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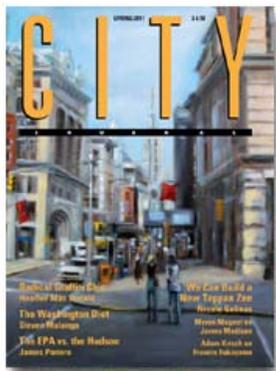


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NICOLE GELINAS

The Tappan Zee Is Falling Down

Why is New York taking so long to replace a vital bridge?

Last October, more than a year into his \$787 billion stimulus program, President Obama concluded in a New York Times Magazine interview that “there’s no such thing as shovel-ready projects.” To learn why America can’t build stuff quickly (or even slowly), Obama should take a rush-hour ride over the Tappan Zee Bridge, which connects Rockland and Westchester Counties over the Hudson River, just north of New York City.



MARGARET BOURKE-WHITE/TIME & LIFE PICTURES/GETTY IMAGES The state built the Tappan Zee Bridge on the cheap, which has contributed to its deterioration.

The Tappan Zee exemplifies the state of America’s infrastructure in 2011. We rely on it more than ever: each year, 51 million cars, trucks, and buses traverse the seven-lane “Tap,” as locals call it. More people commute over it than through the Lincoln or the Holland Tunnel, both of which cross the river to the south. Yet New York outgrew the bridge decades ago, with today’s traffic far exceeding the structure’s designed capacity. Worse, the Tappan Zee is a disaster in slow motion. Absent ceaseless repairs and ever-vigilant inspectors, it could collapse. Even short of such a disaster, the bridge’s deterioration poses a significant risk to the regional economy: if state officials ever felt that they were losing the battle against the Tap’s decay, they would shut it immediately, diverting traffic to already-clogged arteries to the south and preventing thousands of the downstate region’s workers and customers from getting to their destinations.

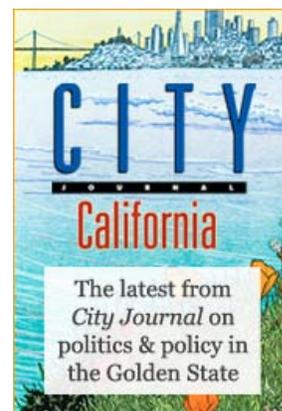
The Tappan Zee’s parlous condition is nothing new. Yet New York State, after more than a decade of halfhearted attempts to start building a replacement, remains at least another decade away from finishing a new bridge—in fact, a half-decade away from even beginning the project. This failure reflects a lack of political will, a weakness that threatens the Empire State’s capacity to grow.

The Tappan Zee was one of the last bridges to arise under a vanished American way of doing things: build stuff first, ask questions later. In the spring of 1950, Governor Thomas Dewey decided that the 535-mile New

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**After The Fall: Saving Capitalism From Wall Street—and Washington**  
by Nicole Gelinas

York State Thruway that he was laying down would include a three-mile bridge from Rockland, just north of New Jersey, into Westchester, where people could drive on to New York City.

Then he got it built. Shortly after Dewey's reelection that November, the new Thruway Authority, which would run the highway and the bridge, announced that it had selected a site between Tarrytown and Nyack—a section of the Hudson called the Tappan Zee (after the Tappan Indian tribe and the Dutch word for "sea"). Even as local residents screamed, anticipating the disruptions of construction and traffic that would change their towns' character, Thruway chairman Bertram Tallamy made clear that since he had the governor's support, it would be *his* way and the highway. He wouldn't consider an alternate site, "although he wouldn't say why," the *New York Times* reported.

By March 1951, Dewey had secured the state legislature's approval. By May, the Army Corps of Engineers, which needed to approve plans affecting navigation in national waterways, had signed off on the state's drawings. Several months later, the Thruway Authority was awarding construction contracts on a project that would gobble up one-third of South Nyack, including its downtown.

Work on the \$81 million project—\$668 million in today's dollars—hit its peak intensity by 1953. Those Rockland residents who hadn't lost their property endured "a sleepless nightmare," the *Times* said, as workers on a 24-hour schedule engaged in "raucous thumping and banging of pile drivers all night." Two weeks before Christmas 1955, Dewey's successor, Governor William Averell Harriman, inaugurated the bridge with the help of a marching band and jet flyovers. By its first Sunday, newspapers were pointing out that the bridge was "crowded," with a "minor accident" causing "a 20-minute tie-up." From a gubernatorial green light to traffic jams had taken only five years.

The bridge spurred new houses and jobs, as officials had hoped. Rockland's population more than doubled between 1950 and 1968, from 90,000 to 210,000. Companies—Volkswagen, Xerox, the Geigy Chemical Corporation, and other major firms—took advantage of a much larger pool of potential commuters and created solid office and industrial jobs in the county. And with nearly two-thirds of eastbound drivers using the bridge to drive to Westchester and New York City, those more populous areas benefited from the growing base of commuters living in Rockland.

No governor today could build a massive public-works project with so little public input. A little more than a decade after the Tappan Zee's completion, activists in New York City, including Jane Jacobs in the West Village, started challenging public officials' authority to plow highways through neighborhoods with little public review. Conservationists, too, began to fight new projects. In 1971, Governor Nelson Rockefeller declared the Hudson River Expressway, five years in the planning, dead, after opponents got a federal court to forbid its construction and the U.S. Supreme Court refused to hear an appeal. More than a decade later, a federal judge killed off Westway, a decade-old plan to make Manhattan's rotting West Side Highway run underground, charging that government officials had failed to study the project's impact on striped bass in the Hudson.

It's tempting to romanticize the old way of doing things, and easy, too, to say that the solution to our infrastructure woes is less citizen involvement. Times columnist Thomas Friedman said as much in 2009, writing that "one-party autocracy," at least when "led by a reasonably enlightened group of people," has its advantages, such as the ability to get controversial projects done fast. But in the Tappan Zee's case, building too quickly—and too cheaply—created some of the bridge's present-day problems.

True, New York has simply outgrown the Tappan Zee, something you can't blame on the bridge's original planners. Today, with Rockland's population reaching 300,000 people, four times as many people cross the span daily as the state had originally projected. State figures suggest that congestion on the bridge more than doubles the duration of what should be a 30-minute commute between Suffern, on the west side of the Hudson, and Port Chester, on the east. (To cope with the traffic, the Tap's managers have been inventive—for instance, deploying a movable barrier to reverse the direction of one lane during peak travel periods.) The traffic volume contributes to an accident rate four times higher than the Thruway's average. And because the Tappan Zee has no room for a breakdown lane, each accident cascades into more delays and congestion.

But the Tappan Zee's planners were responsible for some of the bridge's woes. In 1950, engineers warned that on the Rockland side of the proposed bridge, bedrock began 300 to 800 feet below sea level. Anchoring the bridge so deeply was beyond the technology of the time, so the state settled on an untested design that "floated" above bedrock in softer soil and water—mud, really—on top of "sofa pillows" and wooden pilings, as the Times described it. But Mike Anderson, who runs the state Department of Transportation's task force on the proposed Tap replacement, points out that those pilings are consequently so near the river's surface that they're "exposed to the ecosystem and the air in low-tide circumstances," which makes them vulnerable to decay. Thriving marine life in a cleaned-up river has the potential to set up housekeeping in the wooden supports—though the Thruway, which inspects for such things, says that it hasn't happened yet. The supports also don't meet modern earthquake standards.

Moreover, officials cut corners, building parts of the bridge "thin and light" to save money, the state noted in a 2009 report—a strategy "not conducive to long-term durability." They also didn't want to incur the expense of dealing with New Jersey politics, and so they didn't seek a narrower crossing for their bridge across the state line—even though such a crossing would mean a shorter bridge and a lighter load for their untested design. By 1960, only five years into the bridge's operation, cheap finishes, which let moisture seep into key components, were putting the structure at risk.

Most troubling of all was that the Tappan Zee's engineers designed it to be "nonredundant." That is, a critical fracture could make the bridge fail completely because its supports couldn't transfer the structure's load to other supports. Mid-century engineers and their political overseers built bridges this way, notes Sam Schwartz, New York City's chief infrastructure engineer in the 1980s, in part because they thought that new computer technology eliminated any risk of miscalculation.

Partly because the Tappan Zee is nonredundant, its tendency to deteriorate matters a lot. Each decade, the Thruway Authority has more than doubled the money it spends just to keep the bridge open, and

experts believe that the rate of growth in maintenance costs is likely to increase. Eventually, the state's Department of Transportation warns, "continuous maintenance of the Tappan Zee Bridge will be so disruptive and costly as to render the crossing obsolete." Just over the current decade, the Thruway Authority will spend \$1 billion on the bridge, including \$300 million to replace the deck. As the state began work on that project, motorists were already noticing "punch-throughs"—gaping holes in the roadway, including one that "provided a clear view of the Hudson River below," reported the Hudson Valley's *Journal News*.

Motorists' concerns about the bridge's safety intensified after 2005, when the *Journal News* got hold of a 2004 inspection report that highlighted "design flaws, corrosion, and years of neglect," as the paper described it, including an 11-fold increase in "flag" warnings and a persistent column crack that resisted patching. The concerns grew still more intense in 2007, when the Interstate 35W bridge in Minneapolis, a structure of nonredundant design and similar vintage, collapsed and killed 13 people. The Tappan Zee is "absolutely" safe, the Thruway Authority insists. But according to the Department of Transportation, current conditions requiring modification include "diaphragm beam cracks," "bearing deterioration," "column top deterioration," "column base deterioration," and "cross-beam deterioration." You don't have to be an engineer to know that those things aren't good.

Further, the Tappan Zee could fail without actually collapsing, notes construction lawyer Barry LePatner, who has studied 600 bridge failures around the country over the past two decades for his book *Too Big to Fall*. If inspectors decided that a critical component of the bridge was unsafe and got appointed officials to agree, the Department of Transportation could shut the span down without warning during one afternoon commute. That's exactly what the department did in autumn 2009, closing an 80-year-old bridge over Lake Champlain in upstate New York. Despite 20 years' worth of extensive repairs, including a deck replacement, the cracked bridge was unsalvageable; the state blew it up that December. Drivers won't have a replacement until the end of this year, at the earliest.

Knock the far busier Tappan Zee out, and the economic impact would be much larger. The bridge handles 22 percent of the 233 million vehicles that cross the Hudson River downstate each year. The nearest bridge to the north is 29 miles distant, and its connecting roads can't handle heavy traffic. The Tappan Zee's drivers, then, would further clog the already-jammed George Washington Bridge, 24 miles to the south, as well as the Lincoln Tunnel and the Holland Tunnel. Commutes would be nightmarish, causing lost work time and lost business.

Every day that New York delays replacing the bridge forces the public to keep shouldering this risk. As Anderson makes clear, no rehabilitation can remedy the existing structure's built-in vulnerabilities; eventually, time, weather, and weight will win. New York needs a new bridge.

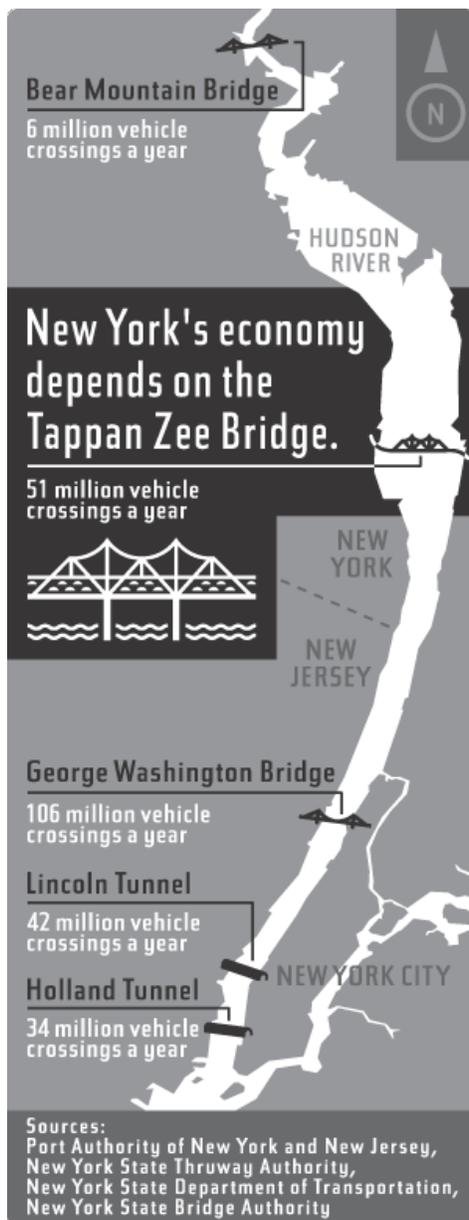


ILLUSTRATION BY ROBERT PIZZO

New York officials have been aware of this need for more than a decade. In that time, the state has committed \$83 million—to build a 2,078-page (and growing) pile of paper.

Prospects for a new bridge looked good in 1999. The economy was doing well, and Governor George Pataki seemed eager to build. “I probably shouldn’t say this, . . . but we are looking at the possibility of completely replacing the Tappan Zee Bridge,” he said on the radio that summer in response to a complaint about traffic. “It’s one of the options under consideration by the Thruway Authority because it is so old.” Newspapers began to speculate about possible timelines. Bob Baird, a *Journal News* columnist, figured that it would take at least three years to build a new bridge; the *Times* gave it ten.

The state began considering public and expert input as it considered different options. The plans that it gradually came up with were sensible: unlike the original, the new Tap would be firmly anchored and wide enough to accommodate heavier traffic and a breakdown lane. It would be big and strong enough to carry a Metro-North line in the future, giving Rockland residents a mass-transit option into New York City, though

dedicated bus lanes would perform that duty at first. The bridge itself would cost \$9.3 billion; adding trains (and train stations) later would bring the total to \$16 billion.

All this planning was perfectly reasonable: a new bridge *should* take longer to design and build than the original Tappan Zee did, because New York should get it right this time. But the planning should have taken just a couple of years, and the bridge should long since have been under construction. Instead, in the best-case scenario, construction won't start until 2015. New York's new governor, Andrew Cuomo—who chartered a boat shortly after his election last November to inspect the bridge and called its replacement “a very important issue”—probably wouldn't be able to cut the ribbon of a Tappan Zee Two even by the end of a second term.

One reason for the foot-dragging is the National Environmental Protection Act (NEPA), which President Nixon signed in 1970 and which requires states seeking federal money for infrastructure projects to prepare “environmental impact statements.” Under NEPA, a state's department of transportation must announce its plan to draw up such a statement; consider alternatives to meeting its goal (including doing nothing); hold public hearings; draw up a draft statement; hold more public hearings; draw up a final statement; secure the approval of various federal agencies; and only then start its project. Twelve years after Pataki spoke out, New York is only at the “draft” stage of this long process. Last year, to speed things up, the state decided to do separate impact statements for the bridge and railroad phases of the project, but even so, it won't release a final statement on the first phase until at least 2012. “There's no question that the NEPA process slows things down,” says Jeffrey Zupan, who has studied the Tappan Zee project for the Regional Plan Association.

NEPA delays infrastructure projects partly because of officials' worries about the courts. Everyone involved in New York infrastructure remembers Westway; nobody wants to be responsible for deciding not to hold the public hearing or for not considering the alternative proposal that a judge later singles out as the reason that he's awarding an injunction against construction. So Albany often errs on the side of doing too much infrastructure prep. For example, to account for New Jersey governor Chris Christie's cancellation of a Hudson River rail-tunnel project, which could affect regional traffic, New York may revise its predictions of bridge traffic and its impact on air quality.

It may seem absurd to be so careful about environmental impacts. Westchester County is not pristine wilderness, and the state's traffic projections are likely to be wrong, in any case. But New York would rather spend the time and money on consultants now than face a court fight five years out. Congress should address these real concerns, perhaps allowing states to self-certify environmental impacts rather than undergo the crushing federal process.

The deeper problem behind all the delays, however, is not regulatory but political. When New York officials want to do something quickly, they don't worry overmuch about legal niceties, public input, or possible court challenges. It took politicians little more than a year to comply with NEPA's requirements for the Fulton Street transit center in lower Manhattan, for example—a project favored by Sheldon Silver, the powerful Speaker of the state assembly. It also took little more than a year to secure NEPA approval of extending the Number 7 subway line to the Far West Side of Manhattan, a project that Mayor Michael Bloomberg

threw his political weight—and the city's money—behind. The Atlantic Yards basketball stadium and housing project in Brooklyn doesn't involve federal money, so officials didn't need to deal with NEPA in that case, but they did steamroll over a similarly rigid state-environmental review process, inviting the state court cases that arose.

No politicians, though, have championed the Tappan Zee. That's not surprising, since they wouldn't get much out of it politically. It doesn't offer affordable housing, as Atlantic Yards supposedly does. Nor does it open up vast new tracts of land to development and tax revenues, as the West Side extension is supposed to. And it isn't a project funded by a pot of 9/11 money, as the Fulton Street project was (at least until costs exceeded those funds). All the pols will get for building a new Tappan Zee is complaints for years on end about construction and money—so that some *future* politician won't have to watch a bridge collapse. Indeed, the existence of NEPA allows politicians like former governors Eliot Spitzer and David Paterson—and Pataki, too—to enjoy press credit for wanting to do something about the Tappan Zee without actually having to do it.

State lawmakers have an additional excuse to avoid building: that a new bridge would cost too much. But that isn't true. The government has the resources. New York is the fourth-richest state in the country in per-capita personal income, according to census data. New Yorkers' per-capita state and local tax burden is the nation's third-highest, the Tax Foundation says. The state will spend \$93 billion this year, not including federal resources.

The issue is not that New York doesn't have the money but that it spends it on other things. Of that \$93 billion, \$19.5 billion will go to aid local school districts, \$17.3 billion will fund Medicaid, and another \$6.2 billion will pay for public-employee benefits. Transportation infrastructure will get just \$2.8 billion (for a total of \$3.6 billion when combined with federal grants). Yes, New York has a transportation "trust fund," which is supposed to devote fuel-based taxes to fund and manage infrastructure—but Albany, over nearly two decades, has developed a bad habit of raiding the trust fund's coffers and replacing the looted money with borrowed funds, leaving it spending nearly 70 percent of its revenues on interest and other debt-related costs.

It's true that replacing a bridge in a dense environment is an expensive proposition. To avoid mucking up commutes for the entire New York City region, the Thruway Authority would have to keep the existing span open during construction, and the state, to avoid taking private property on both sides of the Hudson, would need to attach the new Tappan Zee to the old bridge's connections to dry land. These steps would require more inspectors, more maintainers, and more careful engineering and construction on the new bridge, so as not to endanger the old bridge and the people still using it. Raising a new Tap would also require a lot of expensive nighttime labor, when traffic is lighter on the original bridge. And if a subcontractor thinks that it will be done, say, with some ramp work by 5 AM but doesn't quite finish, its workers can't remain on the job for another hour, when cars start to flow; they must go home and start over the following night. Minimizing pollution and noise in a busy environment by restricting delivery routes and schedules adds further costs. But real leadership means explaining to the public that these costs, heavy though they are, are nevertheless outweighed by the danger of the current bridge's collapsing.

Leadership also means refusing to cite supposedly uncontrollable cost overruns as a reason to avoid building. Planners can control costs, and

while price tags will inevitably be hefty, they don't have to be unpredictable. Indeed, Barry LePatner, the construction lawyer, calls cost overruns inexcusable: "You can plan for any contingency." State officials shouldn't risk being surprised by a contractor who starts work and later claims that he must jack up the price because, say, the water is deeper than he thought. The state should draw up a contract in which it carefully writes up contingency costs for hundreds of possible technical conditions. "These are known unknowns that can be negotiated," says LePatner.

Another way to ward against overruns would be to bid out the project under a "design-build" plan. Instead of hiring a team of consultants to design the span and then choosing a contractor to execute the drawings, the Department of Transportation would hire one contractor to do both design and construction. Under design-build, the risk that a project costs more than expected is assumed by the contractor—usually a global construction and engineering firm or a group of such firms. Governments across the world employ this approach. Closer to home, the Port Authority of New York and New Jersey is pursuing such a plan for the smaller Goethals Bridge replacement project between Staten Island and New Jersey.

Albany could even let firms bid on designing, building, and *maintaining* the bridge for a decades-long period. This kind of arrangement gives the builder an incentive to do work that lasts, because the state doesn't pay the builder up front for the construction work. Instead, the payments are stretched out over time and depend on the project's performing well. "The government has the leverage in the relationship," says Joe Aiello of the Meridiam Infrastructure fund, which manages such projects globally, including the \$2 billion Tarrant Expressway in Texas and the \$900 million Port of Miami Tunnel, both under construction. If structured properly, these long contracts can ensure, too, that the builder and maintainer squirrels enough early revenues away for later years, when maintenance costs will grow. Albany's normal practice, by contrast, has been to use infrastructure surpluses for other purposes.

Still, no contract structure obviates the need for political discipline. In 1992, the British government chose a team of companies to design, construct, and operate the M6 highway—and then watched as local opposition prompted "the longest ever public inquiry for a road project," according to a 2007 report prepared by the project-management firm Aecom. Eight years later, the project finally got a green light, and the government had to pay the companies for the delays.

To succeed, then, the Tappan Zee "needs a political champion" to push the project along, argues Douglas Fried, a partner at the law firm Chadbourne & Parke, which advises on public-private partnership structures. If the state appears to waver, it could wind up paying more. As Karl Reichelt of the construction company Skanska notes, global firms are willing to assume all kinds of technical and other risks, but they deeply fear political risk—the possibility that their clients could do what Pennsylvania did two years ago. The state decided to privatize its turnpike, invited bidders to spend millions of dollars preparing bids for a long-term contract, and then dropped the whole idea at the last minute.

Political discipline demands keeping your mind made up once you have started something, too, counsels LePatner. Often, the culprit behind cost overruns is "change orders" that the state sends the contractor after altering its thinking, mid-project, about what kind of work it wants done and on what schedule. Not only are the requested changes often legitimately expensive; they're also being performed by a contractor who

has already won a bid and thus has little incentive to name a good price. On the current Tappan Zee deck-replacement project, the Thruway Authority has placed 14 change orders, totaling nearly \$30 million in extra costs.

Nor can strict contract rules and innovative partnerships with the private sector eliminate the need for political leadership on labor costs, which would constitute 25 percent to 40 percent of the price of a new Tappan Zee. There isn't much that Governor Cuomo can do about federal and state "prevailing wage" rules, which distort the cost of public-works projects by prescribing pay-scale bands for everyone from carpenters to steelworkers, union or nonunion. But a governor intent on controlling costs could produce labor savings in other ways. Construction crews normally operate under union rules that can confine days to seven hours, with expensive overtime kicking in after that; define jobs so narrowly that two people have to be on site to do one person's job; and allow for irrational scheduling of holidays, so that members of a crew take different days off, slowing down work. In their current round of negotiations with construction unions, private-sector New York employers are hoping to slice 25 percent from labor costs, largely through reforming work rules. Cuomo could do the same on the Tappan Zee.

One more way to control costs is just to get started. As Japan begins to rebuild from its March earthquake and tsunami, it will demand more steel and cement, pushing up global prices. And as the local economy improves, Cuomo will have less power over laborers enjoying demand for their work.

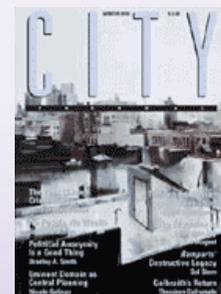
**G**overnor Cuomo needs to realize that time is running out. To make sure that New York will have a bridge in the future, he should make three cases.

The first would be to President Obama and Congress. Last year, New York's department of transportation, in a report prepared with Merrill Lynch, concluded that "federal funding is the single most important revenue source" to replace the Tappan Zee. In general, Albany tries to get the feds to cover 50 percent of the tab for large infrastructure investments, but the last federal transportation bill expired nearly two years ago, and the next one could be less generous. To encourage the feds to support the new \$9.3 billion Tappan Zee, even at a lower rate—say, 30 percent—Cuomo could capitalize on the fact that Obama still hasn't achieved the goal that he set out with his 2009 stimulus and reiterated more than a year later: to "make sound and long-overdue investments in upgrading our outdated and inefficient national infrastructure." Cuomo should say that under his leadership, New York can prove that a big project *can* be shovel-ready.

The second case would be to the New York legislature. New York—if the federal government does chip in that 30 percent—would be responsible for \$6.5 billion. Even if it can raise \$3 billion through higher tolls, the legislature would have to find at least another \$3 billion. But surely a state with as much revenue as New York can afford that investment over time in the infrastructure that underpins the private-sector economy—which, in turn, pays for all the commitments that the legislature makes, from education and Medicaid to public-sector workers' pensions.

The third case would be to the public. If taxpayers across the state are going to approve the government's investment in the Tappan Zee, the governor will need to convince them that a new bridge is crucial—and that he can get it built.

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