



EXECUTIVE SUMMARY

# State Capacity for Building Infrastructure

by Zachary Liscow

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## Introduction

Three landmark bills passed in 2021 and 2022—the Bipartisan Infrastructure Law, the Inflation Reduction Act, and the CHIPS and Sciences Act—directed an estimated \$1.6 trillion of federal spending toward building US transportation, energy, and manufacturing infrastructure. This push toward dedicated public investments in infrastructure has brought the issue of state capacity to the forefront of policymaking. In this paper, Zachary Liscow examines state capacity for infrastructure construction in the United States, identifying three elements of state capacity that drive up costs and slow down timelines: insufficient personnel, onerous procedures, and a lack of adequate tools. He offers specific suggestions about ways to address these challenges and improve US public capacity to carry out infrastructure projects.

## The Importance of State Capacity to Infrastructure Construction

Robust state capacity plays a critical role in infrastructure development, as it enables effective project selection, timely permitting, and efficient project execution. At a high level, the state must fill in informational gaps associated with public-good provision, where there is often incomplete data about project costs, benefits, and public preferences.

State capacity impacts the success of infrastructure projects throughout the life cycle of projects. At the outset, robust state capacity is vital for securing funding, streamlining permitting processes, and making informed decisions regarding funding allocation. As projects progress, strong state capacity is needed to develop well-engineered, detailed project designs. Ultimately, effective state capacity facilitates efficient procurement and successful project execution, ensuring that projects are completed on time and within budget.

## The High Cost of US Infrastructure Construction

US infrastructure construction faces high costs, lengthy construction timelines, and increased input prices. The cost of building urban-transit infrastructure in the US is approximately \$560 million per kilometer, over two and a half times the OECD average. Highway construction costs have increased sharply over time, more than tripling between the 1960s and 1980s and continuing to rise since. At the same time, construction timelines are inefficiently long. For instance, when it comes to energy infrastructure, the typical deployment timeline for offshore wind in the US is between three and five years, and for extra-high-voltage power lines, the typical timeline is

between five and 13 years. Additionally, recent industrial policies have coincided with a sharp rise in input prices. The national highway construction cost index shot up a remarkable 57 percent between the end of 2019 and the third quarter of 2023, largely driven by COVID-19 supply chain disruptions.

Liscow identifies three state-capacity forces helping to drive these challenges in the US:

**Personnel.** Employment levels of government workers available for state infrastructure capacity have barely increased or have declined over time, and federal government pay has increasingly fallen behind private-sector pay over time. As there are fewer government workers per dollar of work done, planning and management are increasingly outsourced.

**Cumbersome procedures.** It takes a relatively long amount of time to acquire infrastructure permits in the US, and the lengthy process is exacerbated by substantial litigation around infrastructure permitting.

**Lack of tools.** Data infrastructure and transparency are weak, making it hard for the government and the public alike to even get a firm grasp of the challenges at hand. Coordinated long-term planning is also lacking, hampering the deployment of renewables and the development of transportation infrastructure, processes that both typically require coordination across multiple government entities.

### ***Personnel***

Personnel—both in number and quality—are crucial to effective policy implementation, but public-sector employment in highway and civil engineering has not kept pace with the private sector. Between 1997 and 2020, state-level departments of transportation lost 40,000 employees, a reduction of about 20 percent. Civil-engineering employment in the public sector has similarly failed to keep pace with the private sector, further increasing disparities in efficiency. Insufficient staffing is related to the increased construction costs of highways: An increase in employment by one person per thousand reduces costs by 26 percent.

Moreover, the pay difference between the private sector and the federal government has widened over time: The private-public pay differential has increased from virtually no difference in the 1960s to 24 percent in 2022. This difference raises concerns about the ability of the government to attract a high-quality federal workforce, creating a

personnel shortfall that leads to delays, reliance on costly contractors, and overall project-management challenges.

To address these issues, Liscow recommends increasing the number of government infrastructure experts and aligning public-sector salaries with those in the private sector to attract skilled professionals. Expanding the size and quality of the government workforce in this respect would reduce reliance on consultants and enable more in-house planning—which could in turn improve planning efficiency and reduce timelines, generating its own cost savings. Additionally, Liscow advocates for revising federal regulations to facilitate greater insourcing of planning at state and local levels.

### ***Procedure***

Procedural inefficiencies also hamper state capacity. Excessive procedures and bureaucratic requirements often extend project timelines. Lengthy multi-agency permitting processes inhibit the government's ability to meet policy goals promptly. Excessive litigation further detracts from state capacity by delaying permits and introducing obstacles.

Liscow proposes simplifying administrative procedures and judicial-review rules to streamline the construction process. Empowering the executive branch relative to the judiciary can reduce the use of litigation to stall projects. He recommends enhancing public participation and streamlining feedback processes to better understand public preferences while reducing the time to gather such information. Centralizing certain decision-making processes at the federal level could also improve efficiency and create economies of scale, though this approach should be deemed appropriate on a case-by-case basis.

### ***Lack of Adequate Data and Planning Tools***

Timely and transparent data, along with adequate planning tools, are critical to effective state capacity. Weak US infrastructure data is not conducive to public accountability, nor does it allow for research into the effectiveness of any given approach, stifling potential progress. Additionally, insufficient long-term planning exacerbates state capacity issues and creates uncertainty for projects with partial government funding.

Liscow first recommends that federal and state governments invest in better data systems, which would enable agencies to gain better insight into their projects and help the public advocate for more efficient spending. State transportation departments can

band together to agree on standard-setting, or the federal government may condition their large transfer payments on greater data uniformity and transparency to state and local governments. Second, coordinated planning would allow agencies to reduce costs, hire appropriate personnel, and accelerate project execution. Moreover, well-developed project plans could mitigate potential litigation by addressing a wider array of stakeholder interests from the outset.

## ABOUT THE AUTHOR

### Zachary Liscow

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Zachary Liscow is a professor of law at Yale Law School. His wide-ranging work in law and economics currently covers tax policy, benefit-cost analysis, and infrastructure construction costs. He is particularly interested in developing cost-effective policies to address inequality and in understanding what drives the high costs of building US infrastructure. He has also worked in a variety of other areas, including environmental policy and empirical legal studies. Professor Liscow's work has been featured in the *Wall Street Journal*, the *New York Times*, the *Washington Post*, the *Atlantic*, *Bloomberg*, CNN, and elsewhere. Liscow earned his PhD in economics from the University of California, Berkeley, and his JD from Yale Law School. He graduated summa cum laude from Harvard College with degrees in economics, as well as environmental science and public policy. He grew up in South Haven, Michigan. In 2022–2023, he was the chief economist at the Office of Management and Budget at the White House, and in 2009–2010, he was a staff economist at the White House Council of Economic Advisers. He also worked for the World Bank's inspector general. Professor Liscow clerked for the Honorable Stephen F. Williams on the US Court of Appeals for the DC Circuit.

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