

## Transit Profile: The Denver area Light Rail System



### Project Description

The Regional Transportation District (RTD), the Denver metro area's regional transit agency, operates a 14-mile Light Rail Transit (LRT) system. The first segment, the Central Corridor, opened on October 7, 1994 (5.3 miles in length) and serves as the spine of the larger regional rapid transit system. The second segment, the Southwest Corridor, opened on July 14, 2000 (8.7 miles in

length) and serves as an extension into the southwestern suburbs of the metro area. The entire LRT system has 20 stations. The Light Rail system is an integral part of a larger regional transit system consisting of 180 fixed bus routes and other services that serve a 2,400 square mile area. Currently, 31 Light Rail vehicles serve the Light Rail system.

The Central Corridor line originates from 30<sup>th</sup> Avenue/Downing Street in the City of Denver, northeast of downtown, running through the Five Points Business District and the heart of downtown, terminating at the Interstate 25/Broadway interchange south of downtown. The Southwest Corridor connects to the Central Corridor line at the I-25/Broadway interchange and extends southwest along S. Santa Fe Dr. to Mineral Ave. in the City of Littleton into the southwestern part of the metro area.

On its route, the Light Rail system passes the 16<sup>th</sup> St. Pedestrian and Transit Mall, the Colorado Convention Center, the Auraria campus (an educational center hosting three higher education institutions) and the cities of Denver, Englewood, Sheridan and Littleton. It also comes within one block of the Denver Performing Arts Complex and the Denver Pavilions retail-entertainment center.

### Capital Costs

Both the Central Corridor and Southwest Corridor LRT Lines were completed on time and on budget.

The Central Corridor line was 100% funded by RTD at \$100 million (\$1992) through an existing use tax and in part by the savings realized by taking approximately 430 bus trips per day off city streets that were replaced by Light Rail service. No increase in taxes and no federal dollars were needed.

The Southwest Corridor line was funded by FTA's Full Funding Grant Agreement at a 80% Federal, 20% Local match for a total cost of \$177.4 million (\$1996-2000). The Local match of \$35.3 million came entirely from RTD's budget through the existing use tax.

Project	Central Corridor LRT	Southwest Corridor LRT
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<b>Length</b>	5.3 miles		8.7 miles	
<b>Opening Date</b>	October 7, 1994		July 14, 2000	
<b>Number of Stations</b>	15		5	
<b>Capital Costs</b>	<b>Millions (\$1992)</b>	<b>% of Total Costs</b>	<b>Millions (\$1996-2000)</b>	<b>% of Total Costs</b>
<b>Construction</b>	\$81.0		\$149.4	
<b>Vehicles</b>	\$19.0		\$28.0	
<b>Actual Cost</b>	\$100.0		\$177.4	
<b>Estimated Cost</b>	\$100.0		\$177.4	
<b>Portion of Funding</b>				
<b>RTD</b>	\$100.0	100%	\$35.3	20%
<b>Local</b>	\$0.0	-	\$0.0	-
<b>Regional</b>	\$0.0	-	\$0.0	-
<b>State</b>	\$0.0	-	\$0.0	-
<b>Federal</b>	\$0.0	-	\$141.1	80%
<b>Private</b>	\$0.0	-	\$0.0	-
<b>Excluded</b>	\$0.0	-	\$1.1	-
<b>Public Vote Involved?</b>	No		No	

## Ridership

With the opening of the Southwest Corridor LRT Line in July 2000, ridership continues to exceed expectations. Ridership on the Southwest Corridor in October 2000, three months after the line's opening, at 13,300 average weekday riders is 58% above the forecast of 8,400 average weekday riders for opening day. Moreover, total Light Rail boardings in November 2000 were up 83% over November 1999 boardings when only the Central Corridor LRT Line was in operation. Ridership on the Central Corridor LRT Line before the Southwest LRT Line opened averaged over 16,000 riders per day.

	1995	1996	1997	1998	1999	2000
<b>LRT Boardings: Weekday Average</b>	13,100	13,500	14,800	16,300	16,100	22,500*

\* Southwest Corridor Light Rail opened in July 2000

Sources: Farebox data

## **Central Corridor LRT Line**

In May 1995, RTD completed the *Light Rail Passenger Transit Study* to calculate revenues and "to estimate new RTD ridership since the opening of Light Rail."<sup>1</sup> That study found that "more than one-fourth of the weekday Light Rail passengers (27%) were new RTD riders—riders who did not use RTD for this particular trip prior to the opening of Light Rail."<sup>2</sup> A similar study completed three years later in December 1998 found that first time riders had increased to 30%.<sup>3</sup>

<sup>1</sup> *Light Rail Passenger Transit Study*, RTD, May 1995, p. 1.

<sup>2</sup> *Light Rail Passenger Transit Study*, RTD, May 1995, p. 5.

<sup>3</sup> *1998 Light Rail Customer Satisfaction Survey*, RTD, December 1998, p. 1.

## **Southwest Corridor LRT Line**

Six months after the opening of the Southwest LRT Line, the *Southwest Light Rail Passenger Survey: Report of Results* was completed to determine passenger use and satisfaction of the facility. Following are some of the findings:<sup>4</sup>

- About half of the Southwest Light Rail passengers surveyed ride the Light Rail five days or more a week.
- Another thirty percent ride one to four times each week.
- Almost sixty percent of those who had never taken advantage of RTD prior to the opening of the Southwest extension use Light Rail at least 3 days a week now.
- Thirty-four percent of all passengers surveyed are new regular riders, people who never rode RTD or rode infrequently in the past (less than one day a week) but now ride one day or more a week. Among weekday riders, this figure is thirty-eight percent.

Thus, the opening of the Southwest Light Rail Line clearly has attracted new riders to the system.

## **Other Project Benefits**

### **Central Corridor LRT Line**

The Central Corridor Light Rail Line served as the demonstration rail transit line for the Denver metropolitan area and was “envisioned as the core segment of a regional [rapid transit] system.”<sup>5</sup> Development of a regional rapid transit system was, and continues to be, “viewed as an integral link to achievement of air quality and economic development goals by providing an opportunity to promote higher density, mixed-use development patterns in conjunction with rapid transit corridors and stations.”<sup>6</sup> The success of rail transit in the Region is shown in the completion of the Southwest Corridor Light Rail Line and its popular and governmental support of construction of the Central Platte Valley and Southeast Corridor Light Rail Lines.

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<sup>4</sup> *Southwest Light Rail Passenger Survey: Report of Results*, RTD, December 2000, p. 1.

<sup>5</sup> *Light Rail Station Development Program: Final Report*, City and County of Denver, April 1997, p. 1.

<sup>6</sup> *Light Rail Station Development Program: Final Report*, City and County of Denver, April 1997, p. 1.

## **Southwest Corridor LRT Line**

According to the December 2000 *Southwest Light Rail Passenger Survey: Report of Results*, it would appear that the Southwest Corridor LRT Line is getting people out of their cars and reducing congestion:<sup>7</sup>

- For most passengers on the Southwest Light Rail, the option of driving was available. Just over three-quarters of those surveyed reported that a vehicle was available to them even though they used Light Rail to complete their trip.
- Those who had previously driven or carpooled and now take Light Rail were asked if they had traveled on Santa Fe Drive. A majority had, indicating that the Southwest Light Rail is helping to reduce traffic congestion on this major artery.

## **The Land Use Connection**

The opening of the Central Corridor LRT Line spurred the creation of a *Light Rail Station Development Program* by the City and County of Denver. This program has continued to other Light Rail corridors planned through Denver. The *Light Rail Station Development Program* was created to promote transit-oriented development in the City of Denver. The intent of this program is “to encourage a mix of uses and activities near Light Rail stations, which will serve Light Rail users, visitors, area workers, and residents. A mix of uses is an essential element necessary to encourage Light Rail ridership, maximizing rail investment and area revitalization.”<sup>8</sup> The program describes land uses and urban design and economic development strategies around various stations in the City of Denver. Further, “it became clear that in addition to serving the overall intent of encouraging transit-oriented development, the program would also provide the foundation: for the revitalization of the Five Points area; and the continued success of the Broadway Marketplace and redevelopment of the Gates industrial site”<sup>9</sup> within Denver.

## **Central Corridor LRT Line**

The Central Corridor LRT Line continues to stimulate significant redevelopment. Since its opening in 1994, the Five Points area has undergone many improvements including the redevelopment or expansion of several businesses and institutions including those adjacent to the line. New businesses have been added including a new media center with more redevelopment currently being considered at the 25<sup>th</sup> and Welton Station. The opening of the Alameda Station coincided with the opening of the redeveloped Broadway Marketplace area which contains big box retail along with a number of restaurant establishments and joint use parking between transit and commercial patrons. Additionally, the design process for the Gates industrial site adjacent to the I-25/Broadway Station has been reopened as a result of a 50-acre parcel next to the station recently becoming available for redevelopment.

## **Southwest Corridor LRT Line**

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<sup>7</sup> *Southwest Light Rail Passenger Survey: Report of Results*, RTD, December 2000, p. 2.

<sup>8</sup> *Light Rail Station Development Program: Final Report*, City and County of Denver, April 1997, p. iii.

<sup>9</sup> *Light Rail Station Development Program: Final Report*, City and County of Denver, April 1997, p. iii.

The Southwest Corridor LRT Line, which opened in July 2000, includes a station with transit-oriented development at a site that once contained the largest enclosed mall west of the Mississippi. The Englewood Station area, located at S. Santa Fe Dr. and Hampden Ave., is designed as a mixed-use facility with joint development at the Light Rail station. Joint development between the City of Englewood and private developers has already begun. Mixed-use on this site includes the City of Englewood Municipal Building, commercial uses, and shared parking. Additional civic uses, housing and expanded commercial development are planned.

### **Property Values**

Data has not been collected regarding the effect of proximity to a Light Rail station on property values in Denver. However, by all accounts it seems that proximity to a Light Rail station encourages development.

### **What Others Say**

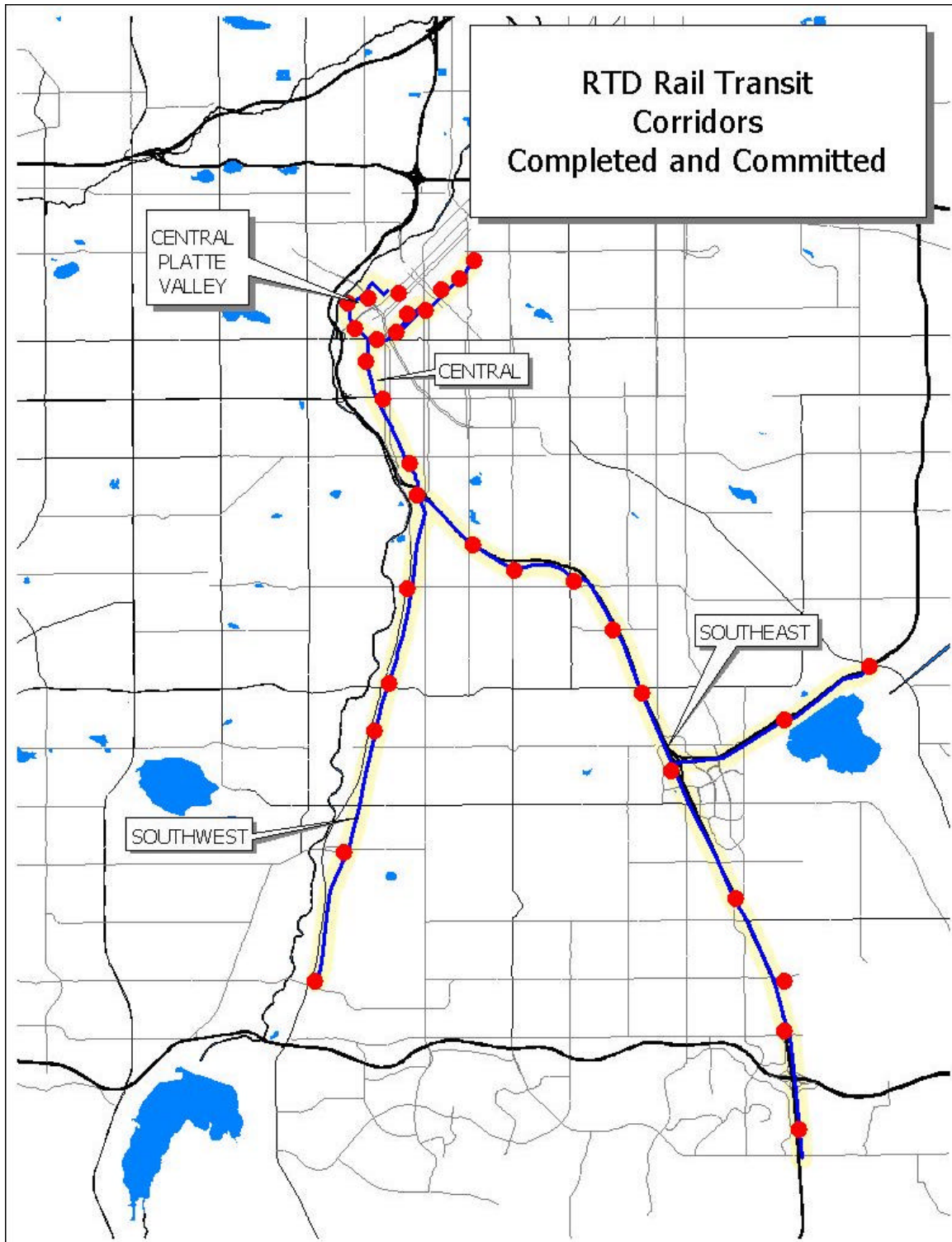
#### **Central Corridor LRT Line**

- “Ridership on Denver’s new Light Rail system is already exceeding expectations, making it the second successful Light Rail start-up since St. Louis’ MetroLink opened less than 18 months ago.”  
**Passenger Transport**, November 7, 1994.

#### **Southwest Corridor LRT Line**

- “July 14, [2000] was a historic day for RTD, Denver and commuters throughout the metropolitan area. It marked the debut of the new Southwest light-rail line that can now whisk riders from Littleton and points in between to downtown Denver for work, shopping and play....Congratulations, RTD, for building the Southwest line on time and under budget.”  
Lewis T. Ford, citizen, *Denver Rocky Mountain News*, July 23, 2000
- “New RTD line a hit: The number of passengers along the Regional Transportation District’s new southwest light rail line was 34 percent above projections for its first week of operations.”  
*Denver Business Journal*, August 2, 2000

## Rail System Map



## Photos

Passengers board at the 16<sup>th</sup>/California Station in downtown Denver



Light Rail train arrives at 16<sup>th</sup>/Stout Station at the 16<sup>th</sup> St. Pedestrian and Transit Mall in downtown Denver



Light Rail train arrives at the Auraria campus



Passengers arrive at the Englewood Station on the Southwest Corridor Light Rail Line



## Community Support

When the Central Corridor LRT Line opened, the line was so popular and overcrowded that attempts were made to redirect ridership. RTD actually added bus routes leading to downtown in order to respond to the overwhelming acceptance of the system. Moreover, after the Southwest Corridor LRT Line opened, an additional 12 Light Rail vehicles were purchased to meet ridership demands in addition to the 14 Light Rail vehicles already purchased to meet forecasts for the service. That is an 86% increase in capacity for the corridor.

RTD's *1998 Light Rail Customer Satisfaction Survey* (completed in December 1998) found that ninety percent of passengers rated the Central Corridor's service as either

good or excellent. RTD's *Southwest Light Rail Passenger Survey: Report of Results* (completed in December 2000) was executed to determine passenger use and satisfaction of the Southwest LRT Line. This report found that overall, people are satisfied with the service, giving it an average rating of 4.3 on a 5 point scale.

## **Extensions**

### **Central Platte Valley LRT Line**

Groundbreaking for the 1.8 mile Central Platte Valley (CPV) Light Rail Line occurred on January 25, 2001. This line will have four stations and is expected to open for revenue service in Spring 2002. The Light Rail spur will connect to the existing Central Corridor LRT Line south of the Auraria Station in the City of Denver and extend through the CPV to Denver Union Terminal (DUT), the region's future intermodal hub, in lower downtown Denver (LoDo).

The CPV Light Rail Line will serve all venues that serve the region's professional sports teams such as the arenas which serve the Denver Broncos professional football team and the Colorado Avalanche professional hockey team. It will also serve other regional destinations such as the Denver Children's Museum, Ocean Journey aquarium and LoDo, a major mixed-use destination, as well as downtown Denver. As a result, the CPV Light Rail Line will not only provide much needed transit capacity for daily commuters into downtown Denver, the region's major employment destination, it will also serve as a critical component of the multi-modal transportation system serving the concentration of special event venues along its route.

The CPV line will connect to future planned rapid transit lines at DUT. In the future, DUT will serve as the focal point for all passenger transportation in the region. Moreover, the 16<sup>th</sup> Street Mall shuttle service will be extended to DUT to serve the project. Since public financing was extremely limited, an innovative public/private partnership formed to participate in the planning and financing of the project.

### **Southeast Corridor LRT Line**

A Full Funding Grant Agreement was awarded by the FTA on November 17, 2000 for the construction of the Southeast Corridor LRT Line. The local funding match for this grant was already approved by voters in the Denver metro area on November 2, 1999. Construction will begin on this project in Summer 2001. Service is expected to begin in 2008. The line will extend into the southeastern suburbs along I-25 from the existing I-25/Broadway LRT station in the City of Denver to Lincoln Ave. in Douglas County coupled with a spur up I-225 from I-25 to Parker Rd. in the City of Aurora. The Light Rail Line will be 19.7 miles long with 13 stations as it connects the two largest employment centers in the region—the Denver Central Business District and the Denver Tech Center.

The Southeast Corridor Light Rail Line will include many stations utilizing transit-oriented development practices and others serving as mixed-use commercial activity centers. The Louisiana Station and the Yale Station are both designed to be integrated into neighborhoods with moderate residential densities and neighborhood retail. The Colorado Boulevard Station contains the Colorado Center, a commercial and office

complex that is planning additional joint development with the station. The Orchard Road and Arapahoe Road stations are located in the suburban high-rise commercial/office core known as the Denver Tech Center.

### **Links**

[www.RTD-Denver.com](http://www.RTD-Denver.com)

[www.transitalliance.org](http://www.transitalliance.org)

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