



## Why \$1 Billion Doesn't Buy Much Transit Infrastructure Anymore

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Reuters

Chicago Mayor Rahm Emanuel recently announced a \$1 billion plan to overhaul the city's L trains, which are run by the Chicago Transit Authority and began operations in 1892. "The public will get a new CTA," he [said at a press conference](#).

That's a bit of an exaggeration. In reality, the money will be used to lay new rail tracks between 18th and 95th streets on the Red Line to eliminate "slow zones," replace ties on the Purple Line and improve underground ventilation and electrical substations. In addition, nine stations will receive modest technical upgrades and—finally, the most significant addition—two stations on the North Side will be rebuilt.

It seems \$1 billion doesn't go very far in subway construction these days. Look at New York, where the 8.5-mile Second Avenue subway line is expected to cost [more than \\$17 billion](#).

Internationally, subway construction costs remain considerably lower. Sao Paulo's new 11-km Yellow Line, [completed last year](#), cost \$1.6 billion, with fully automated trains and free high-speed wireless Internet at each of 11 stations.

Singapore's new Circle Line runs 22 miles with 28 stations and cost \$4.8 billion, or \$130 million per kilometer. Upon completion next year, it will become the world's [longest fully automatic underground transit line](#), and among its most advanced.

In Europe, too, subways cost less. Madrid's recently-opened Metrosur line is 41 km long, with 28 stations, yet was completed in four years at around \$58m per km. Recent expansions in Paris and Berlin cost about \$250 million per km.

New York, meanwhile, is building the most expensive subway line of all time, at \$1.7b per km. This figure makes London's 16-km-long Jubilee line and Amsterdam's 10-km North-South line, which both faced delays and controversy and cost \$350m and \$400m per km, respectively, seem reasonable in comparison.

New York's astronomical subway costs are partially explained by pricier real-estate and labor and the expense of tunnel boring into Manhattan bedrock. Blogger Benjamin Kabak [thinks exorbitant consultant and design fees](#) and stunningly over-priced construction contracts also play a part.

Another concern is age. Robert Paaswell, engineering professor at the City College of New York and director of the University Transportation Research Center, says costs are so high in Chicago and New York because their systems are the country's oldest and thus the most expensive to upgrade. The New York City subway, which began operations in the 1870s as an elevated system, has experienced three derailments in the past six months.

This helps explain why Washington, D.C., where the Metro opened in 1976, laid more than three new miles of track and built two new stations, a 2,200-car parking structure and a rail car storage facility as part of a subway extension into Prince George's County, Maryland, [all for \\$456 million](#).

Paaswell also cites New York's higher regulation costs, over-conservative labor laws and financing via bonds, which lead to longer-term debt plans. Finally, Americans and Europeans generally hold different views of major public transport projects. The latter see the expense as justified, even necessary, while the former tend to embrace driving and view major construction projects as a potential hassle.

"There's no urgency by governments or citizens here to get subways done, and when it finally happens the construction causes so much inconvenience that people don't like it," said Paaswell, a former CTA executive director. "In Europe, they don't care too much about it, they just blast right through and get it done."

For this reason, less dense U.S. cities often prefer light rail, which averages about half the cost of subways and can often dovetail on highway projects. The new SouthEast rail line portion of Denver's T-Rex transport project [cost \\$970 million for 19 miles](#) of new lines and 13 stations.

And Minneapolis' 19km, 17-station Hiawatha, or Blue Line, which opened in 2008 and connects the Twin Cities' international airport and the Mall of America to downtown, [cost \\$715 million](#) and has far exceeded its ridership targets.

City officials still looking to justify exorbitant spending on subway expansion might want to cite a [1918 essay by Julius Glaser](#), a design engineer for the city of New York.

Why do we build subways? They're expensive. They cost several times as much, mile for mile, as elevated railroads, and their construction entails more inconvenience to the public and to business, and for a longer time. They interfere with and endanger the sewers, gas pipes, water mains, electric conduits, and other subsurface structures, for an extended period, and then, when finally completed, many people dislike to ride in them.

Yet we build subways, because, when finished, unlike elevated railroads, so far as street conditions are concerned, they are noiseless, invisible and do not obstruct light, air or traffic. Train operation is never interfered with by weather conditions, and real estate along the route is enhanced in value. The permanent advantages of underground railroads far outweigh the temporary inconveniences during the construction period.

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