BILLIONS FOR RED TAPE

The Gateway Rail Tunnel Project endures a paralytic—and costly—permitting process

BY PHILIP K. HOWARD

Two new rail tunnels need to be built under the Hudson River to alleviate a critical rail bottleneck and permit overhaul of century-old tunnels. The purpose of this report is to outline the economic and environmental costs of different permitting timetables, and to propose approval mechanisms that will save taxpayers billions and avoid significant environmental harm.

A Transportation Armageddon

The Gateway Rail Tunnel Project is a $24 billion infrastructure plan to alleviate a critical bottleneck on the Northeast Corridor rail line (Washington, DC to Boston). It will create two new tunnels under the Hudson River between New Jersey and Penn Station in New York City, rebuild capacity on the New Jersey

approaches to the Hudson, and add platform and station capacity within Penn Station. This connection is a critical transportation link in the Northeast Corridor, an area of the country that accounts for 20 percent of national GDP. Ridership on the Northeast Corridor rail line includes nearly 100,000 individual train trips each way between New Jersey and New York City every workday. The trains run at close to full capacity.

The existing rail connection between New Jersey and Penn Station consists of a pair of 105-year-old tunnels underneath the Hudson River, just south of the Lincoln Tunnel. These rail tunnels, which serve both Amtrak and NJ Transit trains, were already in need of repair when they were badly damaged in October 2012 by millions of gallons of seawater from Superstorm Sandy, causing further deterioration of system performance. In one otherwise ordinary week in July 2015, four out of five weekdays saw total service disruption, with no trains crossing the Hudson at all. Without intervention such delays are a "soul-chilling premonition of our future," said New York Senator Chuck Schumer in August 2015, adding that he feared we are approaching a "transportation Armageddon."

A Regional Crisis

At the heart of the Gateway Project, which was first proposed by Amtrak in 2011, is the creation of two new Hudson River tunnels. Further disruptions on the existing tunnels are inevitable, and each of them must be closed down, at some point in the next decade, for at least a year of repairs. Closing one without the creation of additional tracks will reduce system capacity by 75 percent. The economic and environmental effects of closure, without new tunnel capacity to replace the existing tunnels, will be harmful to the regional economy and cause paralytic traffic jams through much of the day. In May 2015, during a tour of the current tunnels, New Jersey Senator Cory Booker told reporters, "I want to focus people on the fact that we're in crisis."

New rail capacity under the Hudson has been studied since at least 1971. A proposal to build two new tunnels was incorporated in the ARC (Access to the Region's Core) Project that was approved in 2009, after six years of environmental review, with an initial budget of $8.4 billion. In 2010, the project's stated cost had risen to $11 billion and New Jersey Governor Chris Christie withdrew his state's share of the funding. The project was terminated after $600 million had been spent.

Plan to Double Capacity

Gateway's proposed two tunnels are similar to those in the ARC Project but will take a slightly more northerly path under the Hudson, terminating at Penn Station. (The ARC tunnel would have terminated under Herald Square in Manhattan, without a direct connection to Penn Station.) Gateway will also involve adding platforms to Penn Station and rehabbing bridges and crossings in New Jersey to improve system capacity.

With the addition of two new tunnels, and the rehabilitation of the two current ones, Amtrak estimates that Gateway will ultimately double rail capacity throughout the project area. In 2015, Amtrak estimated that Gateway would cost $20 billion—half for the new tunnels and half to expand capacity on both sides, including bridge upgrades and new platforms for Penn Station. In early 2016, Amtrak raised the estimated costs to $23.9 billion.

Final costs will depend on when work can begin. Planning for the project is substantially complete, and with permits in place, work could start by the end of 2017. However, Gateway requires environmental review and permits from almost two dozen federal, state and local agencies.

Today, there is no clear path to review and permitting for the project even though the similar ARC Project underwent a six-year environmental review and was fully permitted. Nor is there agreement as to the scope of review that is required. Amtrak estimates a process of three years. Other participants have suggested that it will take twice as long. A five-year review process would mean the new tunnels would not open until 2028 at the earliest, past the time at which one of the existing tunnels will likely be shut down for repairs.

Time is Money

In our 2015 report, "Two Years, Not Ten Years," Common Good found that a six-year delay in environmental review and permitting more than doubles the total cost of infrastructure, including continuing capacity inefficiencies. The report also found that lengthy environmental review often causes environmental harm by prolonging bottlenecks. The main flaw in the current processes for infrastructure approval, the report found, is the absence of clear lines of authority to make judgments needed to make sure the review process moves forward and does not get bogged down in immaterial issues and disagreements.

With a project the size of Gateway, time is not just money, but lots of money. As set forth on page 20, when compared to an 18-month process to finish review and permitting, a three-year permitting timetable could increase taxpayer cost of the project by over $3 billion. A further two-year delay would increase costs by almost $10 billion.

The importance of Gateway is undeniable. There are no serious arguments against the project. Nor are there any serious alternatives, which have already been studied as part of the ARC review. Delay in starting work will only raise costs, drag down the regional economy, and cause environmental harm. Conversely, the environmental benefits of building Gateway as soon as possible are compelling. Better rail capacity takes cars and buses off the road. Avoiding the nightmare scenario of premature shutdown of an existing tunnel is itself an overriding reason to start construction as soon as practicable. What is needed to advance the public interest—to save taxpayers billions and avoid a potential "transportation Armageddon"—is an expedited and certain legal path to approval of Gateway.

The Gateway Project will expand and renovate the Northeast Corridor rail line between Newark, New Jersey and New York City. The line's original tunnels and bridges were built over 100 years ago and suffered major damage during Hurricane Sandy.

Cost-Benefit Breakdown

Based on engineering, design, and evaluation work already completed, we understand that construction on the Gateway tunnels could commence by late 2017, or roughly 18 months from April 2016, and that the tunnels could be operational seven years later, in late 2024. As stated earlier, delaying permits by another 18 months will increase costs by over $3 billion, with costs rising at a higher rate with further delays. The main potential costs and benefits are as follows:

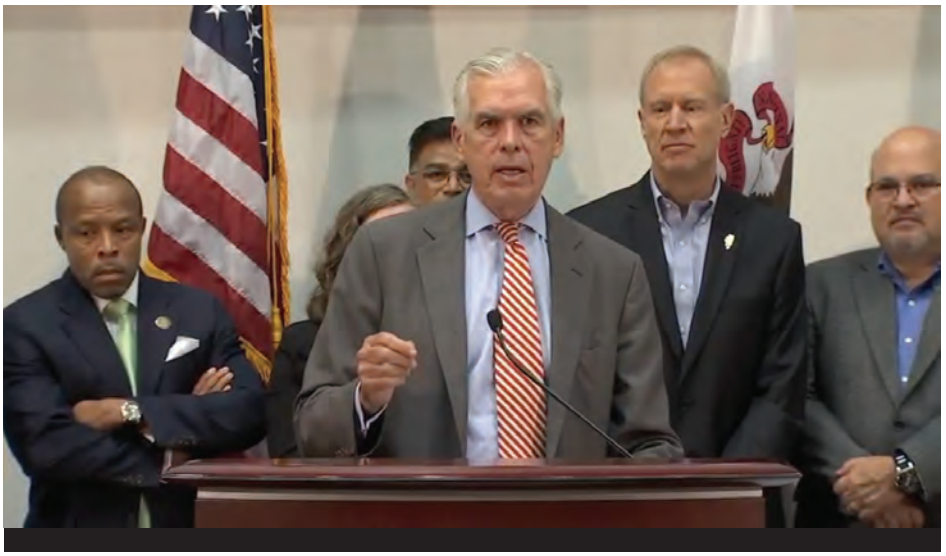
Environmental benefits of increasing rail capacity sooner. The permitting documents for the ARC Project projected an additional 80,000 trips by train per day over the current baseline, a nearly 50 percent increase in ridership, upon project completion. Gateway would double the ARC capacity (ultimately adding around 160,000 additional train trips). Increasing rail capacity produces a commensurate drop in automobile usage. The analysis for ARC estimated that 80,000 additional train trips would translate to a 4.9 percent decrease in daily car trips across the Hudson, some 590,000 fewer miles driven per day. Based on the same metrics, Gateway would save over 1.1 million miles per day, reducing automobile traffic across the Hudson by nearly 10 percent.

Economic benefits from construction stimulus. ARC planning documents concluded that the project would generate nearly 100,000 jobs in the region during the construction phase, and approximately $9 billion in business activity during that same period. ARC's environmental impact statement (EIS) also estimated that the construction phase of the project would generate around $1.5 billion in federal, state and local tax revenue.

Economic and efficiency benefits of increased rail capacity. A post-mortem report of ARC by the Government Accountability Office aggregated various economic analyses which concluded that economic growth attendant to improved transportation infrastructure would generate somewhere between 44,000 and 100,000 additional jobs, and lead to an increase of up to $4 billion in personal income during the 10 years following the project's completion. The analysis also concluded that the project would generate $120 million a year in business activity over the long term, and that home prices in regions served by the project would increase by an average of 4.2 percent following the project's completion, resulting in an additional $375 million a year for local governments from increased property tax revenue.

Gateway will provide double the capacity of ARC, at double the cost. However, we conservatively assume no greater economic benefit from Gateway than from ARC. Because we cannot determine the net benefits of what the ARC analysis calls increases in "business activity," we discount that number by 80 percent.

Construction cost increases due to delay. As a rule of thumb, developers estimate an increase in construction costs of at least five percent for each year of delay in a project. Two percent is due to inflation in hard costs, and three percent for carrying overhead for each additional year. In 2003, ARC was projected to cost $3.7 billion. By 2010, because of a number of factors, including delay, the cost estimate had risen to $12.4 billion.



As Chair of the nonprofit government reform coalition Common Good, Philip Howard has worked closely with leaders of both major political parties in the United States.

Costs attributable to closures of existing tunnel. Amtrak estimates that further degradation of the two existing trans-Hudson rail tunnels will result, sooner rather than later, in a 75 percent decrease in capacity when one tunnel must be shut down for repairs, or a loss of over 131,000 train trips per day (65,500 each way). The closure for repairs is estimated to be for one year. Once repairs are complete for one tunnel, the other must be shut down for repairs. At the rate used in ARC's permitting documents, noted above, shutting down one tunnel translates to nearly one million additional miles driven in the region per day. The three Hudson River automobile crossings already exceed capacity during rush hours. Because congestion time rises disproportionately as traffic exceeds capacity, a rail tunnel closure will result in dramatic increases in delays.

Tunnel Closure Assumptions

None of the participants have publicly commented on how much longer the existing tunnels can remain in service before being closed for repairs. Nor do they suggest how many more short-term closures will be required.

For simplicity, we assume a relatively optimistic scenario:

For a three-year permitting process with approvals, we assume a 25 percent chance that a tunnel must be shut down in seven years, and that the second tunnel can remain open until the new tunnels are completed;

For permitting processes lasting either five or seven years, we assume a 75 percent chance of shutdown ten years from now, and that the second tunnel must be closed after the first is repaired;

Upon a shutdown in all scenarios, we assume an increase of 50,000 cars per day entering Manhattan, based on Amtrak's estimate of a loss of 65,500 round trip train rides per day (131,000 total trips) and assuming a diversion of lost rail passengers to cars at a rate of 1.3 passengers per car when a tunnel is closed.

To date, there has been no comprehensive, publicly available analyses of the potential effects of a surge in traffic of the size that would occur when one of the existing tunnels shuts down and many of those passengers divert to cars or stop commuting altogether.

The Price of Permitting Delays

Using an 18-month review and permitting process as the baseline, with permits granted by late 2017, the cost of additional permitting delays includes delayed construction benefits, lost business activity, and lost property tax revenue (all based on ARC projections). Doubling the baseline 18-month review and permitting process—for a total of three years—increases the project cost by $3.3 billion.

With a permitting date of March 2019, the calculations are as follows:

Construction cost increase from 18-month delay: 5 percent yearly premium on $24 billion construction cost x 1.5 years = **$1.8 billion.**

Delayed construction benefits: $4 billion in construction income + $1.8 billion in net business activity ($9 billion in business activity less 80 percent) + $1.5 billion in tax revenue on construction activity) discounted at 3 percent over 1.5 years = **$317 million.**

Loss in general business activity: $120 million in business activity yearly discounted by 80 percent x 1.5 years = **$36 million.**

Lost property tax revenue: $375 million in tax revenue yearly x 1.5 years = **$562.5 million.**

Delay in environmental benefits: 401 million additional yearly vehicle miles driven generate 181,898 tons of CO2 emission per year x 1.5 years = 601 million additional miles driven, **272,000 tons of CO2 released**.

Additional costs from one-year shutdown of one tunnel (assumes 25 percent chance of tunnel closure by Spring 2023).

Environmental effects: 736,000 additional tons of CO2 released yearly x 25 percent chance = **184,000 tons of CO2 released.**

Lost productivity due to 50,000 additional automobiles crossing Hudson into NYC daily: $2.3 billion per year x 25 percent chance = **$575 million.**

The total monetary cost of an 18-month permitting delay is $3.3 billion. Using these same calculations for lengthier permitting delays, the cost for a 3.5 year delay totals $9.8 billion and a 5.5 year delay rises to $13.4 billion.

However, a NJ Transit analysis concluded that a traffic spike caused by a similar reduction in rail capacity would create major congestion as far as 25 miles from the bridge and tunnel approaches on the New Jersey side. ARC's EIS similarly found that as many as 44 intersections within Manhattan would be plagued by persistent gridlock during peak hours if car traffic increased by a similar level (up from the nine intersections that currently experience gridlock during peak hours).

Traffic modeling software, used here to derive economic loss, additionally shows that average vehicle speed, throughout the affected region, could drop by as much as 10 percent during rush hours. No one has calculated the specific delays caused at the entrance to the Hudson crossings by 50,000 additional cars.

Calculating the Cost of Permitting Delays

The estimated costs and benefits of delay are approximate. The numbers are drawn from ARC review documents, and the congestion effects are based on the generally accepted Balanced Transportation Analyzer traffic model.

While increases in construction costs and environmental costs are generally dollar-for-dollar losses, the reduction in business activity is a more complex equation and different categories may offset each other at the margins. As noted, we have generally applied conservative assumptions, including using economic benefits comparable to the ARC Project for the Gateway Project of double the size and scope, and using optimistic scenarios for a potential shutdown of the existing tunnels. Different assumptions that are realistic could increase the costs of permitting delay by another 50 to 100 percent.

Neutralizing the Bureaucratic Inertia

Other countries, including Germany and Canada, complete review and permitting for large projects within one to two years. They achieve this without sacrificing public input, transparency, or quality by allocating clear lines of authority to make sure deadlines are adhered to.

For Gateway, much of the review has commenced or has already been completed. The main environmental issues raised, as noted, have been extensively studied and published in the ARC review. Finishing permitting within 18 months is achievable provided there are authority mechanisms in place to avoid blind alleys or delays caused by bureaucratic inertia.

The mechanisms needed to achieve this timetable could include the following:

Executive order by the President. By executive order, the President can declare an expedited timetable for Gateway to avoid economic and environmental harm. The President can designate the Chair of the Council of Environmental Quality to make decisions about the scope and adequacy of environmental review, and give the head of the Office of Management and Budget the job of resolving all other permitting issues. He can also require state and local governments to abide by the timetable or risk federal funding.

Legislation. Congress could enact a law exempting Gateway from various federal requirements (including further environmental review), preempting state and local permits if they fail to meet the designated timetable (similar to the procedure in place for permitting interstate gas pipelines), and expediting judicial review.

> "...a six-year delay in environmental review and permitting more than doubles the total cost of infrastructure..."

State and local adherence to deadlines. The governors of New Jersey and New York could appoint a project czar, and use their powers to set and enforce timetables.

A Viable Solution

Infrastructure projects come in many shapes, sizes and circumstances. The best process will depend, in part, on weighing the circumstances, including the costs and benefits of delay and debate. An optional project with material environmental costs should generally have a process with time for reasonable debate. The collapse of a bridge or highway will generally call for immediate repair, as occurred when the Santa Monica Freeway was rebuilt in 66 days after the 1994 Northridge earthquake in Los Angeles.

The circumstances of the Gateway Rail Tunnel Project require a process that is completed by the time contractors are able to begin work for four critical reasons. First is the risk of shutdown of the damaged existing tunnels itself. Second, there is no reasonable alternative to the new tunnels, and third, the delay will add billions to the cost and will be harmful environmentally. Lastly, the costs and benefits have already been extensively studied and debated with the similar ARC Project. Meeting this timetable requires that multiple governmental agencies meet time deadlines, and that an overriding authority exists to resolve disagreements that are inevitable among agencies with different public mandates. The main challenge in achieving this result is that agencies are not used to working this way. That is why commitment by political leaders is vital. Public support for a disciplined timetable is also essential. The benefits more than justify a determined effort to make sure this happens: Taxpayers will save billions, traffic congestion will be reduced, and the New Jersey and New York economies will get a needed boost—just by minimizing red tape. ✪

This report was originally published by Common Good in May 2016 and supplements its 2015 report, "Two Years, Not Ten Years: Redesigning Infrastructure Approvals."

Philip Howard is a well-known leader of government and legal reform in America. He is the Chair of Common Good, a nonpartisan, nonprofit government reform coalition, and the author of several best-sellers, including The Death of Common Sense and The Rule of Nobody. Visit www.commongood.org.