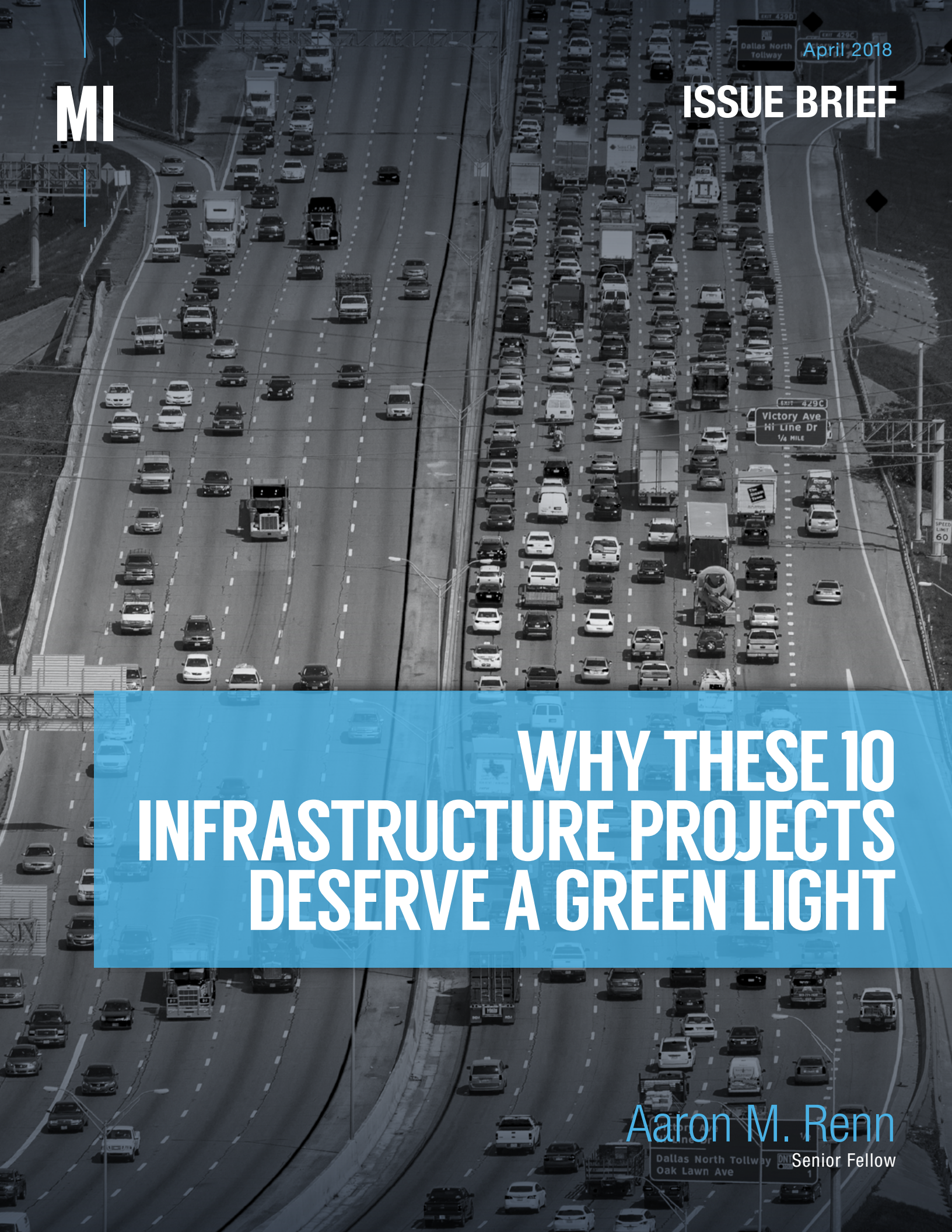




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Dallas North
Tollway

April 2018

ISSUE BRIEF

WHY THESE 10 INFRASTRUCTURE PROJECTS DESERVE A GREEN LIGHT

Aaron M. Renn
Senior Fellow

Dallas North Tollway
Oak Lawn Ave

Executive Summary

Many published reports criticize specific projects as boondoggles.¹ This report is different. It highlights 10 major infrastructure projects—including highways, airports, rail links, and pipelines—that should be built. Some of them are nearing construction, others are in the planning stages, still others are only on the drawing boards. The variety of short- and longer-term projects reflects the variety of the country's needs.

To be sure, America's overwhelming priority today is to maintain the safety and security of existing rail, highway, airport, port, energy, telecommunications, and water and sewer systems—not the building of new ones. Still, there are circumstances that justify new, expanded, or replacement of existing infrastructure. These cases often arise in regions that are rapidly growing in population and jobs and:

- where the existing infrastructure is at or over *capacity* and is experiencing a significant historical (not just projected) *growth in demand, in a region that is growing overall*;
- where infrastructure is *obsolete* or nearing *the end of its useful life*; where the original networks did not envision the current *distribution of demand*, such as highway links between cities that used to be very small but now are very large; and
- where the project *costs can be recovered from user fees* such as tolls.

This report highlights examples of where there is a legitimate justification for new or expanded infrastructure projects, and why. The goal is to aid policymakers in identifying the kinds of projects that states and localities should be undertaking. This type of bottom-up approach is aligned with President Trump's proposed infrastructure plan.²

Here are the 10 projects that deserve a green light, followed by an explanation:

PASSENGER RAIL AND TRANSIT

1. Gateway Project (New York City and New Jersey)
2. North–South Rail Link (Boston)

FREIGHT RAIL

3. Chicago Region Environmental and Transportation Efficiency (CREATE) program

HIGHWAYS

4. I-11 link between Phoenix and Las Vegas
5. I-35 Capitol Express project (Austin)
6. SR 37 freeway improvement (Indianapolis)
7. I-345 freeway removal (Dallas)

AIRPORTS

8. Kansas City International Airport terminal improvement
9. Denver International Airport expansion

ENERGY

10. New England gas pipeline



1. Gateway Project (New York City and New Jersey)

What: Build an additional pair of rail tunnels, plus ancillary projects, between Manhattan's Pennsylvania Station and New Jersey.

Why: Penn Station is the country's busiest rail station—a hub for commuters to Manhattan from New Jersey and Long Island, as well as for passengers traveling between Boston and Washington, D.C., on Amtrak. However, Penn Station is connected to New Jersey by a single pair of century-old tunnels that are in need of major renovation. This creates a single point of failure potentially affecting 171,000 daily rail passengers.³ Amtrak estimates that the economic impact of a tunnel failure would be \$100 million per day.⁴

In 2012, Hurricane Sandy drove saltwater into the tunnels, damaging their concrete lining and electronics.⁵ This damage made repairs more urgent, repairs that will eventually require months-long closures of one tunnel at a time, cutting train capacity by three-quarters, and severely impairing the ability of New Jersey commuters to get to their jobs.⁶ The Gateway Project would provide the ability to carry out critical repairs without a crippling loss of capacity.

Penn Station has also seen strongly growing passenger volumes. The number of New Jersey Transit commuter rail passengers using the existing Hudson River tunnels has tripled since 1990, to 150,000 on 330 trains. Amtrak runs an additional 100 trains carrying 21,000 riders, including the Northeast Corridor (from Boston to Washington, D.C.), the system's only profitable route.⁷ New tunnels are thus also required to provide for increased commuting capacity to the growing Manhattan job market.

Price: The current cost estimate is \$11.1 billion for new tunnels and \$1.9 billion for rehabilitation of the existing ones.⁸ (The entire Gateway Project may be as much as \$30 billion).⁹ This is substantially more expensive than international tunneling projects,¹⁰ which means that this project should not proceed until the costs are reduced.

Status: An Environmental Impact Statement for the new tunnels is being finalized, but financing has not yet been obtained. A related project in New Jersey, replacing an old drawbridge, is under construction. Some portions of construction, including the preservation of a tunnel right-of-way in New York and land acquisition in New Jersey, have already been done as part of a previous attempt at a similar project.

Justification: The current infrastructure (the tunnels) is *obsolete* and *nearing the end of its useful life*, and the *demand for rail services is growing*.

2. North–South Rail Link (Boston)

What: Build new rail tunnels (four tracks) connecting Boston's North and South Stations.

Why: Boston's commuter-rail lines radiate from two terminals: South Station, adjacent to the city's downtown Financial District; and North Station, less convenient to the city's central business district (CBD) and with much lower ridership. Boston's growth in commuter ridership has strained the current South Station, which is at capacity at peak periods, with no additional train runs possible (given the Massachusetts Bay Transit Authority and Amtrak's current operating standards). There is also currently no direct subway connection between North and South Stations, which further complicates transfers between them.

The North–South Rail Link is an alternative to a proposed \$2 billion project to expand South Station.¹¹ It would enable connectivity between all the northern and southern commuter rail lines plus Amtrak in Boston by permitting “through running,” as in Philadelphia and several European cities. This form of operation is more efficient than turning trains around at downtown terminal stations. The rail link would also provide better access to Boston’s CBD. However, the legacy of severe cost overruns on Boston’s “Big Dig” project that buried a downtown freeway underground¹² will likely cast a cloud over this proposal.

Price: A recent Harvard Kennedy School study estimated the tunnel cost at \$4 billion to \$6 billion, depending on the number of tracks and additional stations.¹³

Status: A north–south rail tunnel was originally proposed in 1921 but was never built. Massachusetts is currently conducting a feasibility study.¹⁴ The state also conducted an environmental study to expand South Station, which has been the politically preferred alternative.

Justification: The *demand for additional train runs is growing*, and the infrastructure is at *peak capacity*.

3. Chicago Region Environmental and Transportation Efficiency (CREATE) program

What: CREATE is an ambitious series of projects designed to reduce congestion and eliminate bottlenecks in Chicago’s freight and passenger rail network.

Why: Chicago is the nation’s largest rail hub, the place where eastern and western railroads meet. One-fourth of the nation’s rail freight and half of all intermodal trains must get to or through the Windy City.¹⁵ Due to heavy congestion and movement conflicts on rail lines laid out a century ago, it takes a freight train 26–30 hours to get through the city. Freight rail speeds average 5 mph–12 mph in the region. This affects the entire national rail network. Locally, commuter and Amtrak trains are also often delayed.

CREATE was established as a public-private partnership between state and local government, the U.S. Department of Transportation, six major freight railroads (BNSF, Canadian Pacific, Canadian National, CSX, Norfolk Southern, Union Pacific Railroad), Amtrak, and Chicago’s Metra commuter

rail system to significantly reduce rail congestion by eliminating bottlenecks and grade crossings, creating overpasses and underpasses, upgrading tracks, and expanding rail capacity. CREATE comprises 70 discrete projects.

Price: \$2.6 billion in work outstanding (out of \$4 billion total)¹⁶

Status: 34 projects are complete or under construction. Grant applications are pending for an additional \$500 million in projects along the 75th St. Corridor.

Justification: The current infrastructure is *obsolete or nearing the end of its useful life*.

4. I-11 link between Phoenix and Las Vegas

What: Build a new interstate connection between the two cities.

Why: Las Vegas and Phoenix, two fast-growing cities, are about 300 miles apart but do not have any direct interstate connection. The route that does connect them, US 93, until recently was a dangerous two-lane road with several choke-points, including a pedestrian-filled crossing over the top of the Hoover Dam. US 93 has since been upgraded to a divided four-lane highway and the Hoover Dam bypassed. But the upgraded route is not quite built to interstate standards. Urbanized sections of the route have frequent stoplights, there are occasional at-grade intersections with rural highways, and some of the lanes are narrower than the 12-foot interstate standard.

Price: \$318 million for the 15-mile segment in Nevada.¹⁷ No cost estimate has been issued for the longer set of upgrades in Arizona.

Status: Construction in Nevada has begun. The Hoover Dam bypass is complete, and a part of Interstate 11 in the southeastern Las Vegas suburb of Henderson is already open; a bypass of the nearby town of Boulder City is nearing completion. Construction of the much longer segment in Arizona has not begun, though some preliminary planning is under way.

Justification: *Changing distribution of demand:* the connection between *two cities that used to be small but now are large* is now obsolete.

5. I-35 Capital Express project (Austin)

What: Add two express lanes in each direction to I-35 for 33 miles through the capital of Texas.

Why: Austin has been the fastest-growing major metro area in the U.S. since 2000, with its population up over 62% during that period.¹⁸ Austin has not built sufficient new infrastructure to support that growth. As a result, I-35 through central Austin is the second most congested highway in the state.¹⁹

The Texas Department of Transportation's (TxDOT) Capital Express project would mitigate congestion by building additional express lanes. Per TxDOT, these could be High Occupancy Vehicle lanes, though tolls are not proposed at this time. However, additional lanes often increase travel demand ("induced demand"). This can be managed by congestion pricing, i.e., by tolls, which should be instituted on this project.

In addition to added lanes, the Capital Express project would lower I-35 through downtown Austin, cap certain segments with parks, and remove an elevated viaduct.²⁰ These actions would improve connectivity between downtown Austin and adjacent neighborhoods.

Price: \$8.1 billion²¹

Status: Studies are in progress; construction is anticipated to begin in 2021, pending funding.²²

Justification: Austin is a *high-growth* region, and the existing infrastructure has *reached capacity*.

6. SR 37 freeway improvement (Indianapolis)

What: Upgrade 6.5 miles of SR 37 from a surface arterial to a freeway.

Why: Hamilton County in north suburban Indianapolis is the fastest-growing county in Indiana. SR 37 serves the city of Fishers, whose population grew from 7,508 in 1990 to

90,127 today, and Noblesville, whose population grew from 17,655 to 60,183.²³ The roadway is projected to become gridlocked without upgrades.²⁴

Using a technique pioneered elsewhere in the region, SR 37 will be converted from a surface street to a freeway by constructing tight roundabout interchanges at existing intersections (plus one larger interchange). This allows the road to be upgraded to a freeway at moderate cost, with limited displacement for far less cost than constructing a new freeway.

Price: \$150 million²⁵

Status: In design; construction projected to start in fall 2018

Justification: Regional *growth* is straining the *capacity* of existing infrastructure.

7. I-345 freeway removal (Dallas)

What: Demolition of 1.3 miles of urban freeway in central Dallas, to be replaced with a surface boulevard

Why: Downtown Dallas, about 1.5 square miles, is circumscribed by a five-mile freeway loop that consumes large amounts of valuable real estate and makes pedestrian access to downtown unpleasant. Though primarily a commercial area, the downtown has seen substantial residential growth. Areas immediately beyond I-345, the northeast section of the freeway loop, have also experienced substantial residential growth and revitalization. The demolition of I-345 would connect these two growing neighborhoods and also free up 245 acres of downtown land for high-density, taxpaying development. The Texas Department of Transportation (TxDOT) estimated an increased land value of \$2.5 billion from removal, a minimum of \$1 billion greater than any other studied scenario.²⁶

Price: TxDOT estimates the price as ranging between \$100 million and \$500 million.²⁷

Status: The Dallas city council and TxDOT are both studying the impact of removing the freeway.²⁸

Justification: The existing infrastructure is *obsolete*.

8. Kansas City International Airport terminal improvement

What: Replace the existing terminals to improve passenger flow and experience.

Why: The airport in Kansas City was built in the 1960s, largely at the direction of Trans World Airlines, which intended to use it as a hub for domestic flights. TWA designed the airport as a set of disconnected horseshoe-shaped concourses with airport gates on the outside and public roadways on the inside—allowing passengers to drive to within a few dozen paces of their gates, but leaving very little space for security, concessions, or restrooms. This decision proved shortsighted: after a spate of aircraft hijackings in the 1970s, airports made security more stringent, and TWA moved its hub to St. Louis. Increased passenger traffic and the needs of post-9/11 security have further overburdened the airport, which passengers routinely rank as one of the worst in the U.S.²⁹ Respondents to informal polls cite crowding and the lack of amenities.

Price: \$1 billion, to be paid from airport revenues³⁰

Status: Kansas City voters approved building the new terminal last November. The city recently signed a Memorandum of Understanding for development with Edgemoor Infrastructure & Real Estate, a developer based in Bethesda, Maryland.³¹

Justification: The existing facilities are *near the end of their life* and are also *obsolete*.

9. Denver International Airport expansion

What: Add 39 new gates to Denver International Airport.

Why: The Denver metropolitan region has grown rapidly in recent decades. So, too, has the traffic through Denver International Airport. DIA's central location and efficient runway layout make it an ideal hub, but the airport, built to accommodate 50 million passengers per year, handled 58.3 million in 2016.³² Increasing the number of gates would accommodate up to 85 million passengers per year.

Price: About \$1.5 billion, paid for from airport revenues

Status: The airport has proposed several contracts for design and construction, and the Denver city council has approved an expansion,³³ but no contracts have yet been signed.

Justification: The airport is located in a *high-growth* region, straining the facility's capacity.

10. New England gas pipeline

What: Build a new natural gas pipeline to serve New England states.

Why: Existing natural gas pipelines into the region are at capacity at peak periods, as the region heavily shifted its electricity generation away from coal and oil toward gas (15% from gas in 2000 vs. 49% today). But anti-pipeline advocates have repeatedly stymied any new construction. The result is that the region has had to import natural gas via tanker ships, some of it from Russia.³⁴ Gas and electricity costs fluctuate wildly in the region. A winter storm in January 2018 caused electricity prices to double and the price of natural gas in the Northeast to spike by a factor of 60.³⁵ New England ISO, which operates the regional electric grid, warns that the region faces rolling blackouts in the future if it does not build new pipelines.³⁶

Price: Previous proposals for pipelines suggest a cost of about \$3.2 billion.³⁷

Status: Several pipelines have been proposed in the recent past, but none have been built.

Justification: The existing infrastructure is at *capacity*.

Endnotes

Manhattan Institute policy analyst Connor Harris provided research support for this paper.

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