

# THINK

● INFRASTRUCTURE SOLUTIONS

HNTB



## Optimizing transit construction projects

Making the most of federal funding and industry expertise to achieve greater value and efficiency

WHITE PAPER | 2019

Navigating the Federal Transit Administration's discretionary grant evaluation standards can be complex for those unfamiliar with the process. Success means finding the right delivery approach and partnering with an experienced consultant.

In this white paper:

- Choosing the right delivery method
- Getting the most from the FTA Oversight Process
- Assembling a winning project team
- Moving projects forward with confidence

Transit agencies that apply for Federal Transit Administration discretionary grants to fund construction of their infrastructure projects face critical decisions at every stage of project development. Whether an agency is undertaking a large or small project, FTA's complex evaluation standards can generate challenges that can result in a loss of project momentum and efficiency for grantees if they cannot keep pace with expectations.

Early on, FTA grantees must determine the project delivery approach that is best for their particular situation – an approach they can successfully manage, not merely one with attractive financial projections. Additionally, agencies may encounter challenges in gauging the time required to meet key federal milestones, as well as assembling a team with the right skills and expertise to see a project from beginning to end.

Because few grantees sustain capital construction programs large enough to maintain project management staff in-house, they can better navigate these challenges by drawing on project management expertise from project consultants. In addition, FTA's Project Management Oversight Contractors (PMOCs), once assigned, bring a wealth of expertise and FTA project experience that can benefit a project sponsor. The value of guidance from "been there, done that" professionals cannot be overstated, particularly if an agency does not regularly handle significant capital projects.

### **Choosing the right delivery method**

Transit construction projects typically are delivered through several approaches. Each approach has its advantages and drawbacks, depending on project dynamics and team members' management experience.

1. **Design-Bid-Build.** Steeped in tradition and within the comfort zones of many transit professionals, Design-Bid-Build is often the go-to approach for transit agencies that have not pursued many large capital projects. The positives of DBB are that the project gets designed to 100 percent, which allows the grantee to mitigate a number of potential risk elements. Completing design is important to some grantees, who are not comfortable with identifying performance standards at the 30 percent design level and allowing the contractor to determine the best methods to meet these performance standards. Projects that utilize DBB may have longer design schedules due to the number of reviews by the agency, which could result in higher costs. The DBB approach also keeps the risk with the agency.
2. **Design-Build.** Design-Build holds significant allure for agencies, due to its reputation for accelerating project completion, generating cost savings, and spurring innovation. This delivery

method is best utilized by FTA grantees that have some capital project experience. A new grantee can use this methodology but should have seasoned professionals in place to shepherd the project to successful completion. DB benefits allow the grantee to handle design up to 30 percent, and then turn the design over to a selected DB team that will not only finish the design, but also handle the construction. This transfers a significant amount of the project risk to the DB contractor. Schedule benefits also are achieved as the DB can start work on early work areas, such as site work and utility relocations, while other project elements are still in design. On the negative side, if a grantee does not turn over a good 30 percent design document, then issues that have not been addressed by the design will need to be addressed and could delay further design. The grantee also must be willing to take a "hands off" approach when working with the DB contractor. The more the grantee changes elements after they have handed off the 30 percent design, the more the time savings benefits of DB diminish.

3. **Construction Manager at Risk.** Another increasingly popular delivery method is Construction Manager at Risk. CMAR is a blend of DBB and DB, which allows the grantee to retain control over the design and construction process. Under this method, the grantee takes the project design to about 90 percent before hiring a construction manager that will begin to review the construction plans and specifications for the constructability of the project. This allows changes to design to occur before the construction project documents are bid. Once the construction documents are complete, the contractor is allowed the opportunity to bid on the project. The grantee and the contractor will agree to a Guaranteed Maximum Price (GMP) and a schedule completion date. The construction contractor is allowed to accelerate the schedule if he so chooses to complete the project more quickly. A skilled CMAR contractor can anticipate and resolve issues quickly, which helps to optimize project efficiency. With this model, the agency also can build performance incentives into the contract; for example, if the project costs come in below the guaranteed amount, the agency and contractor might split the difference in a previously agreed upon amount, for example 50/50 or 60/40.

### **Getting the most from the FTA Oversight Process**

To help ensure that transit projects are successfully meeting the requirements for their discretionary capital grants, the FTA assigns PMOCs to oversee their progress. These highly experienced professionals follow FTA guidelines and work with FTA's technical staff to evaluate grantee project

management and technical capacity to handle major transit projects.

PMOC contractors nationwide act as the FTA's "eyes and ears" on a project, a role that can unsettle some first-time grantees when they are assigned a PMOC. While grantees new to the discretionary program may be unsure as to what to expect, the PMOCs are highly experienced in the nuances of large projects. They can quickly see gaps in the grantee's plan, errors in documentation, unsound real estate acquisition, issues with third party agreements, safety and security strategies and other potential project or grantee shortcomings.

PMOCs also can be a source for great advice. PMOCs can provide excellent insights for many aspects of the project. They are very good at technical advising and can assist with the most exasperating question: Am I missing something? What will FTA think?

Once construction grant documents are signed, PMOCs typically meet quarterly to ensure cost, schedule and scope remain on track. However, this schedule does not preclude grantees from seeking out PMOCs more often to get their views on specific questions or to gain insights into best practices for certain project aspects.

There is no doubt that PMOCs reviewing required documents or inspecting construction progress will add time to the project schedule. And, of course, no grantee is eager to create more hold points as they strive to meet their project milestones. But, by making full use of the PMOCs by viewing them as constructive stakeholders interested in your success, grantees can greatly reduce the likelihood that they will have to go back and rework something that will not meet federal standards – or to miss some important step among hundreds, which may result in even further delays.

An additional resource available to transit agencies are the professionals from the FTA's headquarters, regional and metropolitan offices. The FTA regional offices are tasked to oversee the PMOCs on the project and are the first point of contact for the project from the beginning to the end. Among the staff at these offices are engineers, planners and transportation program specialists, who will provide general advice and counsel to agencies on grant-related matters.

### **Assembling a winning project team**

It is easy for transit agencies to underestimate how challenging it is to assemble a team that can adeptly usher a capital project from its earliest stages through to completion. Even for relatively small projects, a range of specialized management and technical capabilities come into play, many of which might not be apparent at the outset.

Some agencies decide to manage their Small Starts projects in-house, and there is a clear attraction to this approach. For one thing, "going it alone"

means that the agency does not immediately incur additional costs: the project-linked workload is shared across the existing staff. Also, agencies may have team members who possess advanced skills that normally get little exercise, such as engineering or project management. These individuals might be eager to apply their special skills. Even more junior staff are likely to look forward to building their experience through a "stretch assignment."

The downside of this approach, however, is that FTA funding for New Starts and Small Starts is a competitive program – with lots of competition. Yes, it adds a thick layer of complexity to projects that might test the resiliency and enthusiasm of the team in quick order. If no one has taken the lead before in running a large-scale, federally funded project, the agency must understand how the program works and develop a strategy to stay on track. The program requires an appreciation of what FTA needs to make an investment decision and to make sure the grantee provides FTA what it needs. It alters a construction project – seeking these discretionary funds makes the project an FTA project, which can have financial and schedule impacts on any project.



A number of agencies hire consultants – professional engineers, project managers and others – to meld with their core teams over the course of the project.

This cost-benefit tradeoff prompts many agencies to invest in expanding their team to gain the right skills and experience for the new project. This expansion effort generally takes one of two forms. They might hire new, full-time staff members with the idea of gaining expertise in the short term and bolstering agency competencies in the long term. This approach requires that they scope out and define new staff positions and then go into the marketplace to seek the best talent available. Their recruiting success normally varies based on competitiveness of their salary offer and the depth of the national labor pool.

A number of agencies hire consultants – professional engineers, project managers and others – to meld with their core teams over the course of the project. They find that this approach provides them with the precise expertise they need on a non-permanent

basis. Existing staff can remain (for the most part) focused on maintaining current operations, but also gain from working side by side with professionals who might have dozens of similar transit projects under their belts. This decision will increase the project costs as the level of experience needed to implement the project can be expensive.

**Moving projects forward with confidence**

Large capital projects are challenging even for the most successful transit agencies. Success hinges on having the right skills and experience on your team. Engaging a project management firm before project development can help agencies identify the most appropriate delivery method, as well as the expertise, resources and funding that will be needed for each step of the journey.

There is great power in taking advantage of PMOC expertise as soon as assigned by FTA, to take full advantage of their experience and insights into the FTA’s process. Additionally, agencies derive value from tapping into the FTA’s headquarters and regional teams, who will work with grantees to make their capital construction projects successful.

The right combination of FTA professional resources, consulting expertise, and agency insight and knowledge can ensure that transit projects start well and end even better, so that the community can enjoy a more effective and efficient transit system in the years ahead.

**Resources**

For more information, please contact one of HNTB’s experts:

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	<b>New Starts/Core Capacity</b>	<b>Small Starts</b>
Scale	Total project cost is equal to or greater than \$300 million <i>or</i> Total New Starts funding sought equals or exceeds \$100 million	Total project cost is less than \$300 million <b>and</b> Total Small Starts funding sought is less than \$100 million
Project types	<ul style="list-style-type: none"> <li>• New fixed guideway system</li> <li>• Extension to existing system</li> <li>• Fixed guideway BRT system</li> <li>• Core capacity</li> </ul>	<ul style="list-style-type: none"> <li>• New fixed guideway systems</li> <li>• Extension to existing system</li> <li>• Fixed guideway BRT system</li> <li>• Corridor-based BRT system</li> </ul>
Eligibility rules	Grantee must complete two phases – Project Development and Engineering – before receiving a full funding grant agreement.	Requires completion of one phase – Project Development – before receiving a construction grant agreement.
Max. federal funding	80 percent from all federal sources; 50 percent New Starts	80 percent from all federal sources

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