

HEADLIGHTS







LIGHTRAIL IN THE TWIN CITIES

By Raymond R.
Berger (ERA #2298)

At left, car 111 waits for time at the temporary southern terminus, Forth Snelling, on opening day of the Hiawatha Line. It will be the third in-service train northbound. Onlookers are taking pictures and waiting for their turn to board. Most are not old enough to remember when the Twin Cities was last served by electric traction, some 50 years previously.

RAY BERGER

It seemed an inglorious end of an era for the citizens of the Twin Cities area, back on June 7, 1954. But that was about to change. Exactly 50 years, 19 days since the last streetcar rolled in Minneapolis, passengers were lining up to ride on the city's new light rail line. So many, in fact, that some had to be turned away. The opening of the Hiawatha Line promised to become one of the most significant recent events in the history of electric railroading, the culmination of studies, plans and setbacks spanning over three decades.

Opening Day

Saturday, June 26, 2004 was a perfect day — sunny and mild — certainly befitting the glorious event that was finally taking place in Minneapolis. People gathered at the Warehouse District/Hennepin Avenue station for the opening ceremony as soon as the sun had risen. This terminal station, gateway to the city's entertainment district, was the site of speeches by public officials. It is also the starting point of a new light rail line connecting downtown Minneapolis with the Twin Cities' most important traffic generators: the Minneapolis-Saint Paul International Airport (MSP) and the Mall of America, the largest shopping center in the United States.

Promptly at 10:00 AM the festivities began with an hour of speeches by various civic, state and municipal officials. The officials then boarded the first train, beginning passenger service. At the same time, the long lines of very orderly, patient, enthusiastic Minnesotans slowly began to enter the island platform to board the subsequent trains for their first ride on their new light rail line.

Metro Transit, operators of the largest part of the transportation network in the Twin Cities,

planned a magnificent start of this service. Mini-celebrations were held throughout the day at each of the 12 stations along the route, offering entertainment, food, theater tours, children's activities, music and even a ride in a historic bus.

Metro Transit realized that there would be a lot of people who would like to sample the new service, so they provided an alternate bus service that stopped at all the light rail stations. This alternate bus service was identical to substitute bus service that would be operated if special track, signal or station work were done in the future, thus familiarizing commuters with the bus stop locations should an alternate form of transportation be required.

The Hiawatha Line is named after Hiawatha Avenue, also known as Minnesota State Highway 55, which runs parallel to the line for much of its distance. To integrate the Hiawatha Line with the rest of the area bus system, it was also given the name Route 55. Substitute buses were identified in the same manner. On opening day the line temporarily ended at the Fort Snelling station. Five more stations, which didn't open until December 6, were still under construction to add to the initial 12. Service on the unopened portion of the line was provided by a temporary bus shuttle designated Route 155 that was abandoned when the extension opened.

Throughout the day the lines seemed to get longer and longer until about 6:00 PM when traffic seemed to level off. In order to control the huge throngs, police, light rail service supervisors and train operators kept order. At the Warehouse District/Hennepin station only a few standees were permitted to board. This gave the opportunity for other passengers to board and alight at other stations en route. Many passengers rode the full length of the line in one direction and returned by bus to their starting station.

Of particular interest to transit enthusiasts were two General Motors TDH-5105 buses that were part of the festivities. One, No. 1300, was painted in its original Twin Cities Rapid Transit Company paint scheme of 1954 and is owned by the Minnesota Transportation Museum (MTM). It was inoperable, but was towed by a Metro Transit tow truck and displayed just outside the Downtown East/Metrodome station.

The second bus was also a TDH-5105 from the same series, but painted in a later paint scheme. This bus was restored by the Metro Transit Bus Operations and was in operable condition. It ran a circle tour from the 50th Street/Minnehaha Park station to Longfellow House, Minnehaha Falls and the Princess Depot, an ex-Milwaukee Road train station restored by the MTM group.

Light rail service was somewhat sporadic, as it was difficult to close the doors and get underway. Sixteen of the 26 Bombardier cars were available for use and coupled into two-car train sets.



Opening Day Celebrations

RAY BERGER PHOTOS

Crowds line up at the Warehouse District/Hennepin Station above to get on the first train to carry passengers in Minneapolis after a 50 year absence. By the end of the weekend of free rides, some 35,000 citizens will have climbed aboard.

In a welcome reverse of fortunes, one of the very buses that helped bring an end to rail service in the twin cities in 1954 is on display at the Downtown East/Metrodome Station, left. The GM TDH 5105 air ride coach was beautifully restored by Metro Transit.

At right, VA Medical Center Station on opening day. More first day riders board car 107.







Crowd Control

RAY BERGER PHOTO

Officials and police are plentiful to help with the crowds and answer questions from curious riders whom Metro Transit hopes will become regular rail patrons.

Second and Third Days of Operation

Sunday, June 27 was the second day of free service on the Hiawatha Line. Service was more stabilized, but there was a great number of curiosity seekers and commuters who wanted to try traveling between home and work on the light rail line. Riders wanted to find out how to purchase tickets, use the vending machines, find the best transfer arrangements, work out travel time allowances, transfer points and transfer times, and the like. Since there were no fares collected, it was a good opportunity to see how these new riding patterns would affect their lives.

Many of the curiosity seekers wisely waited until Day Two when lines and congestion had abated somewhat. Two-car trains were used throughout the entire day and still there were many standees, though not the crushing conditions of the day before. This gave rail fans the opportunity to board and alight at different stations to seek interesting photographic views and video shots.

By Day Three, Monday, June 28, normal rush hour service was operated. Transit officials struggled to maintain proper headways and even service levels. Delays along the line were minimized as supervisors carefully watched every train movement and operators worked hard to keep to their schedules. The results were astounding as operators slowly became familiar with the proper handling of the railcar equipment.

Historic Background

Transit in the Twin Cities started out as it did in most cities during the Industrial Revolution. Separate horsecar companies were formed in Minneapolis and Saint Paul. The Saint Paul City Railway started the first of these on Fourth Street in 1872. The first horsecar line in Minneapolis started in three years later connecting Dinkytown with downtown. They were such a success that 67 miles of line in Minneapolis were constructed in 1889 and 53 additional miles in Saint Paul, though both networks were not yet connected.

While there was an advantage to running horsecars on steel wheels on steel rails, there were other problems. Seven horses were needed to keep a single horsecar in service all day. Manure was a huge problem and the horses themselves were subject to disease. Horsecars weren't even fast, especially on steep hills.

These problems were not unique to the Twin Cities and inventors were hard at work developing alternative forms of propulsion. An early contender was steam power. It seemed promising at first, but the smoke and soot from burning wood or coal posed difficulties in an urban environment. Nonetheless, steam trains ran in suburban service connecting Minneapolis, Lake Harriet, Minnehaha Park and Excelsior from 1879 to 1891.

A fourth steam-powered line ran from the east side of Saint Paul to North Saint Paul between 1890 and 1892.

Cable cars were also tried in Saint Paul, with two lines built to overcome steep hills. One ran on Selby Avenue from 1887 to 1898 and the other on East Seventh Street from 1889 to 1893. In Minneapolis, materials were purchased to construct a line, but it never was built.

Electric powered traction proved to be the most practical solution. Unsuccessful experiments were conducted on Marquette Avenue in Minneapolis in 1885 and in 1886. In 1887, Frank J. Sprague (ERA #1) succeeded in operating electrically powered streetcars in Richmond, Virginia. The difference in his application was in how the electric motors drove the wheels, through a series of gears. The first use of this technique in the region occurred in 1889 on the still-independent Stillwater Street Railway. This concept so caught the attention of officials that by 1891 electrically propelled cars ran the entire Twin Cities operation, except for the two cable lines in Saint Paul.

Twin Cities Rapid Transit Company is Born

Local streetcar companies benefited by very stable, long-term corporate ownership. Thomas Lowry, an officer in the Minneapolis Street Railway, purchased a controlling interest in the corporation in 1877. In 1884 he gained control of the Saint Paul system as well. This led to the connection of the two systems in 1890 when the University Avenue line was built between them. The following year he merged both companies to form the Twin Cities Rapid Transit Company (TCRT). Lowry's family personally ran TCRT until 1931 and the company existed until the Metropolitan Transportation Commission (MTC) purchased it in 1970.

As the population increased, TCRT continued to expand. Mr. Lowry used the streetcar company to add to his already considerable real estate holdings. Lines were extended into newly developed areas and new track was laid as recently as 1947. At its peak, TCRT had 524 miles of track, running from Stillwater and Bayport in the east to Deephaven, Tonka Bay and Excelsior in the west.

A steamboat service was operated on Lake Minnetonka by TCRT and they built the steamboats for that service, too. The steamboats and streetcars were scheduled to connect, providing what is known today as a seamless transportation network. TCRT's empire also briefly included the Big Island Amusement Park and Lake Park Hotel on Lake Minnetonka, the Wildwood Amusement Park on White Bear Lake, and most of the taxicabs and buses in Minneapolis and Saint Paul. Even the independent streetcar companies in Anoka and Hastings used TCRT trackage to reach downtown destinations.



Revenue Service Begins

RAY BERGER PHOTOS

Fort Snelling Station, above, is the temporary outer (south) end of the line and shows similar crowds on opening day, Saturday, June 26, 2004. Trains reverse in the middle pocket track immediately south of the station.

Car 109, top left, is inbound at Nicollet Mall Station on Monday, June 28. Fares are now being charged and inspectors are checking to make sure riders are complying.

Car 113 and train board passengers eastbound at Government Plaza Station, bottom left (5th Street South, between 3rd and 4th Avenues South) on Monday, June 28.



At the Downtown East/
Metrodome Station, the line
curves to the north around
the complex before joining
the former Milwaukee Road
right-of-way.

The station is ideally situated
to offer service to this
domed stadium. On opening
day, above, the complex
welcomes scores of first
day riders.





Minneapolis Vistas

RAY BERGER PHOTOS
EXCEPT AS NOTED

Car 114, left, is outbound alongside South 4th Avenue, about to cross Norm McGrew at grade on its diversion around the Metrodome. (MAY 15, 2005)

Car 103, above, is outbound on 5th Avenue having just crossed South 5th Street. The white, air-supported roof of the Hubert H. Humphrey Metrodome can be seen in the background.

Car 101, top right, is outbound at the Franklin Avenue station. In the background can be seen not only the impressive skyline of Minneapolis, but the line's operating facility.

Passengers board a train on opening day at the VA Medical Center Station, bottom right, on the southeast side of Minneapolis.



Buses Begin Their Ascent

The first buses appeared in 1921. These were used on long suburban routes, crosstown lines, express services and shuttles that were feeders to existing streetcar lines. The first replacement of any complete streetcar line with bus service started in 1938. Still, it remained a small part of the transportation picture. It carried only nine percent of the TCRT riders in 1940 and 23 percent in 1949.

As in the rest of the country, automobiles and improved roads made their mark during the Depression and these advances worked against public transportation in the Twin Cities, too. By 1938, every streetcar property in the entire state of Minnesota was either motorized or abandoned except TCRT and Duluth. Duluth ran its last streetcars in 1939. In the Twin Cities, 16 percent of the rail system was motorized during the Depression, particularly the long suburban lines to Lake Minnetonka, White Bear Lake, Stillwater and Anoka. Lightly used inner city lines were also abandoned, such as Kenwood in Minneapolis and East Fourth Street in Saint Paul.

TCRT had a fleet of 1140 standard, two-man cars, all of which were built in the company shops between 1898 and 1917. In order to reduce costs, 553 of these heavy cars were rebuilt at Snelling into one-man cars between 1931 and 1937. In addition to these, there were 35 lightweight cars that were also built at the Snelling Shops, between 1916 and 1928.

Suburban expansion did not occur because of tight money during the Depression. During World War II, new automobiles were not available and gas rationing during the war years prevented their further use. As a result, TCRT ridership figures — which peaked at 238 million annual riders in 1920, then slumped to 100 million in 1933 — rebounded to 201 million in 1946. Four years after the war, 36 percent of all trips taken in the Twin Cities area were made using public transportation.

Once World War II was over, demand rose for new suburban development. Still, ridership held on at a surprising 165 million in 1949. TCRT responded by modernizing and consolidation. Streetcars were rebuilt and a fleet of 141 new President's Conference Committee (PCC) cars was purchased from the Saint Louis Car Company. TCRT had been running only much older cars in their fleet before the PCCs arrived, the only such system in the United States. New buses were also bought and a few lightly used streetcar lines were motorized. Facilities were consolidated, resulting in further economies. Company management still strongly believed in serving the public.

With the arrival of the 141 new PCC cars, the TCRT fleet grew 18 percent to 828 cars. These were operated from six car houses (Snelling, Duluth Street, East Side, Lake Street, Nicollet

and North Side stations), while buses ran from two additional bus garages. The Snelling Shops remained the main overhaul and car construction facility of the system.

End of an Era

Such was the picture when a group of outside investors took control of TCRT in November, 1949, after a bitter proxy fight. Minneapolis would be the perfect place for them to maximize investor profits because of the high cost of operating a big streetcar fleet with its associated infrastructure. TCRT had a large fleet of streetcars including 141 shiny, new PCCs that could be readily sold. The old wooden streetcars could bring handsome sums as scrap and so could the entire infrastructure.

And unfortunately, that is exactly what happened. All 141 PCCs were sold off first, then the older wooden streetcars were run until buses could be purchased. On June 7, 1954, the last streetcar ran, replaced by a fleet of GM TDH-5305s. By that time the annual ridership had dropped to 86 million.

Anyone who has read *Headlights* has heard of the results of the wholesale dismemberment of the Twin Cities Rapid Transit streetcar network. Several officials were convicted as a result, but the loss of the quality transportation services offered could never be replaced. However, TCRT survived until 1970 when MTC purchased its assets. This move was part of a national trend to acquire public transportation assets by municipalities, counties, regions and states because privately owned enterprises could no longer provide reasonable service while at the same time keeping fares at reasonable levels.

Selecting the First LRT Route

The fall of the TCRT streetcar network left a bitter taste in the mouths of Twin Cities transit advocates. Somehow the system would be revived, they hoped, and the development since 1981 of light rail in San Diego fueled that idea.

Automobile-oriented city planners in the 1960s sought to increase traffic mobility south of Minneapolis by creating a new Hiawatha Avenue corridor. Hiawatha Avenue connects three important traffic generators: downtown Minneapolis, Minneapolis-Saint Paul International Airport and the Mall of America, the country's largest suburban-style shopping center. Hiawatha Avenue was a four-lane thoroughfare running through a low-density area with a large amount of light industry because it paralleled the Chicago, Milwaukee, Saint Paul and Pacific Railroad right-of-way.

City planners succeeded in quickly condemning private property on the west side of the thoroughfare. Private homes, low-rise apartments and light industrial buildings were immediately removed. This greatly alarmed activists, who



Minnehaha Avenue

RAY BERGER PHOTOS
JUNE 27, 2004

Trains run on their own right-of-way after curving off the Hiawatha Avenue corridor. The raised pavement alongside the tracks runs for two long blocks between East 52nd and East 54th Streets. South of here the line regains private right-of-way.

Looking south, at top, car 109 is outbound just beyond East 53rd Street. Car 114 is at East 54th Street about to regain that right-of-way in the bottom photo. On the opposite page looking north, car 115 is also southbound in a pastoral scene that would lend itself to a sunny afternoon, which was, alas, missing on this second day of demonstration rides.







Lumber Exchange Building

RAY BERGER PHOTO
JUNE 27, 2004

A two car train led by 111 approaches Hennepin Avenue, one block away from its westward trek to the downtown terminal at Warehouse District/ Hennepin Station. The Richardsonian Romanesque style building behind the train is the Lumber Exchange Building. Designed by Franklin B. Long and Frederick Kees, it was the first skyscraper built in Minneapolis and dates to 1885.

mobilized to stop the planned expansion of Hiawatha Avenue into an eight-lane roadway. Court battles raged for 20 years and in the end, the highway planners lost their bid for the expansion. However, nothing happened after 1980, either to expand the roadway, build new housing or any other use. As a result, rail advocates thought this might be the easiest corridor to pursue for constructing the Twin Cities' first light rail line.

The Chicago, Milwaukee, Saint Paul and Pacific Railroad was built in the 1870s between Chicago and Minneapolis as the Chicago, Milwaukee and Saint Paul Railroad. Consequently, a magnificent stub-end terminal station marked the originally planned end of the line in Minneapolis. In the 1880s, a third transcontinental railway was constructed between the Twin Cities and the Pacific Northwest. At the time the western extension was built, the railroad was re-named the Chicago, Milwaukee, Saint Paul and Pacific, known simply as the Milwaukee Road. Building a wye south of Saint Paul made the track connection between the existing railroad and the Western Extension, so the original terminal building remained in use and the trains reversed direction to the wye before traveling westward.

Created in the 1980s principally as a merger of the Chicago, Burlington and Quincy, the Great Northern and the Northern Pacific Railroads, the Burlington Northern Santa Fe Railroad left out the Milwaukee Road because of redundancy, but portions of it were sold to other carriers. The line into Minneapolis was abandoned as industries along the line closed or turned to trucking to receive or ship products.

This abandonment made available the alignment for the proposed light rail line into downtown Minneapolis which was to end in the midtown area at Lake Street. The Milwaukee Road crossed Hiawatha Avenue at Lake Street, but the abandoned right-of-way entered downtown on Washington Street, slightly north of the desired location.

Years of Controversy

The Minnesota State Department of Highways sponsored a study of alternate transit technologies, including a People Mover system, heavy rapid transit and even light rail. Nothing much resulted of the 1964 study, but the idea stood that some alternative to highways, automobiles and buses might be in the Twin Cities' future.

MTC was charged with creating a comprehensive plan for Twin Cities transportation. At the time, the legislature was concerned with such things as traffic congestion, automobile pollution, increased accident rates and escalating highway construction and maintenance costs. A political shake-up in 1967 resulted in the creation of the Metropolitan Council, a regional governmental agency. Metropolitan Council became

the parent agency of MTC in 1994, and MTC changed its name to Metro Transit.

When MTC purchased the Twin Cities Rapid Transit Company in 1970, they launched a 13-point program to upgrade the quality of bus service in order to try to reverse the downward trend of bus patronage. They also began a long-range transit improvement study that considered rail rapid transit service on an exclusive right-of-way as a backbone service.

Throughout the first half of the 1970s, MTC conducted studies to determine which technology might work best. Heavy rail, various automated guideway technologies and even busways were explored. Heavy rail was rejected because one report feared the over-development of downtown Minneapolis and downtown Saint Paul to the “detriment” of other communities in the region. Busways were also rejected because of escalating operating costs and the failure to contribute to the shaping of regional development patterns.

In 1975, the Minnesota State Legislature rejected automated transit technologies, adding a prohibition on fixed guide rail development. However, the State Legislature in 1980 reversed its position, telling MTC to conduct a feasibility study on the use of light rail. The studies that resulted analyzed light rail along five alignments in four general transit corridors, with one non-LRT alternative for each of the alignments.

Among the conclusions reached by MTC was that light rail could have higher ridership potential and could be more cost-effective than the alternatives. Further, light rail could have significant impact on residential, commercial and industrial development along the route. Finally, it added that light rail was indeed feasible in one or more corridors in the Twin Cities.

In 1981, light rail was declared as the “preferred” alternative to the widening of Hiawatha Avenue from downtown Minneapolis to the Minneapolis-Saint Paul International Airport project.

MTC and the Regional Transit Board reviewed proposals for transit corridors in 1985. Once again, light rail was named as the preferred mode of transportation in those corridors studied. One recommendation was for MTC to look at the long-term transit needs for all high-use corridors. This led to a start of a long-range transit analysis.

Also in 1985, the City of Minneapolis, along with representatives of 17 agencies and private business organizations, analyzed several corridors. They assumed that light rail would be preferred and looked at financial planning, construction and operations management. This analysis set the cost of light rail construction at \$364 million, with \$449 million if a downtown subway were to be built. This analysis also concluded that light rail in three corridors would require about \$7.4 million less in subsidy than an all-bus service. Further, the State Motor Vehicle Excise Tax should be the main source of capital (*continued on page 59*)



Light Rail Operations and Maintenance Facility

RAY BERGER PHOTOS

110 rolls outbound by the new light rail shop and facility on the first day of revenue service (JUNE 28, 2004).

The system is blessed with inside storage. Four tracks, at left, make up the storage bay on the west side of the building.

Car 113 sits atop the running repair pit at right. In this area, full access is available to both the underside and the topside components of the car.



BOMBARDIER FLEXITY SWIFT

Hiawatha Line Light Rail Vehicle

METRO TRANSIT



The Bombardier light rail vehicles (LRVs) for Metro Transit in Minneapolis/St. Paul, Minnesota represent the first North American application of Bombardier's FLEXITY light rail technology. The LRVs employ service-proven engineering concepts from Bombardier's low-floor, light rail products in Europe — including LRVs in Cologne, Germany and Stockholm, Sweden — while complying with all North American standards and regulations. The design features Bombardier's 70 percent low-floor LRV technology, which positions 70 percent of the vehicle floor and all the entry ways just 14 inches above the top of the rails. The remaining 30 percent of the vehicle's floor, positioned over the bogies (trucks and wheels) at each end of the cars, are just one step up from the main floor.

Advantages of the 70 Percent Low-Floor Design

The vehicle's low-floor layout places doorways at "grade level," a feature that helps transit authorities avoid costly construction of special ramps and access facilities when implementing a new light rail line. It also greatly facilitates passenger access to the car and enhances rider safety. In fact, because 70 percent of the vehicle floor is at "grade level" passengers enter and exit through the doorways without engaging cumbersome steps.

Once inside, passengers can remain on the boarding level or navigate up one step to elevated seating sections over the bogies. This design is particularly useful for wheelchair access, and the Hiawatha Line vehicles are fully compliant with requirements of the Americans with Disabilities Act in the United States.

Operator	Metropolitan Council (Metro Transit)
Length	94 feet 0 inches (28,650 mm)
Width	8 feet 8.375 inches (2,650 mm)
Max. Speed	55 mph (88.5 km/h)
Minimum Curve Radius	82 feet (25 m)
Maximum Gradient	50%
Percent Low Floor	70%
Seated Passengers	66
Standees	180 (6 pass/m ²)

Operating Capabilities

The Hiawatha Line LRVs are powered by 140 kW bi-motor power trucks, which are driven by electricity from overhead lines. The vehicles are bi-directional with operator cabs at each end. Each vehicle is just under 95 feet in length and offers features such as luggage racks, double bike racks, wheelchair locations, roof mounted heating and cooling systems, a sophisticated passenger information system, and video surveillance cameras.

In downtown areas, the LRVs are designed to operate at reduced speeds in mixed traffic, not unlike a bus. In areas outside the city center, they act more like a passenger train, moving at higher speeds (up to 55 mph) in a segregated right-of-way. The vehicles are able to run in temperatures as low as -34 degrees Fahrenheit (-37 C) or as high as 105 degrees Fahrenheit (40.6 C). They can deal with snow accumulations up to 36 inches (914 mm).



BOMBARDIER TRANSPORTATION



BOMBARDIER TRANSPORTATION PHOTOS





Lake Street/Midtown

RAY BERGER PHOTOS

Lake Street/Midtown Station, seen at left from platform level, is partially enclosed with glass windbreaks, a reminder of what winters in Minnesota are like.

A train, above, stops southbound at the Lake Street/Midtown Station on June 28. The station sits atop a substantial overpass with elevated sections leading to it. This arrangement offers ideal transfer arrangements to and from the heavy 21-Selby-Lake crosstown bus route.

Car 115, right, is southbound on the elevated structure just north of the Lake Street/Midtown Station.



funding and that federal funding should be pursued as long as it didn't delay construction. Also, a "feathered" property tax should be levied to supplement state tax and federal funds and that "local funding sources should be pursued for system enhancements above the baseline design."

Later that year, the State Legislature prohibited further action on light rail until the regional transit study was completed. But once that was done, the legislature authorized the Hennepin County Regional Railroad Authority to plan and build a system.

Seven counties in the Twin Cities area formed a Metropolitan Light Rail Transit Joint Powers Board in 1992, which today is known as the Metro Transitways Development Board. This group works to provide a coordinated regional approach to rail and bus transit development, from policy creation to legislative proposals. These member counties represent an important source of initiative and funding and helps coordinate local road and transit improvements. Ultimately, this board developed a three-part vision to meet future transportation needs for existing bus service, busways and rail. In this way, local opposition was mitigated as it was developed as part of a region-wide improvement scheme.

Finally Success, Then Ground Breaking

After years of similar-style delaying tactics, studies, plans and opposition, light rail advocates finally won the battle. Perhaps no other project suffered so many setbacks, only to return stronger than ever.

On August 2, 2000, Bombardier Transit Services, Inc., was selected by Metro Transit, as MTC was now called, to build 26 light rail vehicles for the Hiawatha Line. A design/build contract for \$291 million was signed on September 28. Finally, on January 17, 2001, ground was broken for the line at the site of the new maintenance and storage shop at Cedar Avenue near the Interstate 94 highway. Total cost for the line was estimated at \$675.4 million, with funds coming from the following sources:

FEDERAL TRANSPORTATION ADMIN.	\$ 334.3 MILLION
STATE OF MINNESOTA	\$ 100.0 MILLION
METROPOLITAN AIRPORTS COMMISSION	\$ 87.0 MILLION
HENNEPIN COUNTY REGIONAL RAIL AUTHORITY	\$ 84.2 MILLION
FEDERAL GRANT FOR CONGESTION MITIGATION & AIR QUALITY	\$ 49.8 MILLION
MINNESOTA DOT	\$20.1 MILLION

Each of the 94-foot-long Hiawatha Line vehicles is double ended with three articulated sections. They seat 68, with a standing capacity of 187 passengers. The cars feature overhead parcel racks and bicycle storage hangers and are fully compliant with the Americans with Disabilities Act. Balancing speed for the cars is 55 miles per hour. Cars are equipped with Dellner automatic couplers and operate in single units during off peak hours and two-car train consists during peak periods.

Car shells were constructed at the former Concarill plant in Sahagun, Mexico and final assembly occurred at Bombardier's Barrie, Vermont plant. Truck frames came from Bombardier's subsidiary in Crespin, France. Traction motors were supplied by Toshiba and came from Toshiba Fuchu, Japan. The Dellner couplers were manufactured in Germany. The Penn Machine Company in Pennsylvania supplied the wheels, axles and tires. Delivery of the first vehicle occurred on March 19, 2003.

Once the construction schedule was set, the line was built on time. Beginning in the Spring of 2001 to the Fall of 2003 the construction focused on the 11th Avenue to 26th Street portion of the route, then the yard and maintenance shop complex, followed by the 26th Street to Minnehaha Park portion, including constructing a short tunnel north of the 50th Street/Minnehaha Park station. The line between Minnehaha Park and Fort Snelling was constructed between the Spring of 2002 and the Fall of 2003 as was construction between 11th Avenue and the Nicollet Mall. The additional one-station extension to the Warehouse District/Hennepin Avenue station terminal was built between the Fall of 2003 and the Spring of 2004. The line was tested for months before opening, with regular service simulated for about a month before Phase One opened June 24.

Phase Two Follows

Work on the second phase of the line, between Fort Snelling and the Mall of America, continued for five more months. The opening on December 4 was accompanied by two days of free rides, just like the first opening. This section includes stations at both airport terminals, followed by the Bloomington Central and 28th Avenue stations, and terminating at the Mall of America station.

A unique feature of this extension are twin 1.7 mile

tunnels at the airport (one each for the northbound and southbound trains). The Lindbergh Terminal station (Concourse A–G) is the only stop on the Hiawatha Line that is totally underground. This is a center-platform stop typically reached by elevator or escalator. Trains return to the surface as they near the Humphrey Terminal station (Concourse H).

The Hiawatha Line Today

The Hiawatha Line replaces bus Route 7 between 46th Street and Hiawatha Avenue and the Mall of America, as well as express bus Route 180 and Hiawatha Avenue limited-stop peak-period bus service on Routes 7, 19, 20 and 22. Trains operate every 7½ minutes during rush hours, every 10 minutes during the day on weekdays, and every 15 minutes in the evenings. On weekends and on holidays, service varies between a 10-minute headway during the day to a 30-minute headway in the very late evenings. Twenty-two of the 26 cars are required for service.

Along the line there are 35 grade crossings, 15 gated, and 10 traffic lights with preemption in favor of light rail vehicles and eight without this feature. The line is 11.6 miles long, with 17 stations. Since the Milwaukee Road right-of-way is slightly north of the traffic generating portions of downtown Minneapolis, a street-running alignment was chosen on South Fifth Street between Hennepin Avenue and the Metrodome/Downtown East station.

Street level platforms are located at the Warehouse District/Hennepin Avenue, Nicollet Mall and Government Plaza stations on South Fifth Street. At the Downtown East/Metrodome station, the line is transitioned from South Fifth Street along side the Metrodome to the former Milwaukee Road right-of-way. It follows that alignment past the maintenance shops and storage yard facility to Lake Street. Then, the line ascends to an elevated structure to crossover Lake Street and ramps to the ground level on the south side of Hiawatha Avenue, where buildings were demolished for the ill-fated Hiawatha Avenue roadway expansion in the 1960s.

The line remains on the south side of Hiawatha Avenue until 42nd Avenue and 50th Street, just beyond the 50th Street/Minnehaha Park station, where it jogs on to a side street to reach the Veterans Administration Hospital/Medical Center. There is a short 600-foot tunnel just before 50th Street and Hiawatha Avenue.

City Hall

RAY BERGER PHOTO
MAY 15, 2005

Car 118 and train are outbound at the Government Plaza station. The view is across the plaza of Hennepin County Government Center and shows the 5th Avenue side of Minneapolis' 1906 City Hall.







Minneapolis-Saint Paul International Airport

JOHN PAPPAS PHOTOS

A train headed to downtown Minneapolis, left, leaves the Lindbergh Terminal station. At the top of the escalators is the Transportation Center where a walkway and a people mover connects passengers to the main terminal of the airport.

Above, the northbound bored tunnel at the east end of the Lindbergh Airport station platform. The twin bores lie some 70 feet under the airport complex. The tracks rise to surface level before reaching the Humphrey Terminal station. There is no charge to travel between the two airport terminal stations.

At the Veterans Hospital/Medical Center station the line re-joins Hiawatha Avenue for a short stretch, then enters its own private right-of-way to reach the Fort Snelling station.

South of that point, the line spreads into a three-track alignment where there is a turning pocket. The line then descends into the subway under the airport runways between Lindbergh Terminal and Humphrey Terminal within the airport. At 30th Avenue and 70th Street the line turns south, past the 80th Street station, then west on 82nd Street, past the Bloomington South station to reach the Mall of America terminal.

Originally, the Hiawatha Line was scheduled to open on April 3, 2004, but a 46-day strike delayed the opening until June. Adding to the delay were two factors. First, the operators scheduled to work the new line had to be re-trained. Second, all the ancillary plans for the opening celebrations had to be reviewed and re-cast. Despite these setbacks, opening day drew crowds of 95,000-plus riders without incident. Rides on the entire transit system were free on Saturday and Sunday. By Monday, June 28, regular fare collection rules were in effect. Still there were 93,000 boardings, exceeding the transit system's weekly goal of 55,400 by nearly 68 percent.

Some 46 bus routes feed into the 17 Hiawatha Line stations. It was estimated that in 2005, 20 percent of all 19,300-weekday light rail riders arrived from bus connections.

The Future

There is an additional corridor under consideration for construction now that the Hiawatha Line is fully in service: the Central Corridor line. It is an 11-mile route connecting downtown Minneapolis along Interstate 94, Marshall Avenue in the southeast, Seventh Street in the south and Pierce Butler in the north to reach downtown Saint Paul.

There are three commuter rail corridors under consideration for service as well. A prime candidate is the NorthStar Corridor connecting downtown Minneapolis with Saint Cloud, Minnesota. Four Park and Ride lots have been used as stops for express bus services since 2001. State funding is being sought to build commuter stations and parking lots, acquire equipment and the like, linking the two cities and closer communities on the 80-mile line on existing Burlington Northern Santa Fe Railroad tracks.

The NorthStar line is planned for two phases. The first will be a six-station line in Minneapolis and neighboring Hennepin, Anoka and Sherburne Counties to Big Lake. The second phase will bring the line to the City of Saint Cloud. Included in Phase One is a four-block extension of the Hiawatha Line from the Warehouse District/Hennepin Avenue station to the Minneapolis BNSF station. 🌱



SPACE FOR LEASE
Wexford (612) 359-9988

Warehouse/Hennepin
Sun 8:27 AM
10:48 AM

METRO TRANSIT
1068

Team Girls

Warehouse/Hennepin
Sun 8:27 AM
10:48 AM