

Can Transit Infrastructure Projects Be Delivered Better?

Speaker:

Eric Goldwyn, Assistant Professor, Transportation and Land-Use Program, NYU Marron Institute

Moderator:

Matti Siemiatycki, Professor of Geography and Planning and Director of the Infrastructure Institute at the University of Toronto

January 15, 2025

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Land Acknowledgement

We wish to acknowledge this land on which the University of Toronto operates. For thousands of years it has been the traditional lands of the Huron-Wendat, the Seneca, and most recently, the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

Transit Costs Project

Understanding Transit Infrastructure Costs
in American Cities

Eric Goldwyn, Alon Levy, Elif Ensari,
and Marco Chitti 1/15/2025



NYU

Marron Institute
of Urban Management

Talk Outline

Domestic transit spending is increasing

American transit construction costs are high

We looked at expensive and inexpensive projects in order to learn

Transit projects often take on other objectives

We could stand to be more efficient

Transit agencies have limited expertise

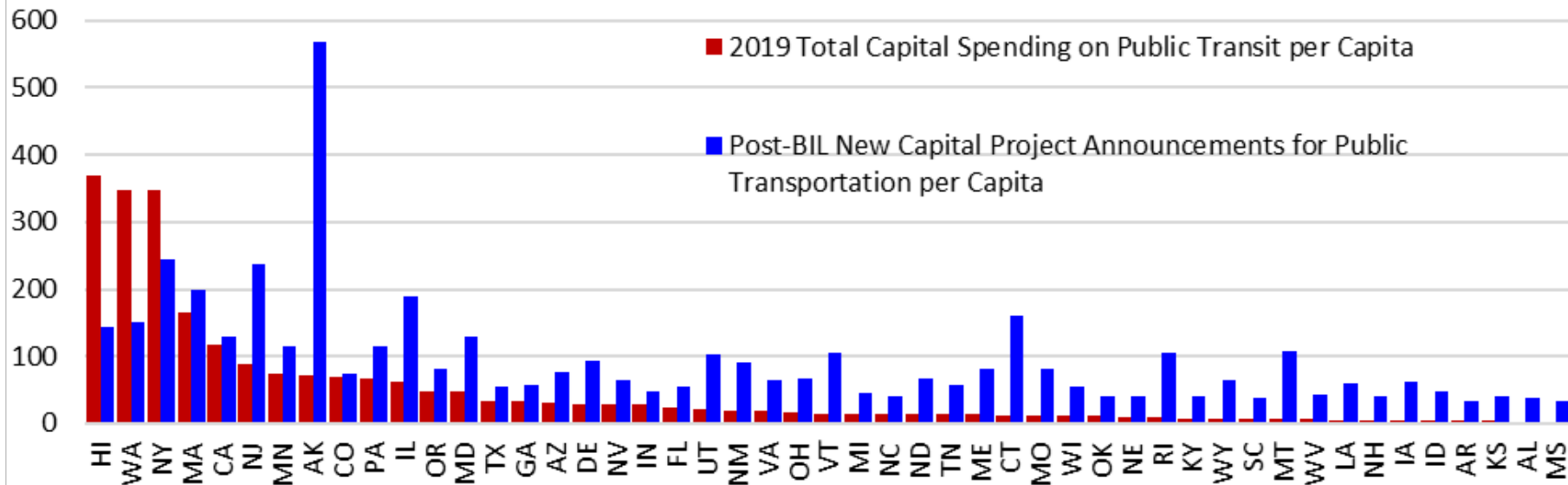
Expensive decisions that are never questioned

Recommendations

A brief update on a transit project in progress

Public Transportation Capital Spending by State: 2019 Reported vs. BIL Announced

Announced BIL Funding per Capita (\$)

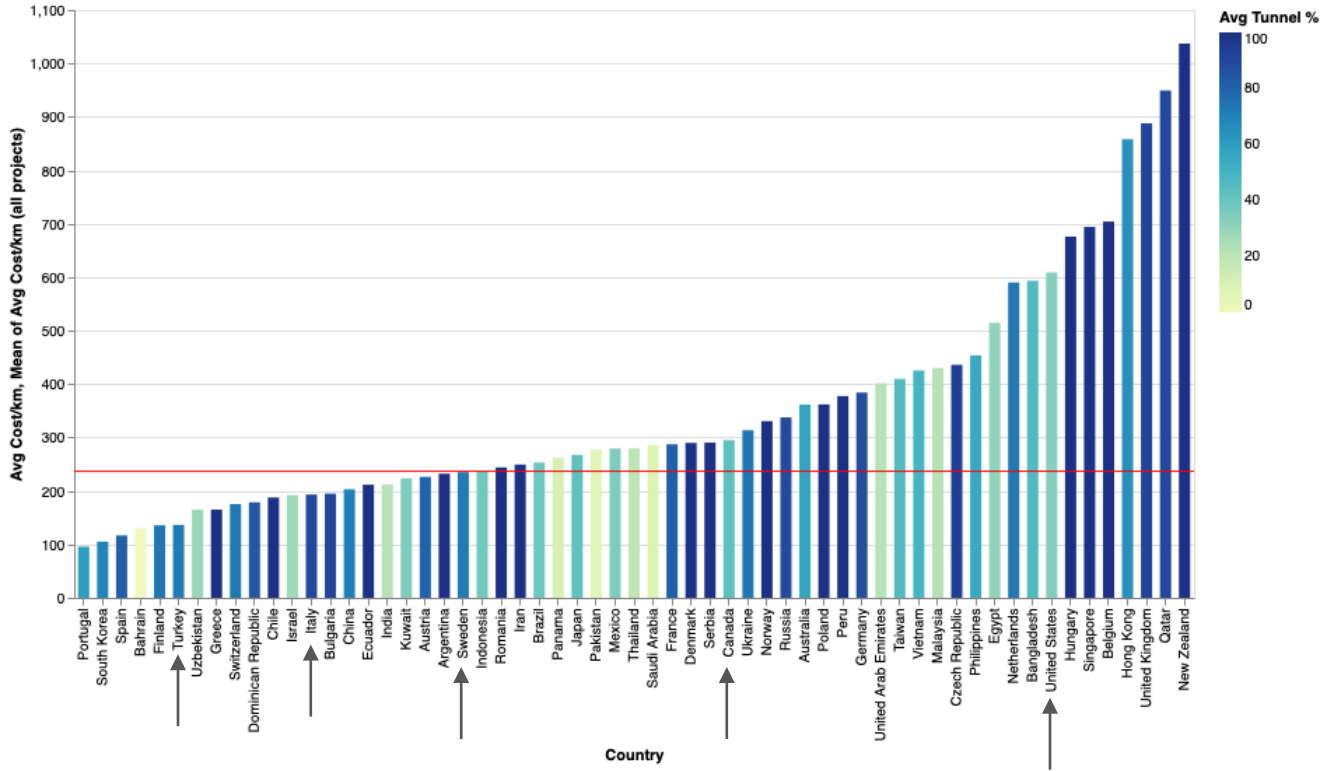


Source: Federal Transit Administration; Invest.gov; Census Bureau; U.S. Treasury calculations.

Notes: 2019 capital spending is sum of agency-reported Federal, state, and local capital spending data from the National Transit Database. U.S. territories and the District of Columbia are not represented above. 2022 Census Bureau populations are

BIL: Bipartisan Infrastructure Law

883 Rail Project, 57 Countries*, 187 Cities



Case Studies

- Green Line Extension, Massachusetts
- Istanbul
- Milan, Brescia, Naples, and Rome
- Stockholm
- Phase 1 of the Second Avenue Subway, New York

Primary Factors

- Intergovernmental and Third-Party Agreements
- Labour
- Procurement
- Stations

Intergovernmental and Third-Party Agreements

News

Project delays may cost taxpayers \$150K daily as DART officials and Dallas council members squabble

KERA | By Nathan Collins
Published February 28, 2023 at 3:19 PM CST



DART /

Disagreements between DART and city officials over excess tax revenue, project additions and a lack of communication has delayed DART projects in Dallas.

Delays in a Dallas area light rail project could cost taxpayers \$150,000 a day. That's a rough estimate by a Dallas Area Rapid Transit (DART) official at Tuesday's joint committee meeting with the Transportation and Infrastructure committee.

DURHAM COUNTY NEWS

Duke opts to not back Triangle light-rail project

by: CBS 17 staff
Posted: Feb 27, 2019 / 05:34 PM EST
Updated: Mar 1, 2019 / 06:40 AM EST

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Mercer Island Abandons Long Legal Fight Against Sound Transit

By Ryan Pecker - December 14, 2022



After a series of years-long legal fights with Sound Transit, Mercer Island has signed a settlement and given up. (Rendering of future Mercer Island Station courtesy of Sound Transit)

Municipality will pay transit agency \$2.1 million and drop claims surrounding East Link extension.

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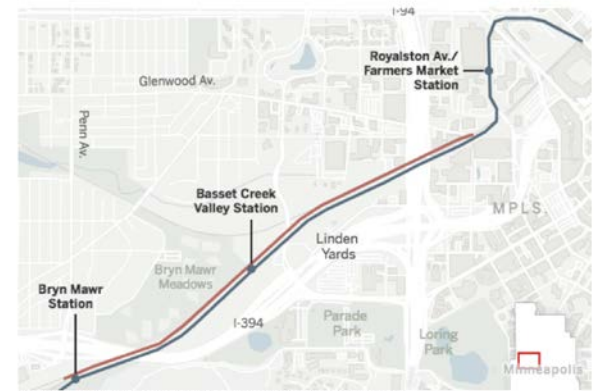
April 23, 2023

The Urbanist Podcast: What We're Reading

March 24, 2021 | Track Construction

How much more? Cost of crash wall on Southwest line in Minnesota spikes 356%

Written by RT&S Staff



A 1-mile-long barrier wall required by BNSF will cost more than originally expected.

The Metropolitan Council knows who is going to pay for this wall, but the new price is staggering.

Mitigation or Betterment?



86th Street and Second Avenue Before and After Construction

A Story About Pipes



Photo Credit: Ben Heckscher

Labour

Second Avenue Subway Phase 1 Tunnel Boring Machine Staffing				
Actual and Proposed Staffing				
Team	Number of Staff/Shift	Fully-Laden Employment Cost	Proposed Number of Staff/Shift	Fully-Laden Employment Cost of Proposed Scenario
TBM Crew	20	\$73,720	13	\$47,457
Support Crews	26	\$89,964	17	\$57,882
Total per Shift	46	\$163,684	30	\$116,529
Total	138	\$491,052	90	\$349,586

Agency Capacity



AECOM

SKANSKA



Kiewit

FLUOR

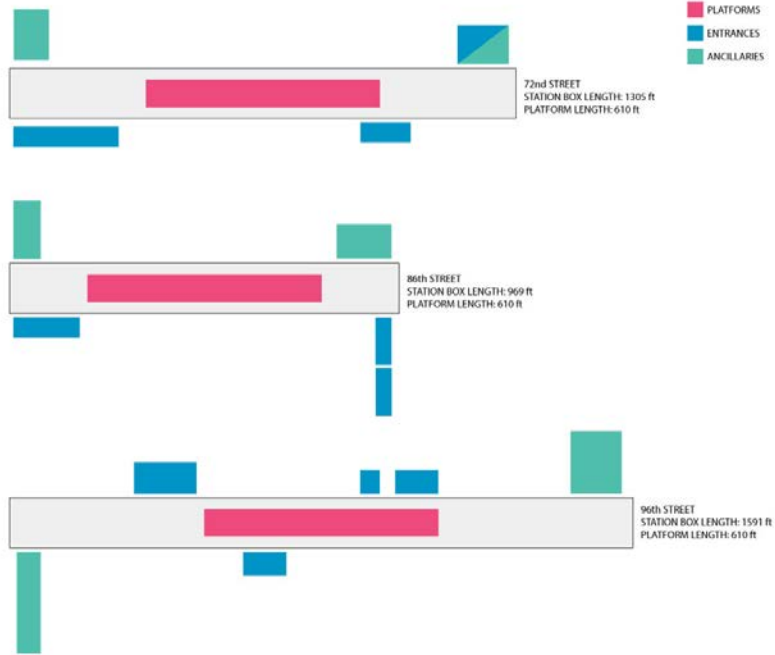
Gilbane

HDR



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Stations



Second Avenue Subway Station Boxes

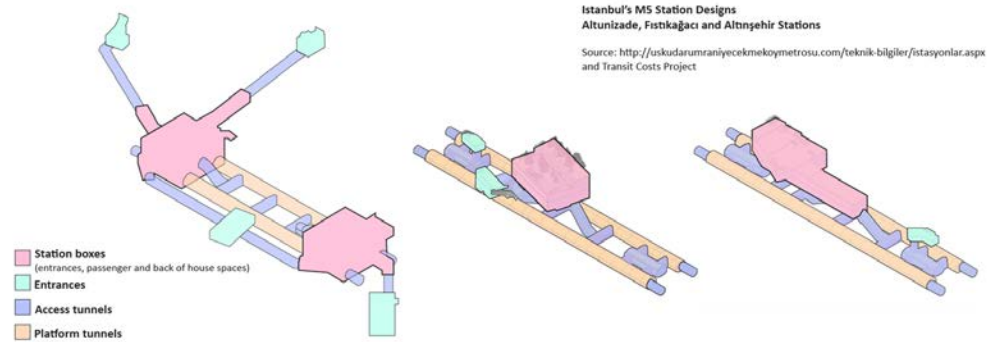


Proposed Union Square Station

Another World is Possible

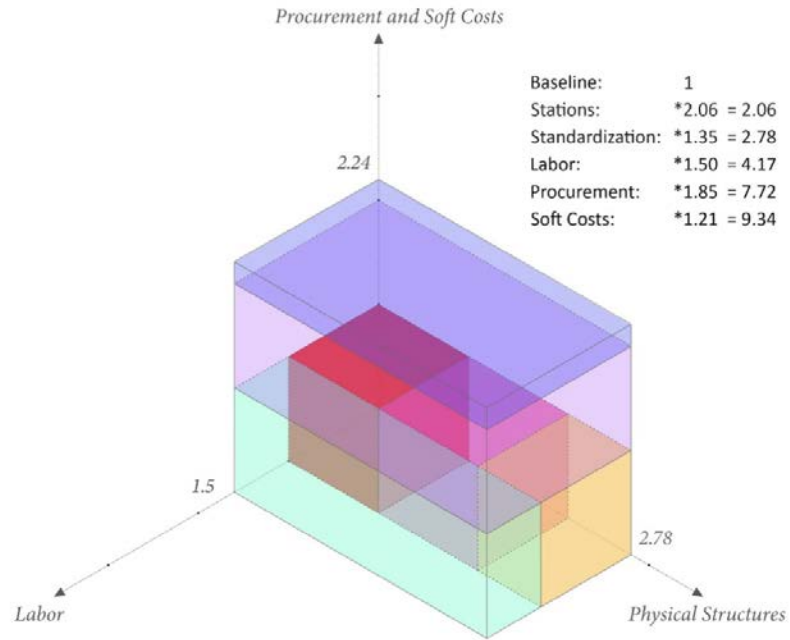


Redesigned Union Square Station



Turkish station boxes are shorter than platforms!

Factor of 8-12



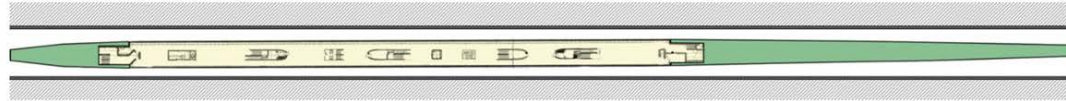
So What's Going on Today?



Scope: Reducing Station Size

Stations have same 10-car platform length as Phase 1, with significantly less back-of-house in the cavern.

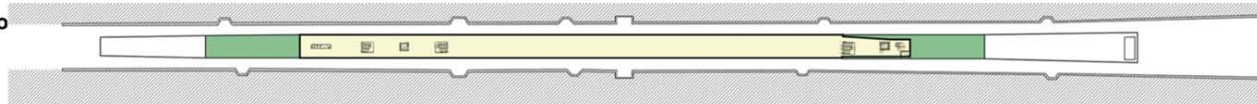
96 St Station
Phase 1 terminal station



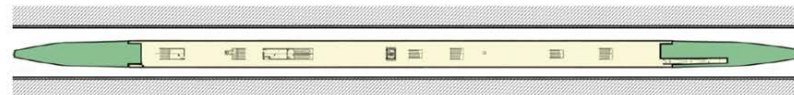
106 St Station



116 St Station



125 St Station
Phase 2 terminal station



Back of House
Platform & Mezzanine

On Track to Save \$1.3 Billion



Scope: All told, these steps saved more than \$1 billion

We're not done – as design advances, we're continuing to value engineer.

Reuse tunnels

Reduce station size

Reduce/relocate back-of-house

**\$1 billion+
savings**

Value engineering underway:

Eliminate tunnel “bellmouth” opening

Reduce platform width for capacity

Relocate mezzanine at 116 St to avoid utilities

Further reduce user space at 125 St

Improve tunnel launch location

**\$300 million+
savings**

+ *Design-Build will yield more efficient delivery concepts*

Thank you

More at transitcosts.com

&

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