

# **State DOT Oversight of Facility Projects**

## **FINAL REPORT**

**Prepared for:**  
National Cooperative Highway Research Program  
Transportation Research Board  
Of  
The National Academies

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## Acknowledgements

The Oversight of Facility Projects Guidebook was sponsored by the National Academy of Sciences and managed by AECOM, a national engineering and construction management firm with specialized expertise in transit project planning, design, and construction. AECOM subcontracted Milligan & Company, LLC, a national consulting firm with specific expertise in the area of transit capital development and state administration of Federal Transit Administration (FTA) grant programs to develop and produce this guidebook. The lead development team consisted of:

- Scott Baker, AECOM, Project Manager
- John Clare, Milligan & Company, LLC, Principal Investigator
- Diane King, Milligan & Company, LLC, Subject Matter Expert
- Matthew Butner, Milligan & Company, LLC, Subject Matter Expert
- Daniel Wagner, Milligan & Company, LLC, Subject Matter Expert
- Kurt Neufang, AECOM, Subject Matter Expert
- Jerry Hsu, AECOM, Technical Specialist
- Viktor Zhong, AECOM, Technical Specialist

The following state departments of transportation (DOTs) participated in a survey conducted as part of this research to guide the development of specific topics that are included in this guidebook:

- Connecticut Department of Transportation
- Colorado Department of Transportation
- Minnesota Department of Transportation
- Montana Department of Transportation
- Nebraska Department of Transportation
- New Hampshire Department of Transportation
- New Mexico Department of Transportation
- North Carolina Department of Transportation
- North Dakota Department of Transportation
- Pennsylvania Department of Transportation
- South Dakota Department of Transportation
- Vermont Department of Transportation
- Wyoming Department of Transportation

## Executive Summary

State DOTs continue to play a variety of roles when administering FTA grant programs. Of particular importance is the implementation and oversight of facility-type projects, both in initial construction and rehabilitation. DOTs indicated the need to have a guidance tool to assist with the implementation, oversight, and on-going monitoring role of construction projects, which often involve complex and often difficult-to-understand federal requirements.

The purpose of this research project was to develop a useful guidance tool for State DOTs undertaking construction projects, either for the first time or with little prior experience with construction project management. The tool, in the form of a guidebook, provides a comprehensive introduction to construction project management, including the applicability of the principles of project management and of all phases of project development from project initiation through planning, environmental clearance, real estate acquisition, design, construction, and closeout. It also addresses FTA and other federal requirements as States and their public-entity subrecipients have more flexibility in the area of procurement. To these ends, the guidebook uses a plain language approach to describe the numerous requirements for carrying out a successful and compliant facility improvement project.

The guidebook provides a useful tool for State DOTs and their subrecipients to identify and explain the implementation, oversight and on-going monitoring process of administering the rehabilitation and construction of facility projects. It explains the FTA and other federal requirements and their applicability. The guidance is targeted to projects generally carried out by small urban and rural systems.

The research team conducted an online survey of State DOTs to better understand their current practices and needs for guidance in facility project oversight. Based on the survey results and drawing on their hands-on experience and deep knowledge in this area, the team drafted the guidebook. The draft was then reviewed and revised by subject experts.

## Chapter 1 Introduction

State DOTs continue to play a variety of roles when administering FTA State programs. Of particular importance is the implementation and oversight of facility-type projects, for both new construction and rehabilitation. These projects are often problematic for rural and small urban transit systems due to the infrequency of this type of project.

The purpose of this research project was to develop a resource for guiding State DOTs and their subrecipients through the implementation, oversight, and on-going monitoring role which involves complex federal requirements that can often conflict with local requirements. The resource guidebook provides an overview of FTA requirements as they apply to States and their subrecipients and addresses the following six steps associated with staff organization, design, land acquisition, construction procurement, contract administration, federal reporting and contract closeout:

1. Project organization and responsibilities
2. Land acquisition
3. Acquiring architecture and engineering (A&E) services
4. Independent cost estimate (ICE)
5. Construction phase bid and award process
6. Contract administration

## **Chapter 2 Project Approach**

The research team began the project with an online survey of State DOTs (see chapter 3). The survey results were used to ensure the final product will be useful in assisting with the implementation and oversight of capital construction projects financed by the FTA Sections 5311 and 5339 grant programs.

Concurrently with the development of the guidebook, Milligan & Company, LLC supported FTA with the development of the Fiscal Year 2017 Comprehensive Review Guide, formerly published separately as the State Management Review and Triennial Review guides. The authors incorporated the latest guidance from FTA regarding procurement and disadvantaged business enterprise (DBE) requirements related to construction. Chapter 1 Introduction and Basic Requirements of the guidebook discusses FTA procurement requirements and how they apply to States and their subrecipients. The guide notes that several steps are not required by FTA of States and their public-entity subrecipients but represent sound business practices.

The research team also drew on its experience with managing FTA-funded and other construction projects to develop the guidebook. (see chapter 4)

## **Chapter 3 Online Survey**

### **Survey Development**

In order to make this project more relevant to the needs of State DOTs, we developed and implemented a brief survey. The survey was administered on-line to all 50 State DOTs and requested their responses to a list of questions. The input for the completed surveys was valuable in ensuring the final product will be useful in assisting with the implementation and oversight of capital construction projects financed by the FTA Sections 5311 and 5339 grant programs. See Appendix 1 for the complete survey instrument.

### **Survey Implementation**

The survey was developed by Milligan & Company, LLC and administered by AECOM, using the online survey development cloud-based software, SurveyMonkey. Eight questions encompassing the practices of State DOTs in project planning, implementation and completion were distributed through Survey Monkey. State DOTs were given approximately four to six weeks to respond to the survey questions, with the ability to add content not addressed in the questions. AECOM followed up with reminder emails after the initial distribution.

### **Survey Results**

Responses were received from 13 State DOTs. The responses were tabulated as shown below.

*Q1 - What is the biggest issue you find with the implementation and monitoring of FTA construction projects for small urban or rural transit systems?*

Responses
1. Finding the right contractor to do oversight
2. Getting technical assistance from FTA regarding grant questions
3. Lack of training and guidance for small projects – everything out there now seems to be generated towards Major Capital Projects
4. The distance to travel to physically check in on the project. Lack of expertise in construction management because it is something we do rarely
5. Local provider know-how. Many aren't familiar with construction or federally-funded requirements of construction
6. Lack of in-house expertise for building construction
7. Adherence to FTA requirements that differ with FHWA including required FTA clauses in procurement documents and contracts
8. Funding, development of plans/specifications, and project oversight
9. A small urban or rural transit systems lack of knowledge pertaining to Federal environmental, third-party contracting, procurement and labor regulation
10. The environmental clearance process/NEPA. This process can go on for months on certain projects
11. Records flow and monitoring from subcontractor to PMOC
12. Staff limitations at both transit systems and State DOT
13. Smaller transit districts have little understanding of what's involved with the construction of a new facility and the FTA requirements. In addition, they have unrealistic expectations of schedule to construct a new facility
<b>Answered: 13      Skipped: 0</b>

*Q2 Who undertakes the management and implementation of these projects in your State? (Respondents were allowed to select more than one answer)*

Answer Choices	% of Responses	# Responses
The State DOT Transit Division	<b>76.92%</b>	10
The State DOT Highway Division	<b>23.08%</b>	3
The local transit system (subrecipient)	<b>53.85%</b>	7
<b>Answered: 13      Skipped: 0</b>		

*Q3 Do you currently have a formal guidebook or manual that provides direction on FTA requirements?*

Answer Choices	% of Responses	# Responses
Yes	<b>38.46%</b>	5
No	<b>61.54%</b>	8
<b>Answered: 13      Skipped: 0</b>		

*Q4 Are FTA funds normally used for land acquisition?*

Answer Choices	% of Responses	# Responses
Yes	15.38%	2
No	84.62%	11
<b>Answered: 13      Skipped: 0</b>		

*Q5 Are FTA funds normally used for design and engineering consultants?*

Answer Choices	% of Responses	# Responses
Yes	84.62%	11
No	15.38%	2
<b>Answered: 13      Skipped: 0</b>		

*Q6 Who is responsible for retaining design and engineering consultants?*

Answer Choices	% of Responses	# Responses
The State DOT Transit Division	15.38%	2
The State DOT Highway Division	7.69%	1
The local transit system (subrecipient)	76.92%	10
<b>Answered: 13      Skipped: 0</b>		

*Q7 Is there a clear understanding of the FTA Disadvantaged Business Enterprise requirements as they relate to construction projects?*

Answer Choices	% of Responses	# Responses
Yes	53.85%	7
No	46.15%	6
<b>Answered: 13      Skipped: 0</b>		

*Q8 Would a standard, plain language, guidebook for implementing and monitoring FTA construction projects be useful?*

Answer Choices	% of Responses	# Responses
Yes	100.00%	13
No	0.00%	0
<b>Answered: 13      Skipped: 0</b>		

*Q8 Please add any other comments.*

<b>Responses</b>	
1.	I am not sure if it would be helpful – depends on how well it is written/designed for use – word, after word would not be helpful – charts with guidance may be
2.	This sounds like a much needed project. CDOT’s experience is full of hits and misses – we would certainly use the guidance
3.	We have developed a brief (4 pages) guidance document that outlines responsibilities and steps from project initiation to close out. But a plain language guidebook from FTA would be helpful if it is designed for small projects
4.	Yes, a guidebook would very useful
5.	Primarily, local agency procurement needs to include FTA requirements. They sometime go forward and procure construction activities with only their own procurement requirements and/or FHWA's in mind because they are more familiar with them.
6.	A guidebook would be useful as long as it is relatable to smaller rural agencies as well as small urban areas
7.	Land acquisition is typically part of the local match for these types of projects
8.	We would welcome additional resources for our staff or small urban or rural transit operators such as you referenced in Question #8.
<b>Answered: 8      Skipped: 5</b>	

## **Chapter 4 Research Team Knowledge from Prior Experience**

The research team consisted of staff of AECOM and its subcontractor Milligan and Company, LLC. The prior expertise and current roles of the research team is delineated below for each team member.

### **John Clare, Milligan & Company, LLC, Principal Investigator**

As a senior consultant with Milligan & Company, LLC, Mr. Clare has participated in numerous State Management and Procurement System reviews for FTA's oversight program. Prior to joining Milligan & Company, LLC, he served as a project management consultant overseeing major capital improvement projects and worked for the Central New York Regional Transportation Authority (Centro) in Syracuse, New York. During his 26-year tenure at Centro, Mr. Clare served as project manager for several capital construction projects. His responsibilities included property acquisition, relocation, environmental impact assessments, acquiring and managing professional services contractors, and acquiring and managing construction contractors. Transit construction and facility rehabilitation projects he has managed include operations and maintenance facility projects; an intermodal transportation center incorporating Amtrak, Greyhound and Trail ways services into a single facility; and one of the first indoor compressed natural gas fueling stations in North America. He has presented on the projects at New York State transit association conferences.

### **Scott Baker, AECOM, Project Manager**

As a Senior Consulting Manager at AECOM, Mr. Baker has a strong combination of national consulting experience on transit projects and hands-on experience based on years of line responsibility for planning and implementation of projects. Mr. Baker has extensive experience in administration and business process improvements, organizational assessment and review, funding and financial analysis, and procurement and innovative contracting for state DOT's and transit agencies. He is adept in fleet, facility, technology, and financial planning. Mr. Baker was Chief Counsel and assistant general manager for VIA Metropolitan Transit in San Antonio, Texas. He served the Port Authority of Allegheny County in Pittsburgh for 3 years, leading bus and rail operations for most of that time. Mr. Baker received a bachelor's degree from Harvard College and an MBA from Harvard Business School. He earned the Juris Doctor degree from Georgetown University Law Center.

### **Diane King, Milligan & Company, LLC, Subject Matter Expert**

As a Director of Consulting Services and project manager for Milligan's work supporting the Triennial and State Management Review programs for the past four years, Ms. King supports FTA in developing procedures and updating program guidance for the Triennial and State Management Review programs. She has conducted FMO Reviews, PSRs, DBE reviews, Title VI reviews, and Drug and Alcohol Audits of FTA grantees, both and state and non-state entities.

For the past five years, Ms. King has also managed the firm's engagements with Alaska DOT, Massachusetts DOT and Missouri DOT. In this capacity, Ms. King is responsible for the day-to-day management of the project, assignment of staff and overall execution of tasks.

#### **Matthew Butner, Milligan & Company, LLC, Subject Matter Expert**

As Business Development Officer for Milligan, Mr. Butner develops and executes business development strategies, including proposal development and strategic partnerships on behalf of the company. He also serves as a reviewer/advisor for various projects within Milligan's consulting services department. Prior to joining Milligan, Mr. Butner was a federal project manager for the FTA, managing both the Triennial Review and State Management Review programs at FTA Headquarters, as well as a project manager in FTA Region IX where he managed FTA grant portfolios for the states of Hawaii, Arizona, California, Nevada, Guam, and American Samoa. He also oversaw the portfolios of dozens of local FTA grant recipients – advising on FTA policy, modifying grants including grant closeout. He also managed Project Management Oversight Consultants which oversaw federally funded capital improvement projects within the region.

#### **Daniel Wagner, Milligan & Company, LLC, Subject Matter Expert**

As a senior consultant with Milligan & Company, LLC, Mr. Wagner serves as a lead reviewer and instructor for State Management and Triennial reviews. For the past several years, he has supported FTA with the development of the annual State Management and Triennial Review contractor guides and served as a workshop presenter. He brings institutional knowledge of the state-managed FTA programs as he served on the team that developed the State Management Review program. He provides oversight services and program support to several State DOTs.

#### **Kurt J. Neufang, AECOM, Subject Matter Expert**

Mr. Neufang, an Advisor for Transit Planning Services, has 30 years of experience in the public transportation industry. He has managed a small urban transit system, a rural transit system, a regional ridesharing operation and three (3) University transit systems - at the University of North Carolina, Georgia Tech, and the University of North Texas. He served as a senior planner at the MPO in Atlanta and worked at NCDOT in Raleigh as a Project Management Specialist. Mr. Neufang has also been involved in a number of transit system development plans which includes successful projects in both rural and urban areas. He has managed numerous projects performing like Comprehensive Operations Analysis for Clarksville Transit in Tennessee, developing an optimal set of daily runs and vehicle assignments for the FAST paratransit service for Rutherford County Transit in North Carolina, and conducting a Service Expansion Analysis for the RTA in Conway, South Carolina that included cost estimates which highlighted the operational, administrative and maintenance elements for the new regional transit services.

**Jerry Hsu, AECOM, Technical Specialist**

Mr. Hsu was a member of AECOM's Strategic Planning Services Group. He provided analysis and solutions for transportation regulatory, institutional, and procurement and contracting issues. His project experience includes the practice of public sector procurement management, professional services contracting programs, transportation governance, and P3 rail initiatives.

**Viktor Zhong, AECOM, Technical Specialist**

Mr. Zhong is a member of AECOM's Strategic Planning Services Group. He provides management solutions for the public transit industry in such areas of state transit program administration, financial planning and funding analysis, operating and maintenance cost modeling, transit operations, and governance. He has an interdisciplinary education background in finance, economics, and transportation planning and policy.

## **Chapter 5 Guidebook Development**

The guidebook was developed by Milligan & Company, LLC. The guidebook development followed an outline that was presented in the initial proposal. As chapters within the guidebook were completed, a quality control/quality assurance review was provided within the Milligan & Company, LLC team. Upon completion of the draft guidebook, a review was completed by AECOM.

The guide was developed based on the experience of the lead author with managing FTA-funded and other construction projects and of other Milligan & Company, LLC team members experience with FTA requirements as they apply to construction projects, States, and state subrecipients. The project management practices presented are generally accepted business practices.

## Appendix 1 Online Survey Instrument

AECOM Technical Services, Inc. and Milligan & Company, LLC are undertaking a project sponsored by the National Academy of Sciences, National Cooperative Highway Research Program.

This project will develop a reference guide that can be used by State DOTs and their subrecipients to identify and explain the implementation steps, oversight and on-going monitoring process of administering grant funded projects which involve the rehabilitation and construction of facilities. This guide will be targeted to the projects generally carried out by small urban and rural transit systems.

In order to make this project relevant to your needs, we are requesting your response to a few brief questions. Your response to these questions will be valuable in ensuring the final product will be useful in assisting you with the implementation and oversight of capital construction projects financed by the Federal Transit Administration’s Sections 5311 and 5339 grant programs.

Question	Answer
1. What is the biggest issue you find with the implementation and monitoring of FTA construction projects for small urban or rural transit systems?	
2. Who undertakes the management and implementation these projects in your State?	<input type="checkbox"/> The State DOT Transit Division <input type="checkbox"/> The State DOT Highway Division <input type="checkbox"/> The local transit system (subrecipient)
3. Do you currently have a formal guidebook or manual that provides direction on FTA requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Are FTA funds normally used for land acquisition?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. Are FTA funds normally used for design and engineering consultants?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Question	Answer
6. Who is responsible for retaining design and engineering consultants?	<input type="checkbox"/> The State DOT Transit Division <input type="checkbox"/> The State DOT Highway Division <input type="checkbox"/> The local transit system (subrecipient)
7. Is there a clear understanding of the FTA Disadvantaged Business Enterprise requirements as they relate to construction projects?	<input type="checkbox"/> Yes <input type="checkbox"/> No
8. Would a standard, plain language, guidebook for implementing and monitoring FTA construction projects be useful?	<input type="checkbox"/> Yes <input type="checkbox"/> No
9. Please add any other comments	