Improving infrastructure outcomes through better capital allocation

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In an age of fiscal uncertainty, US cities and states must optimize capital allocation to improve infrastructure planning.

State and local leaders must deliver vital services that improve the health, safety, and prosperity of their citizens without exceeding their budgets. The challenge of meeting these goals has become more difficult in recent years because the federal government—facing its own budget constraints—has decreased funding to cities and states. With future federal support uncertain, governors and mayors have been reducing operating budgets—their day-to-day expenses—and reining in public programs. In 2017 alone, 23 states made mid-year budget cuts to their operating budgets.[1] Even with lower budgets, however, states and cities are still expected to maintain the same level of citizen services that they have traditionally provided.

Amid this financial strain, America’s infrastructure is badly in need of a refresh, with deteriorating roads, bridges, and buildings providing daily reminders. Governors and mayors have primary responsibility for these issues, since cities and states own over 90 percent of non-defense assets and provide 85 percent of annual public-infrastructure investment in the United States. That totals more than $100 billion for new construction or improvements, or between 3 and 13 percent of annual state expenditures (average 7 percent). Most capital expenditures go to projects related to transportation, such as new highways and bridges, but states also have responsibility for infrastructure assets within their higher-education systems, correctional facilities, public housing, natural environments, and other areas.

Typically, leaders keep the capital allocations for various projects the same from year to year, seldom changing the amounts budgeted for roadway repair, new bridge construction, or other important categories. With infrastructure problems becoming more severe, this approach will no longer suffice. A better method for capital planning—and one that is already common in the private sector—involves first identifying desired project outcomes (in the public sector, the particular focus would be on benefits to citizens) and then allocating the capital budget based on these priorities. The focus on citizen outcomes may require governments to think about success in novel ways—for instance, as highway projects that deliver a better commuting experience, rather than the number of roads paved.

Although this capital-planning strategy sounds straightforward, state and local leaders may find it challenging because they are accustomed to focusing on operational budgets. To assist them, this article describes the critical elements of an outcomes-based approach to capital planning—one that focuses not on cost reduction but on using existing funds more wisely.

Setting clear capital priorities, with a focus on outcomes

During capital planning, most state and local budget officers have one primary objective: ensuring that agencies spend all infrastructure funds allocated for the fiscal year. This operational focus is natural—leaders fear forfeiting money if they leave it on the table—but it also prompts agencies to prioritize "shovel-ready" projects that require immediate funding, since this will help them use their full allocation. Because of this mind-set, crucial infrastructure initiatives may not receive the capital they deserve, including those that could reduce costs, increase productivity, or substantially benefit the public. Conversely, projects that convey minor benefits may receive extensive funding, simply because agencies can immediately implement them.

Governors and budget officers could improve capital planning by creating a more strategic vision to guide investment—one in which projects are primarily prioritized based on citizen outcomes. They could also create key performance indicators (KPIs) to track progress toward that vision, and ensure that all agencies under their purview are in alignment with their overall objectives.

Setting the vision and infrastructure priorities

At present, few states establish a transparent, clear vision for capital planning that is based on desired outcomes for citizens. There are, however, some global organizations that could serve as examples for them. Consider Infrastructure NSW, an independent entity that advises the government of New South Wales, the largest Australian state, with Sydney as its capital. The organization reviews proposed infrastructure projects, prepares five-year plans, and conducts expert reviews of ongoing projects to keep them on track. To increase accountability, Infrastructure NSW has a public website that contains a frequently updated list of infrastructure projects, including details on the scope and next steps.

Establishing performance metrics and tracking outcomes

Once state and local governments have established their vision and priorities, they can select KPIs to track progress against the desired outcomes for every capital-asset class. While some state and local entities now have metrics, they tend to focus on the wrong ones—for instance, looking at the amount invested or studying process-based metrics, such as the number of road-miles paved. Moreover, few state and local governments publicize their results or develop concrete strategies for raising KPI scores. That means many government initiatives produce limited public benefits, and no one is held accountable for failures.

The best KPIs—and those that we recommend all state and local governments consider—focus on outcomes for citizens. In other words, they examine factors such as the reduction in homelessness rates, rather than the number of affordable-housing units built, or student achievement in math and science, not just the number of new school labs. Agencies could incorporate state KPIs into all projects that they implement and provide regular reports to governors or other top leaders that describe their progress. When evaluating KPIs, leaders must also consider unexpected changes that could affect outcomes, such as a severe economic downturn that increases unemployment rates.

State and local entities should consider publicizing the results of all infrastructure projects. In Washington, Governor Jay Inslee and his team created a performance-management system in which they evaluate progress on KPIs each month, reporting progress to citizens on a web dashboard. By setting clear targets and increasing transparency, the government has cut costs and improved efficiency across departments.

States and localities may design different types of web dashboards—what is most important is that they should clearly illustrate progress, provide access to detailed information, and cover all major expenditures. Exhibit 3 illustrates one potential format. While this hypothetical dashboard does contain some general metrics, such as the percent of projects completed on time and on budget, it also goes a step further by providing detailed information on outcomes for citizens. For instance, the Department of Transportation specifies how much it wants to reduce commuting times and congestion for particular projects.

Embedding priorities in capital-project development

Infrastructure projects, by nature, involve many agencies and individual stakeholders, all of which are accustomed to setting their own priorities. This approach will not be sustainable in an age where state leaders are creating an overall vision to guide infrastructure projects. Instead, state and local budget offices could collaborate with agencies to create action plans that align with the leadership's vision. For instance, city and state leaders might want to prioritize projects that will reduce homelessness and increase home affordability. To improve outcomes in these areas, they could closely collaborate with relevant agencies to create housing-preservation and housing-development action plans.

Evaluating infrastructure projects using strategic and technical reviews

In some cases, a new bridge can make it much easier for commuters to reach a city, reducing congestion or providing greater access to jobs. In other instances, however, it can be a bridge to nowhere—a new route that helps very few people because of its low utilization. These “white elephants” are large and impressive but not worth their high cost. In other words, projects that an agency proposes may not merit the funds suggested.

To avoid low-impact projects, state budget officers and policy coordinators can undertake a two-step review of all initiatives when allocating funds to agencies. First, they determine whether a proposed initiative aligns with their state’s strategic priorities. Some federal agencies already undertake similar reviews in which they evaluate projects in relation to their overall objectives and can serve as examples. For instance, in the United States, the Federal Transit Administration has established goals for improving mobility, the environment, or economic development. It assesses projects by determining how they will help achieve these goals, as well as the associated costs. The top-rated projects—those that are likely to produce the best outcomes at the least expense—get the highest scores and are most likely to receive funding.

After the strategic review is complete, state and local governments should have asset-class experts undertake a technical analysis. When done correctly, a thorough technical review can result in large savings by allowing agencies to re-scope, redesign, or even eliminate projects. When undertaking technical reviews, public agencies should follow the example of their private-sector counterparts by looking at a project's costs, benefits, design, and construction plan. For example, a private steel company evaluated its capital-project pipeline against the following four criteria, all of which could apply to public infrastructure projects:

- *Business-case validation.* Is the project technically necessary? Has the organization evaluated the full spectrum of alternatives, from doing nothing to repairing an existing asset to selling off a failing asset?
- *Design optimization.* Is the project scope in line with industry standards? What risks could jeopardize proposed timelines and budgets? Is the timeline realistic?
- *Contractor and procurement strategy.* Is the proposed method for project completion the most efficient way to procure an asset? For instance, is it best to design the project, send it out to bid, and then undertake construction, or would another strategy work best?
- *Construction and execution.* Are there adequate controls and governance in place to mitigate cost overruns and schedule delays?

If state and local governments adopted this two-part approach, they could unlock significant value. In addition to helping agencies focus on worthy projects, they could help eliminate potential cost and time overruns, which can decrease the value of even the most worthy project. Many public agencies may face time and resource constraints that prevent them from rigorously analyzing all projects, but they could still undertake smaller reviews. Even if they look at only their ten largest projects, they will make better decisions about where and how to invest.

Improving portfolio allocation

As state and local agencies evaluate potential infrastructure projects through strategic and technical reviews, they may discover many candidates worthy of funding. Yet budgets are tight and constraints are real, so only a few will receive the necessary investment. Despite these financial limitations, most state and local governments lack a solid process for making resource-allocation decisions across the portfolio. That means some of the projects that produce the best outcomes for citizens may not receive funding. In addition, leaders may overlook nuances that can influence overall outcomes for the portfolio, such as project synergies. It may not notice, for instance, that overall outcomes would be better if they simultaneously invested in road improvement and housing development in the same area, rather than conducting the projects at separate times.

To maximize outcomes, state and local governments should consider a new approach to resource allocation. This involves determining, on a dollar-for-dollar basis, which projects will have the most impact. For example, leaders could evaluate whether spending $1 million on roadways will produce more impact than spending $1 million on affordable housing.

The best infrastructure-planning organizations around the world tend to follow similar practices when allocating resources on a dollar-by-dollar basis. Many undertake detailed cost–benefit analyses—often considered the gold standard—while others conduct multiple-criteria decision analysis or focus on cost-effectiveness. Each method has different advantages, but they all provide a rigorous and systematic method for estimating costs. Regardless of the decision-making methodology selected, state and local governments should help ensure that their staff can apply the framework consistently and clearly. That may require additional hires, training programs, or even new legislation that mandates agencies follow the selected approach.

In addition to conducting dollar-for-dollar analyses, infrastructure-planning organizations should examine potential outcomes at the portfolio level to determine whether multiple, related projects can generate better outcomes than a single project alone. For instance, one state transportation agency rigorously analyzed its portfolio of projects to understand the likely outcomes that would occur with different combinations of projects related to arterial road and bridge repair, urban core improvement, and other areas. This analysis helped the state select the initiatives most likely to reduce average commuting times to below 45 minutes.

Building a continuous-learning loop to improve infrastructure projects

Within many states and cities, budget officers and agency heads do not have the resources to determine whether a completed project delivered the expected outcomes and truly benefited the public. Without a retrospective analysis, they cannot identify problems that hampered projects, nor can they uncover best practices that enhance outcomes.

City and state leaders can avoid this quandary by turning capital allocation into an exercise in continuous improvement. During each investment cycle, leaders should attempt to improve the planning process to ensure that projects are completed on time, remain in budget, and deliver the desired impact. At present, however, there is not a rigorous, systematic process for reviewing projects, ensuring accountability, and preserving the lessons for future leaders. Instead, a patchy network of government and civilian groups conduct ad hoc reviews of infrastructure initiatives. While they may provide some performance assessments, they do not consolidate the lessons learned into a central repository for future teams.

The best agencies will increase both accountability and project success rates by establishing a formal review system that helps them learn about best practices, as well as common mistakes, from past initiatives. Consider Chile, for example, which created the National Investment System to identify, coordinate, and select infrastructure projects throughout the country. When a project is complete, budget leaders use this system to determine whether a project met all expectations, including those for costs, timelines, and public benefits. The agency then considers these results when planning new projects. Such post-project analysis creates a continuous-learning loop that helps agencies deliver better outcomes for each infrastructure initiative.

In this challenging fiscal environment, US state and local leaders understand that they are expected to deliver more results with fewer resources. But trying to increase revenues or reduce operating costs will take them only so far. They need to consider a new approach to infrastructure planning, one in which improved capital allocation forms the core of their strategy. A focus on capital budgets is particularly appropriate now because they rely on debt financing, while operating budgets must be balanced annually by raising revenues or cutting costs. In consequence, capital budgets give states more flexibility—an essential quality during a time of financial constraints. To improve capital planning, public-sector agencies could overhaul entrenched systems for setting priorities, evaluating projects, allocating portfolio investments, and learning from past projects. Through this transformation, states may discover untapped potential for savings and better ways to deliver the outcomes that matter most for citizens.

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