Transportation for America

Centering priorities: Project selection for transportation agencies

Transportation agencies often have limited funding to meet lofty goals, resulting in projects that are misaligned with priorities. We developed a framework for better selecting goals and performance measures so agencies can choose transportation projects in a transparent, outcome-based way.

Background

Transportation agencies develop Long-Range Transportation Plans (LRTP) to establish vision and goals for the transportation system and guide both capital investments and research needs to support that vision. The LRTP is supposed to be the foundation for the development of investment decisions contained in the State Transportation Improvement Plan (STIP) or a Metropolitan Planning Organization's (MPO) Transportation Improvement Plan (TIP). Unfortunately, the connection between the lofty goals and the spending decisions in the LRTP and the STIP/TIP is often weak. This can be for many reasons, including outdated performance measure criteria, legislative earmarks, geographic equities, political horsetrading, or a combination of these things. As a result, many agencies fail to advance their goals.

This report provides a framework for transportation agencies to align transportation investments with their goals. It highlights best practices in connecting long-range planning to project selection in order to meet commitments to the taxpayer and traveling public. The concepts are useful for local, regional, and state decision-making.

Best practices in performance management

First and foremost, it is important to agree on goals, find measures to determine progress to those goals, and use those measures to prioritize projects for funding. Why is this important? One, it ensures that limited funds go to projects that accomplish the most in terms of local, regional, or state priorities. Two, it creates accountability and transparency to the public that will assume decisions are made for political reasons if the actual reasons are not clear. Three, it can help those developing a project to address a transportation problem in their community do so in a way that is most likely to further the agency's goals.

When an agency uses performance measures to align spending with priorities, there are three things to keep in mind:

1. Utilize systemic outcome measures to set targets, evaluate progress, and adapt the selection process over time.
2. Limit the number of goals to create an understandable process that focuses on the highest priorities.
3. Make sure performance measures and criteria align with agency priorities using outcome-based, project-level measures for project selection.

Types of performance measures

Performance measures serve myriad purposes for various actors. Here are some categories of government performance measures and their appropriate uses:

Procedural or internal measures are used to evaluate the performance of organizational staff. They include things like complaint response time, customer satisfaction, and cost-efficiency. While these measures can be important, they do not evaluate effectiveness in achieving goals for a transportation system.

Output-based measures refer to more immediate and tangible results of a process. Examples include things like agency total programming per capita on pedestrian facilities or total miles of bike lanes constructed. These measure external activities but not the direct impacts of transportation investments on communities.

Outcome-based measures assess the benefit that has been produced or achieved. An outcome measure can be *project-based*, such as the number of deadly crashes on a specific corridor, or *system-based**, like roadway fatalities per 100 million vehicle miles traveled. Outcome measures most directly reflect the impact on people's lives.

*System-based outcome measures are useful in measuring overall progress toward goals to inform adjustments and course corrections. Are there important issues for which the region is falling short or backsliding? Setting targets and benchmarking performance to these targets will show where the agency should focus future investments, adapting the project selection process accordingly.

In making specific investment decisions, project-based outcome measures can be the most useful because they are applicable to individual projects and measure things that matter in people's lives.

Agencies should separate each category of measures for more effective comparability and evaluation. Projects have only limited ability to affect system-wide measures, and system-wide outcomes may not be significantly impacted by an individual project.

Less is more

The ideal number of goals is 3-5. This is a number that is easy for everyone to remember and ensures that the agency is truly picking priority benefits and not simply quantifying every possible outcome of a transportation investment. Too many performance measures and/or goals dilute the influence that scoring any one of them can have over decision making. And if a good or bad score in a priority area does not impact the outcome then it isn't being treated as a priority.

Further, having a large number of goals and measures is confusing. When the public doesn't understand a project selection process, they assume it's merely political. That means agency staff are working hard on a process that doesn't elevate transparency or build faith in its

work. When a process is simple and understandable, partners tend to believe it is fair and can better develop and submit projects aligned with the priorities.

To keep the number of measures manageable, look for measures that capture more than one benefit. For example, safety improvements often come with public health impacts. Similarly, measuring how well people can access jobs and essential services covers economic and environmental impacts as well as cost savings. Finding measures that can reflect these multiple impacts is ideal.

Aligning measures to goals

Each goal should be paired with 1-3 performance measures. For example, you might have a goal to improve safety, and then measure the reduction in fatalities and serious injuries, and then specifically in fatalities/serious injuries for vulnerable road users.

Aside from quantity and categorization, performance measures also need to reflect agency goals. Unfortunately, measures are often instead developed based on agency familiarity and often agencies find ways to measure many facets of one goal (often congestion reduction), while not addressing other goals.

For example, many agencies will simultaneously measure travel time reliability, travel delay, freight movement (measured as freight travel delay) and economic competitiveness (measured as congested highway lane miles). While this is often characterized as four different measures, it is actually four facets of the same measure: Congestion reduction. However, they may have few to no measures about the travel experience for nondrivers and transit users. Similarly, they may measure miles of sidewalks as their only pedestrian measure, without considering factors like sidewalk location, connectivity, the number of crossings, or hostility of roadway speed.

In the end, make sure the way you allocate points or value aligns with your priorities. If you are allocating up to 100 points and 50 points are going to different congestion measures while 25 points go to safety then you are communicating that safety is half as important to your agency as moving vehicles quickly.

MAP-21, the 2012 federal transportation law, added the requirement that MPOs and state DOTs include certain performance measures in their long range transportation plan. This requirement continues in the present federal transportation program. However, these required measures were the result of political negotiation and, therefore, are often duplicative. They are also meant to be system-wide measures and don't work well as measures for project prioritization and selection. Additionally, MPOs and state DOTs have complete flexibility in setting targets for these required measures, in adding measures and in how they use these measures (if at all) beyond reporting to FHWA on targets. Since regional and state agencies likely have goals that differ from what Congress had in mind in 2012, they are free to simply report on these measures without using them to influence investment priorities.

Performance measures

There are some measures that can be overused and others that are less well known but could help agencies better align project selection with regional goals.

Congestion reduction

Congestion-centered performance measures focus on moving vehicles quickly through corridors. They are often referred to as travel time measures but they only measure travel speed of vehicles. To measure time, you have to measure speed and distance. Many things we do to speed up traffic can actually add time to people's trips. For example, a roadway that prohibits all left turns will have less delay, but it means a driver might have to go out of their way when their destination is to the left. That extra distance usually nullifies the time savings from going faster on the corridor.

It also doesn't capture people's feelings about time savings. While traffic is frustrating, most people would prefer a delay-filled 10 minute trip over a free flowing 60-minute one. However, congestion measures tend to favor the latter.

Additionally, reducing congestion is usually presented as a positive economic outcome. But higher economic activity is correlated with congestion. Some of the most economically productive streets in the nation are highly congested, and actions to reduce congestion can harm local economic output. For example, increasing traffic speed and noise in a vibrant walkable district, or worse, using eminent domain to take economically productive property in order to expand a roadway. Economically depressed areas have little-to-no congestion.

This disconnect on congestion measures is furthered by shortcomings in travel demand modeling. Travel demand models consistently overestimate the congestion relief benefits of road widening and lane addition projects. They are regularly used to justify expensive highway projects by predicting far more traffic relief than the project eventually delivers, and they overestimate the future congestion from not expanding highway capacity. Unfortunately, these models are rarely if ever checked for accuracy.

When measuring congestion reduction, look at actual time savings and ensure the amount of time saved is significant enough to impact someone's quality of life. Seconds to a minute of savings per traveler can't be detected in economic models.

You can read more about the shortcomings of congestion goals and measures in T4America's Community Connectors portal, Congestion Con report, and this blog post. Below are more constructive measures for getting people to their destinations that avoid the pitfalls of congestion-based measures.

Access to jobs and services

Measuring access to jobs and essential services measures the ability of travelers to reach important destinations, based on total travel time no matter what mode they use (driving, walking, transit, and biking). It also takes into account land use decisions. For example, changes to zoning that allow more housing to be built close to a job center, or siting a grocery store in a neighborhood, can improve access.

Access to jobs and services is also associated with a wide variety of positive outcomes such as connecting people to opportunity, promoting travel choices, managing congestion and

system reliability, reducing emissions, fostering economic vitality, and creating a more equitable transportation system. Many agencies have multiple goals linked to these issues, making access to jobs and services a particularly useful measure in reflecting those goals. If this is the case, an agency may choose to weigh access to jobs and services heavily in its project selection process.

For an example of using access to jobs and services, see Virginia's Smart Scale program, which prioritizes transportation projects based on a transparent, outcome-based process. Additionally, State Smart Transportation Initiative has guidance on implementing access performance measures.

Comparing benefits and cost

To measure the benefit of a given project, it is important to look beyond monetary value. Instead, we recommend building a scoring criteria built specifically for your region's goals to inform investment decisions. This could take the form of assigning points based on priority areas. For example, an agency may award 30 points for bringing an asset into a state of repair and 10 points for improvements in access to jobs and services. This allows for easily quantifiable and harder-to-quantify benefits on par with one another. In this prioritization, as with performance measures, agencies should strive for simpler scoring systems that can be easily explained and understood.

In some cases, transportation agencies seek ways to do a more formal benefit-cost analysis (BCA). First, it is important to separate a BCA and a cost-effectiveness analysis. These two terms are often used interchangeably but they have important differences. A cost-effectiveness analysis compares the costs of different options to achieve a specific outcome. For example, comparing the cost of different options for bridging over rail tracks or for increasing ridership on a bus line. A BCA compares all potential benefits to the cost. Essentially, cost-effectiveness analysis is meant to find the most efficient way to achieve a single desired outcome, while a BCA determines whether the total benefits of a project outweigh its costs.

A BCA is more useful for an agency's project selection because the goal is to get multiple benefits out of every project and ensure those benefits align with the agency's priorities, while maximizing those benefits for the cost. It is also useful to ensure that large projects do not get extra consideration. Large projects often come with more benefits because they are doing so much, but when divided by cost they may no longer look as effective. However, a small project, despite having fewer benefits, could be accomplishing a great deal for the money. Whether an agency invests in one $100 million project or 100 $1 million dollar projects, the goal is to ensure you are getting the most benefit for your investment.

Traditional BCAs can, however, be biased towards monetizable benefits, rather than community values. You do not need to monetize benefits to compare them to costs. You merely need to come up with a number value to represent the benefit and divide that by the cost, as the Virginia Department of Transportation does in their Smart Scale process. They use the resulting ratio to rank projects. Interestingly, they do not compare total benefits to total costs, but rather measure their priority benefits to the cost to the state. A locality can bring up their score by covering more of the cost themselves.

How to ensure benefits are shared

Many ask how to measure "equity." There is no such thing as an equity measure. But there are ways to determine whether benefits are evenly shared across groups of people (eg, income, race, etc.), types of travelers (drivers, pedestrians, etc.), or regionally. Any measure can be disaggregated in this way. For example, if safety is a goal but there is a concern that roadways are only getting safer for drivers, you can assign points to projects for overall safety improvements and specific safety improvements for non-drivers or for safety projects in areas that have a large population of nondrivers. Similarly, if access to jobs and services is a priority but you want to make sure that access is provided by all modes, you can assign points for improving car access, transit access, and active transportation access. [Note, however, that if you are measuring congestion reduction, that is an auto access measure and should not be measured a second time.]

Additionally, project selection should aim to avoid disproportionately high and adverse economic, human health or environmental effects on low-income and minority populations. This might include looking at potential displacement, harm to local small businesses, air quality, and impermeable surfaces. An agency could take points from a project that is going to have a negative impact on an area that has suffered past negative impacts of transportation projects.

Communication

While choosing correct performance measures is critical, it is just as important to involve the public in setting your goals and creating your process. You also should make extremely clear how decisions are made and inform the public why one project was selected over another by publicizing what goals the selected project helps meet. That way, a project sponsor, elected official and the public will understand how they can improve their project to ensure it can be funded in the future.

Finally, your process should be analyzed for improvements. Consider if the process worked as your agency and constituents thought it should. Coming full circle, the agency can again use system-based outcome measures and targets to assess overall progress with a wider lens. It is also useful to study if projects assumed to be good for certain outcomes are actually achieving them. In addition, consider if the priorities in the region are changing. Where you find the need to make a change, explain why publicly. People are more likely to trust a process if the owner of that process admits when it needs to be improved.

Mark Twain famously once told a friend, "I didn't have time to write a short letter, so I wrote a long one instead." Simplifying and sharpening project selection frameworks is challenging, but the reward is a process that is more understandable to the public and decision-makers, is more cost-effective, and moves us more quickly and effectively toward a transportation system that better serves your unique goals.

Transportation for America is an advocacy organization made up of local, regional and state leaders who envision a transportation system that safely, affordably and conveniently connects people of all means and ability to jobs, services, and opportunity through multiple modes of travel. Transportation for America is a program of Smart Growth America.