



TRANSPORTATION RESEARCH BOARD / NATIONAL RESEARCH COUNCIL

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National Research Council
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Washington, DC 20418

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LRT News is published intermittently by the Transportation Research Board to disseminate information on new developments in light rail transit planning, technology, and operations. The newsletter also reports on new studies, completed research, and current literature. The publication of *LRT News* is made possible through funding under the Technical Assistance Program of the Federal Transit Administration. Donald O. Eisele, editor. John W. Schumann, Chairman, TRB Committee on Light Rail Transit. Peter L. Shaw, TRB staff. Submit news items to *LRT News*, Transportation Research Board, 2101 Constitution Avenue, NW, Washington, DC 20418, telephone 202-334-2966. ISSN 0162-8429.

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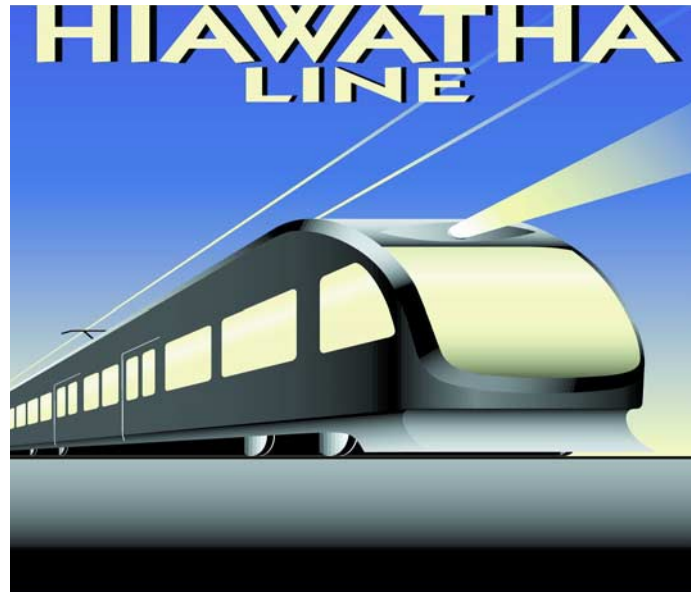
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From Light Rail
to Streetcar



Related Transit Links



Minneapolis' First Light Rail Transit

Minnesota's Hiawatha Line: From Streetcar to Light Rail

Despite the winter chill, hundreds of hearty Minnesotans gathered with Governor Jesse Ventura and Congressman Martin Sabo on January 17, 2001, to break ground for Minnesota's first light rail transit (LRT) line. After decades of anticipation, construction on the Hiawatha line—a \$675 million project—was in high gear this past summer. From the start, diehard transit advocates have kept the project on track and celebrated the achievement of each milestone.

The 11.6-mile Hiawatha line will connect three of the Twin Cities' most popular destinations: downtown Minneapolis, with 145,000 daily workers; the Minneapolis–St. Paul International Airport, with 93,000 daily travelers; and the Mall of America, with 118,000 daily shoppers.

Revenue service from the Nicollet Mall to Fort Snelling will begin late in 2003, followed by service from the Warehouse District to Nicollet Mall and from the airport to the Mall of America late in 2004. Projected ridership is 19,300 per day in 2004 and 24,800 by 2020. Metro Transit—using bus lines and LRT—will create a seamless transit system with 46 bus routes connecting to 13 LRT stations.

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And Commuter Rail, Too!



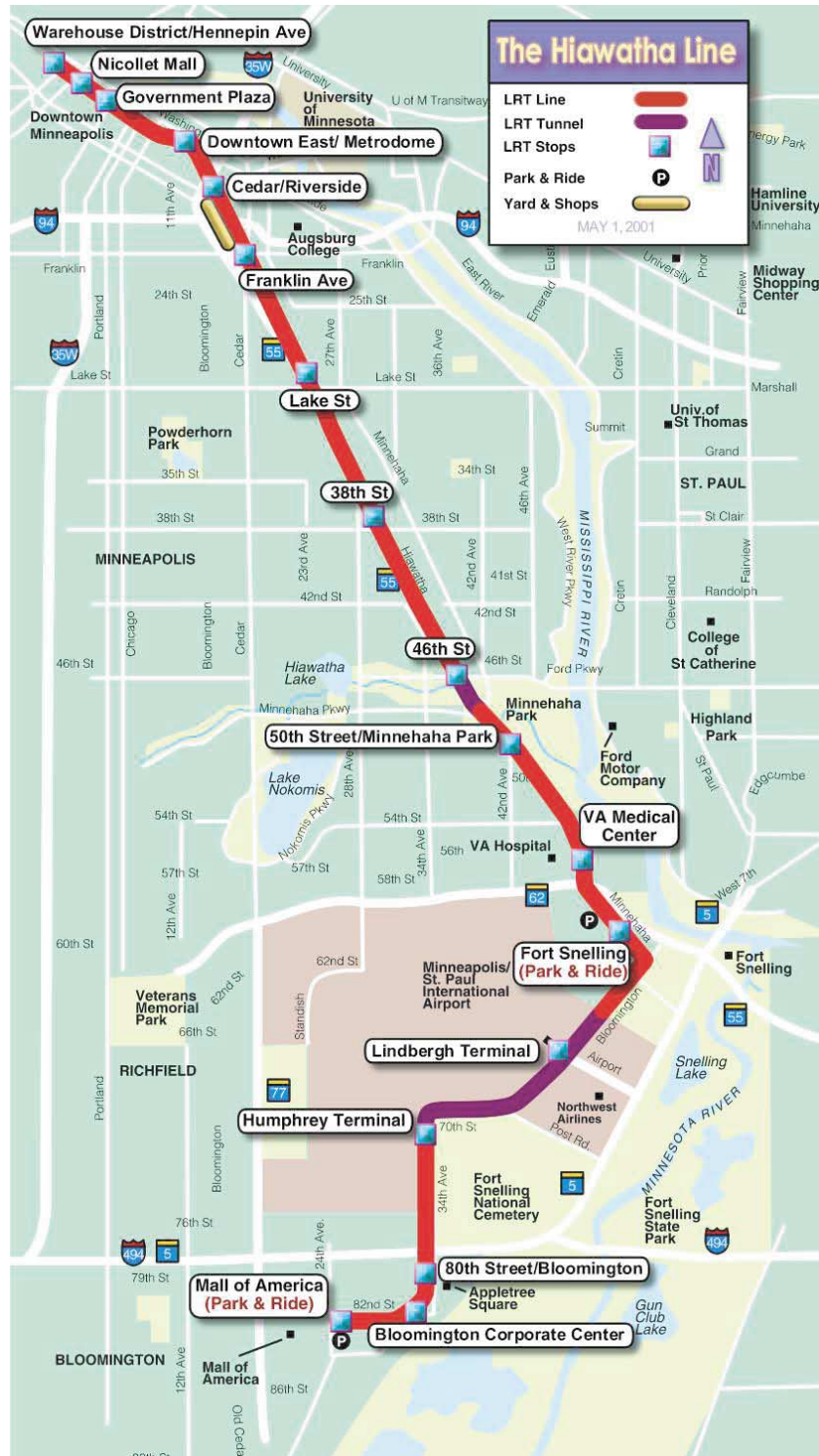
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From Light Rail to Streetcar



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Map of 11.6-mile Hiawatha Line.

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Officials participate in groundbreaking ceremony for 38th Street Station.

In total, seventeen uniquely designed stations will be enhanced by public art. Most of the station designs were unveiled in April 2000 after a three-month community involvement process in which local residents and businesses helped architects and artists design stations that reflect the character and needs of their communities. Their goal was to create an environment that will be comfortable, attractive, and safe.

“The stations are like charms on an 11.6-mile bracelet of track,” describes Steve Durrant of URS/BRW’s design team.

Groundbreaking for the 38th Street Station—the first station to be built—occurred on August 2, 2001. The celebration showcased neighborhood talent, including sidewalk chalk artists, musicians, and a gentleman dressed as a streetcar conductor who contributed a rousing chorus of “I’ve Been Working on the Railroad.” The bungalow-inspired station will be a gateway to three neighborhoods. These communities historically were centered on streetcar service and a park system that was the envy of the nation. Famous architects, such as William Gray Purcell and Frank Lloyd Wright, had turned their attention to a new class of homeowners—the working men and women who were helping to build America. Current neigh-



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neighborhood residents want the station to convey their pride in this history.

The station's pitched roof will reflect the bungalow homes that are typical in the neighborhoods. Sculptures, encased in the roof, will represent items commonly found in attics. Glass in the standing-seam, metal roof will allow the natural flow of sunlight, and arts and crafts-style metal screens will add another decorative element.

LRT along the Hiawatha Corridor is expected to be a boon to the local economy. Local and regional governments are seizing the opportunity to advance Smart Growth by promoting development strategies that encourage more efficient use of land and resources and provide a more walkable, transit friendly environment.

Corridorwide development potential to year 2020 includes nearly 7,000 new housing units, more than 19 million square feet of new commercial development, and up to 68,000 new jobs.

Bold, exciting colors for the LRT system's new vehicles—to be built by Bombardier—were recently selected. The colorful trains will contrast distinctively from the winter snow of Minnesota. The exterior of the vehicle will be stainless steel or painted metallic silver, and the cabs at each end will be yellow. A black band will run along the windows, and arcs of blue and red will add color around the doors. The interior will feature seats covered in blue fabric with yellow accents, yellow walls and ceilings accented with blue, and yellow and blue flecked gray floors. A map showing station stops will run the length of each car's ceiling.

Approximately 60 percent of the Hiawatha line was designed and 7 percent built as of July 2001. Minnesota Transit Constructors was awarded a \$291 million design-build contract in September 2000; the design-build team includes Granite Construction Company of Watsonville, California, and C. S. McCrossan, Inc. of Maple Grove, Minnesota. There is a separate construction contract with Obayashi/Johnson Brothers for the airport tunnel.

Construction has been gearing up since April 2001's winter thaw and, depending on the specific project, is currently on time or ahead of schedule. Much of the work has been focused in the yard and shops area as well as on the airport tunnel, and station construction and relocation of private utilities are now

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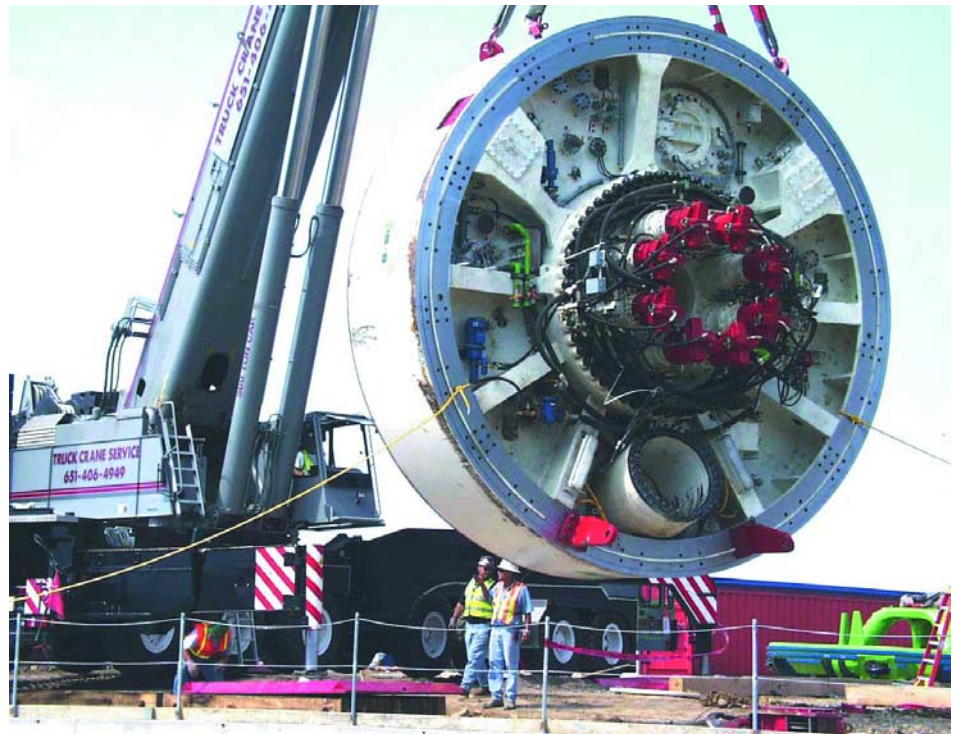
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Part of earth boring “worm” that will create two tunnels under the airport’s runways.

under way. Delivery of 4,500 tons of tracks and an earth boring “worm”—a tool the length of a football field that will bore two tunnels under the airport’s runways—was visible.

Interagency collaboration has been key to achieving milestones. Project partners include the Metropolitan Council (owner and federal grantee), Metro Transit (operator), Minnesota Department of Transportation (DOT) (design and construction), Metropolitan Airports Commission, Hennepin County, Minneapolis, Bloomington, and the University of Minnesota.

For further information on the planning of LRT in the Hiawatha Corridor, contact the Metropolitan Council Regional Data Center (telephone 651-602-1140) or visit www.metrocouncil.org/planning/lrt-facts.htm. For weekly construction updates, contact the Hiawatha Construction Hotline (telephone 651-284-0502 or 888-776-5500). E-mail questions to LRT@dot.state.mn.us.

*—Jennifer Lovaasen, Metropolitan Council,
St. Paul, Minnesota*



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AND COMMUTER RAIL, TOO!

The Hiawatha line is just one part of a multimodal solution to Minnesota's transportation challenges. In addition to the two LRT lines—Hiawatha and Cedar Avenue—currently under construction, a system of exclusive busways and commuter rail lines is in the planning stage. After construction is completed, this transportation network will carry as many people *as if an extra lane were added to each of the metro area's most congested highways*.

According to opinion polls the public perceives traffic congestion in the Twin Cities metro area as a more serious problem than crime. Subsequently, 79 percent of metro residents support LRT, busways, and commuter rail as a transportation solution. Support for multimodal transportation is likely to increase even more as commuter frustration grows. Current congestion is expected to double by the year 2020, with an influx of 500,000 new residents; during that time, only 25 miles of new freeway will be constructed.

State legislation in the late 1990s gave Minnesota DOT responsibility for planning and implementing commuter rail transportation. Under Minnesota DOT's oversight, individual (county) railroad authorities could form joint powers boards to conduct advance feasibility studies, major investment studies, and alternatives analyses of several candidate corridors. These corridors were identified as feasible commuter rail corridors in the Minnesota Commuter Rail System Plan, completed by the DOT in early 2000. The first and most developed of these corridors, the Northstar Corridor, is currently in the preliminary engineering stage and awaiting state funding.

An overview of each corridor under study is provided.

Northstar Corridor

The Northstar Corridor would run 82 miles from downtown Minneapolis to St. Cloud/Rice along Trunk Highways 10 and 47. The proposed commuter rail line would use the existing double-track—a 79-mph Staples to Selba subdivision owned by Burlington Northern Santa Fe Railway (BNSF), which is a mainline between Chicago and Seattle. The rail line would have

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connections to bus transit and to the planned Hiawatha line and potentially include 11 stations. With the exception of the downtown station in Minneapolis and the Minneapolis Northeast Station, all of the stations would have park-and-ride capabilities.

In January 1999, Phase II of the Twin Cities Metropolitan Commuter Rail Feasibility Study recommended the Northstar Corridor as the priority corridor. In the Commuter Rail System Plan, completed in January 2000, the Northstar Corridor was identified as the Stage 1 corridor in Tier 1 staging.

Red Rock Corridor

The Red Rock Corridor would run 18.4 miles from Hastings to St. Paul (Union Depot) along Trunk Highways 10 and 61 with connections to the Central Corridor. The proposed commuter rail line would use existing rail tracks owned by BNSF and Canadian Pacific Railway and possibly would include 4–5 stations.

Central Corridor

The Central Corridor would run 11 miles between downtown Minneapolis and downtown St. Paul along I-94/University Avenue. The mode selected could be commuter rail on existing rail tracks operated by Canadian Pacific Railway or BNSF, or a combination of LRT and bus rapid transit in the University Avenue or I-94 Corridor.

Dan Patch Corridor

The Dan Patch Corridor would run 40 miles from downtown Minneapolis in Hennepin County, through the west and south suburbs of Hennepin, Scott, and Dakota Counties, to Northfield in northern Rice County. The proposed commuter rail line would use the existing single-track, a former MN&S line owned by the Canadian Pacific Railway, Twin Cities & Western Railway, and BNSF.

Rush Line Corridor

The 80-mile Rush Line Corridor would extend from St. Paul in Ramsey County, through the northeast Twin Cities to Hinckley

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in Pine County. The study includes portions of Pine, Chicago, Washington, and Ramsey Counties. The purpose of the Rush Line Corridor study is to identify and recommend both short- and long-term transit improvements for travel in the corridor.

Midwest Regional Rail Initiative

This high-speed rail study examines a 525-mile corridor from the Twin Cities to Chicago. The Minnesota portion of the study includes 130 miles in southeastern Minnesota from La Crescent to St. Paul.

Since 1996, the Midwest Regional Rail Initiative developed from a series of service concepts into a well-defined vision of creating a 21st century regional passenger-rail system. The Midwest Regional Rail System (MWRRS) Plan elements include

- Use of 3,000 miles of existing rail right-of-way to connect rural and urban areas,
- Operation of a hub-and-spoke passenger rail system,
- Introduction of modern trains operating at speeds up to 110 mph, and
- Provision of multimodal connections to improve system access.

The sponsors of the MWRRS are Indiana, Illinois, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin. Amtrak and the Federal Railroad Administration are also planning partners.

For further information visit the Minnesota DOT's Office of Freight, Railroads, and Waterways website at www.dot.state.mn.us/ofrw/.



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*A New Formula***LRT + RR = TRAM-TRAIN**
New Term For Transit and Rail Track Sharing

In the April 1996 issue of *LRT News* the following question was posed: Could LRT and S-Bahn occupy the same tracks in the United States?

TCRP Report 52: Joint Operation of Light Rail Transit or Diesel Multiple Unit Vehicles with Railroads (www.national-academies.org/trb/publications/tcrp/tcrp_rpt_52-a.pdf), published in May 1999, outlined the perceived problems with LRT and diesel multiple unit vehicles in the United States and examined case studies of current practice overseas. The report was more than 400 pages long and served as an eye-opener to many readers not familiar with daily operation of the vehicles as well as with the advances being made.

“Karlsruhe—In Reverse,” an article in the December 1999 issue of *LRT News* (www.national-academies.org/trb/publications/LRTNews/lrtv14n2.pdf), noted that a Karlsruhe model of service (operating transit and rail over the same set of tracks) had just been initiated.

Research Results Digest 43: Supplementing and Updating TCRP 52: Joint Operation of Light Rail or Diesel Multiple Unit Vehicles with Railroads (www.trb.org/trb/publications/tcrp/tcrp_rrd_43.pdf), has additional information on the Karlsruhe model of operation.

Currently, with advances in France, there is a new term for the combined transit and rail operation to add to the transportation lexicon—tram-train.

Railway Gazette International (July 2001 issue) reports, “With Karlsruhe able to look back on several years of successful experience running trams on the then-German Federal Railway’s main line tracks, and with the arrival of Saarbrücken trams at the Sarreguemines station, the tram-train concept began to catch on in France.”

Grenoble, Nantes, and the Paris suburbs are mentioned in the article. “In July 2000 SNCF (the French National Railway) called for expressions of interest for the supply of

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79 tram-trains...The first 15 are to be placed as a firm order for delivery by 2004.”

According to *International Railway Journal* (May 2001 issue) feasibility studies are under way in a number of other cities in Belgium, Luxembourg, Norway, Sweden, Austria, and Slovenia.

Add the term Tram-Train to your lexicon.



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Portland, Oregon: Back to the Future?

FROM LIGHT RAIL TO STREETCAR

Although city after city in the United States allowed the expanding highway system to carve through and destroy the urban core, the people in Portland, Oregon, moved in a different direction. The following quotations are from *LRT News*:

“The Portland, Oregon, metropolitan area is about to complete a study of 14 options for improvement in a corridor that extends from central Portland to the city of Gresham in the east. The in-depth analysis of this corridor, known as the Banfield Transitway Project, was spurred on by the cancellation of a major interstate highway facility in 1973. Light rail is receiving considerable emphasis.

LRT News, Issue 1, October, 1978

“After intensive analysis, LRT has been selected as the transit element in a combined transit-highway project for the Banfield corridor in the Portland, Oregon, metropolitan area.”

LRT News, Issue 4, February, 1981

“TRI-MET, the major regional transit operator in metropolitan Portland, Oregon, opened its LRT system (christened MAX for Metro Area Express) amid public celebration on September 5, 1986.”

LRT News, Volume 3, Issue 1, January, 1987

Today, as the LRT system continues to expand in Portland, Oregon, the city has started to move in another direction. On July 20, 2001, the Central City Streetcar Project opened a new

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Portland streetcar on the new line between Northwest Portland neighborhood and the downtown central business district.

2.4-mile line between Northwest Portland neighborhood and the downtown central business district.

Although this is not an extension of MAX, it does cross the MAX line at right angles. The use of much shallower track slab and specially ordered girder rail suggests that the Portland Streetcar line will not handle the heavy light rail vehicle cars. City officials call this “the first modern streetcar system to be built in the United States in 50 years.”



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Intercity Rail Passenger Systems Update

[http://www.gulliver.org/publications/IRPS/
IntercityRail_No7.pdf](http://www.gulliver.org/publications/IRPS/IntercityRail_No7.pdf) (July 2001)

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