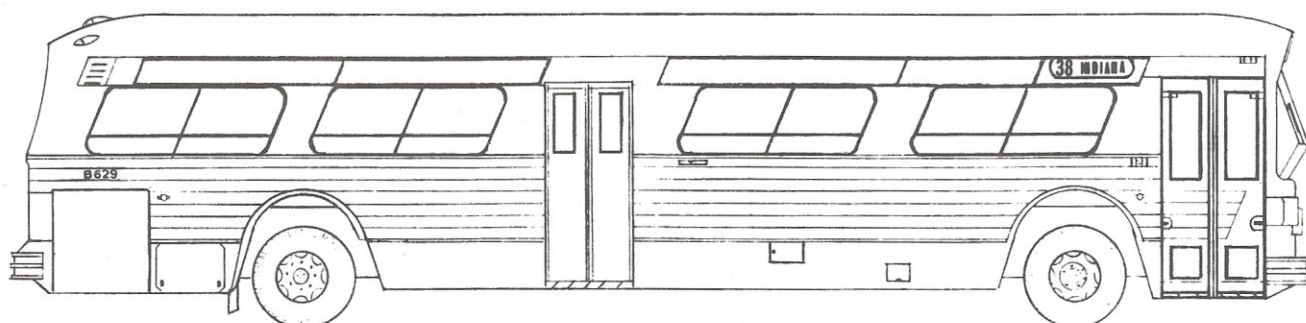


# Transport Central



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## COLUMN ONE

### RAPID TRANSIT FOR THE SMALLER CITIES

Ken V. Hayes, Jr.

(Part One of this article appeared in Transport Central September 27)

The fourth and last stage is effected after the success of the system is proven. It consists of station-by-station extensions to the ultimate limits of sufficient patronage on the existing lines and, if possible, utilization of other rights-of-way to establish new routes. The latter should be undertaken in the same stage-by-stage manner as the initial system. In addition, due to the fact that in most cities the downtown center has shifted away from existing railway lines, it may be beneficial to construct a downtown subway of short length. However, when we talk of subway work, we are immediately talking in terms of at least \$1 million per mile. For this reason, a subway should be constructed only as an absolute necessity, and be as short as possible.

Finally, we can talk in terms of fudge—that is, the costly little extras that can be added to the system as it becomes established to increase patronage and give better service. This includes such designers' dreams as a downtown transportation complex (such as Cleveland's Terminal Tower), low- or no-cost parking at as many stations as possible, station gingerbread such as infrared heating and air conditioning, fare collection innovations and the like. New cars might also be introduced, but at \$150,000 and up per unit this will probably be out of the reach of the average operator.

Let's talk practicalities—or at least anticipate some of the arguments skeptics may have. If, for example, large cities with all of their possible patrons can't make money, how can we expect a smaller system (with a correspondingly smaller number of patrons) to succeed? Granted that rapid transit is a high volume business, it must still go where people want it to go or it has little chance of success. And further, it must adapt to changing times. This proposal takes cognizance and acts under both these rules. No new rapid transit system has been built in the U. S. (or completely renovated) in over 25 years (except Cleveland). Most of the rest have been left behind by population shifts or do not offer the patron what he now requires. Some systems are slowly trying to adapt; others are not.

At this point I will develop two proposed systems for intermediate sized cities presently having all-bus mass transit systems: Milwaukee and the Twin Cities of Minneapolis and St. Paul. Milwaukee's public transit is provided by the Transport Company, and Minneapolis-St. Paul by two subsidiaries of Minnesota Enterprises Corporation.

Milwaukee: This city has an extensive network of rail lines within the city limits as well as extending outward into suburban areas.



Even a one-track right-of-way is usable for initial rapid transit so long as adequate safety, signal and turnout facilities are provided. In addition, some one-track facilities have enough surrounding land area to accomodate additional tracks, and even if not, modern, pre-stressed concrete elevated structures can support a two-track system on supporting columns which take up only as much land area as one surface track. Therefore, in this article and proposed system, all railway lines—whether one or two track—will be considered as two track rights-of-way.

The map included here illustrates the proposed Milwaukee system, as developed in three stages: Stage one being seven route miles, State two being twenty and stage three twenty-three miles in length, approximately. Thus the total and final system will consist of fifty route miles developed and completed in a period of between five and twenty years. Cost data are contained in the chart, but here are some of the major features of the system: Stage one utilizes six Budd Rail Diesel Cars (RDCs)—two RDC-1s (master control units seating ninety in each) and four RDC-9s (motorized trailers seating ninety-four per car). Since the first stage is only seven miles in length, only two complete trains are required to give adequate coverage for the expected patronage, each train being three cars in length. Thus each train has a total stated seating capacity of at least 278 persons, and handrails (which are not standard) might be installed to accomodate an additional 150 to 250 standees in each train, creating peak capacities of between 428 and 528 persons. Also desirable is an additional RDC-1 to serve as an emergency replacement vehicle in case of a breakdown, or additional peak hour service space. This stage features nine preferably prefabricated stations, or one per every .77 mile average. In the latter two stages, stations will come at 1.11 and 1.15 miles average respectively. Total invested capital for the initial stage is estimated to be \$2.8 million when the right-of-way is leased.

Minneapolis-St. Paul: In the Twin Cities we have a five stage system of extensive coverage (necessary to the diffuse nature of population density). The accompanying chart illustrates the salient characteristics of the first three stages of the system, totalling 38 miles. For simplicity, however, only the first stage is shown on the attached map, a system of 15 miles in length. The Twin Cities are cities with a recognized possibility of rail rapid transit utilizing existing railway lines. It is the state highway department which has suggested that certain of the existing railway lines might serve for rapid transit use, rather than building new freeways in order to accomodate increasing automobile road use.

Bus service alone in the Twin Cities area is not even a qualified success: Twin City Lines, Inc., owner of Minneapolis Transit and St. Paul Transit (operator of over 96% of the city bus service) has lost 70% of its patronage since 1946, and out of 35 and 26 routes in Minneapolis and St. Paul, the companies lose money on all but 9 and 4 respectively. Since the population is so diffusely distributed, the number of rail lines for adequate coverage must necessarily be large. All the lines necessary are presently in existence, and the total 5-stage plan calls for more than fifty miles of such routes. The initial system (Stage I), as discussed here, is 15 miles in length. Eleven Budd RDC-1s are required to operate over the three routes included, each hauling one RDC-9 motorized trailer, with two RDC-1s on standby reserve. There are 16 stations along the line.

In general, the intermediate-sized city is getting to the point where it cannot for long make do with only one mode of public transit—



the bus. Street space—already at a premium—will continue to diminish as auto and truck use rises. This point of intermediate city rapid transit is dramatically (and expensively) driven home in the San Francisco Bay Area, where the Bay Area Rapid Transit District is spending around a billion dollars to build and operate a rail rapid transit system seventy-five miles in length, even though no one city in the District's territory has so much as one million population. BART, however, did not reach its decision to build soon enough to make use of the Key System Transit Lines' transbay bridge crossing, a fully depreciated but usable rail line connecting San Francisco and Oakland, and now the District must spend \$133 million for an underwater tunnel to serve the same purpose. This last point justifies the point that a low cost rapid transit system can be developed over leased railway tracks in any city large enough to provide patronage to meet fixed expenses on such a system, and this is any city over 150,000 in population with an eye for the present and a mind to the future.

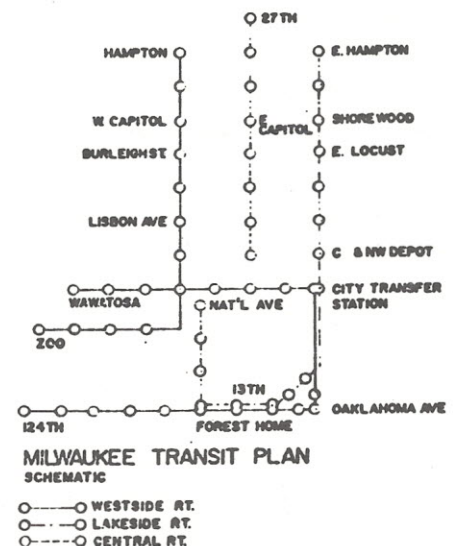
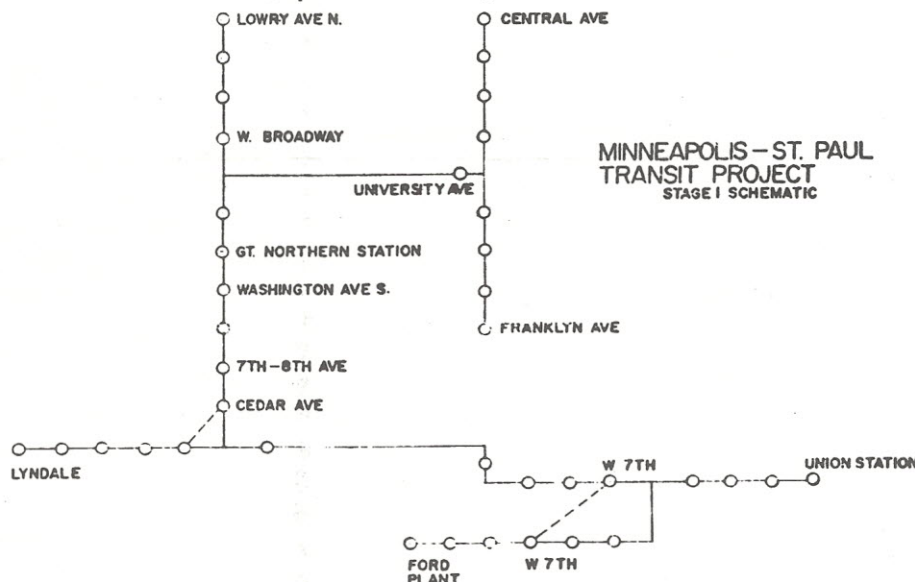
**COST OF RAPID TRANSIT INSTALLATION**  
(Capital costs only)

**Milwaukee**

Item	Stage I	Stage II	Stage III
Right of way	leased	leased	leased
Rolling Stock	leased	\$ 3.5 x 10 <sup>6</sup>	\$ 3.0 x 10 <sup>6</sup>
Stations	\$ 1.8 x 10 <sup>6</sup>	\$ 3.6 x 10 <sup>6</sup>	\$ 4.0 x 10 <sup>6</sup>
Signals	\$ 0.45 x 10 <sup>6</sup>	\$ 1.0 x 10 <sup>6</sup>	\$ 1.15 x 10 <sup>6</sup>
Electrification	none	\$13.5 x 10 <sup>6</sup>	\$11.5 x 10 <sup>6</sup>
Miscellaneous			
Improvements	\$ 6.5 x 10 <sup>5</sup>	\$ 9.0 x 10 <sup>5</sup>	\$ 3.5 x 10 <sup>5</sup>
Total:	\$ 2.8 x 10 <sup>6</sup>	\$22.0 x 10 <sup>6</sup>	\$20.0 x 10 <sup>6</sup>

**Minneapolis-St. Paul**

Item	Stage I only
Right of way	leased
Rolling stock	leased
Stations	\$ 6.8 x 10 <sup>6</sup>
Signals	\$ 7.5 x 10 <sup>5</sup>
Miscellaneous	
Improvements	\$ 4.5 x 10 <sup>5</sup>



(Ken Hayes is a transportation, public utilities and finance major from Lafayette, California. His wide experience includes investment studies of transportation and public utilities systems and authoring of science fiction stories. Column One is a forum open to all responsible opinion on the transportation industry. We invite your comments.)



THE NEW MATH -- The Interstate Commerce Commission's monthly publication, Transport Economics, reports that by using costs solely or allied with rail passenger operations, U. S. railroads actually made money during the 1959-66 period. However, with revenues down 10% and many runs discontinued in 1967, the ICC's experimental cost system reported a \$72 million loss. The Association of American Railroads' answer to all this was that the Commission must be using some kind of new math.

Meanwhile, Washington Congressman Thomas Pelly, in an unusually blunt statement on the floor of the House of Representatives told the members of the House Committee on Interstate Commerce that if they fail to act on pending bills to save rail passenger service "the end can only lead to nationalization of our railroad system". Pelly added that, in his view, that would be a sad day for America. Pelly said the Committee should make the rail passenger question its first order of business next session. Congress, he said, must step in because the railroads "are juggling figures to make their losses on passenger trains bigger".

Pelly praised the service offered by the Great Northern and Northern Pacific, but he said some roads, like the Southern Pacific, are deliberately trying to discourage passengers. Pelly said he wanted to travel on the Cascade from Seattle to Oakland and there transfer to the California Zephyr for the trip to Chicago. "What did I discover? There was a five minute connection with a change in stations required, and no holding the train for through passengers. You can bet I didn't go that way", Pelly continued. Pelly said legislation must be passed "to assure that the nation's railroads provide service vital to the public interest".

L-C-L -- The Hummingbird injunction was renewed through September 30 (TC-27 Sep 68)....Penn Central has discontinued all checked baggage service except that offered within New York State....The same carrier has petitioned to discontinue #570-571, Baltimore-Harrisburg, effective October 20....Louisville & Nashville has made formal application to the Interstate Commerce Commission to merge the Monon into its system....The Departments of Transportation and Justice have urged the ICC to order PC takeover of the New Haven by January 1 in order to preserve the latter's continued operation; the Departments suggested that the final purchase price, presently disputed by PC and NH bondholders, be set after takeover. ....The Railway Supply Association's 1968 public display of rail equipment (on Illinois Central tracks at Chicago's South Water terminal) proved to be disappointing as only a half dozen suppliers with a dozen or so pieces showed (only Alco represented the locomotive builders with one IC unit)....The Burlington and Western Pacific have announced a \$4 million "contemporary" advertising campaign using newspapers and radio in the Chicago and San Francisco market areas to encourage more patronage (on the California Zephyr); in addition, travel agents can win up to \$1000 for selling the most tickets....Greyhound Lines has announced the merger of two of its four bus divisions, Central and Western (which becomes the surviving division) effective next January 1.

FLYING HIGH -- The world's largest and fastest commercial jetliner, capable of carrying 490 passengers at a cruising speed of 625 mph, rolled off the production line Monday; the \$20 million Boeing 747 has been under construction for more than a year....A plane was prevented from taking off at O'Hare the other day for a short time because a fox was sitting on the runway. The fox watched a United jet soar into the sky from another runway, then ran back to his burrow. But, according to O'Hare's tower supervisor, such is not uncommon. A number live in the area—and they particularly like to watch planes take off....And, as if the skies aren't crow-



ded enough these days, the Federal Aviation Administration has warned pilots to expect and avoid vast flocks of migrating geese, ducks and swans. About 10 million ducks will be making for warmer climes between October 15 and November 15; geese and swans also enroute to balmy weather will be congesting the air lanes during the same period....Passenger traffic through Britain's major airports is increasing by less than one-fourth of the U. S. rate, and is well below the world average; so says the British Airports Authority, operator of the country's four major fields. Economic pressures on the United Kingdom are blamed for the slowdown, yet a new field in the Greater London area to supplement Heathrow, Gatwick and Stanstead airports will be a necessity in the coming decade....American has received Civil Aeronautics Board permission to operate a Chicago-Albuquerque service; Delta and Western also received rights to operate to and from the New Mexico field....Allegheny is so pleased with its first four months of operations from Louisville's Standiford Field that it is seeking new routes between Louisville and Chicago, New Orleans, Nashville and Memphis. The line began service to Standiford May 26, with three non stop daily runs to Pittsburgh....Stanray Corporation has received a \$4 million contract from TWA to provide passenger boarding bridges that link airport terminals and jumbo jets; the units will be built at the company plant in Ogden, Utah.

SEPTA SPEAKING -- At noon Monday, September 30, operators at the Philadelphia Transportation Company's Wyoming Avenue general offices began answering their phones: "Good Afternoon. This is SEPTA." One era had ended; another had just begun. The last truly large transit operation in the U. S. passed from private to public hands that day. Behind was a profit making enterprise; ahead, hopefully, were service improvements for the public.

Not only did Philadelphians gain a public transit system in their city, but that system gained a new general manager, all on the same day. Gone is retired General Michael Reichel; in charge as acting General Manager is 62 year old David N. Phillips. Efforts to have Albert G. Lyons, PTC President for many years, take the reins of SEPTA failed when Mayor James Tate vetoed the idea.

TC's Paul Weyrich comments: "Truly transportation in Philadelphia is at the crossroads. SEPTA, if properly managed, can blaze new trails in good service for the public. On the other hand, SEPTA, if allowed to become a topheavy bureaucratic machine loaded with bungling incompetents may go the way of other public authorities known for poor service and huge deficits. SEPTA has ambitious plans. Money, of course, is a problem; the Commonwealth's new Transportation Department may prove helpful in that regard. SEPTA's biggest problem, however, is leadership. Thus far, in operating its commuter car program it has been at best lackluster."

FRIDAY'S FACTS -- Rutgers University will get a \$49,900 Federal grant to continue studying the feasibility of operating low-altitude air shuttle service in the New York-New Jersey-Connecticut area. Conceivably, the service could entail aircraft operating between short runways in the Tri-State area and floating "Aquadromes" anchored around the shores of Manhattan Island....Toledo will study the feasibility of a publicly-owned transit system with the help of a DOT grant....Bi-State's Board of Commissioners have adopted a broad-scale interim plan to provide major improvements in transit service in the St. Louis area until a permanent rapid transit network can be established....Los Angeles' beloved Angel's Flight incline railway, a fixture since 1901, is to be torn down by February 1 because of continuing urban renewal work in the area....Baltimore Transit drivers went on strike October 1....The Chicago South Suburban Mass Transit District has filed an application with DOT for a \$24 million grant for 130 new double-deck electric cars to be operated by the IC....GM has unveiled a new, lower experimental transit coach dubbed the RTX.