor.

4. Boulder to downtown Longmont at 30-minute peak headways/60-minute off-peak headways, with the intermediate station at 63rd St. in Gunbarrel instead of at SH-52 (called L2-Build-c).
5. Boulder through downtown Longmont to the Sugar Mill at 30-minute peak headways/60-minute off-peak headways (called L2-Build-d). This model run assumes a station at SH 52, downtown Longmont, and the Sugar Mill.
6. Boulder to downtown Longmont with no intermediate station at 30-minute peak headways/60-minute off-peak headways (called L2-Build-e). This model run was designed to test the change in ridership between Longmont and Boulder with an improved travel time provided by the absence of an intermediate station.
7. Boulder to downtown Longmont at 30-minute peak headways/60-minute off-peak headways, with the intermediate station at downtown Niwot instead of at SH-52 (called L2-Build-f).

Table ES-1 shows the results of that analysis. The table shows that the largest increase in overall Denver-Boulder-Longmont rail system ridership (22.4%) occurs with the most robust service package: 15-minute peak headways/30-minute off-peak headways (the same as that modeled for the US 36 EIS). The lowest increase in system ridership (10.9%) occurs under the scenario modeled with 30-minute peak headways and no off-peak service.

Station boardings rose and fell in rough proportion to total system boardings. Daily boardings in Longmont ranged from 1,380 under the scenario with the highest level of service (L2-a) to 710 under the scenario with the lowest level of service (L2-b).

Model run L2-d used the same operating plan as L2 (30-minute peak/60-minute off-peak) but added the Sugar Mill site east of downtown as an end-of-line station. Under L2, Longmont station boardings (using only one station in downtown Longmont) were shown at 1,020 per day. Under L2-d, with two

stations in Longmont (one in downtown and one at the Sugar Mill), total Longmont area boardings increased to 1,140 (an increase of 11.8%), with roughly 75% occurring in downtown Longmont and the remaining 25% occurring at the Sugar Mill site.

Table ES-1: Results of Ridership Modeling

Model run	Total system (Denver- Boulder- Longmont) ridership (2025)	Change from LI	Daily Station Boardings		
			Intermediate	Downtown Longmont	Sugar Mill
L1: No Action (US 36 EIS)	14,720	NA	NA	NA	NA
L2: Boulder/Longmont, 30-min peak/60-min off-peak (intermediate station at SH 52)	16,960	+2,240 (+15.2%)	SH 52: 230	1,020	NA
L2-a: Boulder/Longmont, 15-min peak/30-min off-peak (intermediate station at SH 52)	18,020	+3,300 (+22.4%)	SH 52: 400	1,380	NA
L2-b: Boulder/Longmont, 30-min peak/no off-peak (intermediate station at SH 52)	16,320	+1,600 (+10.9%)	SH 52: 190	710	NA
L2-c: Boulder/Longmont, 30-min peak/60-min off-peak (intermediate station at Gunbarrel)	17,320	+2,600 (+17.7%)	63 rd : 430	1,120	NA
L2-d: Boulder/Sugar Mill, 30-min peak/60-min off-peak (intermediate station at SH 52)	17,160	+2,440 (+16.6%)	SH 52: 240	860	280
L2-e: Boulder/Longmont, 30-min peak/60-min off-peak (no intermediate station)	16,800	+2,080 (+14.1%)	NA	1,090	NA
L2-f: Boulder/Longmont, 30-min peak/60-min off-peak (intermediate station at Niwot)	16,860	+2,140 (+14.5%)	Niwot: 140	730	NA

Source: URS Corporation, August/September 2004

As each ridership model was developed, certain assumptions were made about the nature of the local and regional bus network serving the Diagonal corridor and the communities in the study area. For example, local routes in Longmont were “rerouted” in the modeling process to feed into the downtown rail station. The BOLT and Route J services were modeled as restructured to become less of an express service on SH 119 and more of a local feeder service; both routes were assumed to stop at most major points along SH 119 (with the assumption of new park-n-Rides where needed) to feed into either the intermediate station or the

Longmont or Boulder end-of-line stations. The analysis shows that regional/express routes show decreases in ridership by 41-70% depending on the rail-operating scenario. This is to be expected since parallel bus service along the Diagonal corridor was decreased or restructured to perform more of a feeder service to corridor rail stations. However, local routes in Boulder showed increases of 3-6%, and local Longmont routes showed ridership increases ranging from 30% to 76% as a result of implementation of rail service. When rail and bus services are combined, total transit ridership in the corridor increases from 3% to almost 11% depending on the scenario.

Ridership Modeling Observations and Conclusions

1. Initial analysis of modeling results showed that the majority of riders using the Longmont corridor rail system were boarding in Longmont in the AM peak period to ride to Boulder, returning in the PM peak.
2. Total system ridership was almost directly proportional to service levels. The base case scenario (30-minute peaks/60-minute off-peaks, 54 trains per day) added about 2,200 daily riders to the Denver-Boulder-Longmont commuter rail network. A doubling of service using the 15-minute peak/30-minute off-peak scenario (106 trains per day) increased overall system ridership attributable to the Longmont extension by approximately 47%; consequently, daily boardings in downtown Longmont increased by 35%, and boardings at the intermediate station (SH 52) increased by more than 70%. When service levels were reduced to the 30-minute peak/no off-peak scenario (30 trains per day), total Longmont system ridership decreased from the base case by 28%; daily boardings in Longmont decreased by 30%, and boardings at the intermediate station decreased by 17%.
3. Daily boardings at the intermediate station, while relatively low compared to those expected by most commuter rail systems, varied by location and relationship to jobs and housing. The lowest boardings were seen in downtown Niwot, which has an historic established commercial and residential area nearby but no significant employment base. The station

boardings shown at the intersection of SH 119 and SH 52 were moderate, ranging from roughly 200 to 400 depending on the scenario (this was somewhat surprising given this location's relationships to regional thoroughfares and its proximity to the large employment base at IBM). The station location tested at SH 119 and 63rd St. in Gunbarrel had the highest ridership level (430 under the 30/60 scenario), though still relatively low for traditional commuter rail operations. No one location stood out as having significant advantages over the other as far as daily ridership. (Additional analysis of this and other station locations is shown in Section 4.6 below.)

3.4 Capital Cost Estimates

The US 36 EIS is proposing using the existing single-track BNSF corridor from Boulder to Denver for its rail alternatives. That project is proposing using the existing freight track in addition to one new track within the BNSF right-of-way to accommodate 15-minute peak period (30-minute off-peak) travel through the corridor. The capital cost for the track between Denver and Boulder is estimated at \$508 million in year 2003 dollars. Analysis conducted in this study concluded that a single track would be sufficient to extend commuter rail service from Boulder to Longmont, even with 15-minute peak headways. To accommodate that level of service, two passing sidings would be needed.

As a follow-up to that initial conceptual analysis, capital cost estimates were developed for four construction scenarios for the Boulder-Longmont commuter rail segment. Those four scenarios were:

- A single-track alignment between 30th and Pearl in Boulder and downtown Longmont (1st and Main);
- Extension of the single-track alignment from downtown Longmont to the proposed station site at the Sugar Mill (approximately 1.5 miles east of downtown);
- A double-track alignment between Boulder and downtown Longmont; and

- Extension of the double-track alignment from downtown Longmont to the Sugar Mill.

Using these assumptions, **Table ES-2** shows the capital cost estimates for the Boulder-Longmont segment along with that segment combined with the US 36 EIS commuter rail system (**Appendix D** contains detailed tables for all cost estimates).

Table ES-2: Capital Cost Estimates

	Single track to Downtown Longmont (12.3 miles)	Single track to Sugar Mill (13.8 miles)	Double track to Downtown Longmont (12.3 miles)	Change from Single Track	Double track to Sugar Mill (13.8 miles)	Change from single track
Boulder-Longmont Segment	\$89.3	\$108.2 (+21.2%)	\$127.4	+\$38.1 (+42.7%)	\$151.2	+\$43.0 (+39.7%)
Cost/mile	\$7.2	\$7.8 (+8.3%)	\$10.4	+\$3.2	\$10.9	+\$3.1
US 36 EIS	\$508.2	\$508.2	\$508.2	NA	\$508.2	NA
Cost/mile	\$17.8	\$17.8	\$17.8	NA	\$17.8	NA
Total combined system cost	\$597.5	\$616.4 (+3.2%)	\$635.6	+\$38.1 (+6.3%)	\$659.4	+\$43.0 (+6.9%)
Cost/mile	\$14.6	\$14.6	\$15.6	+\$1.0	\$15.6	+\$1.0

Source: URS Corporation, September 2004. All costs in millions of year 2003 dollars.

3.5 Operations and Maintenance Cost Estimates

Manuel Padron and Associates, on behalf of RTD, prepared operations and maintenance cost estimates for both the US 36 DEIS and the Longmont Diagonal Rail Feasibility Study (*US 36 Corridor DEIS Estimates of Operating Statistics and Costs/Supplemental Analysis*, Manuel Padron and Associates for RTD, March 15, 2005). That report analyzed O&M costs for the Longmont extension by assuming:

- the original US 36 DEIS Package 4 rail operations plan (15-minute peak headways, 30-minute off-peak headways, 104 trains/day); and
- an extension to downtown Longmont with every other peak-period train running to that city (resulting in 30-minute peak headways), with no off-peak or weekend service.

Table ES-3 summarizes O&M costs and other statistics for the US 36 DEIS and Longmont extension for locomotive-hauled coaches (LHCs) and Diesel-Multiple Units (DMUs), as calculated in the Padron report.

Table ES-3: Operating and Maintenance Costs for Passenger Rail Service for the Longmont Extension

Operating Statistic	Locomotive Hauled Coaches			Diesel Multiple Units		
	US 36 DEIS	US 36 with Longmont	Longmont Costs	US 36 DEIS	US 36 with Longmont	Longmont Costs
Peak Cars	16	18	2	16	18	2
Fleet Cars	19	22	3	19	22	3
Peak Locomotives	8	9	1	NA	NA	NA
Fleet Locomotives	10	11	1	NA	NA	NA
Annual Revenue Train Hours	31,700	33,300	1,600	31,700	33,300	1,600
Annual Revenue Car Hours	63,500	66,500	3,000	63,500	66,500	3,000
Annual Revenue Car Miles	1,744,100	1,894,700	150,600	1,744,100	1,894,700	150,600
Annual O&M Costs	\$24,828,000	\$26,686,000	\$1,858,000	\$11,416,000	\$13,343,000	\$1,927,000

Source: US 36 Corridor DEIS Estimates of Operating Statistics and Costs/Supplemental Analysis, Manuel Padron and Associates for RTD, March 15, 2005

3.6 Station Analysis

The US 36 EIS established its end-of-line station at the Boulder Transit Village at 30th/Pearl. The existing BNSF rail corridor between 30th/Pearl in Boulder and downtown Longmont is approximately 12.3 miles in length. By using the preferred station spacing criteria of five miles, this would mean that two or possibly three stations would be appropriate for the corridor. An intermediate station somewhere between Boulder and Longmont is recommended as the first station location added to the corridor, which would allow access to and from the rail system for residents and



employees in the middle portion of the corridor. Three candidate locations were developed for the intermediate station: at Gunbarrel (where two station concepts were developed), SH 52, or Niwot. The second station terminating at the Longmont end of the system also had several candidate locations: Hover/Pike Road, 1st/Main south of downtown (where two station concepts were developed), and the Sugar Mill site east of downtown.



The project team assembled station-planning committees to assist in the development and review of candidate station sites. The committees consisted of previously identified stakeholders along with property owners and other stakeholders in the vicinity of the specific station sites. Committee members were invited to two rounds of meetings to review candidate sites and station design concepts. The Longmont station planning committee had the added task of reviewing transit-oriented development potential for station sites in that city. The results of the station planning committee process for each of the two general station areas – intermediate and Longmont – are summarized in **Tables ES-4a and ES-4b**.

Table ES-4a: Results of Intermediate Station Planning Process

Station	Results of 1st Station Planning Committee Meeting	Initial Project Team Evaluation/ Recommendation	Results of 2nd Station Planning Committee Meetings	Final Recommendation
Gunbarrel West	Added as result of public comments; good access, circulation, expansion, proximity to jobs and residences	Good potential; seems to serve local area better than East; retain	No disagreement	Retain as option subject to further study
Gunbarrel East	Access and circulation awkward; relocation issues; limited expansion; though corresponds with local plans	Access and circulation makes it less favorable than East; eliminate	Retain until 2030 ridership results	Retain as option subject to further study
SH 52	Major regional hub; proximity to jobs; potential for land donation; expansion	Good regional access makes it attractive from a transportation standpoint; retain	Opposition from Gunbarrel, Niwot	Retain as option subject to further study
Niwot	Serves established residential and commercial area; traffic issues; limited expansion	Traffic and noise impacts could be major issues; eliminate	Niwot business community expressed strong support	Retain as option subject to further study



**Gunbarrel West (left)
Gunbarrel East (right)**



**SH 52 (left)
Niwot (right)**

**Table ES-4b:
Results of
Longmont Station Planning Process**

Station	Results of 1 st Station Planning Committee Meeting	Initial Project Team Evaluation/ Recommendation	Results of 2 nd Station Planning Committee Meetings	Final Recommendation
Pike/Hover	Good connections to FRCC and SH 119; but major congestion issues	Traffic issues and limited TOD possibilities; eliminate	No major disagreement	Eliminate
1 st /Main West (renamed 1 st /Terry Street (Downtown))	Close to downtown; good potential for TOD	Could be urban renewal area; good TOD; retain	No disagreement	Retain
1 st /Main East	Alternative to West for access to jobs and municipal center	Extensive trackwork needed to accommodate freight traffic; traffic impacts; limited development potential; eliminate	No disagreement	Eliminate
Sugar Mill	Gateway to city; major redevelopment potential; regional hub	Good TOD potential; could be icon for city; retain	No disagreement	Retain



Hover/Pike (left)

1st/Terry Street (right)



1st/Main East (left)

Sugar Mill (right)

Recommendations: Intermediate Station

- While an intermediate station in the corridor is warranted, no one station site had significant advantages over another, especially in the area of ridership and daily station boardings (as noted earlier, station boardings ranged from a low

of 140 at Niwot to a high of 430 at 63rd). Therefore, no intermediate station location recommendation is being made at this time.

- Regarding the Gunbarrel station sites, the City of Boulder has stated that either location could adequately fit into future development plans in the Gunbarrel area, and therefore both should remain for further consideration in future phases. The project team concurs with this recommendation.
- Regarding the Niwot station recommended for elimination, there has been strong interest expressed by the Niwot business community for retaining a station at this location; representatives of the local business community believe a station in this area would be beneficial to the local economy despite any traffic or parking impacts, and they urged that the station be retained. The project team concurs with this recommendation.

Since no specific station location is being recommended at this time, the project team recommends that additional ridership modeling and location analysis should be conducted in an Environmental Assessment, at which time it is anticipated that more up-to-date population, employment, and travel demand data will be available from the 2030 horizon year from DRCOG.

Recommendations: Longmont Stations

The project team initially recommended that the Hover/Pike and 1st/Main East candidate stations be eliminated from further consideration, with 1st/Main West (renamed 1st/Terry Street (Downtown)) and the Sugar Mill carried forward for more detailed analysis in future phases. The project team met with representatives of Longmont and Boulder County to review the recommendations, which were also reviewed at the project's public meeting in Longmont on August 4, 2004 and at a follow-up station planning committee meeting in Longmont on August 17, 2004. Based on those meetings and additional project team analysis, the following sites are recommended:

- The station site at Hover/Pike is recommended for elimination at this time, primarily because of its impacts on traffic at the already-congested Hover/SH 119 intersection and because its capability for expansion to the south is limited. This site may re-emerge in the future if, for example, Front Range Community College locates a permanent campus in the area (presently, the college is leasing its facility). If the college remains at this location, the Hover/Pike site would be reconsidered and would potentially serve as a third station in the Longmont corridor.
- The station site at 1st/Terry Street (Downtown) is recommended to be carried forward, with further development of its TOD plan and surrounding traffic access.
- The station site at 1st/Main East is not recommended for further consideration. The project team's evaluation determined extensive trackwork would be needed to accommodate freight traffic. In addition, there would be numerous traffic impacts and limited development potential.
- The station site at the Sugar Mill is recommended to be carried forward, with further development of its TOD plan and surrounding traffic access.

Consideration was given by the project team to implement the Longmont stations in phases; in other words, the station near downtown at 1st/Terry Street could be implemented as an early action end-of-line station, with an extension to the Sugar Mill at a future date when ridership demand warranted. As noted earlier, initial ridership models did not show a significant net increase in total Longmont area station boardings with the addition of the Sugar Mill station. However, the Longmont members of the Corridor Communities Coordination Team (CCCT) made the following comments at the CCCT meeting on September 30, 2004:

1. Implementation of a single passenger station in downtown Longmont could result in significant traffic impacts, particularly since this would be an end-of-line facility and it could potentially attract significant auto park-n-Ride traffic from areas to the east and north of Longmont; and

2. Implementation of the Sugar Mill station concurrently with the downtown station could alleviate some of those traffic impacts and could provide a significant new redevelopment opportunity in Longmont. The station site is at the junction of two major highways and could ultimately be a major regional park-n-Ride, especially if southwestern Weld County joins the RTD system (which might occur if approved by voters in an election tentatively scheduled for 2005). In addition, 2030 modeling numbers may show growth in travel demand from the north and east, which would positively impact ridership and station boarding results in Longmont.

Therefore, the CCCT recommended implementation of both the 1st/Terry Street and Sugar Mill stations concurrently with implementation of the commuter rail line between Longmont and Boulder.

3.7 Layover/Storage Facility

The US 36 EIS is proposing the establishment of a rail vehicle layover and/or storage facility somewhere on the west end of the US 36 corridor. The purpose of the facility is to allow trains that start on the west end of the corridor to be stored overnight to eliminate “deadhead” or non-revenue miles and operating costs. The potential extension of the commuter rail line to Longmont would result in the need for a combined layover/storage facility at the end of the line in Longmont.

RTD has established the basic requirements for a commuter rail end-of-line storage facility as part of the US 36 project. These conceptual requirements include:

- Rail Facilities: Storage for three to five train consists, with a minimum initial length for 8 cars plus 1 locomotive, with a fence separating the facility from the mainline; and
- A staff building, with a minimum size of 4500 square feet to include locker room/restroom facilities; offices; operator breakroom/meeting room; and employee parking.

If the commuter rail line is extended to Longmont, the storage facility should be located at the end of that extension instead of in the Boulder area. RTD staff examined this issue in relation to the Longmont corridor study. Four locations were considered for the facility:

1. West of Hover and south of Pike near the location of the Hover/Pike candidate passenger station;
2. Adjacent to Front Range Community College;
3. Between Nelson and Sunset parallel to Ken Pratt Boulevard; and
4. The current BNSF storage tracks southeast of Nelson St.

Of the locations examined, only two sites (sites one and four) were recommended to be carried through to the next level of screening. Both sites two and three were rejected as inadequate locations for the facility due to lack of direct access from a major arterial and low ratings for the possibility of expanding track width. More specifically, the location of site two would negatively impact the Front Range Community College through the taking of parking and the possible disruption of class due to the noise of idling trains. Site three was less desirable because its use would necessitate multiple property takings. Additionally, this site crosses Sunset Street at grade and could block Sunset Street during operation. Sites one and four proved more desirable and were therefore recommended to be carried through to the next level of screening. The location of site one, though somewhat far from the potential end of line station, has good site accessibility and can accommodate track expansion in both length and width. Site four is currently storage track for BNSF and is not directly on the corridor. However, it is in close proximity to both possible end of line stations – Downtown Longmont and Sugar Mill stations – and can be realigned for Sugar Mill access.