



FTA Annual Report on Technical Assistance and Workforce Development for FY 2021

PREPARED BY
Federal Transit Administration



U.S. Department of Transportation
Federal Transit Administration

JANUARY
20
22

COVER PHOTO

Courtesy of istockphoto.com

DISCLAIMER

This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof. The United States Government does not endorse products, services, or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the objective of this report. The opinions and/or recommendations expressed herein do not necessarily reflect those of the U.S. Department of Transportation.

FTA Annual Report on Technical Assistance and Workforce Development for FY 2021

JANUARY 2022

FTA Report No. 0209

PREPARED BY

Federal Transit Administration
Office of Research, Demonstration, and Innovation
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

AVAILABLE ONLINE

<https://www.transit.dot.gov/about/research-innovation>

Metric Conversion Table

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL
LENGTH				
in	inches	25.4	millimeters	mm
ft	Feet	0.305	meters	m
yd	Yards	0.914	meters	m
mi	Miles	1.61	kilometers	km
VOLUME				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft³	cubic feet	0.028	cubic meters	m ³
yd³	cubic yards	0.765	cubic meters	m ³
NOTE: volumes greater than 1000 L shall be shown in m ³				
MASS				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
TEMPERATURE (exact degrees)				
°F	Fahrenheit	$5 (F-32)/9$ or $(F-32)/1.8$	Celsius	°C

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE January 2022		2. REPORT TYPE Annual		3. DATES COVERED October 1, 2020 - September 30, 2021	
4. TITLE AND SUBTITLE FTA Annual Report on Technical Assistance and Workforce Development for FY 2021				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Edwin Adilson Rodriguez Office of Research Management, Innovation, and Outreach Federal Transit Administration				5d. PROGRAM NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) US Department of Transportation Research, Demonstration and Innovation 1200 New Jersey Ave., SE Washington, DC 20590				8. PERFORMING ORGANIZATION REPORT NUMBER FTA Internal Report No. 0209	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Department of Transportation Federal Transit Administration Office of Research, Demonstration and Innovation 1200 New Jersey Avenue, SE, Washington, DC 20590				10. SPONSOR/MONITOR'S ACRONYM(S) FTA	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Available from: National Technical Information Service (NTIS), Springfield, VA 22161; (703) 605-6000, Fax (703) 605-6900, email orders@ntis.gov ; Distribution Code TRI-30					
13. SUPPLEMENTARY NOTES [www.transit.dot.gov/research-innovation/fta-reports-and-publications] [https://www.transit.dot.gov/about/research-innovation] [https://doi.org/10.21949/] Suggested citation: Federal Transit Administration. FTA Annual Report on Technical Assistance and Workforce Development for FY 2021. Washington, D.C.: United States Department of Transportation, 2021. https://doi.org/10.21949/.					
14. ABSTRACT This statutorily required annual report provides information on FTA's Technical Assistance and Workforce Development Program (49 U.S.C. § 5314). It provides information on technical assistance, workforce development, standards, human resources, and training projects active in FY 2021. The report also includes information on FTA's process for making upcoming allocations for FY 2022.					
15. SUBJECT TERMS Public transportation, 49 U.S.C. § 5314, Section 5314, FTA appropriations, FAST Act, FTA demonstration and deployment, workforce development, workforce frontline, FTA innovation					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Unlimited	18. NUMBER OF PAGES 31	19a. NAME OF RESPONSIBLE PERSON
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER

TABLE OF CONTENTS

ix	Abstract
9	Executive Summary
11	Requirements for this Report
12	Section 1: Active Projects Results
12	Technical Assistance
12	Transit Workforce Development Technical Assistance Center (TWC)
13	Crime Prevention and Public Safety Awareness
13	National Center for Applied Transit Technology (N-CATT)
14	Transit Automation Technical Assistance
14	Mobility on Demand (MOD) On-Ramp Program
15	Transportation Research Board (TRB) Core Program Support
15	Safety Awareness Technical Assistance
16	National Aging and Disability Transportation Center (NADTC)
16	National Center for Mobility Management (NCMM)
17	Transit Research Analysis Committee (TRAC)
17	Transit Survey Data Archiving and Analysis
18	Transportation Capacity Building Program and Planning Methods
19	Environmental and Sustainability Management Systems Training and Technical Assistance Program
20	Standards Development
20	Transit Standards Development Program – CUTR
21	Transit Standards Development Program – APTA
22	Human Resources and Training
22	National Transit Institute (NTI)
23	FY 2015 Innovative Transit Workforce Development (ITWD) Projects
24	Second Chance
27	Section 2: Frontline Workforce Development Program Trends and Next Steps
29	Section 3: FY 2022 Expected Activities and Program Planning Process for Technical Assistance and Workforce Development Allocations
30	Acronyms and Abbreviations

LIST OF TABLES

10	Table 1: Active Projects by Eligible Areas
----	---



U.S. Department
of Transportation

**Federal Transit
Administration**

Administrator

1200 New Jersey Avenue, SE
Washington, DC 20590

January 13, 2022

Dear Colleague:

The Federal Transit Administration (FTA) is pleased to provide its Annual Report on Technical Assistance and Workforce Development for Fiscal Year (FY) 2021 as required by Federal public transportation law (49 U.S.C. § 5314(a)(3), (b)(2)(E)). This report describes the results from FTA's FY 2021 active projects in technical assistance, standards, workforce development, and training totaling \$35,065,342.

Significant highlights for FY 2021 were the award of a cooperative agreement for the first Transit Workforce Technical Assistance Center in August of 2021; continued support of human services transportation technical assistance through the National Aging and Disability Transportation Center; the expansion of mobility management activities through the National Center for Mobility Management; and the release of several standards reports through FTA's Standards Development Program. FTA and the public transit industry benefit from the work of FTA's many cooperative agreement partners. These programs provide significant expertise to public transit agencies that advance safety, equity, climate solutions, economic strength, and assist transit agencies to transform their operations.

FTA is also proud of the innovations of the National Transit Institute (NTI) in accommodating the changing transit education activities needed due to the coronavirus disease 2019 (COVID-19) pandemic. NTI transitioned key courses to online learning and was able to increase the number of operator assault prevention courses at FTA's request. NTI continues its tradition of responsiveness and flexibility in serving the training needs of the public transportation industry.

Lastly, in support of the Climate and Sustainability goals of the Administration and the U.S. Department of Transportation, FTA renewed its focus on environmental sustainability through investments in the Environmental and Sustainability Management Systems Training and Technical Assistance Program.

Thank you for your interest in public transportation.

Sincerely,

A handwritten signature in blue ink, appearing to read "Nuria I. Fernandez".

Nuria I. Fernandez

Abstract

This annual Report to Congress provides information on the Federal Transit Administration (FTA) Technical Assistance and Workforce Development Program (49 U.S.C. § 5314) for Fiscal Year (FY) 2021. The primary goals of this program are to provide technical assistance, standards development, human resources, workforce development, and training projects to more effectively and efficiently improve public transportation. The report includes a section on frontline workforce activities and trends and notes expectations and processes for allocating funding for FY 2022.

Executive Summary

This report is required by Federal public transportation law (49 U.S.C. § 5314(a)(3)). It provides information on projects active during Fiscal Year (FY) 2021. Active projects refer to projects and programs that involved Federal Transit Administration (FTA) resources during the fiscal year and are typically funded from appropriations enacted by Congress in earlier fiscal years. This is a retrospective report on the results of prior investments. There are four major types of eligible projects for this FTA program: technical assistance, standards development, human resources/workforce development, and training. This report is organized into three sections:

- **Section 1** provides detailed information on technical assistance, standards development, human resources, workforce development, and training projects, including key results of each project;
- **Section 2** discusses frontline workforce development projects, including key results of each project, and recommendations to improve program effectiveness. This is an additional report required by FTA's Technical Assistance and Workforce Development Program (49 U.S.C. § 5314 (b)(E)) and is partially duplicative of the report on technical assistance. Thus, in 2016, FTA's House and Senate authorizing committees approved FTA's request to submit one combined report document.
- **Section 3** provides information on expectations, directions, and processes for allocating FY 2021 funding.

FTA has a long history of investments in training, technical assistance, standards, and workforce development. The major goals for these programs include more effectively and efficiently providing public transportation service, training the public transportation workforce, and fielding innovative frontline workforce projects.

Table 1 Active Projects by Eligible Areas

Program/Project Name	Eligible Activities *											Amount	
	Technical Assistance (TA)								Std*	HT**			
	1	2	3	4	5	6	7	8	9	10	11		
Transit Workforce Development Technical Assistance Center (TWC)									x			x	\$5,000,000
Crime Prevention and Public Safety Awareness						x			x				\$2,000,000
National Center for Applied Transit Technology (N-CATT)									x				\$3,000,000
Transit Automation Technical Assistance									x				\$450,000
Mobility on Demand (MOD) On-Ramp Program									x				\$499,342
Transportation Research Board (TRB) Core Program Support									x				\$275,000
Safety Awareness Technical Assistance									x				\$400,000
National Aging and Disability Transportation Center (NADTC)	x	x	x										\$4,400,000
National Center for Mobility Management (NCMM)		x	x										\$3,800,000
Transit Research Analysis Committee (TRAC)						x			x				\$1,725,000
Transit Survey Data Archiving and Analysis									x				\$300,000
Transportation Capacity Building Program and Planning Methods									x				\$150,000
Environmental and Sustainability Management Systems Training and Technical Assistance Program									x				\$1,316,000
Transit Standards Development Program – Center for Urban Transportation Research (CUTR)										x			\$5,000,000
Transit Standards Development Program – American Public Transportation Association (APTA)										x			\$1,000,000
National Transit Institute (NTI)												x	\$5,000,000
FY 2015 Innovative Transit Workforce Development Projects – Second Change											x		\$750,000
												Total	\$35,065,342

TECHNICAL ASSISTANCE (TA)

1. Americans with Disabilities Act (ADA) of 1990
2. Human Services Transportation Coordination
3. Transportation Needs of Elderly Individuals
4. Increase Transit Ridership in Coordination with Metropolitan Planning Organizations
5. Improve Transportation Equity and Efficient Public Transportation Planning for Low-income and Minority Individuals
6. Facilitate Best Practices in Bus Driver Safety
7. Meet Buy America and Rolling Stock Purchase Requirements
8. Other technical assistance activity that advances the interests of public transportation

***STANDARDS (Std)**

9. Standards

****HUMAN RESOURCES AND TRAINING (HT)**

10. Human Resources
11. Training

Requirements for This Report

Federal public transportation law (49 U.S.C. § 5314(a)(3)) requires the Secretary of Transportation to submit a Report to Congress for all projects active under this section during the previous fiscal year. This annual report must be submitted to the Committee on Banking, Housing, and Urban Affairs and the Committee on Appropriations of the U.S. Senate, and the Committee on Transportation and Infrastructure, the Committee on Science, Space, and Technology, and the Committee on Appropriations of the U.S. House of Representatives not later than the first Monday of February in the following year.

This annual report must include:

- A description of each project that received assistance under this program during the preceding fiscal year.
- An evaluation of the technical assistance and standards activities carried out by each organization that received assistance during the preceding fiscal year.
- A process to determine allocations for the FTA Technical Assistance Program for the subsequent fiscal year.
- Measurable outcomes and impacts of the Human Resources & Training (section 5314(b)) and National Transit Institute (NTI) (section 5314(c)) programs.

Section 5314(b)(2)(E) requires the Secretary to submit a report on Innovative Public Transportation Workforce Development, to include a detailed description of activities carried out, an evaluation of the program, and policy recommendations to improve program effectiveness. Given that this report is partially duplicative of the report required by section 5314(a)(3), in 2016, FTA's House and Senate authorizing committees approved FTA's request to submit one combined report.

Section 1

Active Projects Results

Section 1 groups projects by the authorized program areas: Technical Assistance, Standards, Human Resources, Training, and Workforce Development. Each project summary provides information on the recipient; a detailed description of each funded activity, including its purpose and goal(s); relevant project results listing pertinent activities, measurable outcomes, and impacts to the industry and the community; the year the project was awarded, the total amount funded from multiple fiscal years; and the anticipated completion date. The projects are ordered by when they were awarded, with the most recent awards noted first.

Technical Assistance

Technical Assistance (TA) investments furthered the mobility of older adults and people with disabilities, expanded mobility management awareness, supported the Americans with Disabilities Act (ADA) of 1990, enhanced public safety awareness in transit systems, and expanded access to human services transportation through coordination initiatives.

Title: *Transit Workforce Development Technical Assistance Center (TWC)*

Recipient: International Transportation Learning Center (ITLC)

Project Description:

FTA established the first Transit Workforce Development Technical Assistance Center (TWC). The TWC will support public transit agencies' workforce development needs for all modes of public transit across urban, tribal, and rural entities. Its overall mission is to help transit agencies recruit, hire, train, and retain the diverse workforce needed for today and the future. The TWC will 1) conduct technical assistance activities within and for transit agencies that promote more effective and efficient training of frontline workers involved in public transportation maintenance and operations; and 2) implement technical assistance activities through collaborative partnerships between transit agency management and labor, including apprenticeship development and implementation.

Results:

On April 9, 2021, FTA announced a competitive research Notice of Funding Opportunity (NOFO) that closed on May 10, 2021. The selected recipient was ITLC, which was announced on August 2, 2021. The TWC began work in the fall of 2021.

FTA Funding: \$5,000,000

Title: *Crime Prevention and Public Safety Awareness*

Recipients: Associations and a non-profit organization

Project Description:

This technical assistance is part of FTA’s Human Trafficking Awareness and Public Safety Initiative. The program will develop and disseminate technical assistance materials supporting public safety awareness campaigns that address public safety in transit systems, including crime prevention, human trafficking, and operator assault.

Results:

In FY 2021, FTA worked with the selected recipients to finalize the cooperative agreements. These cooperative agreements ensure each recipient meets the goals of the program.

FTA Funding: \$2,000,000

Title: *National Center for Applied Transit Technology (N-CATT)*

Recipient: Community Transportation Association of America (CTAA)

Project Description:

The Consolidated Appropriations Act, 2019 (Pub. L. 116-6), provided \$1,500,000 under FTA’s Technical Assistance and Workforce Development Program (49 U.S.C. § 5314) for a cooperative agreement to assist small urban, rural, and tribal public transit recipients and planning organizations with applied innovation and capacity-building. FTA provided an additional \$1,500,000 in FY 2021 for this effort. N-CATT provides practical, replicable resources that help solve local challenges by applying technological solutions. N-CATT accomplishes its mission through collecting, understanding, communicating, planning, encouraging, and spurring implementation of cost-effective, value-adding technologies.

Results:

The N-CATT began its cooperative agreement in September 2019. Relevant activities for N-CATT in this reporting period include in-depth technical assistance and resource development for N-CATT’s “Tech University” webpage. Technical assistance includes hosting state technology summits and providing follow-up assistance to participating state DOTs, providing direct technical assistance to communities through Innovative Technology Strike Teams, and hosting skill-building workshops. N-CATT’s resource development includes publishing white papers, fact sheets and guidebooks; producing podcasts; developing video case studies and hosting webinars on applied innovation topics.

FTA Funding: \$3,000,000

Title: *Transit Automation Technical Assistance***Recipient:** The Volpe Center**Project Description:**

The purpose of this program is to provide technical assistance on bus transit automation to public transit agencies. This project advances the adoption of automation technologies and related practices to improve the safety and performance of transit systems.

Results:

This program was awarded funding in September 2018 and is expected to conclude in November 2023. In FY 2021, the program convened a Transit Bus Automation Community of Practice (ongoing) and created and published short papers on topics identified through and drawn from FTA's transit bus automation research, such as survey design and insurance and liability. Through this program, FTA is developing a greater understanding of the state of transit bus automation and the potential opportunities for transit bus automation to improve safety and performance.

FTA Funding: \$450,000**Title: *Mobility on Demand (MOD) On-Ramp Program*****Recipient:** Shared-Use Mobility Center (SUMC)**Project Description:**

The MOD On-Ramp Program provides technical assistance to public transportation agencies on advancing innovative MOD projects. The goal of this effort is to support the successful development of MOD ideas and business plans for future implementation as pilot projects.

Results:

This program was awarded funding in September 2017, and it concluded in April 2021. The program hosted a series of online, public webinars sharing lessons learned from selected MOD On-Ramp projects and hosted a MOD On-Ramp National Workshop in Chicago, IL. The program also provided technical assistance and strategic planning by hosting workshops and monthly calls with local stakeholders to educate transit agencies and local partners on MOD initiatives. The MOD Learning Center, accessible at <https://learn.sharedusemobilitycenter.org/>, completed the program as a repository of resources and references for MOD projects.

FTA Funding: \$499,342

Title: *TRB Core Program Support*

Recipient: Transportation Research Board (TRB) of the National Academies of Sciences, Engineering, and Medicine (NAS)

Project Description:

This project provides for FTA engagement on TRB's core technical activities. It provides for limited FTA staff attendance at the TRB Annual Meeting, access to research databases and dissemination tools, and general support for 175 TRB standing committees and various task forces. Additionally, this activity facilitates the exchange of transit research information and results at the national level.

Results:

Key outcomes in FY 2021 included FTA staff attendance in the TRB Annual Meeting and access to TRB reports and webinars. This project provided FTA staff with access to all online TRB resources including the Transportation Research International Documentation (TRID) database. Research sponsors use TRID to avoid costly duplication and assure timely dissemination of results. TRB processes approximately 30,000 new transportation-related publications into TRID per year.

FTA Funding: \$150,000

Title: *Safety Awareness Technical Assistance*

Recipient: Operation Lifesaver, Inc. (OLI)

Project Description:

The objective of this project is to reduce grade crossing, trespassing, and related incidents on transit systems by increasing public awareness of safe behavior around tracks and trains. The project funds transit safety education grants for the development of training and educational materials, and the dissemination of information to assist transit agencies to make the public aware of transit-related rail safety issues.

Results:

The current agreement started in May 2021 and will end in July 2022. FTA and OLI executed new activities for FY 2021 that directly support the goal of disseminating safety information to the public, and benefit both individuals and transit agencies by increasing awareness of safe behavior.

FTA Funding: \$400,000

Title: *National Aging and Disability Transportation Center (NADTC)*

Recipient: Easter Seals, Inc.

Project Description:

The NADTC is a partnership between Easter Seals and the National Association of Area Agencies on Aging (n4a). Its purpose is to promote the mobility of people with disabilities and older adults, ensuring that public transportation supports independent living in communities. The Center provides training, technical assistance, best practice resources, partnerships with other national centers and industry organizations, and seed funding for targeted local projects.

Results:

The multi-year technical assistance program was initially awarded in September 2015. NADTC was re-competed in 2020 and awarded a five-year cooperative agreement from 2021 to 2025. In FY 2021, NADTC completed a national diversity, equity and inclusion initiative; conducted a coordination campaign including a national coordination committee; provided online courses, webinars, and targeted technical assistance; hosted a learning collaborative; published a monthly newsletter and monthly blogs; actively participated on social media; maintained an updated website; and developed useful resources including an annual trends report. NADTC provides grant assistance to local communities for planning and implementation of innovative transportation solutions and creating replicable models of excellence. NADTC's activities achieved broad outreach. From October 1, 2020 through March 30, 2021, approximately 2,237 people participated in NADTC online courses, webinars, and conference presentations. There were 24,877 unique visitors to the NADTC website, www.nadtc.org, from October 2020 through March 2021.

FTA Funding: \$4,400,000

Title: *National Center for Mobility Management (NCMM)*

Recipient: Community Transportation Association of America (CTAA)

Project Description:

The NCMM is a partnership among CTAA, the American Public Transportation Association (APTA), and Easter Seals, Inc. It supports mobility management professionals in developing and implementing strategies that improve transportation access for older adults, people with disabilities, and low-income individuals and families.

Results:

The current project was awarded funding in May 2019 and is expected to operate through September 2022. NCMM funds three levels of community

grants, from the planning to design to the pilot phase. These grants led to new services in several communities (four in rural areas) and sustainable funding for at least three projects emerging from the pilot phase. In FY 2021, NCMM supported the Coordinating Council on Access and Mobility (CCAM), a Federal interagency council that works to coordinate funding and provide expertise on human service transportation for three targeted populations: people with disabilities, older adults, and individuals of low income. NCMM launched a major initiative to support transit's efforts to transport individuals to COVID-19 testing and vaccination clinics, and provided technical assistance to other public transit agencies and human service agencies through various methods. NCMM helped train mobility management practitioners on emerging service models through webinars and e-learning training courses. NCMM's website is the main platform for providing technical assistance, and is designed for optimal access through a Google-powered advanced search feature.

FTA Funding: \$3,800,000

Title: *Transit Research Analysis Committee (TRAC)*

Recipient: National Academies of Sciences, Engineering, and Medicine (NAS)

Project Description:

TRAC is an interdisciplinary committee of experts from industry, academia, and the private and public sectors that provides independent perspective to FTA on future investments in transit research, development, and innovation. Its goal is to examine and recommend actions FTA can take to ensure that its research and innovation program is relevant, timely, and effective in meeting the diverse and changing needs of the public transportation community.

Results:

The current project was awarded funding in June 2018 and will be extended to June 2022. Due to the COVID-19 pandemic, the next meeting was moved to FY 2022.

FTA Funding: \$1,725,000

Title: *Transit Survey Data Archiving and Analysis*

Recipient: U.S. Department of Energy National Renewable Energy Laboratory (NREL)

Project Description:

The objective of this project is to prevent valuable transportation datasets from becoming lost or destroyed and to make these data available for legitimate research while at the same time safeguarding survey participant privacy.

The project will obtain transit rider survey data from agencies that collected information and convert this data to a standardized format for archiving. The project will also include public summaries of the available databases, which will help researchers and others gain a better understanding of the people who are riding public transit. The data will be archived on NREL's Transportation Secure Data Center (TSDC), accessible at <https://www.nrel.gov/transportation/secure-transportation-data/>.

Results:

The current interagency agreement started in July 2021 and will end in July 2023. In FY 2021, the project focused on establishing a standardized workflow to convert transit survey databases into the TSDC and reconfiguring the TSDC website and secure portal environment to provide navigable branches for accessing transit survey data. Through this project, FTA will provide opportunities for researchers and others with an interest in transit to better understand the characteristics and travel patterns of the users of public transit.

FTA Funding: \$300,000

Title: *Transportation Capacity Building Program and Planning Methods*

Recipient: Volpe National Transportation Systems Center

Project Description:

This project provides technical assistance with peer learning activities, effective practices and applied research, information development and dissemination, and program planning. The project supports peer-based events and technical assistance to build the capacity of transportation professionals via the sharing of experiences and lessons learned around specific planning-related topics. The goals of the project are to research and document best practices, synthesize information, and conduct other targeted research on planning-related topics.

Results:

The current agreement started in June 2021 and will end in May 2026. In FY 2021, FTA and the Volpe National Transportation Systems Center discussed next steps in supporting activities under this new interagency agreement.

FTA Funding: \$150,000

Title: *Environmental and Sustainability Management Systems (ESMS) Training and Technical Assistance Program*

Recipient: Virginia Polytechnic Institute and State University

Project Description:

The objective of this project was to develop and implement the ESMS Training and Technical Assistance Program. The program was developed in response to requests from transit industry representatives to establish such a program. An ESMS is a set of processes and practices, implemented in accordance with standard 14001 of the International Organization for Standardization (ISO), that enables an organization to reduce its environmental impacts and increase operating efficiency. An ESMS is designed to develop a systematic management approach that incorporates every aspect of an organization's current and planned operations and produces environmental benefits such as energy conservation, efficient water use, vehicle emission reduction, materials recycling, and management of hazardous materials.

Results:

The ESMS Training and Technical Assistance Program funding agreement was initiated in 2008 and ended in August 2021. The program consisted of a series of trainings and technical assistance program deliveries which assisted 33 transit agency teams in developing and implementing an ESMS at their facilities. Participants in the program received training, on-site technical support visits, electronic materials and resources, and consultation to help develop an ESMS using the ISO standard 14001. In FY 2021, two ESMS training and assistance program transit agencies declared their intent to submit their ESMS for ISO 14001 certification. The ESMS Resource and Training Assistance Program resulted in a suite of resource documents, webinars, and online courses to continue assisting transit agencies in implementing and maintaining ESMS in their facilities in the future. The Technical Assistance Final Reports and resources can be found at <https://www.transit.dot.gov/regulations-and-programs/environmental-programs/environmental-and-sustainability-management-systems>. Transit agencies from across the country participated in the program, ranging from medium-sized agencies with bus and paratransit services to agencies with large, complex operations including ferry services, heavy rail, commuter rail, and bus rapid transit. The environmental benefits of implementing ESMS include the enhanced ability to analyze, control, and reduce environmental impacts, such as air emissions and oil in wastewater, and an associated reduction in the number, type, and severity of compliance incidents. In addition to these benefits, participants of the ESMS program have reported business benefits, including more efficient and controlled operations, cost savings, and improved relationships with employees, regulators, systems users, and the general public.

FTA Funding: \$1,316,000

Standards Development

FTA provided funding for the development of voluntary and consensus-based standards and best practices for the public transportation industry in the areas of safety, fare collection, intelligent transportation systems, accessibility, procurement, security, and asset management to maintain a state of good repair, operations, maintenance, vehicle propulsion, communications, and vehicle electronics.

Title: *Transit Standards Development Program – CUTR*

Recipient: University of South Florida (USF) Center for Urban Transportation Research (CUTR)

Project Description:

This program collects information required to develop transit standards by suggesting new or revised voluntary standards, guidelines, and best practices.

Results:

The program started in September 2017 and will end in December 2022. In FY 2021, the program completed reports in roadway worker protection and mitigations for trespasser and suicide fatalities and injuries. Under this program, FTA published the following four reports:

- *Crashworthiness/Crash Energy Management for Transit Bus*, accessible at <https://rosap.ntl.bts.gov/view/dot/55469>.
- *Crashworthiness/Crash Energy Management Follow-Up for Less than 30 Ft Bus*, accessible at <https://rosap.ntl.bts.gov/view/dot/55690>.
- *Emergency Lighting and Signage for Rail Transit Passenger Vehicles*, accessible <https://rosap.ntl.bts.gov/view/dot/58011>.
- *Inward- and Outward-Facing Audio and Video Recordings for Transit Rail Vehicles*, accessible at <https://rosap.ntl.bts.gov/view/dot/58012>.

In addition, the program developed an intermediate technical brief for transit agencies to limit COVID-19 exposure based on the bus operator temporary barrier for COVID-19 research. The program also conducted virtual meetings with industry working groups to present research findings from mitigations for trespasser and suicide fatalities and injuries; transit bus operator temporary barrier for COVID-19; and transit rail roadway/pedestrian grade crossing.

FTA Funding: \$5,000,000

Title: *Transit Standards Development Program – APTA***Recipient:** American Public Transportation Association (APTA)**Project Description:**

This project supported FTA in its leadership role to coordinate with the transit industry and standards development organizations (SDOs) to develop and maintain voluntary standards and best practices to help improve the performance, reliability, efficiency, and safety of transit systems.

Results:

The project started in September 2017 and concluded in October 2020. The APTA standards program reviewed and updated existing public transportation standards and recommended practices. The program completed review and update of 76 standards and recommended practices accessible at <https://www.apta.com/research-technical-resources/standards/>.

FTA Funding: \$1,000,000

Human Resources and Training

This section reviews the results of FTA-funded projects associated with public transportation human resource activities and includes a discussion of the training activities of the National Transit Institute (NTI).

Title: *National Transit Institute (NTI)*

Recipient: Rutgers, the State University of New Jersey

Project Description:

FTA's Technical Assistance and Workforce Development Program (49 U.S.C. § 5314) funds NTI (49 U.S.C. § 5314(c)), housed at Rutgers, the State University of New Jersey, which develops and conducts courses, educational programs, and webinars for Federal, State, and local government employees and for non-profit leaders engaged in government-funded public transportation work. NTI strategically develops and delivers courses across the country in partnership with regional transit agencies, state DOTs, municipal governments, metropolitan planning organizations (MPOs), and state and national transit-related associations. NTI plans and develops its work in close alignment with FTA's respective offices and with the public transit industry to ensure that NTI courses and activities are tied to FTA's strategic goals and support the training needs of the public transit industry.

Results:

In FY 2021, NTI delivered 162 training courses virtually to 6,177 transit and transportation professionals. Similar to FY 2020, due to COVID-19, in FY 2021, NTI experienced a sharp reduction in the delivery of training courses compared to pre-COVID years. NTI continues to expand its virtual course portfolio with plans to continue 100% virtual course delivery until January 2022 and, potentially, resume a limited scheduled of on-site course offerings soon after.

FTA Funding: \$5,000,000

FY 2015 Innovative Transit Workforce Development (ITWD) Projects

In October 2014, FTA announced the Notice of Funding Availability (NOFA) for its Innovative Transit Workforce Development (ITWD) projects. The NOFA solicited proposals that promoted innovative nationally and regionally significant public transportation workforce development models, programs that invested in America's economic growth, and helped to build ladders of opportunity into the middle class. Eligible Applicants included urban and rural transit agencies; state departments of transportation providing public transportation services; metropolitan planning organizations; Indian Tribes; non-profit institutions; and institutions of higher education. In October 2015, FTA awarded funding totaling \$8,308,882 to 17 recipients for the FY 2015 ITWD projects. The seven priorities for projects were:

1. Targeting areas with high rates of unemployment.
2. Helping local communities benefit directly from employment opportunities created by the construction and operation of new transit capital projects or other public transportation activities within their region.
3. Providing career pathways that support the movement and employment of traditionally disadvantaged communities or those who were underrepresented in transit and transit construction.
4. Helping to increase target recruitment of minorities, including Tribal citizens, women, veterans, returning citizens, persons with disabilities and low-income individuals.
5. Addressing gaps in job areas where current or projected workforce shortages in fields related to public transportation exist.
6. Pre-employment training/preparation/tracking.
7. Recruitment and hiring.

Of the 17 projects, 14 projects were completed by the end of FY 2019, two concluded in FY 2020, and the remaining one project – Second Chance managed by the Chicago Transit Authority (CTA) – was completed in April 2021. Information on the Second Chance project is included below:

Title: *Second Chance*

Recipient: Chicago Transit Authority (CTA)

Project Description:

This cooperative agreement expanded an existing CTA Second Chance Priority Careers program. CTA provided individuals who faced barriers to employment, such as returning citizens, domestic abuse survivors, and the homeless, with an opportunity to obtain full-time temporary employment and training. This included 315 positions cleaning CTA trains, buses, facilities and rail stations. This 12-month program provided participants with essential skills, on-the-job skills training, professional development, and career coaching to assist them to become self-sufficient through permanent employment. Additionally, CTA's Second Chance Priority Careers Program provided participants with the opportunity to acquire certificates of completion from recognized programs through a partnership with City Colleges of Chicago, including the Customer Service for Transit Professionals and Basic Mechanical Skills training programs. Other certifications eligible for program participants include FEMA's Incident Command System 100 (ICS 100) certification, OSHA 10-HR General Industry Certification, State of Illinois Department of Motor Vehicles Commercial Driver's License Permit (CDLP) credentials, and many more. CTA partnered with the Department of Family and Support Services (DFSS) and 26 social services agencies throughout the City of Chicago to gain qualified candidates for the Second Chance Program.

Results:

FTA's support of CTA's existing Second Chance Priority Careers Program began in August 2015. The program was expected to end in May 2020; however, due to the COVID-19 pandemic, it was completed in April of 2021.

Through this project, CTA expanded the program from 268 to 236 participants, who completing training in the fields of maintenance, operations, and customer service. 129 of the 236 participants who completed the Second Chance Program were hired by CTA for permanent frontline and entry-level transit jobs such as bus servicers, rail car servicers, rail car repairers, customer service representatives, flag workers, stockroom clerks, bus operators, and bus maintenance coordinators. An additional 19 participants found employment elsewhere. The training program has a 92 percent success rate for participants gaining employment. This project culminated in the development of a guide titled "Handbook to Establish Training Program for Job Seekers Facing Barriers to Employment." This guide can be used by others who may be considering developing a program working with job seekers who face employment barriers.

FTA Funding: \$750,000

The Second Chance project managed by CTA was the last active FY 2015 ITWD project. FTA's evaluator for these workforce programs, the Axiom Corporation, Inc. conducted a summative evaluation of the FY 2015 ITWD projects. FTA released its Summative Evaluation of the projects in December 2020, accessible at <https://www.transit.dot.gov/research-innovation/innovative-transit-workforce-development-projects-2015-summative-evaluation>. The purpose of the evaluation was to gauge each project's effectiveness against their individually-proposed goals and to determine whether further Federal investment was warranted. This evaluation report provided results of each project and lessons learned:

- The projects met and often exceeded their goals.
- The ITWD program was successful in identifying promising approaches for workforce development.
- Transit, workforce, and education together made very strong partnerships.
- Established projects offered a safe route to outcomes.
- Pre-apprenticeship programs must be flexible to accommodate transit construction.
- Employees should be included early in recruitment and training projects.
- Applicants needed to better define outcomes and metrics.
- Support is critical when expanding the talent pool to disadvantaged or under-represented populations.
- Participant selection was critical to project outcomes.

The major accomplishments of these projects included:

- The successful development of training programs for transit frontline workers.
- Outreach programs to introduce careers in transit to potential audiences.
- The development of curriculum for emerging technologies in signals.
- Training programs for small businesses.
- The creation of apprenticeship programs for college students, incumbent workers, and youth.
- The FY 2015 ITWD projects supported for the first time, an inclusion of training for returning citizens and small business development training.

The findings from the FY 2015 ITWD Projects helped inform the development of the \$5 million Technical Assistance and Workforce Development Program (49 U.S.C. § 5314) funds, to establish a Transit Workforce Center (TWC) – a new FTA Technical Assistance Center awarded in August of 2021.

Individual project descriptions and results of all of the FY 2015 ITWD projects were included in previous FTA Annual Reports on Technical Assistance and Workforce Development. The FY 2018 reports can be accessed at: <https://rosap.ntl.bts.gov/view/dot/39973>, the FY 2019 report at <https://rosap.ntl.bts.gov/view/dot/50723>, and the FY 2020 report at

<https://rosap.ntl.bts.gov/view/dot/55468>. The FY 2015 ITWD projects' findings underscored the importance of frontline workforce development training through peer-to-peer collaboration, labor management forums, and apprenticeships. The projects also noted the importance of encouraging and supporting the development of outreach and training materials and programs for youth and new entrants to public transit.

Section 2

Frontline Workforce Development Program Trends and Next Steps

Federal public transportation law (49 U.S.C. § 5314(b)(2)(E)) requires the Secretary of Transportation to make publicly available a report on the Frontline Workforce Development Program for each fiscal year, not later than December 31 of the calendar year in which that fiscal year ends. The report must include a detailed description of activities carried out under this section, an evaluation of the program, and policy recommendations to improve program effectiveness. This requirement by FTA's Technical Assistance and Workforce Development Program (49 U.S.C. § 5314 (b)(E)) is partially duplicative of the report on technical assistance. Thus, in 2016, FTA's House and Senate authorizing committees approved FTA's request to submit one combined report document.

There were three significant developments in FY2021 related to emerging public transportation workforce trends. First, FTA solicited applications for and awarded the first workforce development technical assistance resource called the Transit Workforce Center (TWC). Second, FTA launched a renewed focus on climate change and sustainability to support the Administration's goal for public transportation fleets to be carbon neutral by 2050. Third, public transit agencies put in place many new protocols and training activities to address the COVID-19 pandemic. All three of these developments have great significance for how the public transit workforce will develop and grow in the future.

FTA also collaborated with NTI to conduct an industry workforce needs assessment aimed at identifying training, skills, and educational gaps that exist in the industry. In addition, the assessment identified current NTI programs to help keep its resources in line with transit's changing workforce, technologies, and operating environment. NTI completed the report titled "Identifying Current and Future Training Needs of Public Transportation Industry," and published it on FTA's website on March 22, 2021, accessible at <https://rosap.ntl.bts.gov/view/dot/55684>.

Transit Workforce Center (TWC)

To help transit agencies retain, train, and build the transit workforce needed today and tomorrow, FTA solicited and awarded its first transit workforce technical assistance initiative – the Transit Workforce Center (TWC). The TWC will support public transit agencies' workforce development needs for all modes of public transit across urban, tribal, and rural entities. Its overall mission is to help transit agencies recruit, hire, train, and retain the diverse workforce needed for today and the future. Key activities of the TWC are to: 1) conduct technical assistance activities within and for transit agencies that promote more effective and efficient training of frontline workers involved in public transportation maintenance and operations; and 2) implement technical assistance activities through collaborative partnerships between transit agency management and labor,

activities of the TWC are to: 1) conduct technical assistance activities within and for transit agencies that promote more effective and efficient training of frontline workers involved in public transportation maintenance and operations; and 2) implement technical assistance activities through collaborative partnerships between transit agency management and labor, including apprenticeship development and implementation. The TWC is tasked with cataloging and promoting successful and innovative models for ensuring worker safety and training during national emergencies and public health emergencies such as COVID-19. Among other tasks, the TWC also will address the recommendations made by the 2019 Government Accountability Office (GAO) report “Transit Workforce Development: Improved Strategic Planning Practices Could Enhance FTA Efforts” (GAO-19-290). The report, including the three recommendations to FTA, is accessible at <https://www.gao.gov/assets/gao-19-290.pdf>.

The TWC will provide technical assistance and enable FTA to support training and curriculum development, while addressing the climate crisis. The work of the ITWD projects have and will continue to help transit agencies recruit, hire, train, and retain the diverse workforce they need for today and tomorrow. It will provide opportunities for peer-to-peer meeting exchanges and collaboration that will help achieve President Biden’s vision for America to Build Back Better. This investment in the frontline workforce will address position shortages by developing a skilled transit workforce, while creating good-paying, secure jobs for workers in communities throughout the country and preparing for possible public health or national emergency interruptions to transit services.

Public Health Emergency Preparedness for Frontline Transit Employees

The public transportation industry has been significantly impacted by the effects of the COVID-19 pandemic; however, over the last year, they demonstrated their resilience and innovation to mitigate the risks of exposure for their employees and riders. Now, after almost a year and a half of putting many new measures in place and based on what they learned, several agencies are seeing increases in ridership. To support safety for their employees, especially operators, transit agencies installed plexi-glass barriers in buses, provided training in conflict-de-escalation, and enhanced cleaning/disinfection of transit assets. A number of agencies also invested in air-purification systems. Mask mandates were put in place for riders, and Personal Protective Equipment was provided to transit workers. FTA is very concerned about the increased incidence of operator assaults and continues to take steps to address this working closely with transit agencies. Public transportation agencies continue to innovate, build out enhanced services, and assess the impacts of workplace changes such as telework to address the new challenges of the last year.

A well-trained transit workforce is central to the transit industry's response to the COVID-19 pandemic. Transit agencies trained workers on various new protocols for operators to ensure safe operations. In addition, deeper and more frequent sanitation and decontamination of stations and rolling stock required new procedures and additional workers. Effective workforce training will help keep workers and transit riders safe as the nation recovers from the COVID-19 pandemic.

Climate Change and Sustainability and the Public Transportation Workforce

Another major public transportation workforce trend is hiring, training, or re-skilling current staff to support the fleet of the future. With the Administration's goal to achieve a carbon neutral public transportation fleet by 2050, agencies will receive significant resources to enhance their fleets with low or no emission vehicles. Moving from diesel, diesel hybrid, or even compressed natural gas vehicles to battery electric or hydrogen fuel cell vehicles requires many functional changes to organizations' staffing plans. Transit operations must be re-assessed and reworked to address the range capabilities of battery electric vehicles. Decisions associated with what buses to purchase require assessments of the buses' capabilities within each agencies' unique climate, topology, and route ranges. New depot and on route charging systems will also require specialized expertise to plan, implement, and use. These trends, especially those related to front-line worker changes, will require significant planning and human resources development to support.

Section 3

FY 2022 Expected Activities and Program Planning Process for Technical Assistance and Workforce Development Allocations

FTA follows a multi-pronged approach to finalizing technical assistance and workforce investments for the upcoming year. There are three major ways that FTA finalizes decisions – the Presidential and Congressional Budget process; addressing any Congressional requirements from yearly Appropriations legislation; and an internal FTA program planning process that gathers the collective input and wisdom of experienced colleagues from across the agency.

Each year, FTA's first priorities are to ensure that current competitively selected technical assistance centers have enough funding to continue operations. Next, FTA assesses and implements applicable provisions in Appropriations legislation enacted by Congress. Lastly, FTA asks each of its program offices to note key technical assistance projects and activities to implement priorities of the Administration. For FY 2022, FTA will prioritize technical assistance, standards, and workforce development activities that further DOT's strategic goals of safety, transformation, equity, climate sustainability, economic strength, and operational excellence.

Acronyms and Abbreviations

ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
CTAA	Community Transportation Association of America
DOT	U.S. Department of Transportation
FAST	Fixing America’s Surface Transportation Act
FTA	Federal Transit Administration
ITWD	Innovative Transit Workforce Development Projects
MOD	Mobility on Demand
NADTC	National Aging and Disability Transportation Center
NAS	National Academy of Sciences, Engineering, and Medicine
NREL	U.S. Department of Energy National Renewable Energy Laboratory
NCMM	National Center for Mobility Management
NTI	National Transit Institute
OLI	Operation Lifesaver, Inc.
SDO	Standards Development Organizations
TCRP	Transit Cooperative Research Program
TRAC	Transit Research Analysis Committee
TRB	Transportation Research Board
TRI	FTA Office of Research, Demonstration, and Innovation
TWC	Transit Workforce Center



U.S. Department of Transportation
Federal Transit Administration

U.S. Department of Transportation
Federal Transit Administration
East Building
1200 New Jersey Avenue, SE
Washington, DC 20590

<https://www.transit.dot.gov/about/research-innovation>