

Innovative Transit Workforce Development Projects of 2012: Summative Evaluation

FEBRUARY 2019

FTA Report No. 0128
Federal Transit Administration

PREPARED BY
Axiom Corporation



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SPONSORED BY

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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

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13. ABSTRACT The US Department of Transportation and the Federal Transit Administration (FTA) believe that human capital is as important as physical capital. To help address transit workforce challenges, in 2012 FTA funded 16 innovative transit workforce development projects. In 2016, FTA engaged Axiom Corporation to conduct a summative evaluation of these projects to gauge effectiveness against proposed goals and assess if further Federal investment was warranted. Axiom conducted document review and structured interviews with participants from 14 projects. Overall, the program successfully identified promising approaches for workforce development. Of the 14 projects at the time of this report, 8 were recommended for further investment, 5 were somewhat recommended for investment, and 1 was not recommended. In total, 66% of all project goals were met or exceeded, 25% were unmet, and the rest were indeterminate. Collectively, the projects introduced more than 44,000 youth to transit careers and provided technical training to more than 800 incumbents, with 465 certifications earned. Another 400 participants received pre-employment training, almost 90 were employed, and 40 interns were hired. In addition, 18 training courses and 2 apprenticeship programs were created. Cross-project conclusions and recommendations are offered.			
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Abstract

The US Department of Transportation and the Federal Transit Administration (FTA) believe that human capital is as important as physical capital. To help address transit workforce challenges, in 2012, FTA funded 16 innovative transit workforce development projects. In 2016, FTA engaged Axiom Corporation to conduct a summative evaluation of these projects to gauge effectiveness against proposed goals and assess if further Federal investment was warranted. Axiom conducted document review and structured interviews with participants from 14 projects. Overall, the program successfully identified promising approaches for workforce development. Of the 14 projects, 8 were recommended for further investment, 5 were somewhat recommended for investment, and 1 was not recommended. In total, 66% of all project goals were met or exceeded, 25% were unmet, and the rest were indeterminate. Collectively, the projects introduced more than 44,000 youth to transit careers and provided technical training to more than 800 incumbents, with 465 certifications earned. Another 400 participants received pre-employment training, almost 90 were employed, and 40 interns were hired. In addition, 18 training courses and 2 apprenticeship programs were created. Cross-project conclusions and recommendations are offered.

Introduction

This report provides the results of the Innovative Transit Workforce Development Program Evaluation of projects awarded in Fiscal Year (FY) 2012. The US Department of Transportation (US DOT) and the Federal Transit Administration (FTA) believe that developing and maintaining human capital is as important as the investment in physical capital. With the resurgence of public transportation in recent years, transit systems face a number of challenges: rapidly changing technologies (to vehicles, right-of-way, and customer information services), an aging workforce, and increasing ridership. These challenges make attracting and preparing new talent increasingly important.

To help address these challenges, FTA published its first Notice of Funding Availability (NOFA) in 2011. A second round of funding for projects was released in Fiscal Year (FY) 2012 seeking proposals for the Innovative Transit Workforce program. Unlike the prior year's projects, 2012 focused on the frontline transit workforce as opposed to leadership. Based on a competitive application process, FTA awarded a total of \$7,048,898 (\$5 million in 2012 funding, the rest from prior-year funding) for 16 workforce development projects. Recipients included transit authorities, higher education institutions, Native American tribes, and non-profit organizations individually or as a consortium. These entities were expected to partner with one another and the public workforce investment system, labor organizations, or other appropriate entities to enact workforce solutions. Proposed projects could support a number of areas in the transportation workforce lifecycle, including:

- Pre-employment training or preparation
- Recruitment and hiring
- Incumbent worker training and retention
- Succession planning/phased retirement

Cost-sharing was not required for 2012 applicants, but was strongly encouraged, with the potential to affect award selection. The 2012 funding was executed in the first half of 2013, although proposed budgets were cut by roughly 15% before execution. Projects were scheduled to run for 18 months from the date of execution. However, it should be noted that programs were extended, with some concluding in 2016 and some still ongoing at the time of this report.

Projects were expected to produce at least one final deliverable that would become available to FTA at the end of the project for dissemination and sharing throughout the industry at no cost, in addition to regular performance reporting. Applicants were asked to specify in their proposals a plan for recording the outcomes of the project, including:

1. Number of individuals affected by the project
2. Cost of the project and share of federal investment
3. At least one measure of quality
4. Project descriptions and statements of applicability to other entities

Program Evaluations

In 2013, FTA hired Axiom Corporation to conduct a summative evaluation of the 2011-funded Innovative Transit Workforce Development projects, with the goal of determining whether these projects met their goals and whether they were scalable and worthy of further FTA funding and expansion. This evaluation involved document review, protocol development, and structured interviews with program operators. It culminated in a 2015 evaluation report provided to FTA summarizing each project, assessing projects against their stated goals, and providing an assessment regarding whether they merited further investment by FTA. The report concluded with observations about common elements of successful programs and recommendations.

In 2016, FTA re-engaged Axiom Corporation to conduct a follow-up summative evaluation covering the 2012 Innovative Transit Workforce Development projects. This evaluation gauges the effectiveness of these 2012 projects and helps justify the Federal investment and follows the same methodology. Axiom Corporation was tasked with reviewing the workforce development projects to determine their goals, measures of achievement, and potential impact on local or national transit workforce development needs. Evaluation criteria outlined included the first three outcomes listed above that applicants included in their proposals and projects. The primary difference between the programs funded in 2011 and 2012 was that 2012 focused more on frontline positions (as opposed to leadership) and funded five additional projects.

Methodology

As was the case for the 2011 evaluation, this 2012 Innovative Transit Workforce Development evaluation was conducted via two primary methods: document review and telephone interviews with grantees. In addition to applicants' proposals, which outlined goals, expected outcomes, and metrics, the grantees provided periodic updates on their progress to FTA. Each grantee also was expected to provide a final report to FTA. Some grantees planned to conduct surveys of participants or use outside evaluation firms. Axiom reviewed all available documentation provided by FTA related to the grantees' programs as a primary source. Table ES-I provides a list of funding recipients and the project titles.

Table ES-1 *Recipients and Titles, Innovative Transit Workforce Development Projects Funded in 2012*

Recipients and Titles
Community Career Development, Inc (CCD) – Bus/Rail Operator Training Academy
Confederated Salish & Kootenai Tribes (CSKT) – CSKT Transit Training Program
Corporation to Develop Communities of Tampa (CDC) – Meeting Today's and Tomorrow's Job Needs in Mass Transit
Corpus Christi Regional Transportation Authority
International Transportation Learning Center (TLC) – Career Pathways and Career Ladders for Frontline Workforce
International Transportation Learning Center (TLC) – Consortium for Signals Training Courseware Development
Jacksonville Transportation Authority (JTA) – Hybrid Technology Workforce Training and Implementation
Lawrence County Social Services, Inc. (LCSS) – Gen Y Transit Workforce Connection
Minneapolis Community & Technical College (MCTC) – Minnesota Metro Transit Partnership
North Dakota Department of Transportation (NDDOT) – Statewide Intelligent Transit System Workforce Training Program
Omnitrans – Regional Transit Workforce Development Program
Rutgers – Transit Virtual Career Network
Southern California Regional Transit Training Consortium (SCRTTC) – Distance Education Technician Program
Southwest Ohio Regional Transit Authority (SORTA) – Hybrid Technology Maintenance Education Program
University of Tennessee (UTenn) – Transit: Your Ride to the Future
Washington Metropolitan Area Transit Authority (WMATA) – Transit Works Program

Next, the Principal Investigator conducted telephone interviews with one or more representatives from each project. These semi-structured interviews followed protocols covering a common set of topics for consistency, but questions for each topic reflected the specific and varied nature of the grantees' projects. For example, each protocol covered program implementation, although the questions differed at times to reflect if the program was a technical training program, a youth outreach project, or a Transit-Virtual Career Network. The Principal Investigator took notes and summarized the data for this report.

Two 2012-funded projects, Southwest Ohio Regional Transit Authority and Corpus Christi Regional Transportation Authority, had not responded to requests for interviews for data collection as of the writing of this report and are not included in the results. These will be included in future reports.

Results

Project Types

Of the 14 funded projects covered in this report, 6 focused primarily on new entrants to transit, 5 were designed primarily to provide training to existing technicians or line-staff to improve the skills of those already in the transit sector, and 3 were designed primarily to target youth to introduce them to transit careers and improve the image of transit.

Table ES-2 describes the primary focus of the projects, but many of the projects were engaged in more than one activity type, targeting more than

one target population. For example, a program may have had both a technical training component and internships for youth outreach; another might have had incumbent training and pre-employment training. To better capture the flavor of the project activities, Table ES-3 demonstrates projects that engaged in three primary activities. Note that projects with multiple activities are listed more than once.

Table ES-2 *Types of Innovative Transit Workforce Development Projects Funded in 2012*

General Project Focus	Number of Projects in Focus Category	Project Sponsors and Titles
New Hires/ Entrants	6	• CCD – Bus/Rail Operator Training Academy • CDC Tampa – Meeting Today's and Tomorrow's Job Needs in Mass Transit • CSKT – CSKT Transit Training Program • Omnitrans – Regional Transit Workforce Development Program • Rutgers – The Transit Virtual Career Network • WMATA – Transit Works Program
Incumbent Workers	5	• JTA – Hybrid Technology Workforce Training and Implementation • MCTC – Minnesota Metro Transit Partnership • NDDOT – Statewide Transit Intelligent ITS Workforce Training Program • SCRTTC – Distance Education Technician Program • TLC – Consortium for Signals Training Courseware Development
Youth/Student Outreach	3	• LCSS – Gen Y Transit Workforce Connection • TLC – Career Pathways and Career Ladders for Frontline Workforce • University of Tennessee – Transit: Your Ride to the Future

Table ES-3 *2012 Innovative Transit Workforce Development Project Activities*

Category of Activity	Number of Projects in Category	Project Sponsors and Titles
Technical Training for Incumbent Transit Workers	7	• CDC Tampa – Meeting Today's and Tomorrow's Job Needs in Mass Transit • JTA – Hybrid Technology Workforce Training and Implementation • MCTC – Minnesota Metro Transit Partnership • NDDOT – Statewide Transit Intelligent ITS Workforce Training Program • SCRTTC – Distance Education Technician Program • TLC – Career Pathways and Career Ladders for Frontline Workforce • TLC – Consortium for Signals Training Courseware Development
Recruitment/ Pre-Employment Training	7	• CCD – Bus/Rail Operator Training Academy • CDC Tampa – Meeting Today's and Tomorrow's Job Needs in Mass Transit • CSKT – CSKT Transit Training Program • LCSS – Gen Y Transit Workforce Connection • Omnitrans – Regional Transit Workforce Development Program • Rutgers – The Transit Virtual Career Network • WMATA – Transit Works Program
Youth/Student Engagement	6	• CDC Tampa – Meeting Today's and Tomorrow's Job Needs in Mass Transit • LCSS – Gen Y Transit Workforce Connection • MCTC – Minnesota Metro Transit Partnership • TLC – Career Pathways and Career Ladders for Frontline Workforce • University of Tennessee – Transit: Your Ride to the Future • WMATA – Transit Works Program

Overall Project Outcomes

As a whole, the 2012 Innovative Transit Workforce Development projects produced a number of outcomes, including participants who were trained, placed in employment, earned certifications, or introduced to transit careers. Note that these are conservative, lower-bound estimates, as some programs did not have tracking in place for all outcomes and some continued to produce outcomes after the grant period. Table ES-4 provides a summary of the outcomes across the 14 projects covered. (Note: Two 2012-funded projects, Southwest Ohio Regional Transit Authority and Corpus Christi Regional Transportation Authority, had not responded to requests for interviews for data collection as of the writing of this report and are not included in the results; they will be included in future reports.)

Table ES-4

*Innovative Transit Workforce
Development Program
Outcomes*

Outcome	Number
Youth introduced to transit industry careers	44,685
Participants trained (incumbent/technical)	816
Certifications earned	465
Participants trained (pre-employment)	404
Participants placed into employment	89
Interns introduced to transit	40
Training courses created	18
Apprenticeships created	2

In addition, a number of products developed under the 2012 Innovative Transit Workforce Development projects have been provided to FTA and can be made available to all transit agencies (see Table ES-5).

Table ES-5

*Innovative Transit Workforce
Development Products
Developed*

Products
8 pre-employment training programs
7 youth engagement programs
6 recruitment videos (agency-specific)
2 transit career educational videos
1 Transit Virtual Career Network
1 hybrid bus curriculum with supporting materials
1 youth STEM transit curriculum
1 website on transit careers
1 report on getting college credit for apprenticeships

Federal Investment and Matching

FTA invested \$5.9 million in Federal funds to the 14 Innovative Transit Workforce Development projects covered in this report. Funding for these projects had considerable variability, ranging from a high of \$795,334 (Washington Metropolitan Area Transit Authority) to a low of \$187,850 (Lawrence County Social Services). The average funding across all 12 grantees was \$422,000.

(Note: As a result of complications with one of WMATA's partners, \$484,627 was de-obligated and returned to FTA.)

Although not required, 7 of the 14 projects contributed some level of matching funds or in-kind contributions. Estimates ranged from a high of \$700,000 to a low of \$0, with an average of \$112,000 (or \$224,000 from the 7 that contributed in-kind). In-kind contributions included staff salaries and benefits, existing training programs, evaluations, building space, and materials. Table ES-6 summarizes the program totals. The total matching and in-kind contribution (a conservative estimate) indicates that despite no requirement, grantees contributed nearly one third of FTA's investment.

Table ES-6

*Innovative Transit Workforce
Development Federal
Investment and Matching
Funds*

Investment Type	Amount	% Total
Federal investment in 2012 grantees*	\$5,906,945	73%
Total matching and in-kind contributions (estimated)	\$1,571,250	27%
Total for program	\$7,478,195	100%

*Represents only the 14 grantees covered in this report.

Conclusions and Implications

Based on this evaluation, a number of conclusions and implications can be drawn about the Innovative Transit Workforce Development projects of 2012.

Conclusions

- **Grantees generally met their goals.** Grantees specified goals in their proposals that they intended to achieve during the project. Although many grantees required additional time, two thirds of the goals were mostly met, met, or exceeded (66%). Roughly one quarter of the goals were unmet (26%), and the rest are unclear for lack of data. Overall, the outcomes suggest that the programs funded were mostly well-planned and executed.
- **The program was successful at identifying promising approaches for workforce development.** The 2012 Innovative Transit Workforce Development projects are best viewed as pilot tests. FTA selected projects that varied in scope and type to explore different avenues for addressing common transit workforce issues. Based on the evaluation results, the projects appear to have identified several promising approaches that are worthy of consideration for further investment or investment on a broader scale.
- **Transit, workforce, and education together make very strong partnerships.** Of the projects implemented, some of the strongest come when a transit agency works with a workforce agency and an education partner. The transit agency provides positions and expertise, the education partner provides instructional design and rigor, and the workforce partner

provides job seekers and support services. Together, they produce very productive workforce development programs.

- **Projects demonstrated innovative options, not maximum outcomes.** The programs selected for funding in 2012 were chosen clearly to test a range of options, not maximize the volume of outcomes in terms of the number trained or hired. This is consistent with an objective to test a variety of solutions. Rutgers, Jacksonville, and the Transportation Learning Center's (TLC) Signals Consortium all developed programs rather than conducting training. Other projects invested in creating and implementing programs for a small number of participants. If, at some point, FTA decided to maximize outcomes instead of innovation, the project selection criteria would need to change to focus on expanding existing programs, projects by large agencies, projects with high goal numbers, and projects with measurable short-term outcomes. Longer funding cycles could help, as well, as it is difficult to build and implement programs in 18 months.
- **Programs need better planning for sustainability.** The impact of these programs is inhibited by a lack of planning for sustainability of the project after FTA funding ends. In many cases, agencies invest in the development of programs that occur once, only to be shelved when FTA funds are exhausted. Products are produced but with no means of sustaining, marketing, or updating them. The partnerships that produce these quality products end up creating a diffusion of responsibility for maintaining and sustaining them.
- **Applicants need to better define outcomes and metrics.** As with FTA's 2011 Workforce projects, some projects failed to clearly specify their intended outcomes. In some cases, no numerical targets were set. In others, metrics were set that did not relate to outcomes or impact (e.g., eligible to enroll). Still others suggested metrics that would be very challenging to measure (e.g., training return on investment) or were only distally related to the project (e.g., change in average miles between bus repairs). Invariably, these metrics lack data when the project ends.
- **Many products are not widely shared.** Part of the goal of the Innovative Transit Workforce Development program is to create processes and products that can be replicated or shared. In many cases, quality products are not being widely marketed or distributed. The T-VCN and the hybrid training and support material are just two products among many that have been carefully produced with the intention that they be marketed, shared, and used. However, when the project ends, no one is tasked with marketing these products. As a result, rather than have broad impact on the transit industry, the products languish.
- **Youth engagement is difficult, and its impact is difficult to assess.** Three projects made youth engagement their focus, and three included youth engagement activities. These programs struggled to successfully recruit youth or to gain access to schools to do so. Although experts have called for

engaging youth early, the results of these programs are difficult to measure, and few even try. Participants often are too young to hire; therefore, short-term employment outcomes are not relevant. Meanwhile, it is unclear if events such as transit days, art contests, or scavenger hunts positively affect either perceptions about transit or the likelihood that the youth enter transit employment later. Indeed, it is unclear if such programs highlight the correct aspects of transit to reach youth. More research is needed on what aspects of transit to market to youth and how to design a program that can produce changes in the relevant perceptions.

- **Different models of pre-employment training can be effective.** Several different efforts among the 2012 projects were pre-employment training programs that typically focused on bus operators. These projects ranged in their depth of intervention from preparing participants to pass a job interview to training participants to obtain a commercial driver license (CDL). Each addressed the pre-employment skills problem at the level at which their respective agency experienced it. There are now at least four program models from which agencies can choose that have been pre-tested.
- **Participant selection is critical to project outcomes.** An interesting issue arises in workforce programs—how to select participants. Some projects open the program to anyone; others select carefully. If the goal is to prepare participants for work in transit and the training is in-depth, then selection is critical to achieving hiring outcomes. Projects would be wise to create multiple screening tests, with the most cost-effective screening measures up front, progressing to the most expensive before training begins. The least efficient thing to do is screen and train a participant only to find he/she cannot qualify for the position.

Implications & Recommendations

- **Develop and implement standard outcome measures.** FTA representatives indicated that the agency is creating a standard set of metrics for funded projects. Doing so is encouraged, as it would provide guidance to projects on what outcomes to measure and, thus, what data to collect as the project commences. Transit agencies are in the business of transportation, not workforce development, and cannot be expected to use the most rigorous data sources, such as unemployment insurance wage records or resource-intensive methods. However, a basic set of metrics should be implemented.
- **Find or create a means to market and share resources developed by this program.** Several products created over the two years of the Innovative Transit Workforce Development program may be of use to many agencies, but they are not being widely shared. To maximize potential impact, a central, searchable repository is needed in which these products can be made available to as wide a transit audience as possible.

- **Hold an opening conference for funded project leaders to ensure they understand their obligations, and hold them accountable.** Currently, it is difficult to get all transit partners to provide the periodic and final reports required as a condition of the funding they receive. FTA could hold an opening conference in which the obligations are emphasized up front and procedures demonstrated. Then, reminders could be sent prior to and after due dates to reinforce the message that FTA expects all requisite reports.
- **Create report templates for funded projects to use.** One method that may help funded agency reporting is a report template. The lead agencies' capacities for report writing vary widely; some (e.g., TLC) are well-equipped and experienced at writing such reports, whereas others have less capacity or expertise. At least one agency expressed a desire for more help in writing its report. Optional templates that provide the requisite topic and subtopic outlines might improve compliance (such as guidance provided in FTA Circular 6100.1E).
- **Emphasize the sustainability plan requirement more in Notice of Funding Availabilities (NOFAs).** As noted, many of the projects end up being "one-offs," as there is no plan or funding to continue them (even if the implementing group considered them successful), or products end up in limbo, as partners do not specify which partner will keep the website or training program available. FTA might consider emphasizing a sustainability plan as a more important part of the NOFA.
- **Examine available evidence of youth program impact as compared to alternative approaches, (e.g., national ad campaigns).** FTA funded several projects that emphasized a youth component. As noted, the impacts are difficult to assess. Moreover, the funds could be spent on other approaches, such as a national public service announcement campaign, celebrity endorsement, etc. Research examining the evidence for outcomes from youth engagement projects should be examined relative to the potential impact of other approaches. It may be that FTA would be better off spending on more direct benefit programs such as pre-employment training rather than reaching down to high schools or below.

Table ES-7 provides a summary of Innovative Transit Workforce Development projects.

Table ES-7 Summary of Innovative Transit Workforce Development Projects

Grantee	Funding (% Federal)	Key Program Goals	Met Goals	Impact	Invest
S. California Regional Transit Training Consortium	\$673,713 (100%)	120 students complete 4 new distance education modules 1,920 hours of training delivered 10 instructors certified	✓ ✓ ✓	High	↑
Omnitrans	\$340,000 (77%)	- Create certificate program for entry-level frontline workers - Create an internship and mentoring program 200 trained in transit	✓ ✓ ✓	High/ Medium	↑
Community Career Development, Inc.	\$443,289 (64%)	- Create a pre-employment program to raise hiring, retention - Recruit and train at least 213 underserved individuals - Hire 155 of those trained	✓ ✓ ✓	High	↑
Washington Metropolitan Area Transit Authority (WMATA)	\$795,334 (\$310,707 Expended) (90%)	150 adults enrolled (60% veterans), 70% complete training 60% job or training placement - Enroll 150 HS students over 2 years 80% completion 85% apply to job or technical skills program	✓ x x ✓ x	Medium/ Low	↔
Jacksonville Transportation Authority (JTA)	\$247,197 (100%)	- Provide guidance to others using examples and multimedia - Create new employee training program on hybrid systems - Place all material in one location for ease of industry access	✓ ✓ x	High/ Medium	↔
Corporation to Develop Communities of Tampa, Inc.	\$234,281 (60%)	75 participants recruited 55 complete training 30 placed in transit employment	x ✓ ✓	High/ Medium	↑
International Transportation Learning Center	\$425,000 (50%)	7 courses developed complete with materials 35 signals technicians pilot testing material and surveys 2 local transit agencies begin signals apprenticeship	✓ ✓ ✓	High/ Medium	↑
International Transportation Learning Center	\$722,500 (51%)	- Reach 20,000 HS students, engage 450 - Recruit and employ 15-20 HS students on frontline - Create 1 curriculum, 2 learning modules - Train for 55 workers; 45 complete training - Recruit and provide mentoring for 8 mentors - Apprenticeship for 35 workers	✓ x ✓ ✓ ✓ ✓	High	↑
Minneapolis Community and Technical College	\$427,444 (90%)	79 complete incumbent training 20 in youth internship program 30 receive building operating certification	x ✓ ✓	Medium	↔
Confederated Salish and Kootenai Tribes	\$255,668 (83%)	60 new trainees enter training, 50 new complete training 10 incumbents enter training, 8 complete training 65% new trainees placed	✓ ✓ ✓	High	↑
North Dakota Department of Transportation	\$269,423 (100%)	150 eligible to enroll 35 transit agencies invited 150 training completers	✓ ✓ ✓	Medium/ Low	↔
Rutgers, The State University of New Jersey	\$659,784 (100%)	- Launch of T-VCN 105,000 visitors, 4,250 accounts, 10,000 inventories - Mapping of military skills to transit industry	✓ x ✓	Low	
Lawrence County Social Services, Inc.	\$187,850 (100%)	1,000 students reached, 20 screened and enrolled 15 complete training, 10 placed in employment 16 demonstrate knowledge gains (pre/post) 16 rate it as positive stepping stone	✓ ✓ ✓ x	Medium	↑
University of Tennessee	\$225,442 (100%)	- Transit Days for youngest two groups - Create art contest & transit STEM curriculum - HS art competition, transit academy, internship	✓ ✓ ✓	Low	↓

Note: Southwest Ohio Regional Transit Authority and Corpus Christi Regional Transportation Authority each had projects funded under the 2012 FTA Innovative Transit Workforce Development program, but did not respond to requests for interviews for data collection.

Innovative Transit Workforce Development Program

As a highly-skilled workforce is critical to maintaining a competitive and efficient public transportation system, the Federal Transit Administration (FTA) suggests that investment in building and maintaining human capital is as important as the investment in physical capital. With the resurgence of transit in recent years, transit systems face a number of challenges: rapidly-changing technology (to vehicles, right-of-way, and customer information services), a high number of pending retirements leading to the loss of institutional knowledge, growing ridership, and long-term expansion. These challenges make attracting and preparing new talent increasingly important.

To help address these challenges, FTA published a Notice of Funding Availability (NOFA) in Fiscal Year (FY) 2011 seeking proposals for its Innovative Transit Workforce Development Program. The program provided funding to transit agencies and other entities with innovative solutions to pressing workforce development issues. A second round of funding was issued in 2012, with projects aimed more at frontline transit positions (as opposed to leadership). This report focuses on this second round of funding, the FY 2012 projects.

Based on a competitive application process, FTA awarded a total of \$7,048,898 (\$5 million in 2012 funding, the rest from prior-year funding) for 16 workforce development projects. Recipients included transit authorities, higher education institutions, Native American tribes, and non-profit organizations individually or as a consortium. These entities were expected to partner with one another and the public workforce investment system, labor organizations, or other appropriate entities to enact workforce solutions. For example, if the lead entity was not a transit authority, it was expected to partner with one or more such authorities. The selected projects were to demonstrate innovative workforce development approaches that could serve as models for other transit organizations. Proposed projects could support a number of areas in the transportation workforce lifecycle, including:

- Pre-employment training or preparation
- Recruitment and hiring
- Incumbent worker training and retention
- Succession planning/phased retirement

Cost-sharing was not required of the 2012 applicants but was strongly encouraged, with the potential to affect the awards.

Funding for 2012 was executed in the first half of 2013, although proposed budgets were cut by roughly 20% before execution. Projects were scheduled to run for 18 months from the date of execution; however, it should be noted that programs were extended, with some concluding in 2016 and some still ongoing at the time of this report.

Projects were expected to produce at least one final deliverable that would become available to FTA at the end of the project for dissemination and sharing throughout the industry at no cost, in addition to regular performance reporting.

Applicants were asked to specify in their proposals a plan for recording the outcomes of the project, including:

1. Number of individuals affected by the project
2. Cost of the project and share of Federal investment
3. At least one measure of quality
4. Project descriptions and statements of applicability to other entities

In 2013, FTA hired Axiom Corporation to conduct a summative evaluation of the original 2011-funded Innovative Transit Workforce Development projects, with the goal of determining whether these projects met their goals and whether they were scalable and worthy of further FTA funding and expansion. This evaluation involved document review, protocol development, and structured interviews with program operators and culminated in an evaluation report completed in 2015 that provided FTA with a summary of each project, an assessment of the projects against their stated goals, and a recommendation regarding the extent to which the projects merited further investment by FTA. The report concluded with observations about common elements of successful programs and recommendations for the program.

In 2016, FTA re-engaged Axiom Corporation to conduct a follow-up summative evaluation of the Innovative Transit Workforce Development projects, focused on the 16 grants awarded in 2012. This evaluation was to gauge the effectiveness of each project and help justify the Federal investment and was to follow the same methodology. Axiom Corporation was tasked with reviewing the workforce development projects to determine their goals, measures of achievement, and potential impact on local or national transit workforce development needs. Evaluation criteria outlined included the first three outcomes listed above that applicants included in their proposals and projects. The primary difference between the programs funded in 2011 and 2012 was that 2012 focused more on frontline positions (as opposed to leadership) and funded five additional projects.

Axiom would then write this final report, including an evaluation of each project using the criteria above, an assessment of whether the grantee met the stated goals, and what impact, if any, the project has had on the workforce development needs it was designed to address. The remainder of this report is the evaluation of these 2012 projects.

Methodology

As was the case for the prior evaluation, the Innovative Transit Workforce Development evaluation was conducted via two primary methods—document review and telephone interviews with grantees. In addition to the proposals that outlined goals, expected outcomes, and metrics, the grantees provided periodic updates on their progress to FTA. Each grantee also was expected to provide a final report to FTA. Some grantees were expected to conduct surveys of participants or use other performance measures. Axiom reviewed all available documentation provided by FTA related to the grantees' programs as a primary source. As of the writing of this report, 9 of the 16 projects had submitted final reports. Of those, there was substantial variability as to the substance, with some being simple financial monitoring and others being substantial reports of the project activities and products produced. Axiom also examined materials provided by project staff as available.

Interviews with project personnel were the other sources of information gathered about the grants. Interviews were conducted via telephone with grant representatives, with the exception of one organization that was local to Axiom. Given that each grantee's project was unique in nature, scope, funding, and goals, a specific evaluation protocol was developed to guide discussion for each interview. All protocols followed a common structure and addressed common topics. Then, each protocol was tailored within this framework to discuss elements specific to the grantee's program and issues raised in their proposal or final report. For example, each protocol had an "Implementation" section, but the questions varied depending on the specific nature of the project (i.e., virtual career network development, technical training development, etc.). The use of such protocols allowed for a systematic and rigorous approach while maintaining flexibility to discuss the unique elements of each project.

Interview participants were contacted by e-mail, then telephone. The purpose of the project was explained, and a time for the interview was determined in subsequent communication. Participants could choose to be interviewed individually or as a group where appropriate. The interviewer in all cases was the Principal Investigator. The discussion was guided by the protocol in a conversational style over one or more teleconferences. Detailed notes were taken as documentation during the interviews. The documentation and interview data were then analyzed to compare program goals and outcomes and address the evaluation questions described above.

Limitations

The scope of this evaluation was a summative evaluation assessing the individual programs against their specific goals. The objective was to identify programs that appear to be promising for further investment by FTA in addressing the common workforce challenges faced by public transit agencies. This evaluation is not an impact evaluation, and an assessment of what outcomes might have been in the absence of the projects (i.e., the counterfactual) is beyond the scope of this effort, as are return on investment calculations. Moreover, because site visits were not conducted, the primary data on the programs were self-reported from those involved in implementing the programs. Although all participants appeared to be forthcoming about their programs—and there is no specific reason to doubt the veracity of any information provided—there was no opportunity to independently verify the information.

Another limitation is that two programs, Corpus Christi Regional Transportation Authority's Management Internship Program and Southwest Ohio Regional Transit Authority's Hybrid Technology Maintenance Education Program, were unresponsive to attempts to contact them to participate in this evaluation. Therefore, their projects are not discussed herein.

SECTION 2

Southern California Regional Transit Training Consortium – Distance Education Technician Program

Background and Problem Addressed

The Southern California Regional Transit Training Consortium (SCRTTC) is a training resource network comprising community colleges, universities, and transit agencies, and public and private organizations that focuses on the development and delivery of training as well as employment of a transit industry workforce that is proficient at the highest standards, practices, and procedures for the industry. SCRTTC is a 501(c)(3) non-profit organization and a leading provider of training for the public transit industry. The SCRTTC Board consists of 21 members, including 10 transit members, 7 college members, 1 labor member, 1 association, and 2 private industry members. The consortium includes both rural and urban transit systems and represents 7,200 buses with 4 million average weekday boardings.

The SCRTTC proposal was aimed to address what its members felt was the “latent demand” and associated challenges for distance education of transit technicians. Noting the coming wave of baby boomer retirements, SCRTTC believes transit agencies needed to prepare technicians to take their place. There was also a need to increase training delivery capacity for technicians while reducing scheduling conflicts and travel costs associated with training. In addition, SCRTTC representatives said that whereas distance education had been proven for leadership or other non-technical training, there was a desire to prove its efficacy for training transit technicians via a pilot program. They believed that if it works for SCRTTC, it can work throughout the industry.

Proposed Workforce Solution

The objective of the program proposed by SCRTTC was to provide valid, innovative technological training solutions captured in a program that would multiply the resources of the existing consortium but remain focused on the transit workforce training needs. SCRTTC sought to apply a “cutting edge, cohort-based, blended distance-learning model combining a full eLearning solution, as well as onsite hands-on classroom instruction blended with online learning to improve technician skills” and prepare trainees for maintaining current and future fleets. The training would also include video conferencing

where face-to-face training was not possible (e.g., Colorado or Northern California consortium participants).

The distance education pilot was expected to have several potential benefits:

- Leverage SCRTTC's existing platform and reach.
- Improve electrical and diagnostic skills for participants.
- Expand skills including the use of online tools and education platforms.
- Provide flexible scheduling to minimize conflicts for participants.
- Complete interaction with other students.
- Accelerated learning schedule with 6–8 week courses.

The SCRTTC proposal indicated specific targets it was seeking to reach. Proposed goals for the program listed in the proposal were:

- Develop four blended distance education courses:
 - Distance Education Orientation
 - Digital Volt Ohm Meter I for Transit
 - INSITE Diagnostics for Transit (alternative fuel engine diagnostics)
 - CI-DE-Electrical I for Transit
- Have 120 students complete all modules.
- Provide 1,920 hours of training.
- Certify 10 instructors.
- Receive average training evaluation scores of 3.0 out of 4.0.

Partnerships

SCRTTC is both the primary entity and a partnership. The SCRTTC Education Services Committee took the lead on the project, and the project was run primarily by an SCRTTC Program Manager with a Training Coordinator and Director and was overseen by the SCRTTC Board. Partners mentioned in the proposal were Southern California Transit Systems, Central California Transit Systems, Colorado Transit Systems, and universities and colleges that are part of the consortium. The consortium contracted out development and oversaw the project, and transit systems were the customer. Education partners served as experts on developing and delivering training and, as members, can participate. Education partners, including Long Beach City College, Los Angeles Trade Technical College, Santa Ana College, and San Diego Miramar College, also provided subject matter experts (SMEs). A contractor (Immersed Technologies) provided course development, and California State Long Beach built the Learning Management System.

Program Implementation

Conceptualization and Planning

The SCRTTC Education Services Committee was responsible for the initial gap analyses and coordination with transit agencies regarding what type of training was needed. This was a months-long effort completed prior to the proposal that involved meeting with all transit system members, including technicians, human resources, and procurement personnel, to get a well-rounded picture of the skill needs, the level required, and what was coming. Then, a scan of existing courseware was undertaken to identify gaps, which led to the specific two courses and orientation in this project. A sub-committee on e-course development met weekly initially to initiate the project and reported to the full Education Services Committee and the Board. The two primary contractors began work on developing the courseware and Learning Management System (LMS) platform.

Courseware Development

The process for getting the courseware built started with existing classroom material. SCRTTC first had to be sure the material worked well in the classroom and was up-to-date. Then, it provided the materials to the contractor to transform them into a self-guided e-course. The contractor took into account adult learning principles and self-pacing needs. Developers tried to avoid simple video presentations and to include interactivity. For example, the courseware uses simulators and includes built-in testing periodically to assess comprehension of the material. SCRTTC also learned as it tested with technicians. The original idea was to have the orientation be instructor-guided, and, then, the course material would be entirely self-taught. However, the courses are timed with a completion date, and, at first, many participants left material to the end of their timeframe, with only 42% completing the courses on time. SCRTTC then added an “instructor” who could monitor the progress of all students and would periodically remind them of the completion date for the final exam; this increased timely completion to 100%.

After completion of the “beta” version of a course, a pilot group that had already taken the classroom course was asked to complete the beta course and provide detailed feedback. Pilot groups typically were fewer than 10 people, but always were technicians from different agencies, an educational representative, and a supervisor. The rule of thumb was that if 25% or less of the course needed to change, it would be tweaked and could move on to start training the trainers for the course. If more than 25% needed to change, developers would create a new beta version and pilot test it again. Because many transit agencies are involved in SCRTTC, finding pilot participants was never difficult. Representatives recalled that one of the electrical modules needed to be re-tested. A course was ready

to launch when the developers provided evidence of the final changes to the Educational Services Committee. When approved, it was uploaded, added to the catalogue, and presented to the full SCRTTC Board as available.

Technologically, the LMS used was BeachBoard, and much of the programming was done originally in Flash, but the contractor was pushed to move to HTML5. The tablet platform used is iPad, and users can access the course from any Wi-Fi connection.

Marketing and Participation

Marketing was relatively easy, as the course creators have access to the membership of SCRTTC. However, technicians often lack e-mail, so SCRTTC put up banners and flyers and provided supervisors with brochures and syllabi to hand out. They also advertised in newsletters (to a wider audience) to entice others to participate. SCRTTC membership is given the first priority to enroll; after that, college students, other instructors, or those in a wider range of transit agencies may participate. A key to making this program more popular is that it won two awards—Innovation in Transit Training from the National Transit Institute and Innovation for Small Agency for Distance-Based Training by the California Transit Association.

The program is free to all members, with the exception of those who are “no-shows” or do not complete training. Registration is online, although supervisor approval is required. Each course has pre-requisites, which can be overridden by the supervisor if he/she believes the participant is ready. Distance Learning Orientation also is a prerequisite.

Progressing Through Training

Participants begin with an orientation course, which is a basic chance to meet the instructor and an introduction to the technology. For example, participants learn how to log in, use a tablet computer, and navigate through the learning management system and courseware. The courses are asynchronous (i.e., participants do not have to be online at a particular time). Originally, trainees had 6 weeks to complete a 16-hour course, but SCRTTC found that was too long, so it was reduced to 3 weeks. Most people use the system during work hours (per union contracts), and supervisors appreciate that their people do not have to travel, so they are nearby in case of an emergency.

Once participants complete orientation, they are prepared to take the courses in a self-guided manner. The exception is the Electrical I course, which involves eight hours of theory taught online and another eight hours of face-to-face, hands-on training. Thus, SCRTTC considers this a fully-blended course.

Participants also have virtual textbooks (e-books designed to supplement the material) available during the course. These books are searchable and allow students to read more on topics of interest. Participants take periodic quizzes and cannot advance until they have passed. They have three opportunities to pass the “final exam”; if they cannot pass in three attempts, an instructor intervenes to determine the reason. (For example, LMS data showed one person to have spent only a few minutes on the actual material.)

Instructors operate through the LMS. They are given higher-level permission to review the work of all students and can see the module on which students are currently working and their performance on quizzes and tests, thus getting a full picture of the trainees. The instructor can communicate one-on-one using group chat or send a message to all. Instructors can observe if students are online and how much time they spend on the courseware.

Training the Trainers

Although the courses are provided through distance learning and are self-guided, instructors still need to know the material well to address questions from students who contact them via text message, telephone, or e-mail. When the development team determines a section’s content is complete, the lead developer will present a train-the-trainer module. It is a summary of the course and about half as long as the full course version. The developer teaches the would-be instructors how to go through the courseware, how to navigate, what the students should learn, and the equipment set up. The future trainers take pre- and post-tests before co-teaching with an SME. Once complete, they can be certified trainers allowed to teach the course.

Outcomes

Courses Created and Conducted

SCRTTC successfully created the courses they set out to complete. For the purposes of this project, they decided to conduct each course three times. After that, they believe they will have proven and refined the process and can offer the courses as a regular part of their schedule.

As shown in Table 2-1, the SCRTTC Distance Education project exceeded its goal for number of participants trained and the number of instructors certified. Representatives from SCRTTC suggested that this shows the level of enthusiasm for the courses. The number of hours trained was somewhat below the projection, and representatives believe this was, in part, because more people chose to take the shorter of the two courses. In addition, specific “hours trained” for a self-guided distance education program is not a very meaningful metric, as students progress at their own pace; time saved is an advantage. The average course rating was slightly below the goal as of the completion of

the project. SCRTTC representatives noted that much of this was because the course was new and there were some initial issues before SCRTTC added instructors to monitor the courses and assist students. They are confident the average ratings are much higher now.

Table 2-1
*SCRTTC Project
Outcomes –
Goal and Actual*

Goal Description	Goal Number	Actual Number
Courses created	4	4 (100%)
Participants completing training	120	140 (117%)
Hours of training provided	1,920	1,756 (91%)
Number of instructors certified	10	30 (300%)
Average course rating	3.0	3.5 (117%)

Budget and Matching Funds

The Innovative Transit Workforce Development Program provided \$673,713 in Federal funds (100% of the project total), which was about \$120,000 less than originally requested. SCRTTC made up for the difference by reducing some marketing and administrative fees and conducting one less round of course delivery. DVOM was estimated to cost \$8,600 per delivery and INSITE \$6,500 fully-burdened (including instructors, materials, administrative, etc.) but not including LMS fees. Although SCRTTC proposed no specific amount of in-kind or matching contributions, representatives said there were some in-kind contributions made. For example, university instructors took the course on their own time to become certified, educational institutions contributed time and meeting space, and transit agencies paid for the salaries while participants were training. Overall, SCRTTC project representatives said that the budget expenditures went as expected.

Impact

SCRTTC representatives reported that the Distance Education Technician Program effort has had a positive impact for the agency. Technicians in the transit environment are a widespread demographic and, with expected retirements, the agency was concerned that expertise would “walk out the door.” The representatives reported being pleased with the ease with which technicians, older and younger, were able to learn the material. Having more trained technicians was an obvious benefit. Moreover, the benefit of avoiding travel made it very efficient for transit agencies.

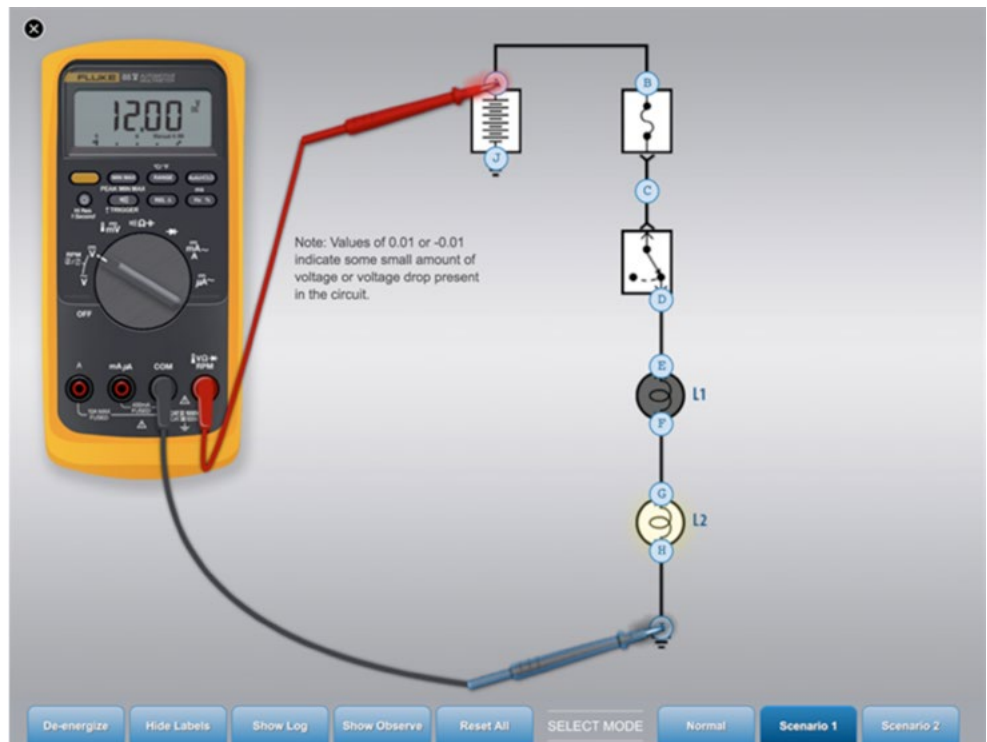
A related benefit noted by SCRTTC representatives was better control for supervisors over their workforce and building a better relationship with participants. Although supervisors want a well-trained workforce, they are sometimes wary of having their staff away in case of emergencies or high workload situations. The distance learning process enabled them to approve the training while being secure that they could call upon their staff in case they were needed.

Another benefit was the creation of a “community of practice” of sorts, in that technicians from different transit agencies would engage during the training (using text or other means) to discuss issues. Thus, technicians could benefit and learn from one another just as in a regular training environment.

Finally, an advantage mentioned by SCRTTC is that courseware can create high-fidelity graphics and simulations, allowing mistakes to be made without costly consequences. For example, as depicted in Figure 2-1, the course offered a virtual ohm meter that looks and reacts like a real meter. A mistake with real equipment means a trainee can damage the \$1,500 meter. With the simulation, trainees can read drawings, use their fingers to adjust the virtual meter settings appropriately, attach the probes, and get feedback on the circuit without risking expensive equipment.

Figure 2-1

Screen Shot from
DVOM Training
Course



Lessons Learned and Recommendations

Interviews with SCRTTC project personnel provided lessons learned and advice for transit agencies considering developing their own competency model:

- SCRTTC has been pleased with the courses and believes their process works well. They have made no content changes in the period since the courses were completed.

- Expect and plan for funds to keep the software up-to-date, not just in terms of course content (which has remained stable so far), but also to the LMS through which it is offered. As the LMS changes, there is a need to adjust the courses to ensure they are compatible; this has been an ongoing expense.
- Consider obtaining your own LMS (as opposed to relying on an outside educational partner) to minimize the LMS compatibility issues if your organization plans to house a catalog of distance education courses.
- Having an instructor monitor the courses is beneficial and improves completion. It helps students avoid procrastinating until the deadline and gives them someone to ask questions, etc.
- Students will often procrastinate and take all the time available to complete the course. Originally, courses were six weeks, but many students completed the course in two weeks, while others waited until the very end. Cutting down the amount of time the course was available made the process faster and more efficient and did not reduce the completion rate.
- Online training is not for everyone. Training agencies need to be aware of this and provide instructor-led options.

Conclusion and Further Investment Recommendation

SCRTTC's Distance Education Technician Program was meant to serve as a demonstration that technical material could be imparted to a transit workforce through a distance education format. Although this is not entirely a new approach, as distance education is becoming common, the agencies providing it internally is beneficial. The project surpassed most of its key goals in terms of courses produced, number of participants, and instructors certified. It fell short in hours trained—not a very meaningful metric in this instance—and there was confidence that the average rating has improved since the projects' three administrations of the training.

The success of this project is, in large part, because the overall process used is sound. SCRTTC has a proven course development, validation, testing, and evaluation Standard Operating Procedure. Course selection was based on careful needs analysis, and the material was adapted to a distance format by experts who accounted for adult learning. The courses took advantage of technology using interactivity and simulations as appropriate, and attention was paid to student needs by having an orientation and instructor monitoring progress and answering questions. FTA should note that the success of these courses cannot be replicated elsewhere without following the specific model that led to the success of the courses.

It appears that there are many benefits to this program that make it worthy of further investment—well-developed courses, substantial saving on travel costs,

more control over the workforce, ability of supervisors to feel comfortable saying “yes” to the training, and replacement of skills that may soon be leaving the transit workforce. Courses now can be offered by SCRTTC to a wide variety of technicians anywhere Wi-Fi and an iPad are available. To get maximum benefit, the courses should be widely publicized and offered.

SECTION 3

Omnitrans – Regional Transit Workforce Development Program

Background and Problem Addressed

Omnitrans is the major provider of transit services for the San Bernardino Valley (Inland Empire) and brings together transit authorities and education partners from the Southern California mega-region, including Los Angeles and Orange counties and the Inland Empire, which serve 16 million residents combined.

At the time of the May 31, 2012 proposal date, unemployment in the Inland Empire area was among the highest of any major metropolitan area, at 11.7%, and was expected to continue to lag. At the same time, transit authorities in the region faced increased ridership, aging infrastructure, and significant funding challenges. Omnitrans and other transit agencies were under strain to provide quality service while employing highly-skilled workers and expressed a significant need for a diverse, highly-skilled pool of potential employees to replace workers due to separation and retirement. Omnitrans was losing 44 skilled workers annually and expected losses of 371 over the next 7 years, particularly in specialized technical positions requiring 6–12 months of training, with trends rising due to retirements.

Proposed Workforce Solution

To address these issues, Omnitrans and its partners proposed the Regional Transit Workforce Development Program (RTWDP), an approach involving a number of transit agencies in the Southern California region partnering with a higher education institution to provide job skills training and career development services to all levels of the transit workforce.

The project had three primary objectives: 1) to develop well-rounded individuals who could become leaders, managers, and highly-skilled workers capable of assuming key responsibilities in the transit industry; 2) to create a path for employees to follow into a successful career in transit agencies in Southern California and across the US; and 3) to help employees gain experience, knowledge, and education to become future transit employees and leaders.

Specifically, the program planned to set up a Certificate Program curriculum providing entry-level instruction to interested graduates, unskilled workers, and the unemployed to pursue careers in transit, and a Mentoring/Internship

Program to provide college students or adults returning to work with a combination of hands-on training and scholarships for coursework with a focus on transit. The overall goal was to prepare at least 200 people to seek employment in the transit industry or continue through the industry.

The project was expected to be beneficial by:

- Allowing Omnitrans and its partners to develop a regional Workforce Development program
- Enabling unskilled labor to develop skills and enter the workforce
- Enabling individuals to receive university-level training regardless of prior education
- Allowing employers to offer skills training in an area of high unemployment
- Allowing transit agencies to partner with an education institution to provide training to a large cross-section of potential employees and incumbents

Partnerships

Omnitrans enlisted several partners in implementing the program. The first key partner was California State University–San Bernardino’s Leonard Transportation Center (LTC), which was founded in 2006 through a US DOT grant. LTC was expected to be the major partner to Omnitrans, bringing in several Advanced Driving Simulators for commercial driver training and research for the program to use as part of the training.

Several transit authorities in Southern California were partners in the RTWDP, including Los Angeles County Metropolitan Transit Authority, the largest transit provider in the region servicing 463 million riders; Riverside Transit Authority, a provider of fixed-route bus service to San Gabriel and Pomona Valley, providing service to 14 million riders; Foothill Transit, a provider of consolidated transport service for western Riverside County, coordinating transit services over a 2,500 mile area and serving 7.9 million riders; and the Victor Valley Transit Authority, a provider of local bus service for 5 communities with more than 1.4 million riders. These agencies were expected to use the RTWDP to develop a pool of labor and for succession planning purposes. Another partner was Southern California Regional Transit Training Consortium (SCRTTC), a leading transit-training provider for the region.

In general, the transit agencies had not worked together on workforce issues prior to this effort, but realized they had a common problem—bus operator candidates were failing their interviews at high rates. Therefore, they would all benefit by improving candidates prior to the interview process.

Unfortunately, just as the project began, LTC changed its organizational focus to “over the road” logistics and was no longer interested in participating. It did, however, sell Omnitrans some simulators adapted for buses at a reduced cost.

Program Implementation

Conceptualization and Planning

Omnitrans took the lead on planning the initiative. Once the award was received, fellow partners were informed of the specifics of the grant, requirements, etc. Planning took roughly one month. The partners focused on what they wanted to achieve, then worked that into a logical program structure. They determined that all transit agencies in the area had a similar problem of people in the talent pool who could not advance through the interviews, estimating that only 4% of candidates proved acceptable at the interview stage. Candidates often did not know how to dress or conduct themselves appropriately, answer interview questions professionally, show up on time, or maintain appropriate email addresses for professional communication.

The first plan for the course was a two-week certificate course that was very intensive. However, partners were concerned about keeping unemployed participants engaged for that long (as opposed to looking for work). A helpful process involved a visit to Omnitrans in Los Angeles, which was conducting a similar effort and determined that the plan needed redirection. Specifically, a full academically-structured curriculum was unlikely to work, and the original program was too long and involved too much classroom time. As a result, interactive portions were added, including time on a simulator to provide the bus experience, in the bus yard to inspect a vehicle, riding a route to observe the job, etc. In the end, the certificate program was designed with some instructional design partners to help participants quickly prepare for success at passing interviews to enter employment as bus operators, including discussions on professional dress and behavior, customer service skills, and exposure to the equipment and simulator experience. A five-day intensive curriculum was designed to address these skills.

For the internship program, Omnitrans program leaders asked their departments to specify what the interns would do, what they would learn, and who would supervise them to ensure the work was mutually beneficial. Requesters also had to ensure that the work would be sufficient to provide 20–30 hours per week throughout the summer. The departments agreed to provide weekly reports on the interns to a four-member supervising panel comprising the Human Resources Director, Operations Director, and two project leads.

Recruitment and Marketing

To market the certificate program, Omnitrans enlisted its Marketing department to use Facebook and other social media, place ads in newspapers, and work with the area's WorkSource Centers (Department of Labor [DOL] one-stop employment centers). To market the internship program, Omnitrans representatives went to colleges in the area to attract people who had never considered transit careers. Omnitrans has relationships with three local colleges, so representatives presented on campus, particularly in the Business Administration Department at California State–San Bernardino, which posted the opportunity on campus. For other schools with whom they lacked relationships, Omnitrans sent written information and asked for assistance.

Selection

For the bus operator preparation course, anyone who signed up was allowed to attend the training. Omnitrans wanted to expose as many as possible to transit employment and preparation. Omnitrans trainers quickly assessed that some people were not going to be coach operators, but the participants were allowed to attend anyway; the thinking was that even if some trainees were not suited to be coach operators, they could still get training that could serve them elsewhere. No specific individual assessments were done prior to training. The participants were described as very diverse, including men and women ranging roughly from ages 20–50 and a mix of ethnicities.

Selection into the internship program involved an application and interview process, although there was no formal assessment prior to selection. A Human Resources intern screened resumes and conducted initial telephone interviews, then the requesting department interviewed potential candidates. An Omnitrans representative estimated receiving resumes for approximately 4–5 candidates per position. Ultimately, Omnitrans could hire only 18 total interns, although they would have preferred more had the budget allowed. The interns were described as being very diverse, including men and women with a mix of ethnicities. Representatives noted that nothing special was done to obtain this mix; rather, it reflects the diversity of the area. Intern college majors also were diverse and matched the department in which they worked, including information technology, human resources, business, engineering, and psychology. Interns came from several schools in the area.

Certificate Training and Internship Implementation

The bus operator training process began when, upon hearing about the program via social media or at an employment center, a person decided he/she would like to attend, made contact with Omnitrans (no application was used), and was offered a spot. The person would arrive on Monday morning to a classroom at Omnitrans, with typically 10–15 people per cohort and 2 instructors who team-

taught. The course began with an introduction to the program and then moved into teaching various topics, including professional conduct, customer service, interviewing skills, etc. During lunch each day, the instructors would answer questions and talk about the transit industry. Mixed into these topics was time on the simulator, a facility tour of Omnitrans, a bus inspection and ride, etc. On the final day, Friday, a celebration and graduation was held, a certificate of completion was issued that was recognized by all partner agencies in the effort, and the Omnitrans CEO came talk to them. Participants were given free bus passes to make attendance easier.

Although, initially, the proposal called for specific career planning and potentially university-level training, once LTC could not participate, the advanced transit instruction became infeasible. Apart from a bus pass, the certificate trainees received no additional support benefits such as childcare, case management, etc. This was another reason to emphasize an abbreviated program offering.

Internships varied according to the department in which they were located. Upon selection and acceptance of the position, the interns reported to their departments as temporary, part-time employees. All were paid hourly (\$15 for college students, \$20 for those with a bachelor's degree), and they generally spent 20–30 hours per week on the job. Examples included an operations intern who worked on a bus communications program; finance interns who helped with managing the process of internal audits, grant analysis, accounting, and quality control; a marketing intern who worked on a media campaign; three interns in the Human Resources Department who worked on recruiting, a wellness and health education project, and agency reporting; and a security intern who worked on creating security manuals.

The departments reported to the aforementioned panel each week regarding the interns' activities and what they were learning and achieving. The panel met with each intern halfway through the program to ensure they were satisfied with their experience.

Outcomes

Omnitrans and its partners started with the following goals: 1) to create a Certificate Program curriculum providing entry-level instruction to interested graduates, unskilled workers, and the unemployed to pursue careers in transit, and 2) to create a Mentoring/Internship Program to provide college students or adults returning to work with a combination of hands-on experience and scholarships for coursework with a focus in transit. The specific goal was to prepare at least 200 people to seek employment in the transit industry or continue through the industry.

Omnitrans was able to plan and implement both the Certificate Program to prepare operators and the Mentoring/Internship Program for college students. It trained 180 people in the Certificate Program (90% of the estimated goal) in 15 offerings of the 5-day program. The Mentoring/Internship Program brought in 18 college students from nearly 100 applicants, all new to transit. These interns were hired for part-time summer employment, and, of the 18 interns, 17 completed the program (1 dropped out after the first day, as it was mutually determined not to be a good fit).

Beyond the training, the program successfully led to employment. Of the program graduates, 82 applied for operator positions at Omnitrans or a partner transit agency, with 13 hired (16% selection ratio, roughly 3 times their normal success rate). Of those 13, 11 (85%) currently are with the transit agencies. Representatives from the project also noted that these data are from only those who responded to follow-up contacts; not all responded. Program representatives noted that one woman contacted was hired by the County and attributes her placement success to the training program. It was suggested that there could be others hired have not yet responded. In addition, Omnitrans hired four interns into more permanent positions, and another two remained working in their internships many months later. Therefore, of the total 18 who were selected for the programs, 33% remain in the transit industry.

Omnitrans included other potential metrics in the program proposal that became obsolete or were not assessed formally. One was to increase the continuing education credits earned per employee by 15% compared to the prior year. However, as the program was unable to implement a formal class with the LTC, this goal was abandoned. Another goal was the number of trained employees waiting for the next promotion opportunity, but because the program ended up focusing on new recruits and not incumbents, this goal also was abandoned, as that program morphed into the internship. The quality metric offered in the proposal was to assess the percent of program graduates reporting that the program contributed to their employment goals (introduced to transit, obtained employment, obtained promotion, higher pay, improved performance, developed personally). Omnitrans representatives reported that an evaluation was conducted, and most said that the program far exceeded their expectations. However, there was no formal tally of responses, so the percentage is unclear. Likewise, it is unclear if the percentage of employers that reported to the program met competencies or learning goals.

Budget and Matching Funds

The Innovative Transit Workforce Development Program provided Omnitrans with \$340,000 in Federal funds (77% of the total), which was \$60,000 short of the initial request; however, the adjustment did not cause disruption due to the narrowing in focus resulting from the LTC withdrawal; otherwise, expenditures

were in line with initial expectations. The Project Manager suggested that roughly \$6,000 was not used. The budget was spent primarily on payments to interns, costs associated with training participants, program marketing, and curriculum development.

The Project Manager estimated that Omnitrans and partners provided at least \$100,000 in in-kind contributions that took many forms, including facility use at Omnitrans, employees involved in training, bus passes for participants, and a training bus purchased with grant money but updated with Omnitrans funds (representatives suggest that the bus on the open market was worth \$300,000 but it was purchased for \$70,000).

Impact

Omnitrans representatives identified several outcomes from the program, including that it is a model of more efficient screening and that preparation can make it more efficient and improve the selection ratio (in this case, from roughly 5% of applicants to 16%). It introduced many new people to transit, both those looking for operator jobs and college-educated students, some of whom have now taken positions in the industry. These students learned about the industry and what is needed to get a job and advance in the industry and got fairly broad exposure and may become future leaders.

Another benefit mentioned was the “buzz” the program created in the region about transit. The Project Manager reported hearing from the community about the program and outcomes of program and has been asked when the program will be repeated. He believes this is good for recruiting.

Finally, representatives indicated that the program has contributed to Omnitrans’ potential to conduct workforce development initiatives in the local area, noting that it has received more invitations to do so since the program, as the program has heightened awareness of what is possible in meeting needs of the workforce in the area. If Omnitrans has funds for such a project, it is confident it can now easily find partners with whom to work.

Lessons Learned and Recommendations

Omnitrans project personnel provided lessons learned and advice for transit agencies considering developing their own RTWDP project:

- Visit a similar program and learn from its experiences in designing your own. The trip to visit Los Angeles was very instructive for designing the Omnitrans Certificate Program.
- Training for the unemployed needs to be reasonable in length and should be interactive to be engaging. Omnitrans re-configured its program before starting based on what was learned from observing other programs to

include more interactive elements such as observing bus drivers in action, equipment inspections, simulators, etc.

- For operators, the key is helping candidates understand the professional culture of the transit industry and the need for customer service skills. Professionalism (e.g., correct attire, being on time, etc.) and customer service are two areas in which candidates often fall short but that are critical for transit workers and also transfers to other industries.
- A meaningful, paid internship experience can attract good college students to transit. Careful attention was paid to ensuring that there was meaningful work for them to do and that they were supervised/ mentored and checked on to determine if they were getting something out of the internship. Adjustments were made when necessary.
- Working with high school students was not feasible due to liability issues.
- It is important to coordinate with other workforce development entities such as WorkSources and other agencies that have teaching capabilities. Omnitrans representatives would like to work with those resources to develop a true transit career path. It should be possible to let them know the average turnover in positions and have the employment development agencies become constant feeders for transit jobs across the transportation spectrum, including coach operators, office positions, maintenance, etc.

Conclusion and Further Investment Recommendation

Omnitrans' RTWDP generally met the project goals set out in the proposal. Although it was necessary to adjust when the LTC was unable to participate at the last minute, the primary focus of the effort was successful. A total of 180 people were trained on the skills needed to be a bus operator, and those trained were hired at a rate more than three times the norm for applicants prior to the program. This worked because there was a clear identification of the problem—candidates failing at the interview stage—and what the program needed to instill in candidates in a short period to fix the problem. The program instilled the skills that made the candidates remain employed once hired, proving successful given the reported retention rate months later.

The Certificate Program is replicable for transit authorities with a similar problem of candidates not being able to pass a selection interview for fundamental reasons. As several transit authorities in an area have common recruiting and selection problems, providing the requisite skills is a reasonable investment. The instincts of the Omnitrans project leaders to work with groups such as WorkSources in the future also is wise; training could be offered through these agencies or in partnership to defray costs, provide a location, etc. The goal of these agencies is to prepare unemployed workers for their next job and place

them. Moreover, they could partner to provide other incentives and support, such as stipends, childcare, case management, etc., which potentially could further boost attendance and completion. However, replicating this program by turning it fully over to agencies is not recommended; the program appears to have benefitted from transit authority involvement and their capacity to provide the transit-specific interactive elements to keep the training interesting and provide a realistic job preview for work at a transit authority.

The Mentoring/Internship Program also was successful and is reasonably replicable. Key elements that seemed to make it successful and would need to be included in any similar internship program include the following:

- Departments can request an intern, but they need a plan for what the intern would do.
- Recruitment should focus on specific departments' assignments, not transit in general, ensuring a good match (e.g., the Finance department sought finance majors rather than force people through a rotation into an assignment that was not of interest).
- A panel should review the plan specifically to ensure it is meaningful and involves a reasonable time commitment. There was accountability for the supervision of interns, with weekly reports to the panel and periodic check-ins with the interns.

These structural elements used in designing this program helped it to avoid common pitfalls of internships such as lack of clarity in assignment, lack of supervision, and work that is not challenging or meaningful. Inviting college students is an opportunity to interest them in transit, and Omnitrans was careful not to waste this opportunity, which paid off in new hires.

Given the relative success of both programs at meeting the primary objectives and the replicable nature of the programs, further investment by FTA seems warranted.

Community Career Development, Inc. – Bus/Rail Operator Training Academy

Background and Problem Addressed

Community Career Development, Inc. (CCD) is a non-profit organization that operates three Los Angeles WorkSource centers (one-stop career centers) in Compton, Central Los Angeles (Metro-Wilshire), and Atwater (Van de Kamp). In 2006, CCD partnered with Los Angeles Valley College (LAVC) to help Los Angeles County Metropolitan Transit Authority (LACMTA) meet its operator recruitment and hiring challenges. LACMTA is the primary transportation agency in Los Angeles County and the third-largest public transportation provider in the US, serving more than 1.5 million riders per day.

When it began in 2006, LACMTA frequently had a high number of bus operator positions open, yet only 10% of applicants were able to pass the Operations Central Instruction (OCI) training required to fill these positions. (OCI is LACMTA's on-the-job training; trainees are provisionally hired but must successfully complete OCI training to remain on the job.) The high failure rate in OCI has resulted in costs estimated at \$4–5 million in overtime, absenteeism, retirement, attrition, failure in training, etc. Moreover, LACMTA was expanding, so it needed to hire 500–700 new bus/rail operators annually. Failure to find candidates able to pass OCI training would have dire consequences for current workforce and operations.

In the surrounding community, Los Angeles faced an unemployment problem. Unemployment in 2012, when the proposal was written, was 11.4% in the area and up to 18.8% in areas targeted by the program. However, many of those unemployed lacked the basic skills required to succeed in the training and employment as operators such as math, customer service, etc.

Together, CCD and LAVC created a successful recruitment program, the Bus Operator Training Academy (BOTA) and, at the time of the proposal, had identified opportunities for improvements—specifically, improving the percentage of those able to pass OCI training, improving pre-screening, and lengthening the pre-employment portion to provide hands-on experience and better understanding of serving clients with disabilities. They also wanted to provide computer skills to enable applicants to use new automated systems. In addition, they identified a need for case management to assist new workers in resolving problems (e.g., childcare, attitude, financial).

Proposed Workforce Solution

The Bus/Rail Operator Training Academy (B/ROTA) was designed to build on the existing BOTA program with the needed improvements. B/ROTA would recruit and address the shortcomings of potential blue-collar bus and rail operator applicants from underserved communities while increasing the geographic, ethnic, and gender diversity of successful applicants. The program was intended to provide pre-employment training and necessary supports for potential LACMTA bus/rail operator applicants and support for up to two months after employment. In addition, a company that manufactured rail cars would need trained personnel and was interested in having similar help for its workforce needs as well.

Proposed goals for the program listed in CCD's grant application were:

- Develop a replicable model for recruiting bus and rail operators from low-income, minority communities, women, and veterans.
- Develop a model pre-employment program to increase the likelihood of hire and retention as bus and rail operators.
- Recruit and train at least 213 individuals, with at least 155 hired and 134 of those retained at least 90 days.
- Develop of a cadre of expert technicians at transit agencies across California.

The design of the program was to create a number of benefits to LACMTA and the community, including:

- Increased ethnic, geographic, and gender diversity in the workforce
- Reduced recruitment and training costs
- Reduced turnover
- Improved public relations and fewer rider complaints
- Increased number of low-income, minority residents and women who are hired and retained
- Increased number of languages spoken by Metro transit operators (something vitally important in an area in which nearly 60% of residents speak a language other than English at home)

Partnerships

CCD, a non-profit operator, and part of America's Job Centers of California (AJCC), served as the administrative lead and manager of the project and also performed recruitment, assessment, screening, background check, enrollment, non-academic support, and case management services.

CCD had several partners for the project. Its educational partner, LACV, one of nine community colleges in the area, would perform curriculum design, instruction, and certification for participants. LACMTA was the transit authority partner and would provide assistance in curriculum design, training space, staff to assist with pre-screening and orientation, and class speakers. LACMTA personnel would interview and hire graduates, and the agency would provide bus passes and tutors/mentors and would assist in recruitment. The LA Workforce Investment Board (WIB) and LA County Workforce Investment Board agreed to assist in recruiting at the 40 WorkSource centers throughout the Los Angeles County area.

An additional partner was a sub-contractor to LACMTA that builds railcars, which would provide the “rail” component for B/ROTA. However, by the time the funding was received, the company had met all of its hiring needs, so that portion was eliminated from the program, which is essentially an enhanced BOTA program.

The partners had strong, longstanding prior working relationships from their collaboration on the original BOTA, so B/ROTA could build on that with added dimensions. CCD also received funding from both the City of Los Angeles and the LA County WIBs for operating the WorkSources and had more than 10 years of working with both. LAVC had been a partner for more than 15 years for innovative training and the employer-driven sector strategy and worked with LACMTA since 2006 when this partnership originated. BOTA is one of many projects CCD has worked on with these partners, so they were used to working together when they developed and won the B/ROTA project.

Program Implementation

Program Development

Originally, BOTA was developed by assembling partners to assess the root cause of the high turnover and failure rates in OCI and determine how to address the need. OCI training is primarily customer service-oriented and involves conflict resolution, handling people with mental or other disabilities, and dealing with angry/frustrated customers. Because operators have no supervisor with them, they must have good customer service, critical thinking, and leadership skills. Much of OCI was determined to be about how to be a good ambassador. In addition, there is a technical side to the training, as participants receive assistance and preparation to get the requisite Class B license with required endorsements (meaning additional training/testing in passenger safety and air brakes). Participants also learn the equipment that determines how to start and end a route, fare determination, transfers, and pre-trip inspection. The original BOTA was good but needed to be enhanced to improve the preparation for OCI success.

Figure 4-1 shows the basic flow of the program, which begins with recruitment. Marketing for participants into B/ROTA uses an assortment of media, including print, e-blasts, flyers, posting in transit systems, employment sites, job fairs, service announcements, press releases, a website, social media, and ads on more than 2,500 LACMTA buses (Figure 4-2). Approximately 53% learned about the program at their local WorkSource, 27% from LAVC or LACMTA websites, and 10% from the California Employment Development Department; the remainder heard about the program from job fairs, friends, or the Department of Public Social Services. Representatives said the best method is word of mouth. LACMTA posts flyers at their divisions so people see it and tell friends. The program also is involved with social media and uses Facebook, its website, LinkedIn, and other media to help in outreach.

Figure 4-1

*B/ROTA Program
Flow Chart*

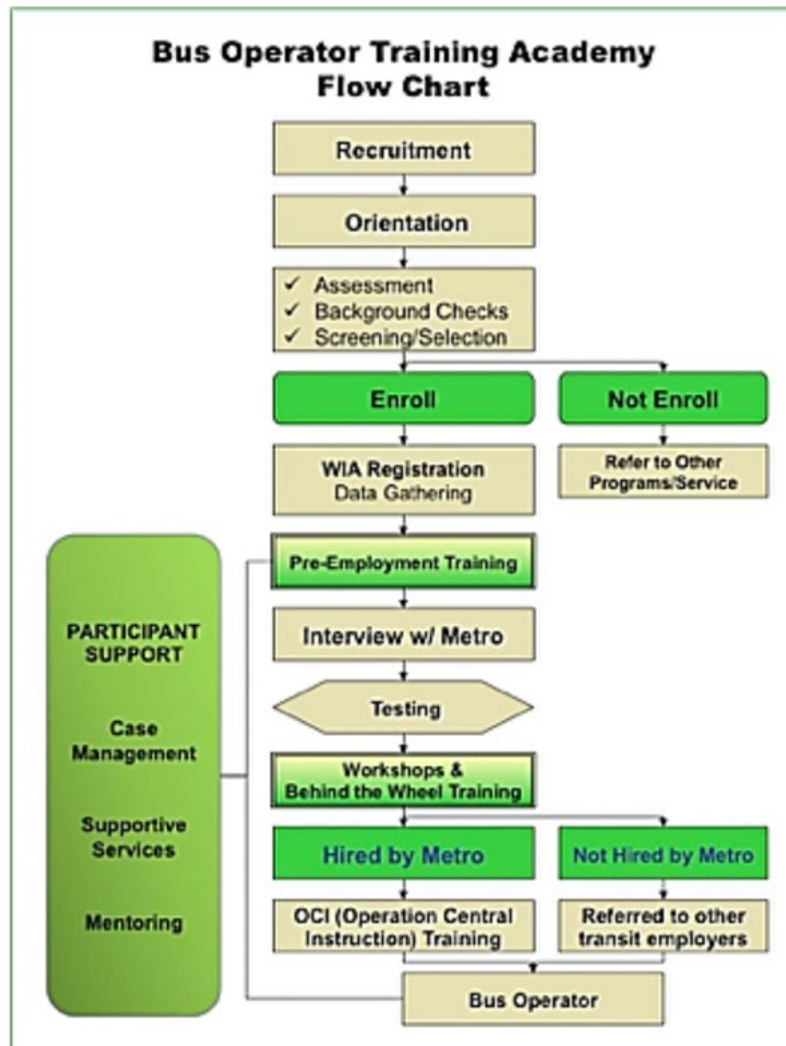
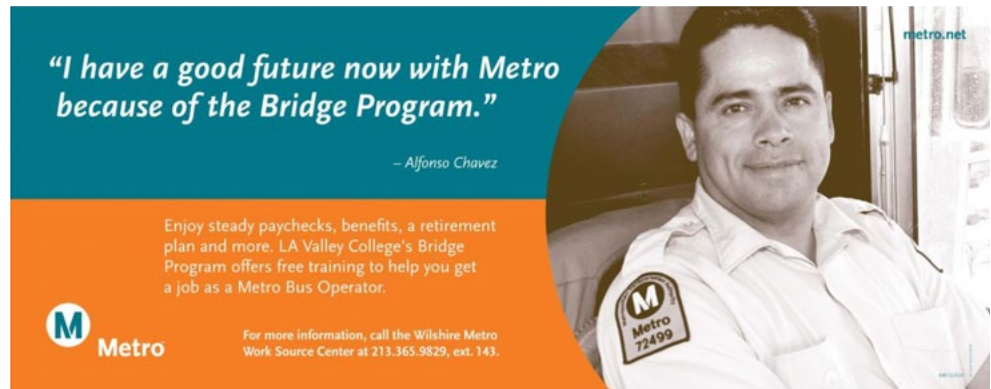


Figure 4-2

*B/ROTA Targeted
Recruitment
Bus Placard*



Recruiting

Although specific figures were not provided, the program focuses on outreach to women and veterans. For example, it works with veteran groups for female veterans, women's associations, and organizations that are women-led, attends 5k runs to pass out flyers, and attends community events focused on women; it takes a similar approach with veterans organizations and events.

Screening and Selection

Pre-employment training begins with an orientation and pre-screening, a three-hour event that attracts 20–30 people (but often up to 100). CCD personnel present a slide show to discuss job requirements and describe the job. During a break, attendees are advised that if this is not of interest, they should feel free to leave, and other occupational programs are mentioned. Orientation often starts with a large group, but people remove themselves based on the requirements and what they hear, and often just a handful continue. After the break, those who remain get practical information about the class, such as start and end dates, first paycheck, drug test requirements, background check, Class B license requirements, etc.

Importantly, participants are asked if they can financially sustain themselves through the course, as CCD does not want people in training for weeks only to drop out due to finances. Those who want to continue are next given a CASAS Employability Skills Math and Reading Diagnostic Test. After another break during scoring, participants may choose to leave. Those returning learn their test results—if they pass with at least a 9th grade level in reading, they can move on to group interview/screening; those who do not pass the CASAS are given information about other programs and resources.

Two or three members of the partner organizations conduct panel interviews. Candidates are asked the same 20 questions, including why they would benefit and why they are a good fit to be bus operator, and questions about their background, prior jobs, criminal background, and health. Some are questions

LACMTA asked to be included. After the interview, they are finished for the day. The pre-screened candidates are rated based on how they performed on the reading and math tests, their driving record, and employment history (gaps, terminations, long unemployment, job hopping), which is consolidated into a packet given to LACMTA. CCD selects the top 25–30 candidates, and LACMTA personnel review the list and determine potential hires and who would be successful. CCD generally knows what LACMTA is looking for, and LACMTA may reject only one or two from the list. Sometimes CCD follows up to answer LACMTA concerns.

Accepted candidates attend a mandatory meeting at which they meet their classmates, instructor, and case managers and are given an assignment to travel a bus route with which they are unfamiliar to observe people getting on and off, driver interaction, passengers who were upset or did not have the fare, how persons with a disability were handled, etc. After this observation, they write an essay on what they observed. This exercise is intended as a way to ensure that candidates see the “real life” of an operator; this also is their last chance to self-select into or out of B/ROTA.

Requirements to be hired by LACMTA are that participants must be at least age 21, live in Los Angeles County, have a valid driver’s license, have a satisfactory driving record, demonstrate a good attitude, have a stable work history, and pass background and drug tests and a US DOT physical exam.

On their first day, participants complete two applications—CCD’s service application to provide a case manager, job developer, and coach and LACMTA’s employment application. This is completed on paper first as practice, then in a computer lab online for LACMTA.

Program personnel describe participants as very diverse, including men and women ages 21–45+. Participant backgrounds range from those entering their first job to former executives.

Pre-Employment Training

The pre-employment portion of the program is called “Bridge to Employment,” which uses a custom curriculum based on LACMTA hiring standards to pass written tests and a simulator, as required during OCI. Classes are held over a two-week period, followed by a graduation ceremony. Classes are held at LACMTA headquarters, enabling students to interact with employees up to and including Human Resource personnel and executives. Participants must dress and act like employees from the start. The training consists of 10 sessions, with an average class size of 25—about 120 hours of non-credit instruction that is customized and contextualized to LACMTA standards and skills to get a Class B permit, pass written and simulator exams during OCI, and handle passengers with disabilities.

Two elements were added as part of this grant to the prior BOTA program. First, American with Disabilities Act (ADA) Ambassador Training was added. LACMTA's ridership by persons with disabilities has increased, and many drivers lacked sensitivity to these passengers or did not know how to appropriately deal with them. B/ROTA included instruction with certified trainers from the college and from LACMTA that included passenger sensitivity, using a lift, securing a wheelchair, and discussions about issues regarding mental and physical disabilities. The belief is that the unknown can lead to fear; the training removed the fear and participants could thus do a better job. LACMTA then asked that this training be provided to current bus operators. The program was replicated and continued with incumbents and is now part of the OCI.

The second element added to B/ROTA was basic computer skills training. Participants spent time with common applications such as MS Word and Excel to prepare them to write reports and perform basic tasks they need to do on the job (e.g., logging in, accessing accounts, checking shifts, bidding for shifts, writing up incident reports, general correspondence). Topics covered include attaching a document to an e-mail, business writing, use of spreadsheets, and basic formulas.

Obtaining a Class B permit is also part of the course. Participants go to the DMV as a group an hour before it is open to the public. CCD pays the fees for testing.

At the end of the course, participants are scheduled for interviews and testing with LACMTA. If they pass the testing, they will be hired as employees and begin OCI.

Workshops and Behind-the-Wheel Training

Between the participant interviews with LACMTA and the start of OCI, there is often a one-month lag as testing, drug screening, fingerprinting, and background checks take place. During this time, B/ROTA provides workshops, which are more like mentoring than classes. Sometimes the group will select the topic to be covered. Students enjoy these sessions and give them positive feedback.

B/ROTA personnel have asked former participants that are now employees to become mentors. These employees attend a one-day workshop on mentoring taught by one of LAVC's Career Coaches and receive a small stipend for their work. The mentors contact their mentees at least weekly by phone, text, or in person to encourage them and offer advice based on their own experiences with the training. They help participants know what to expect, help them study for tests, provide study techniques, help set expectations about OCI, give driving tips, provide guidance on how to handle situations with irate customers, flat tires, etc. Mentors update the Career Coach on a weekly basis and receive their own support and encouragement.

In addition, on a Saturday one week before OCI starts, LACMTA provides a bus and driver for driving training; as students now all have a Class B permit,

the driver allows the participants to drive the bus around LAVC parking areas to get driving experience. The driver critiques them and provides advice. CCD representatives note that this has been very beneficial, as it helps people pass OCI by overcoming driving issues that may come up (e.g., hitting curbs or not being able to make turns in one lane) and lead to dismissal from OCI.

Participant Support and Case Management

CCD provides support services and case management to participants throughout pre-employment training, during OCI, and up to one year after employment. These services include career coaching, case management, assistance with expunging criminal records, follow-up services, financial assistance (e.g., transportation), DMV fees, and assistance with fees such as uniforms or emergency expenses. CCD has multiple funding streams and leverages funds from a variety of sources; the specific assistance source depends on the person and the programs for which they may qualify.

Replication Workshop

B/ROTA gathered LACMTA and other transit company representatives along with City and County WIB participants and employers in a workshop to discuss the program, relationships, challenges, and outcomes and how it could be replicated. CCD representatives believe the program is very customizable, in that the curricula can be shifted to meet different needs. At this event, LACMTA graduates and alumni who were promoted to supervisory or rail positions spoke about their experiences. An FTA member attended, as did another Innovative Workforce Development Program recipient (see Section 3, Omnitrans).

Outcomes

CCD and the partners in B/ROTA set several specific metrics for the program, as summarized in Table 4-1.

Table 4-1
*CCT B/ROTA Project
Outcomes –
Goal and Actual*

Goal Description	Goal Number	Actual Number
Received pre-employment training	213	220 (103%)
Completed pre-employment training	202	216 (107%)
Hired by LACMTA and enter OCI	180	119 (72%)
Completed OCI and began work	155	196 (126%)*
Retained after 90 days	65%	No data
Reduction in complaints	5%	No data
Increase in attendance	5%	No data
Reduction in accidents	5%	No data

*119 by LACMTA, remainder by subcontractors

Over the course of the funded program, B/ROTA provided training to 13 cohorts totaling 220 participants, which exceeded the goal. Of these, 216 (98%) of

participants who entered the training completed it (exceeding the goal) and 196 (89%) obtained employment (also exceeding the goal). Roughly 119 (61%) were selected by LACMTA for OCI training, successfully completed it, and were hired by LACMTA, slightly below the goal of 155. Of those not hired, most were hired as bus operators by one of LACMTA's sub-contractors. No data were provided regarding the quality measures discussed.

Budget and Matching Funds

The Innovative Transit Workforce Development Program provided \$443,289 (64%) in project funds, which was supplemented with about \$250,000 in matching and in-kind funds, which came from a variety of sources. CCD, as a WorkSource Center, co-enrolled participants in other available grant-funded programs under the WIA Adult and Dislocated Worker grants from both the City and County of Los Angeles WIBs. CCD also accessed grants from the State of California and the US DOL for services targeted to veterans. LACMTA made a number of significant contributions, including the provision of facilities, staff time, printing and placing recruitment placards on buses, providing bus passes or parking vouchers for program participants, and providing a bus and bus operator for the behind-the-wheel training experience. LAVC leveraged its existing job training program resources to contribute a portion of staff time, classroom space, a parking lot for bus driver training, and the cost of a career coach for the mentoring component. Placement of this training component on the List of Eligible Training Providers enabled other WorkSource Centers to refer their enrolled participants using their own WIA funds.

In general, CCD reported that budget expenditures were consistent with the proposal and went as expected, which is consistent with their experience over 10 years of running BOTA with these partners. The majority of funds went to LAVC for training and to salaries for executing the program.

Impact

The primary impact of the program is meeting LACMTA's employer needs. CCD representatives report that this project demonstrates that a well-designed partnership among a transit agency, a community college, and a community-based organization can decrease recruitment costs, increase retention during on-the-job training, and increase the diversity of bus operators.

A secondary benefit reported by CCD representatives was creating a career path for participants, who have a clear entry-level path into LACMTA and supervisory roles if they perform well. CCD representatives also report a positive impact on the community, as many unemployed persons found employment in transit from a high-unemployment area. A successful program similar to BOTA can assist low-income job seekers in gaining the skills and knowledge needed for employment by a transit agency.

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program put forward by CCD representatives include the following:

- Partnership is key. The support of LACMTA was vital, as the employer drives the program.
- High-level champions such as executive leaders are extremely important for program continuity and resolving issues as they arise.
- An employer, college/trainer, and workforce development center partnering together is a powerful combination. The partners should have a shared vision for what program success looks like, complementary missions, mutual respect, and flexibility.
- Program improvement is possible when the partners are committed to continuous improvement and are able to objectively evaluate program data.
- A thorough orientation and good screening process are key to selecting participants who have the best potential for hire by LACMTA.
- Low-income, unemployed job seekers require significant support, including emotional support and encouragement.
- Whereas multiple methods of recruitment are important, the single best source of recruitment has been WorkSource.
- The location of the training is important. Providing the training at the employer's site had significant benefits to the participants and to garnering overall support for the initiative.
- Having the guarantee of a job interview is an excellent motivating factor, as is the high probability of employment upon graduation.
- Jobs at LACMTA are attractive, but, initially, many candidates were unsuccessful; this improved with the introduction of screening tools. About 200 applicants are needed to find 30 viable candidates who meet the requirements and are likely to be successful.
- Many otherwise eligible applicants had background issues that prevented them from being hired. To address this, the partners provided legal counseling and assistance with expungement of records. Those who the staff determined would not be able to pass the background check were not accepted.
- The time between the end of training and the start of OCI is roughly one month, which results in some attrition. To address this, the program was shortened, and twice-weekly workshops were added. These workshops prepare participants for the next step in the process.
- Low-income, unemployed participants need a high level of encouragement and support throughout the process. To increase support, the partners

implemented a Mentoring Program. Mentorships begin immediately following the initial instruction period and continue through on-the-job training.

- The experience of actually driving a bus proved to be more challenging than initially anticipated. In the beginning, a driving simulator was used to teach the behind-the-wheel portion; however, it did not enhance driving skills and, therefore, was eliminated. Instead, the partners added one day of practice driving an actual bus.

Conclusion and Further Investment Recommendation

The B/ROTA project met the primary goals it set out to accomplish, despite the rail portion having to be dropped before it began. B/ROTA created a replicable program that addresses the employer needs of improving the percentage of candidates that can pass OCI and also created a pipeline of candidates from the community in need of employment, from preparation for to employment with LACMTA. The program generally achieved most of the recruitment and training goals and came close to meeting the goal of the percentage passing OCI.

BOTA is clearly a high-impact program for LACMTA, which is why it continues its support. It is well worth the investment for transit agencies with the right alignment of partners and an entry-level candidate pool problem. BOTA has had 10 years of development and refinement. What is less clear are the benefits brought about by the changes made for the Innovative Transit Workforce Development initiative. The addition of the disability and computer topics seemed to be worthwhile, and the former was added to OCI. However, these additions did not drastically alter an already-successful program, but appear to be more marginal improvements.

The partnership alignment of an employer, trainer/educator, and workforce development organization (e.g., LACMTA, LAVC, and CCD) is a powerful combination capable of meeting employer workforce needs. BOTA appears to be a replicable program that could be tailored for any number of specific entry-level positions. CCD reports that LACMTA is interested in creating a similar program for maintenance personnel.

It is also worth noting that the BOTA program is essentially a longer, more comprehensive, in-depth version of the program created by Omnitrans (in part based on BOTA) that addresses the operator selection problem further into the hiring process, past interviewing and into training. Together, the two programs provide transit agencies with different depths of intervention from which to choose for improving their operator selection success, depending on the nature of the problem and level of investment possible.

SECTION 5

Washington Metropolitan Area Transit Authority – Transit Works Program

Background and Problem Addressed

The Washington Metropolitan Area Transit Authority (WMATA) serves a population of approximately 4 million within a 1,500-square mile jurisdiction in Washington DC, Maryland, and Virginia. WMATA operates 91 rail stations with 117 miles of track, providing 24-hour bus service with 1,500 buses and a paratransit service that provides about 2.3 million trips per year. In addition, WMATA has its own police force and operates the Circulator bus service for Washington.

WMATA experiences a high rate of turnover in bus mechanics and was operating at a deficit of 50 people in its mechanics workforce. Representatives determined that WMATA required a pipeline not just for mechanics but also for its 500+ different jobs (e.g., electrical, cars, tracks). This begins at an entry level, and WMATA needed people in those entry-level positions.

Proposed Workforce Solution

WMATA's solution was the Transit Works Program, which would focus on veterans, youth, and underrepresented populations to introduce them to transit occupations and provide the skills necessary to enter pre-apprenticeship or apprenticeship programs or pursue entry-level positions at WMATA. The project would re-tool veterans' skills and give young adults real-world exposure to the occupations and skills needed in the transit industry. The program had two primary objectives:

- Provide veterans and underrepresented adults in the labor pool with skills training, transitioning those qualified into WMATA's Bus Maintenance Apprenticeship program.
- Introduce high school students to transit trade occupations and equip them with adequate preparation in mechanical, electrical, and electronics training to successfully enter a transit Technical Skills Program or entry level position.

Transit Works was expected to enhance math and science curricula, improve workforce readiness with soft-skills training, and provide career pathways guidance and entry level employment to qualified candidates.

Partnerships

WMATA was the lead agency, handling administration of the project, providing SMEs, and serving as the employer that would provide apprenticeships or employment to qualified candidates. WMATA's team conducted all the training and supplied equipment and materials. They also aided in recruiting, such as participating in back-to-school nights to get the message out to parents.

The primary partner on the project was the Vets Group, a non-profit community-based organization in Washington DC that provides employment and support services to veterans. Its mission is to empower veterans and their families through education, entrepreneurship, and employment. Their role in Transit Works was to identify veterans they thought would be a good fit for WMATA, especially those who might have had a skill set that would transfer to transit. A person at WMATA had a contact with the Vets Group and made the connection.

There were also two high school partners in the project. Booker T. Washington Technical Charter School is an academically-oriented DC vocational school for grades 9–12 and adults. Suitland High School is a vocational school in Forestville, Maryland, that prepares students for post-secondary education, vocational training, and lifelong learning in collaboration with employers and post-secondary schools. Their role was to recruit interested students and serve as sites for course delivery. WMATA also sought to work with a school in Prince George's County, Maryland, to contact students who may not have the opportunity for college and knew that Suitland had a vocational program that was being terminated, so students there might be seeking a vocational training opportunity. The overall goal was to target areas in which WMATA could seek students that would not have an opportunity otherwise. They reached out to other schools, but the two partners were the only ones interested.

The partners had not all worked together prior to this project, but partnership formation went smoothly. There was regular communication via conference calls, with a WMATA manager staying in touch with the schools to ensure there were no concerns. An issue emerged when Booker T. Washington lost its charter and closed in July 2014, which was 10 months before the end of the project. This meant WMATA was not able to train as many students as they had intended in year two. They did ensure that the 25 students in the program were able to complete it (by accelerating the schedule).

Program Implementation

Program Development

WMATA had many pre-existing basic classes in its technical skills program. For the Transit Works program, it pared down the curriculum, taking just the basic

elements for both the high school and veterans courses. This program was described as being “Level I” of the class.

Recruiting and Selection

WMATA worked with principals at both schools to distribute flyers posted on bulletin boards, and the school put the flyer in parents’ materials. WMATA started working with the schools leading up to the coming school year to ensure it had a few months to market the program. For veterans, WMATA put information in newsletters, developed flyers, made buttons, and posted on its website. A large group on their roster already was looking for work.

There were no stringent criteria for participation— WMATA conducted drug testing, and, generally, participants had to be interested and WMATA preferred candidates who had a mechanical background. However, for those with high interest, lack of a mechanical background did not disqualify them. The goal was to train candidates in a field of interest to gain a livelihood. High school students were required to have passing grades in their coursework and display no disciplinary problems.

Program Implementation

For all participants, WMATA provided textbooks, and instructors used slide decks. In addition to class materials, for the veterans group, WMATA distributed a Careers in Transit guide that describes the careers available at the agency and what is needed to attain the positions.

Veterans Course

The Vets Group agreed that the course could be shortened, and the partners settled on an 8-week course out of concern that the original 15-week course schedule would be too long. WMATA kept the same amount of instruction compressed into a shorter time. The veterans and high school students received a stipend of \$10 per hour, and veterans were given a card providing free transit to the training location at WMATA.

Veterans training included basic mechanical orientation, service lane operation, fare box probing, forklift operation, wheel and tire maintenance, steam cleaning certification, engine fault code troubleshooting, cooling system maintenance, pneumatic systems, basic electrical theory, battery maintenance, and starting and charging systems. Veteran participants earned a forklift certification and a steam-cleaning certification. At the end, if they passed their final exam (with 75% correct), they earned a Certificate of Completion that listed every class they took. A Human Resources representative from WMATA spoke to participants when they were halfway through the program about what positions they were interested in and offered help with applications and resumes. WMATA saw this

as going beyond simply telling participants what is available. The training did not include “soft skills” classes (e.g., interviewing skills), but the WMATA Human Resources representative shared relevant information with participants.

High School Program

The high school student curriculum covered basic mechanical, basic electronics, DC and fundamentals, wiring/soldering, and electromechanical principles and practices. The class generally met once or twice per week for 10 months each year. (However, when Booker T. Washington lost its charter, the program was expanded to a full year to ensure that the full course was completed for enrolled participants.) The instructor was one of WMATA’s younger instructors, who created projects to maintain student interest. For example, they built a remote control truck, and the student with highest average grade/attendance combination got to keep the truck. Human Resources representatives also spoke to high school seniors about their interest in positions. As with the veterans, the high school students earned a Certificate of Completion that listed every class they took.

Outcomes

WMATA met the objectives of creating training programs for veterans and high school students that would provide them the skills needed to obtain entry-level employment at WMATA. In addition, WMATA’s proposal listed a set of performance metrics to attain.

For veterans and underrepresented populations:

- 150 enrolled (60% veterans or 90 veterans)
- 70% completion for all cohorts (or 105 total)
- 60% job or technical skills training placement (or 63 total)
- 25% increase in veterans hired and retained beyond 18 months

For high school 11th and 12th grade students:

- Target enrollment of 75 in each of 2 years (150 total)
- 85% earn C or better and move forward (120 total)
- 85% continue into 12th grade program (64 from year 1)
- Year 2 80% completion
- 85% apply to job or technical skills program (108 total)
- 50% applicants accepted (54)
- 20% increased retention of entry-level workers beyond 18 months
- Qualitative assessments of growth and change in transit knowledge

WMATA's training enrollment and completion goals were close to success. For the veterans, 113 entered the program, which was 75% of the goal. Of those who entered, 101 (89%) completed successfully, which was higher than the goal completion rate and 96% of the goal for completions. For the high schools, Suitland enrolled 32 students over the two years and Booker T. Washington enrolled 25, which was only 38% of the total enrollment goal. Although some of this is because Booker T. Washington's program ended when the school lost its charter, those numbers still reflect recruitment far below the targets. However, of those who entered the program, completion was high, at 27 (84%) and 21 (84%), respectively.

Outcomes fell far short of the goal in the number of veterans who took positions at WMATA. Only about 10 veterans entered into employment at WMATA, just 16% of the goal. Thus, the increase in the veterans hired goal was also not realized. Representatives indicated that for the veterans, at least 10 participants were not hired because they could not pass a background check. (The drug screening was done before entering the program, but the full background check is more expansive and was conducted only upon application for employment to WMATA.)

Employment outcomes were even further below the targets for the high school program. Only two high school students were employed by WMATA, as a bus operator and a mechanic's helper, which is only 4% of the goal for accepted applicants. It is unclear if any others applied. Many students were not ready to select careers, were not interested yet, had to complete schooling, or were not of age to obtain a commercial license.

WMATA collected post-training feedback. For the veterans, it was generally positive; the primary area to improve was guaranteeing a job upon completion of the program. However, WMATA's unionized workforce means every job opening must be "fairly competed," so this type of guarantee is not possible. WMATA representatives expressed that they provided the veterans with the skills to enter apprenticeship programs or compete for the desired entry-level jobs; he was unsure why more did not apply and attain employment.

High school feedback indicated that the students enjoyed the program, particularly the projects that were built in by the instructor. Most indicated that they were not sure what career they were interested in yet and were exploring options.

Budget and Matching Funds

The Innovative Workforce Development initiative awarded \$795,334 to WMATA, which was 90% of the total budget but less than the original request of \$1 million. The difference meant WMATA had to scale back and reassign people

rather than use overtime; it also did not bring in outside personnel for the training. Otherwise, the program was mostly unaffected. The bulk of the budget went to personnel, instructors, transportation (fare cards), stipends, materials, and drug screenings.

WMATA's proposal suggested it would provide \$93,000 in in-kind contributions, which it believes it easily reached or exceeded. For example, the schools provided classrooms, materials, an instructor, and textbooks; the veterans were trained at a WMATA facility.

Impact

The training program that WMATA developed was a solid program that imparted the skills necessary to enter employment at WMATA. Unfortunately, the program resulted in very low impact in terms of actual hiring because of factors unrelated to the training. On the surface, it seems WMATA's Transit Works program did the right things—recruiting from a pool of potential candidates of veterans and high school vocational students, providing real skills training based on proven programs to prepare candidates in an accelerated way, paying participants to attend, providing transit career information, having a Human Resources person help with applications and resumes, etc. Yet the results—fewer than 20% of students completing an 8-week program applying for employment and only half of those attaining it—suggests a strong, unidentified disconnect in the program. Either the applicants were not properly screened for interest, not enticed into the career, or something deeper about the training, or something at/about WMATA caused participants not to apply. The fact that half of the interested applicants were unable to pass a background check suggests a screening problem, at a minimum. WMATA representatives suggested that a side benefit of the program included honing trainer skills by exposing them to students and veterans who were not part of WMATA and having them receive feedback.

Compounding the problem, WMATA has since been faced with a dire funding situation, resulting in many positions lost and training programs severely reduced. Therefore, there is no plan to continue the Transit Works program or to learn from and build on the results.

Lessons Learned and Recommendations

Key lessons learned and recommendations to those wishing to implement a similar program put forward by WMATA representatives include the following:

- Focus on veterans – the students were difficult to recruit, less invested in the program, and had lower return on investment in the short term, as they were still deciding which career they were interested in pursuing. Perhaps they will come back to transit at some point in the future. The veterans,

by contrast, were seen as more invested, able to bring more skills to the training, and could apply for positions directly out of the program.

- Better up-front screening – a key problem for Transit Works was that a background check is required for employment at WMATA but was not done at enrollment, as it was expensive. Moreover, WMATA believed the Vets Group was conducting appropriate assessment of the participants recommended to the program, but it was not effective. When half of those who applied to WMATA could not pass the background check, it was clear they had made a mistake by not ensuring participants could pass before the program started.

Conclusion and Further Investment Recommendation

WMATA's Transit Works had all the makings of a successful workforce development program but without the results in hiring to show for it. It would be easy to conclude that this program was unsuccessful and, thus, not worth replicating or further investment. However, it is worth noting that WMATA has been undergoing a severe funding shortage and public relations and morale issues resulting from highly-publicized safety lapses, including a highly-public, widely-criticized incident in 2015 as this project was winding down. It is possible that participants in the training were aware of WMATA's problems or affected by this publicity and so obtained their new skills and went elsewhere. Thus, the program could have been well-conceived and executed, but broader organizational issues caused the lack of impact. Data collection from participants is needed to answer this question before any further investment could be recommended.

Jacksonville Transportation Authority – Hybrid Technology Workforce Training and Implementation

Background and Problem Addressed

The Jacksonville Transportation Authority (JTA) is an independent state agency serving Duval County with multi-modal responsibilities. JTA oversees the design and construction of bridges and highways and the provision of a variety of mass transit services, including express and regular bus service, community shuttles for a neighborhood ride, a downtown skyway monorail, trolley service, a stadium shuttle for sporting events at Jacksonville Stadium, paratransit for persons with disabilities and older adults, and request-on-demand services. JTA has a challenging role serving the largest city in the continental US in terms of landmass.

At the time of the proposal, JTA had recently made the decision to purchase hybrid buses. During the process of making and implementing this decision, it found no central location containing the information necessary to prepare the agency to receive the equipment and to be fully ready to operate maintain and repair the vehicles. JTA noted that hybrid buses are relatively new technology, but one that offers great promise to transit operators and their public in both reduced use of fossil fuels and reduced air pollution. Hybrid buses are moving from the “testing” phase to being a critical part of fleet operations, demonstrating the need for improved guidance. When a transit agency searches for the information necessary to implement hybrid technology, the information is scattered in different categories, and each vendor may or may not provide complete manuals or operations program. There is no centralized location that includes a complete hybrid implementation plan that will guide agencies to ensure safe, cost-effective, and reliable program implementation starting on day one of equipment acceptance.

With the high electrical current from electric drive systems and the possibly hazardous material in some battery systems, there are safety issues for hybrids that require not only mechanical training but also procedure modifications across several staff levels and job profiles; they also could impact environmental permits. There is a lack of industry-recognized training and other materials to assist transit agencies and prepare their workforces to successfully implement a hybrid bus fleet with safety and efficiency.

Proposed Workforce Solution

This project was intended to develop a concise, holistic view of integrating a hybrid bus into an existing transit fleet. Guidance would be provided through manuals, DVDs, PowerPoint programs, cost estimating guides, checklists, and sample forms. It would also include a program to allow new employee training to be conducted in all areas requiring interface within any possible specifications of the hybrid system. Through partnering with the American Public Transportation Association (APTA) Bus Maintenance Training Committee, the training material was expected to benefit from a ready and national reference set of peers for consultation, review, publication, and distribution. Proposed objectives for the program listed in the proposal were to:

- Build upon the work conducted in the APTA Standards program to develop a concise, holistic view of integrating a hybrid bus into an existing transit fleet.
- Provide guidance through manuals, DVDs, PowerPoint programs, cost estimating guides, checklists, and sample forms.
- Create a program that will allow new employee training to be conducted in all areas requiring interface within any possible specifications of the hybrid system.
- Consolidate this material in a location that allows for ease of industry access.

These materials would help transit agencies that are considering or preparing to receive hybrid equipment for the first time to prepare the agency as a whole.

Partnerships

JTA served as the lead agency and hired a contractor, Knowledge Architects, for training design and development. JTA was responsible for the administration and management of the project, overseeing data collection, gathering materials, and developing training. JTA and the contractor relied significantly on their other partners, APTA and members of APTA's Bus Maintenance Training Committee. Collectively, this group represents a tremendous breadth of knowledge from across the nation. As program materials were generated, all participants (or specific focus subcommittees) were expected to review and assist in the development, peer review, and final reports of training guidance and manuals and presentation processes to ensure that the final products would have national application immediately. This strategic partnership would help each hybrid transit operator provide the benefits of hybrid transit service quickly, cost-effectively, and with the knowledge that they had covered all important features for a safe operation.

The partners involved in this project are members of the APTA Bus Maintenance Training Committee. Committee membership is diverse, representing a comprehensive mix of large, medium, small, and rural transit agencies. Agencies

that participated include Chicago Transit Authority, International Amalgamated Transit Union, Southeastern Pennsylvania Transit Authority (SEPTA), Rockford Mass Transit (IL), New York City Transit, King County Metro Transit (WA), Metro Transit (Minneapolis), Utah Transit Authority, Los Angeles County Metropolitan Transit Authority, Tri Met (Portland, OR), Chapel Hill Transit (NC), and Valley Transit Authority (San Jose, CA). In addition to transit agency involvement on the committee, other active members include the National Rural Transit Assistance Program (RTAP), New Flyer Industries, and Veolia Transportation.

The primary role APTA served was as a resource to help JTA understand where to obtain the information needed to create the repository. APTA helped identify who has what kind of information, where to look, and so on. APTA was also an important advocate in convincing transit agencies to cooperate in the project.

JTA had a previous working relationship APTA. Many of the initial JTA people working on the project left, but they made the appropriate introductions to allow a smooth transition. There were no reported difficulties in setting up the partnership. In the beginning, the group held several conference calls to determine roles and workflow. After that, the main point of contact was the contractor creating the training, and meetings were as needed.

Program Implementation

Program Development

The project was designed to build on the work of the APTA Standards Program, for which APTA's Bus Maintenance Training Committee has attempted to create standards for the training needed to safely and effectively perform bus maintenance. These standards help agencies quickly develop their own internal training programs. The idea of this project was essentially to extend the effort for hybrid bus technology.

Identifying Prerequisite Skills

The first step for this project was a review of prerequisite skills for incumbent hybrid maintenance workers. The team planned to collect job descriptions and training materials for hybrid bus maintenance positions from transit agencies. However, JTA quickly learned that although agencies would discuss job descriptions, roles, and skill sets in larger bus committee meetings, when approached individually they were not willing to provide this information, as they were unsure of who owned the intellectual property (the agency or the Original Equipment Manufacturers [OEM]). This was particularly true of providing it to a "third-party vendor" (i.e., JTA's contractor) who intended to develop training. Although the intention was to obtain materials and compare them across the industry, JTA did not get a sufficient range and amount of materials to be able

to make such a comprehensive comparison and compile common prerequisites. JTA found this was also true of vendors and OEMs. As a mid-size transit agency, it did not have the clout with vendors that a larger agency might have had. In fact, OEMs would not participate at all. JTA also wanted to examine at how OEMs supported agencies after initial training, but the OEMs would not provide any information. It was difficult to gather this information from transit agencies because most had fleets for some time and, after normal turnover, did not have the institutional recollection of this information.

The JTA team next attempted an industry-wide survey. After determining which agencies had hybrid fleets from the APTA resource directory, it sent the survey to more than 100 transit agencies. It took considerable effort to get agencies to participate because they did not know JTA's contractor and did not necessarily trust them. APTA was a strong advocate to encourage participation. JTA was hoping to be able to compare large and small agencies as far as how they managed their fleets, what kind of support they received from OEMs, etc. Despite APTA's efforts, JTA received responses from only 25 of those surveyed. To obtain more information, they visited 15 of those respondents, going on walk-throughs, examining at policies and procedures, etc.

Identifying Maintenance Training Requirements

The second task JTA wanted to accomplish was to identify what maintenance training was required to effectively service a hybrid bus fleet. From the survey and input, JTA identified a few areas where more support was needed, as there was insufficient documentation, information, or material on certain processes. An outline of material that would help a new agency acquiring a hybrid fleet was developed that highlights a number of processes for procurement, inventory, equipment, safety procedures, and FTA regulations around safety and facility management, as well as important training courses for first responders, basic electrical, and troubleshooting of common issues found once took over after warranties expire. This also included list of contacts of different agencies, vendors, etc.

Develop e-learning Courses

The planned third step in the project was to develop guides for trainers and students based on the identified needs found in the prior step. In the course of its research, JTA found that there are different technologies (e.g., parallel, serial), and it could not cover all of them. Therefore, it decided to focus on those from OEM Allison since that is what they had purchased. (They hope in the future to cover a second OEM, BAE). In addition, because they found that small transit agencies often have inadequate materials, rather than put training into hard copy, JTA decided to use an e-learning format to make it easily accessible for the largest number of agencies. It was able to get permission to multi-purpose some

materials obtained from others and incorporate them into the e-learning and resource files.

Overall, JTA developed 10 training modules that were 10–30 minutes in length, depending on the topic. The modules cover basic electrical, hybrid components, operations of components, required service items, required inspection items, and troubleshooting and include a video that covers first responder training requirements for agencies to use internally and externally (to share with fire and police EMT). The video was for first responders. The training generally uses “voice-over slides” with built-in exercises, and users can stop and return to where they left off. JTA used a considerable amount of 3D technology such as 3D models of equipment for a more visual learning experience versus classroom experience. The e-learning format also had built-in “check your knowledge” quizzes, and a written exam was given at the end of the course.

Developing Supplemental Materials

The next several tasks that JTA completed involved developing supplemental and supporting materials to assist the agencies with their hybrid fleets. JTA and its vendor created the following:

- Checklist of critical safety concerns and required safety certificates, based on research of Federal and State requirements to ensure agencies meet minimum codes
- Checklist of recommended parts necessary to service and repair a new hybrid bus
- List identifying special tools required for service, troubleshooting, and repairs (for Allison hybrids)
- List of facility specifications and procedures (bay door heights, etc.)

JTA had planned to create a document to be used at any agency to ensure that local dealer employee technicians were trained and certified to service and repair hybrid systems. However, this was determined not to be necessary as it talked to properties with hybrid fleets.

Distributing the Material

Once the training program was completed, JTA loaded it onto their learning management system and also provided it to APTA to upload. It was expected to be available on the Bus Maintenance Training Committee page of APTA’s website; however, when JTA representatives looked for it, it was not there. Finally, JTA sent the training and materials to the 25 agencies that responded to the survey.

Outcomes

The first objectives of the Hybrid Technology Workforce Training and Implementation project was to build a concise, holistic view of integrating a hybrid bus into an existing transit fleet and provide guidance that could be used by other agencies in the form of training and supplemental materials and to create a program that would allow new employee training on the hybrid system. JTA met these objectives. The final objective was to consolidate this material in a location that allows for ease of industry access. Although JTA shared this information with APTA for this purpose, this objective remains unmet.

Several metrics were suggested to assess the use of the training and its quality:

- 474 JTA employees use some portion of the training (mechanics, operators, supervisors)
- 250 additional people benefit immediately and use the training, including first responders
- 720 people nationally involved in the project
- Over the second 18-month period, an additional 500 trainees participate
- Survey of training quality
- Number of agencies with access through the APTA website
- Number of agencies that use the material developed
- Comparison of mean distance to failure between hybrid and regular fleet at JTA

Although JTA indicated that “quite of few” of their employees have used some or all of the training either as new-hire training or refresher training, it did not keep specific numbers on how many were involved. It also did not share the first responder video with first responders in the area, as they had already been trained by the time the video was completed. Likewise, the other measures were not used. JTA subsequently moved from hybrid to compressed natural gas (CNG) buses, so its total electric hybrid fleet is only seven buses.

Budget and Matching Funds

The Innovative Transit Workforce Development funds provided \$247,197 (100%). The funds went primarily to the contractor to conduct the survey, gather material, visit and talk to other agencies, and develop the training. Although they had originally requested more, JTA was able to adjust the scope by decreasing some of the attempts to get information. JTA representatives believe they contributed in-kind contributions of staff time, though it was unsure of the specific amounts, and it was not discussed in the proposal.

Overall, the budget went roughly as expected after the initial adjustment, as JTA put out a request for proposals from contractors. It reported slightly underspending the received amount in the end.

Impact

JTA representatives suggested that they created a good program and have attempted to make it available. They believe that smaller transit agencies, in particular, often lack the information and assistance from OEMs that larger properties can get. This material is now available to them.

JTA has used the training and continues to use portions of it for new employee training. Representatives feel the impact on their agency would have been more significant had leadership not changed and moved away from electric hybrids and more toward CNG buses (the plan was to buy 15, but JTA stopped at 7).

The JTA team specifically searching the APTA website for the material and not finding it suggests that other agencies may not know it exists. Therefore, any wider impact is limited to only the 25 agencies to which JTA sent the material. These agencies participated in the project and presumably already had their own materials, but they might have found JTA's presentations useful.

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program put forward by JTA representatives include the following:

- It can be useful to a smaller agency to have an outline of what is needed to implement a new technology, training needed, tools, safety lists, etc. A blueprint is needed to not “re-create the wheel.”
- Partnering with FTA earlier is important to understanding the players. It might have given JTA an advantage if the contractor was made known earlier; industry reluctance to share information with them might have been avoided with more of FTA's imprimatur.
- Attending the APTA conference and introducing the contractor was important, as it made people comfortable that they were not trying to take intellectual property and repackage it but really were working with JTA and intended to share information.

Conclusion and Further Investment Recommendation

The Hybrid Technology Workforce Training and Implementation project was to fill a need that exists for smaller agencies trying to implement hybrid technologies. JTA appears to have met the objectives of compiling what could be useful information into 10 e-training modules and supplemental materials.

However, the project appears to have had, at best, moderate impact for JTA and low impact for the wider transit industry, as the materials were not shared as intended by APTA. In fact, in 2016, APTA released a syllabus for hybrid bus technicians and operators that does not appear to acknowledge the JTA work, as it was created by a separate workgroup. A search of the website reveals this document but the not training JTA created.

Further investment in this type of project—for example, completing a similar project for the other large OEM—would be worthwhile only if there was a demonstrated demand for this information from transit agencies and a solid commitment to share this information from APTA or another large transit training repository. It is currently unclear if the lack of wider impact is because the material is not needed or because it was not marketed so agencies do not know it exists. The answer to this question is critical to the value proposition of further investment.

JTA's move away from the very technology they were studying makes further effort on their part for this technology unnecessary. However, the broader issue is whether it is useful to compile and share such information as was done here for any new technology. This project, unfortunately, does not answer this question because the information was not made widely available.

In addition, before this project is replicated, clarity is needed on who owns the intellectual property of training materials or other documentation once provided to the agencies and what is acceptable for them to share for these purposes.

Corporation to Develop Communities of Tampa, Inc. – Meeting Today’s and Tomorrow’s Job Needs in Mass Transit

Background and Problem Addressed

The Corporation to Develop Communities (CDC) of Tampa, Inc., is a non-profit agency with 20 years of experience in workforce development, training, job placement, and job retention for residents in a low-income community in Tampa, Florida. CDC clientele are approximately 30% Spanish-speaking. The area is a Federal Enterprise Community, a State Enterprise Zone, and a Community Redevelopment Area as part of efforts to improve conditions in the community. Area residents, predominantly African American (72%), have a poverty rate nearly twice that of the city as a whole and nearly three times that of Hillsborough County. For example, the unemployment rate in the county was 10.4% in May 2011; in the East Tampa Community, it was 22.8% (1.85 times the countywide figure). CDC has developed a system of job readiness and placement for working with residents who have barriers to employment.

CDC works with Hillsborough Area Regional Transit (HART), the mass transit agency serving Hillsborough County, which, in 2011, provided more than 14 million rides with an operating budget of approximately \$60 million. Many applicants to HART have inadequate preparation or knowledge about the jobs for which they are applying, which is costly in terms of HART’s time and resources and is discouraging to the applicants. The agency has difficulty recruiting for current openings and was concerned that the situation would be worse in the near future as the “retirement wave” begins. For example, at the time of the grant proposal, demand for bus drivers was expected to grow about 13% over the next several years, and the gap for skilled workers was expected to grow even wider. Compounding these problems, HART was losing a slow but steady flow of skilled recruits to higher-paying transit agencies. The coming turnover could leave gaps in the workforce without efforts to replace them and build a pipeline. Meanwhile, East Tampa was an underserved community with a high number of people capable of work but not job-ready in terms of knowing the expectations of a professional work environment.

Proposed Workforce Solution

This project was an attempt to build an “employment pipeline” to address HART’s needs, both now and in the future. The program would address current needs through a step-by-step recruitment, screening, training, and placement process. The project planned to recruit from underserved areas with high unemployment and veterans. Participants would be recruited and screened and would receive job readiness training to prepare them for employment at HART, with assistance with placement. Throughout the process, CDC would provide support services such as case management to help overcome any barriers to employment. HART also had recently acquired CNG vehicles and needed workers certified to perform maintenance on these vehicles. It was interested in having CDC and the project help provide these workers.

Long-term HART needs would be served by a youth component by demonstrating to high school students the different job and career opportunities available at the agency. Through internships, youth would gain firsthand knowledge of that type of work. This was expected to lay the foundation for an employment pipeline by introducing youth to the transit field.

The primary objective of the program was to recruit, train, and employ up to 30 people in the transit industry, including transit operations and maintenance workers.

Partnerships

CDC of Tampa served as the lead agency and fiscal agent. CDC is a 501(c)(3) non-profit organization with 20 years of experience in workforce development, training, job placement, and job retention for residents in low-income communities. Working with residents with barriers to employment, the CDC has developed a replicable system of job readiness and placement that places more than 300 people in jobs annually.

The transit partner was HART, which would serve as the employer and customer and provide SMEs for the training development. An additional partner was the Tampa Bay Workforce Alliance (TBWA), a local one-stop service provider that delivers workforce solutions that support economic development in Hillsborough County. It would provide on-the-job training opportunities (in which 50% of a training salary is covered for the employer). Another strategic partner was Tampa Crossroads, a community-based organization that provides a variety of services to veterans, including housing, employment, and support services.

CDC had a prior working relationship with all partners. It provides training for Tampa Crossroads as a vendor to help veterans get jobs; Crossroads can provide affordable housing, so CDC can provide cross-referrals. CDC and TBWA have partnered on efforts such as Summer Youth Employment, adult training

for ex-offenders, and unemployed veterans seeking construction trade jobs. HART and CDC frequently partner, as HART provides bus vouchers for CDC at reduced cost and CDC has sent referrals for employment to HART. HART also provides human resources staff for CDC's soft-skills training (resumes, interviewing, etc.)

The partnership reportedly went smoothly, although Crossroads was not able to provide as many referrals as CDC had hoped. Crossroads had switched its focus to serving women, few of whom appeared to be interested in the transit training opportunities.

In general, the group met as needed, with regular quarterly meetings as the training began. Because the partners had relationships already, they were able to communicate efficiently and as needed rather than wait for a specific meeting.

Program Implementation

Program Development

The training was customized specifically for those interested in becoming bus operators. CDC coordinated with HART regarding the skills drivers need to be successful, and CDC put various elements of the training together, but the primary focus was on customer service. Although the original plan was for CDC to recruit veterans with CNG-related experience to meet HART's needs, HART decided that the CNG portion would be an incumbent training program to provide certification for existing employees to maintain CNG vehicles and fueling stations. CDC talked with several organizations and experts to put together an appropriate curriculum and worked with a local company that builds CNG fueling stations. The company and CDC met with HART about their specific needs and equipment to make sure the curriculum was customized appropriately.

Recruiting and Screening

For operator training, CDC and its partners participated in job fairs, printed and distributed flyers, and conducted recruitment on location at the career center. In addition, HART and CDC placed public service announcements on the radio and facilitated newspaper articles about the program. CDC representatives did not document the specific number of recruits that expressed interest but reported no problems in finding a sufficient number of participants.

For the CNG training of incumbents, CDC relied on HART to identify those who would need CNG technology training. HART determined who needed certification over the next year. In the end, 30 incumbents received this training.

Participant Selection

HART played the major role in selection. For new recruits for operator pre-employment training, it conducted an orientation that introduced the program and explained the purpose to give participants an understanding of what to expect. It provided applications for participants to complete if they wanted to take part in the training and selected all incumbents on the basis of need for CNG technology training.

Training Provision

Pre-employment training for the new recruits took place across three Saturdays for a half day each, totaling 12 hours of training. Participants were paid \$12.21 hourly for the time spent in training, an amount comparable to a starting salary.

The original plan was to cover the following topics: 1) developing and maintaining a good attitude toward your work and your job, 2) building a positive relationship with your supervisor, 3) working effectively in teams, 4) dealing with diversity in the workplace, 5) effective business communication (listening, speaking, and writing skills), 6) stress management, 7) problem-solving and conflict resolution, 8) working with difficult people, 9) learning to give and receive constructive criticism, 10) avoiding sexual harassment, and 11) dealing with drug and alcohol abuse on the job. However, CDC representatives indicated that although many of these issues were covered, customer service and conflict resolution were the two primary topics desired based on feedback from HART.

Training was structured and was instructor-led using slide presentations. Pre-test and post-test assessments were given to participants. No one could “fail” based on the testing, as the tests were designed to help them learn what they retained from the training and for instructors to gauge performance. Upon successful completion, the participants received a Customer Service Certification, an industry-recognized certification (CDC has a small vocational school approved by the US Department of Education, so its certifications are industry-recognized and State-approved.) In addition, a majority of participants earned CDLs.

For the incumbent CNG technology training, part of the funding from the Innovative Workforce Development project went toward a trainer with expertise on CNG. This training was conducted on-site at HART. A consultant helped CDC identify a trainer, who traveled to HART to conduct a weeklong training with both classroom instruction and hands-on components. The training covered CNG vehicles and fueling stations.

Generally, CDC representatives indicated that the training went according to plan. However, they noted that some facility installations of CNG took longer than anticipated, and it also took longer than expected to find a consultant to write the CNG curriculum. Otherwise, things proceeded as planned.

Youth Transit Introduction

The programming to introduce youth to HART was offered at the CDC youth center. The youth are high school age who would soon be making vocational choices. The programming introduced 75 youth to the career opportunities available at HART; they were divided into two groups, with half visiting HART facilities where employees talked about the jobs that are available, the benefits for working at HART, and the importance of mass transit to the community, and the other half hearing visitors speak about human resources, operations, and administrative career options in transit. The groups then switched. This transit career day occurred once during each year of the grant for 75 youth, reaching 150 total.

Outcomes

The primary goal of CDC's program was to develop a pre-employment training that would lead to the hiring of at least 30 participants by HART. The metrics suggested in the proposal are summarized in Table 7-1.

Table 7-1
*CDC of Tampa
Project Outcomes –
Goal and Actual*

Goal Description	Goal Number	Actual Number
Participants recruited	75	No data
Completed training	55	66 (120%)
Placed at HART	30	36 (120%)
Retained at HART 90 days	100%	86%
Pre-/Post-test learning gains	Increase	No data
Placement test comparison to others	Increase	No data

**Including incumbents in CNG training*

CDC representatives did not have the specific information on the number recruited or who started the training. They also noted that, originally, the CNG participants would be new recruits (veterans), but this idea later changed to incumbents. Overall, 36 new employees completed the training and were hired by HART (mostly as bus operators), and 30 incumbents were trained and received the required CNG certification, which surpassed the original completion goal by 11 participants (20% over the target of 55).

The 36 new hires also surpassed the target of 30 by 20%. It did not achieve the goal of 100% for 90-day retention of new hires, however, as 14% left. The issue appears to be that some took their newly-earned CDLs and used them where they might exceed the \$12.21 hourly starting pay rate. There appears to be no data on the remaining goals.

Budget and Matching Funds

The Innovative Transit Workforce Development Program provided \$234,281 in Federal funds (60% of the total), which was roughly \$40,000 less than the original proposed funds. This impacted the youth program by limiting it to facility tours and also set a cap of 30 on the number of incumbent workers that could be trained. The majority of the funds went to personnel (including the CNG trainer), facilities, and curriculum design.

CDC proposed \$156,000 in in-kind contributions. The CDC representative indicated that it provided labor hours as managers and also provided interview attire to participants. HART used its resources in-kind such as classroom space, equipment for CNGs, and vehicles.

Impact

The CDC representatives contend that the program exceeded its desired impact, pointing to the primary impacts that HART is getting stronger candidates and incumbent workers were being trained and updated to maintain their employment. CDC representatives reported that, at one point, HART was concerned about how many people it could keep due to budget, but CNG saved a lot in fuel costs, enabling them to keep employees. Thus, the CNG training was added value. It was suggested that HART would have needed to hire new people with CNG certification if not for the training, so it saved the jobs for the 30 incumbents.

Finally, the training highlighted the importance of transit in the area and created positive community relationships. The area soon will begin advertising to promote increases in the tax base to help HART, and it is believed that the goodwill created with this program may have a positive impact on voting results for the tax increase.

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program put forward by CDC representatives include the following:

- Work with a partner with the same vision for what the program is trying to accomplish.
- Partnership was critical; having a workforce provider, a broad social service CBO, and a transit employer working together contributed to a good outcome.
- Have a partner who can provide the facilities for the technology. If HART could not have leveraged the CNG or vehicles, the incumbent training would not have been successful.

- Youth often are just being introduced to transit but are not ready to decide on a career. It is difficult to know if that portion of the program had any long-term impact.

Conclusion and Further Investment Recommendation

CDC's Meeting Today's and Tomorrow's Job Needs in Mass Transit was a successful project with moderate impact, moderate only because of the relatively modest number of participants targeted and trained. Whereas better tracking of trainees starting the training is desirable and would help tell the story of the training, the primary numbers—those completing the training, hired by HART, and retained—suggest a program that set realistic targets and exceeded them. By virtue of its success, this program merits further investment.

That said, this is one of several pre-employment bus operator courses sponsored by 2012 FTA Innovative Transit Workforce Development Program funding. It would seem agencies now have a range of programs from which to choose. Rather than continuing to develop more, perhaps the best investment would be to make these programs widely available for replication.

The incumbent portion of the program was worthwhile and perhaps saved jobs or at least updated skills for incumbents. However, it seems that rather than paying for individually-customized CNG training, FTA might be better served with a broader CNG standards and training approach if this is an industry need. For instance, SCRTTC already has CNG engine training courses and APTA may already be developing standards. Although the training may have been good, it also may be feeding the problem in the transit industry of duplication of effort by individual transit agencies.

The youth portion of the program was rather perfunctory and, while in keeping with admonishments to the industry to expose youth to the transit industry, it is difficult to determine if such a program has any impact.

International Transportation Learning Center – Consortium for Signals Training Courseware Development

Background and Problem Addressed

The International Transportation Learning Center (TLC) is a non-profit organization headquartered in Silver Spring, Maryland, dedicated to improving public transportation at the national level and within communities. TLC builds labor-management training partnerships that improve organizational performance, expand workforce knowledge, skills, and abilities, and promote career advancement. It is a national organization that focuses on the frontline workforce in public transportation and transportation in general and is the only organization funded by FTA, DOL, and the Transit Cooperative Research Program (TCRP) to develop and support technical training partnerships for transportation's front-line work force.

Signals technology is safety-critical for all transit rail operations. Reliable signal systems let the rail car and its operator know when to proceed and when to brake. Rapid changes in technology and high levels of retirements make it difficult for transit properties to keep pace and adapt. Training from OEMs on newly-procured equipment often does not integrate well with existing local agency training. In addition, older systems may have mixed generations of signals from an array of vendors. The pending implementation of Positive Train Control (PTC) poses large challenges around procuring and adapting to a new, highly automated computer-controlled technology.

TLC and APTA, with aid from a vendor, began an effort to address the signals training needs by creating a panel of SMEs and drafting detailed learning objectives in a Signals Training Standard. This work was completed in 2010. However, further work by SMEs was required to develop classroom-ready materials that can be taught by technical instructors at transit locations.

Proposed Workforce Solution

To move the signals training standards to quality classroom-ready training material, TLC proposed to develop a consortium of transit agencies and experts forming SME committees to review the existing standards through a rigorous

Instructional System Design (ISD) process and develop the materials needed to support and expand on the learning objectives.

Proposed goals for the program listed in the proposal were:

- Employ a rigorous ISD process with SMEs and develop materials needed to support and expand on the previously-developed learning objectives.
- Complete a comprehensive industry needs analysis.
- Complete development of all fundamental courses plus six intermediate courses, including course books, slides presentations, and instructor guides.

The Signals Consortium was expected to directly benefit the entire rail transit industry. In total, 38 transit agencies with heavy or light rail and potentially another 28 with commuter rail systems all may benefit from the training. The project was expected to have the following benefits:

- Jointly-developed training would provide a shared training platform that will improve training quality while dramatically cutting its costs.
- The innovative engagement of signals OEM vendors would bring considerable additional expertise to the table, along with their interest in improving the effectiveness of the training provided with new procurements.
- Sharing development costs across a large number of agencies and with FTA would greatly enhance training outcomes and build the skills needed to ensure signals systems' state-of-good-repair-and safety.
- Joint training development with experts from transit agencies, OEMs, FTA, and transit labor would produce effective, quality training systems, including a nationally-recognized apprenticeship that is actively supported by all relevant stakeholders.

TLC representatives indicated that there is often tendency to do “one offs” on training, but the goal of this project was to create an industry-wide standard on what constitutes good training on signals and to create “Grade A training.”

Partnerships

TLC served as the lead fiscal and administrative agency, coordinating partners and engaging any vendors required. Educational Data Systems Inc. (EDSI) was a vendor that did a great deal of work on the standards development prior to this project and helped convene the initial meetings.

The Consortium began with 15 members. Participating national organizations included APTA, the Amalgamated Transit Union (ATU), Transport Workers Union (TWU), and the Brotherhood of Railway Signalmen (BRS). BRS played an important role convincing agencies to be involved and sending representatives. The project started with 11 transit agencies, including those from Austin,

Charlotte, Cleveland, Maryland, Massachusetts Bay, New Jersey, Portland, Sacramento, San Diego, and South Eastern Pennsylvania, as well as Amtrak.

During the project, participation grew, and International Brotherhood of Electrical Workers (IBEW) joined, as did other transit agencies. IBEW in Boston was so committed that it sent additional people to meetings at its own expense. Some organizations became less involved over time, such as Amtrak, Chicago (budget issues and leadership change), and EDSI (overbooked). By the end of the project, participation grew to 21 agencies and railroads as paying participants, contributing SMEs (from labor and management), and sitting in on training review webinars. Since then, a few more agencies have joined, and the Consortium now consists of 24 agencies. TLC indicated that it would include any transit agency that wanted to fully participate. It attends conferences and highlights the Consortium in its e-communications that reach more than 2,000 people. It notes that it takes time for people to understand how to conduct training that meets the needs of so many agencies. TLC invites agency representatives to orientation sessions to explain that the material is adaptable and agencies can customize it with their own schematics and specifics.

The Consortium also initially had involvement from OEMs that make the signals systems. Two OEMs allowed the Consortium to use their materials, which was important, but beyond that, the OEMs were not very involved. TLC representatives indicated that the Consortium was trying to develop content, and OEMs were generally trying to sell product, so it was not a good fit.

The Consortium established a Leadership Committee to ensure steady guidance. There already were co-chairs, but it became clear that a broader group was needed to process all the different interests and topics, so it expanded to a committee of six people plus staff. EDSI helped initiate the Leadership Committee, which helped prepare agendas and discussions for larger Consortium meetings. The Consortium as a whole met twice annually. Meetings included information about instructional design principles so participants would understand the process. TLC tried to schedule these meetings at a location with good training facilities with stretches of tracks, etc. (Denver, Cleveland) so participants could see best practices they could adopt. Subgroups—Courseware Development Teams (CDTs)—met between the bi-annual meetings and held webinars twice each month with instructional design experts from TLC.

Program Implementation

Needs Analysis

Once all consortium members were involved and up to speed, the first task for the Consortium was to conduct a Training Needs Analysis. TLC developed a needs analysis survey to identify the kind of material and equipment agencies

had, what topics need the most training effort, etc. The purpose was to identify which signals topics had adequate training and which did not; that way, good existing training could be shared and areas that lack training would be the focus of development. Results indicated that no agency reported having good training on all areas. The survey also provided information about what equipment was most common to use for models and examples in the training.

In addition, TLC provided its Transit Training Network (TTN) to share training. The platform existed prior to the project, but a signals portion had to be developed by the TLC web designer. TLC also added a forum (TLC representatives indicate that the forum was not used as much as they hoped, but it was used more than most such forums).

TLC had hoped to include preparation for PTC technology in the needs analysis phase; however, Consortium members decided that it is currently not possible to determine agency ability to implement PTC, as most carriers and OEMs were still in the design phase. Therefore, there existed no benchmark to which agencies could reasonably be compared for determining implementation readiness.

The needs analysis was also intended to examine workforce profiles. However, the Consortium determined it had sufficient aggregate data on this, as TLC did research for a major study separate from this program.

Training Development

At the end of the project, the Consortium planned to finish development of the fundamentals courses and six intermediate courses. In developing the training, it relied more on learning objectives than survey input. The process began with face-to-face meetings to review the objectives to ensure that nothing important was missing. In breakout groups, participants examined the objectives in detail, looking at each sub-objective and identifying resources that already existed. The breakout groups then reported back to whole group.

Later, the smaller CDTs met twice each month via webinars. TLC brought resources together, facilitated conversations, made linkages regarding which information was prerequisite for what other elements, combined like elements, and drafted outlines in a template with resource images. The images on the webinar helped to clarify specifics of the training. The course book created by SMEs established the core content. Then, the instructional systems designers turned the course book into the online courseware. Quizzes were built in if the course had no interactive activity. Each quiz had an answer sheet referencing the associated page in the course book. All students received the course book, and each course included an instructor's guide.

Pilot Testing and Instructor Training

As courses were completed, they were pilot tested. As of the final report, seven pilot tests had been completed. Where applicable, edits generated by the pilot tests were incorporated. Pre- and post-tests were given to students to determine the knowledge gained from pilot courses. To conduct pilots, the course designers asked for volunteers, particularly those who would soon be teaching these modules. If possible, TLC staff observed someone pilot testing the course; roughly 80% of the pilot testers were incumbents. TLC designers ran the pilot test and returned with edits. The most common issues were language-related (specific terms used in locations, etc.), but edits were generally minor. Another aspect examined was timing—if trainees spent more time on topics than designers expected, those sections were brought back to the original authoring group authoring to ensure the content was clear.

The TLC team also developed courseware to prepare instructors on the concepts and materials. The weeklong instructor training taught instructors how to apply Gagne’s nine events of instruction, oriented them to the Consortium material, and provided ideas about how to build in teaching moments and interactivity. After two days, the instructors practiced teaching, built instructional principles into lab and field instruction, and received feedback from one another.

Developing Supportive Resources

TLC adapted a mentoring guidebook developed under another grant for distribution with the Signals Consortium’s course materials. TLC emphasizes mentoring because it fits with the adult learning principle of “learn by doing.” TLC also points out to agencies, “You might not think you have mentoring, but you do. It just might be informal and not teaching what you’d want them to teach.”

Another supporting element was generating a national framework for apprenticeship for submission to the US DOL as the foundation for a registered apprenticeship in transit signals training. Center staff completed this and is (as of this report) working on how it will be implemented. Some transit agencies already have apprenticeship programs. TLC staff indicated that for several years, many in transit did not agree that apprenticeship was a natural fit for these positions; rather, they believed in hiring people with higher levels of prerequisites (e.g., degrees in engineering). This attitude is changing, as agencies are realizing they will not be able to be as selective as more people retire and the candidate pool shrinks. For some agencies, contracts prohibit apprenticeships; others find the idea acceptable but object to the term “apprenticeship.”

Outcomes

The first goal of the project was to employ a rigorous ISD process with SMEs and develop the materials needed to support and expand on the previously-developed learning objectives. This project was successful in meeting this objective. The project identified, recruited, and continued to engage more than 40 SMEs from 24 public transportation authorities and their respective unions. SMEs met with ISD experts and created courseware based on careful needs analysis and training objectives and also implemented an online system for courseware sharing where good training already existed.

The second objective was to complete a comprehensive industry needs analysis, which was done using an industry survey and by having a large number of transit agencies represented in the Consortium. The third objective was to complete development of all fundamental courses and six intermediate courses, including course books, slides presentations, and instructor guides. This objective was also met. During the 18-month period of performance, the Consortium developed 12 courses in 48 courseware modules (65% of the complete suite to be designed).

In the proposal, TLC indicated specific performance metrics for the project. These included:

- Produce a full set of course books, instructor guides, and presentations for each course.
- Develop seven courses.
- Pilot test each course, involving a total of at least 35 current signals technicians.
- Pilot test trainee surveys.
- Meet with textbook publishers to explore the possibility of customized textbooks for signals training.
- Improve coordination between OEM training and agency training.
- Submit an application for a national apprenticeship program in rail signals technology to the US DOL.
- Begin development of a local apprenticeship program at two local transit agencies.

With respect to these metrics, the full courseware and materials were completed for each course, and the project exceeded the goal of seven courses complete. Each of the 12 courses was piloted with several participants, so the goal was met and the number of participants exceeded 35. The Consortium has piloted satisfaction surveys for the course, but hopes to get beyond that to behavior change, so that goal is still in progress. TLC did not meet with textbook vendors.

The goal of closer coordination with OEMs was described as “a work in progress.” The fact that OEMs dropped out of the Consortium early was not a good indicator. TLC representatives suggested that one issue is that OEM is geared toward delivering the signals systems, and to OEMs the training is almost an afterthought quickly put together by an engineer. TLC did meet the goal of submitting an application for a national apprenticeship program in rail signals technology to US DOL. Two agencies have such apprenticeships, but not because of the Consortium; it is believed that Cleveland and others may soon develop these programs, but this goal is also in progress.

Budget and Matching

The Innovative Transit Workforce Development Program provided \$425,000 in Federal funds (50% of the total) to the Signals Consortium. The initial request was for \$500,000. TLC indicated that it did not scale the project down as it had the funding from the Consortium members (each member contributed at an amount scaled to the agency’s size in ridership). TLC might have completed more courses with more funds, but funding was not a key issue. Half of the project funding came from cash collected by TLC from Consortium members, which was used to match the Federal portion of the training dollar for dollar.

The bulk of the funds went to salaries and benefits, meetings of Consortium members, and contractual services. It contributed the time everyone attended meetings, which cost \$50,000 to \$70,000 per meeting every six months. Overall, TLC experienced no unexpected expenses relative to the budget plan. Originally, TLC thought EDSI might play a bigger role and receive more funds, but it adjusted when this was not the case.

Impact

In terms of impact, TLC representatives say that, first and foremost, there is now very well developed training available to the industry and agencies do not have to do “one-off” duplicate efforts that ultimately are more costly and less effective. It is a better process to come together and spend some money to create a better product with the input of experts. TLC estimates that approximately 2,000 signals technicians work in the industry and can be impacted long term by having this training available.

Another impact is the possibility of using this training to address problems. For example, Metro North had a train accident, and when investigators asked what it was doing to avoid repeating the accident, it showed them the training. NTSB and FTRA approved of this as an appropriate after-action approach. Ideally, TLC suggests that the goal is to reach the point where training is robust enough that these accidents are avoided altogether.

TLC representatives also reported that there was initial skepticism about the labor and management representatives coming together and finding agreement, even among leaders of participating agencies; there were concerns that there were too many interests to come to a common agreement. But it did work, and TLC has had “spinoff” projects emerge from this effort. There was cross communication, with people collaborating about topics such as standard operating procedures, how to obtain spare parts, and other positive by-products.

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program offered by TLC representatives include the following:

- A core activity for the group has to be identifying where labor and management have common interests. Improving training is such an area; everyone learns to do job better, the agency gets more efficient, workers get more skilled and exercise better problem solving, etc. Getting to where people can come to the table quickly is a process, but it leads to good substance.
- Follow a good roadmap for developing courseware. The ISDs in this project used Gagne’s nine events of instruction, which was a good framework.

Conclusion and Further Investment Recommendation

Overall, TLC’s Signals Training Consortium proved to be an effective project, meeting the primary objectives of bringing together a substantial group of agencies and experts and developing a set of courses that range from introductory to intermediate level around key signals topics. The training is based on solid needs analysis and training objectives, modular, customizable, and available through TLC. The training has been pilot tested and reviewed by experts and found to be of good quality.

This program warrants further investment to complete the work of the Consortium and for future consortia around other important topics. Moreover, it is important that FTA get the word out about the training that does exist to have the biggest impact on the industry.

Those seeking to replicate the project would be wise to also replicate key success elements. The program was:

- Created to be bottom up, in that it was led by the agencies themselves
- Comprised of a broad range of agencies
- Insistent that labor and management work together on common interests
- Based on careful needs analysis

- Created using solid ISD principles
- Validated by experts
- Staffed to provide expert advice and instructional systems design

A program following these precepts is certainly more likely to have a worthwhile outcome.

International Transportation Learning Center – Career Pathways and Career Ladders for Frontline Workforce

Background and Problem Addressed

The International Transportation Learning Center (TLC) is a non-profit organization headquartered in Silver Spring, Maryland, dedicated to improving public transportation at the national level and within communities. TLC builds labor-management training partnerships that improve organizational performance, expand workforce knowledge, skills, and abilities and promote career advancement. TLC is a national organization that focuses on the frontline workforce in public transportation and transportation in general. It is the only organization funded by FTA, US DOL, and the TCRP Program to develop and support technical training partnerships for transportation's front-line work force.

The problem being addressed is transit's urgent need for tools for frontline workforce development. TLC noted that there has been an underinvestment in human capital; only 0.88% of payroll and 0.5% of agency budgets are dedicated to workforce development. Meanwhile, transit has faced growing ridership, increasing technology, and an aging workforce. Yet, most training has gone to leadership, not to the 80% of the workforce working in maintenance and as operators. The pipeline coming into transit technical positions is too small, non-college-bound technical education budgets have been cut, and dropout rates remain high.

Proposed Workforce Solution

Working with TLC, transit management and labor have developed and adopted national training standards for six core frontline occupations—maintenance technicians for transit bus, rail car, signals, traction power, and elevator-escalator as well as for bus operators. To leverage training standards into usable workforce development programs, national and regional partnerships have been building the basic components for a standards-based system of frontline workforce development, including frameworks for apprenticeship, mentoring, sharing existing courseware, and collaboratively developing new courseware where needed.

This multi-location Career Pathways and Career Ladders (CPCL) project would leverage these early components of a transit standards-based training framework to develop and pilot local implementation of stakeholder-based models for principal areas of workforce innovation.

Proposed goals for the program listed in the application were to:

- Build on work adopting national training standards.
- Develop, pilot, and disseminate effective implementation models and new tools for building effective standards-driven, stakeholder-based workforce development programs in two main areas of the workforce life cycle:
 - Career Pathways – school-based and work-related learning connections for young people prior to transit employment.
 - Career Ladders – work-based training through standards-based apprenticeships for frontline transit employees, whether new hires (including Career Pathways program participants) or incumbents.
- Implement the programs in five different locations, individually creating a “menu” of models.

Partnerships

TLC was the lead agency on the project and is a collaborative institute comprising transit management and labor engaged through unique innovative partnerships involving stakeholders from national organizations and more than 40 transit systems. TLC is the only national organization in the transit industry dedicated to frontline workforce development. Its program of standards-based workforce development partnerships is built on engagement of transit’s primary stakeholders for frontline workforce development—the agencies that employ transit workers and the unions that represent more than 90% of frontline transit workers.

Work on this project was expected to have national applicability but was built using strategic partners in five areas. Two were for Career Ladders and Apprenticeship, including Cleveland (GCRTA) and Des Moines (DART), and three were for Career Pathways, including Philadelphia (SEPTA), Utah (UTA), and West Virginia (Kanahawa Transit). Each transit agency also had critical workforce development stakeholders participating as project partners locally and regionally, including transit unions, local schools, state school systems, colleges, and post-secondary technical schools. National partners included APTA and the principal national labor organizations representing the frontline transit workforce as well as the US Department of Education (DOE) and US DOL, along with FTA.

TLC had a prior working relationship with all transit agencies involved in the project to various extents. With some, they had worked together on previous

projects, and with others, they had only minor prior engagement but were seeking ways to enhance the relationship.

The project was to enhance Career Pathways and Career Ladders at each of the five partner locations and to work to promote them at the national level.

Ladders vs. Pathways

TLC representatives noted that Career Ladders focuses on incumbent workers, which includes apprenticeship (as they are hired at the time of apprenticeship). Thus, it represents a “ladder” to move higher in the industry. Union leaders are often advocates of career ladders, as incumbents want to have quality training and support to do their job. If all training and attention is on new hires, incumbents feel their needs and careers are being neglected.

By contrast, Career Pathways are generally focused on new hires’ need for the correct pre-hire preparation and training, such as pre-employment training programs and new hire training, thus creating a pathway into the profession. These pathways can start in elementary and middle school, as students learn basic skills such as mathematics that will ready them for future careers. (TLC noted that, to some degree, differences are semantic, and one can think of the journey as one long career path or ladder, from pre-hire education through career advancement.)

Program Implementation

Program Development Conference

TLC held a kickoff conference with each partner agency at the beginning of the project to introduce the project and participants, allow sites to share information with each other, and establish work plans for each individual location. The partners each sent two people, a labor representative and a management representative (except Des Moines, who sent two education representatives). There were presentations and discussions, for example, about mentoring programs and the benefits of mentors (help career advancement, ensure correct practice, improve chances to pass hands-on tests, etc.). TLC also had an expert on bus mechanics and electronics talk to the group, and agency personnel participated in two sessions in which each site discussed past, present, and future ladders and pathways activities and shared resources, information, and ideas across locations. This working meeting included presentations from GCRTA and a representative from US DOL’s Office of Apprenticeship (see Figure 9-1). CPCL participants were able to put their work into a broader context, hearing from senior officials from US DOT, US DOL, and US DOE, who spoke at the plenary session about current initiatives to expand training, apprenticeship, and education opportunities for the frontline blue collar workforce.

Figure 9-1*CPCL Opening
Conference*

The labor and management partners from each agency met in breakout groups to discuss what they wanted to accomplish during the project for their particular agency, taking into consideration what they already had in place, what changes would be helpful, what was feasible, and what TLC could do to assist them. This planning formed the basis for each agency's project. The groups came back into a large session to share their plans, and agencies were able to offer their own resources (e.g., if one agency already had a similar program). TLC noted that transit agencies do not often speak to one another, so the opportunity was valuable for sharing expertise and perspective. Likewise, labor and management relationships can often be very poor, and at these sessions they established a common goal and method to work together. That teamwork set a positive foundation that often was carried through the rest of project.

Career Pathway Projects

Because each location had separate projects with their own unique focus, this section summarizes some of the activities undertaken with a Career Pathway focus and the work at the national level by TLC on Career Pathways.

SEPTA

At Pennsylvania's SEPTA, the project was to outline common core skill sets and job readiness training needed by high school students to enter frontline transit jobs. SEPTA wanted to expand and deepen current high school outreach and to develop, implement, expand, and strengthen programs such as summer internships, mentoring and job shadowing, Saturday sessions, and pre-apprenticeships for high school students. It also wanted to expand and establish new linkages with local community colleges for academic credit and degree completion linked to standards-based training.

Keystone Development Partnership (KDP) provided two train-the-trainer sessions for Transport Workers Union (TWU) Local 234 members who volunteered to be mentors for the SEPTA TWU Summer Youth Program. Ten TWU members attended these one-day sessions, and SEPTA provided the facilities and time for the mentors designated by TWU. The project funded the ongoing SEPTA TWU Summer Youth program, in which academically-qualified students receiving technical education enter an eight week summer program, working full time with mechanics and TWU mentors. The two years of the program included 33 students.

In addition, a core curriculum was developed based on US DOL's Transportation, Distribution, and Logistics Competency Model and modified and expanded by SEPTA and TWU. Materials in the Core Curriculum Outline were developed by Educational Data Systems, Inc. (EDSI) for KDP, which were reviewed and expanded by trainers and mechanics from SEPTA and TWU. This was used to create an after-school program attended by 25 high school students in its first year pilot at Mastbaum High School in Philadelphia (see Figure 9-2).

Figure 9-2
Screenshot of SEPTA
TWU After-School
Program Slides



Philadelphia had a union leadership change during the project, and TLC helped to ensure that both sides were committed to training as a joint effort, pointing out that both training and community outreach help provide jobs to youth. SEPTA's program held together in the midst of what were described as contentious negotiations. During "tough" union elections there, the candidates all said they wanted to continue this effort, which is not always the case.

UTA

At Utah's UTA, the program focused on supporting the development of a scholarship program underwritten by UTA and other companies for high school students at local colleges to improve systematic outreach to high schools and expand connections between high schools, technical schools, and standards-

based training to better prepare students and link them with apprenticeships. They also hoped to expand and establish new linkages with community colleges for academic credit and degree completion linked to standards-based training. During the Construction Career Day at Davis Applied Technology College, which hosted 3,200 high school students, UTA provided a CNG bus as a visual aid; students received prizes for identifying engine, brake, and steering parts.

Kanahawa Transit

At West Virginia's Kanahawa Transit, the program focus was to incorporate existing transit bus maintenance training standards into statewide career technical education high school transportation programs. It also wanted to build occupational competencies and hands-on learning activities into school-based learning with the Rahall Institute and collaborate with Rahall to develop models for migrating transit career technical education activities to other modes of transportation. The WV State Department of Career and Technical Education disseminated a Public Transportation Occupational Guidebook poster (created by the Heldrich Center at Rutgers University and modified by the Center to meet West Virginia's needs) to all of the state's CTE schools (40,000 students). Based on the Core Curriculum Outline created for this project, TLC also developed two new online interactive modules for the WV State Department of Education's Division of Career and Technical Education. These modules, entitled "Transit Bus Exhaust Emissions and Costs" and "Highway Grade Crossing Safety and Costs," focus on the technical, financial, and policy elements as well as analytical and communication skills needed to make "the right decision for a small city." These modules can be used online or in classrooms in a variety of high school and community college programs and other education settings to prepare young people in the pursuit of career pathways in transportation.

Career Ladder and Apprenticeship Projects

This section summarizes project efforts with a Career Ladder and Apprenticeship focus and the work at the national level by TLC on Career Ladders and Apprenticeship.

GCRTA

Cleveland's GCRTA worked toward developing a new rail car apprenticeship for maintenance and running repair based on prior mentoring-centered apprenticeship for rail-car rebuilding. The plans for an initial gap analysis for all rail car maintenance personnel were scrapped, as consensus was that the technicians were each highly-specialized, which was part of the problem. The training staff at GCRTA, with active participation from Local 268, chose to address overspecialization by re-designing the training program and developing a full apprenticeship system consistent with TCRP Report 170, "Establishing a National Transit Industry Rail Vehicle Technician Qualification Program—

Building for Success.” Although technicians will still develop specialized areas of expertise, the new system of apprenticeship allows for more cross-training and longer periods of on-the-job exposure to different skill sets. Over time, this new approach increases the level of diagnostic and problem-solving ability on the shop floor. This newly-developed apprenticeship program was developed and formally adopted by GCRTA and Local 268 Amalgamated Transit Union (ATU.) Seventeen incumbents or new hires started the apprenticeship in Cleveland during the project.

GCRTA and ATU have approved their apprenticeship agreement and will begin coordinating schedules for the first joint training apprenticeship committee meeting. TLC staff worked with GCRTA to connect them with the local office of apprenticeship for instructions on how to register their rail vehicle apprenticeship.

TLC also worked with GCRTA and ATU to validate two courses, Propulsion and Dynamic Braking and Friction Brakes. The validation results of these courses showed that all learning objectives identified in the rail vehicle maintenance standards under Module 203: Propulsion and Dynamic Braking and Module 205: Friction Braking have been covered by GCRTA classroom training courseware and hands-on training. Over the course of the project, 328 career ladder training opportunities were initiated for GCRTA rail vehicle technicians in areas including electrical safety, rail rules, EPA certification, forklift, CPR, and others.

DART

In Des Moines, DART’s focus for the project was to develop a bus apprenticeship based on a skill gap analysis. Seventeen DART employees completed skill gap analyses in eight different transit bus areas—preventive maintenance and instruction, electrical/electronics, electronics diesel diagnosis, transmission and drive train, steering and suspension, air brake system, HVAC, and fan drive operations maintenance and troubleshooting. Surveys were mailed for analysis, and the resulting skills gap report was broken down by the eight subject areas and learning objectives within those areas to help DART identify their training needs.

DART identified that one of its biggest training priorities was in electrical/electronics and electronics diesel diagnosis. TLC is currently working with DART to help it find cost effective ways to provide this training to its technicians. Over the course of the project, 59 career ladder training opportunities were initiated for DART bus maintenance technicians in areas such as hybrid maintenance, troubleshooting, lift maintenance and repair, cooling systems, and others.

Des Moines established its joint apprenticeship committee in November 2013 and held its first joint apprenticeship committee meeting in January 2014.

In addition to the Del Mar and ASE study guides and the Automatic Vehicle Location (AVL) maintenance training and Verint surveillance system training that will be used in conjunction with its apprenticeship program, Des Moines and ATU Local 441 are in the process of formalizing their SOPs, which will also be used to train apprentices on proper maintenance procedures. Two participants started the apprenticeship at DART during the project.

Credit for Apprenticeship

Throughout the project, TLC staff worked nationally and locally with partners to connect them to the appropriate offices at the Office of Career, Technical and Adult Education (OCTAE) and the US DOL Office of Apprenticeship. The kickoff conference included US DOL OA representatives, and, for the final project conference, a representative from the US DOL OA national office and two representatives from OCTAE were in attendance.

In Philadelphia, Keystone Development Partnership, TWU Local 234, and SEPTA worked together with the Collegiate Consortium for Workforce and Economic Development to explore options for obtaining college credit for registered apprenticeships. TLC also formed a relationship with Mountwest Community College, which participated in the CPCL final project conference, in an effort to gain college credit for apprenticeship work.

Outcomes

Some specific performance metrics set out by TLC in the proposal specific to Career Pathway projects are summarized in Table 9-1.

Table 9-1
*TLC Career Pathway
Program Outcomes –
Goal and Actual*

Goal Description	Goal	Actual
Outreach to high school students	20,000	43,000 (215%)
Engage high school students on transit	450	3,258 (730%)
Recruit HS students to frontline jobs	15–20	No data
Core curriculum on transit competencies	1	1 (100%)
Interactive learning modules	2	2 (100%)
Report on college credit, CC relationship	1	1 (100%)

For the Career Pathway Goals, over the course of the CPCL project, programs provided outreach to 43,200 high school students (40,000 students in WV and 3,200 in UT), more than doubling the 20,000 student goal set for the project. In total, 3,258 students were engaged for transit positions (3,200 in UT and 58 at SEPTA), 730% of the target 450. However, the program fell short of the goal to hire 15–20 students to frontline positions. Utah believes some were hired through these efforts, but it was not officially tracked, so UTA or TLC could not confirm this or provide a figure. In general, TLC representatives noted that delays in funding caused some minor issues, but bigger issues created a problem

in conducting outreach to high school students and hoping for hires—high school students often are not ready to leave school and even those leaving high school may not be of age to get a CDL or other necessary elements for entry-level transit jobs.

The goal to create a core curriculum outline was met with the SEPTA TWU after-school program curriculum, and the outline is supplemented by the in-depth transit learning modules developed by the Center for the WV State Department of Education. The goal to develop two online training programs was met by the “Transit Bus Exhaust Emissions and Costs” and “Highway Grade Crossing Safety and Costs” programs. Finally, the goal to develop a new relationship with a community college about credits was met when KDP, TWU, and SEPTA worked together with the Collegiate Consortium for Workforce & Economic Development to explore options for obtaining college credit for registered apprenticeships. A report on obtaining academic credit was produced as part of the project and is available online.

The metrics in the proposal for the career ladder and apprenticeship projects are summarized in Table 9-2.

Table 9-2
*Career Ladder and
Apprenticeship
Outcomes –
Goal and Actual*

Goal Description	Goal Number	Actual Number
Gap analyses for workers	100	136 (136%)
Training plan based on gap analysis	1	1 (100%)
Career ladder training enrollees	55	387 (703%)
Career ladder training completers	45	315 (700%)
Recruit mentors	8	10 (120%)
Initiate apprenticeships and train workers	35	19 (54%)

For Career Ladder and Apprenticeship Goals, the gap analysis participation target was exceeded, as 136 participants at DART took skill gap analysis surveys (17 participants in 8 specific areas). Both DART and GCRTC developed training plans, although GCRTC’s was based on an internal assessment of skill gaps. The goals of 55 career ladder trainings initiated and 45 completed were far exceeded, as 387 career ladder training opportunities were initiated (703% of the goal) and 315 completed (700% of the goal). This included 328 at GRCTA and 59 at DART. The Keystone Development Partnership, under contract with the Center, provided a mentor training session to 10 mentors, 20% over the target of 8.

The project successfully initiated apprenticeship programs and joint apprenticeships, as both GCRTA and DART established them. GCRTA established an apprenticeship structure for rail car technicians, and DART established an apprenticeship for bus maintenance technicians; however, they did not put 35 workers through the programs. Apprenticeships were piloted with 19

total, or 54% of the goal, with all but 2 from GCRTA. TLC representatives noted that 18 months is very little time to develop and implement an apprenticeship, as there are often labor and management issues and bargaining to be worked through. In addition, unforeseen issues such as union leadership changes cost the project time.

To supplement the goals above, TLC established a number of quality measures and tested hypotheses related to the specific programs implemented. In general, some key findings included the following:

- Youth who attended the summer programs had a better understanding of frontline transit positions and a more substantive knowledge of job requirements and skills based on daily worksite logs and final reflection papers.
- Training programs developed received positive reviews; for example, a survey of 11 GCRTA participants indicated that 91% would take another course, and 100% provided overall “excellent” or “good” ratings.
- The pilot apprenticeship program at GCRTA produced an average of 27% improvement on a pre-test/post-test metric.

Budget and Matching

The Innovative Workforce Grant provided \$722,500 in Federal funds to TLC for this project (51% of the total). The original request was for \$800,000, and the project was adjusted by scaling back labor hours. TLC’s proposal suggested it would leverage up to \$450,000 of in-kind resources, but TLC estimates that partners on this project actually leveraged more than \$700,000 in staff time, training support, materials, and supplies, greatly exceeding their proposed contribution and almost matching the Federal contribution.

In general, TLC reported that budget expenditures went according to plan, with the vast majority budgeted for salaries, benefits, and contractual help. Travel and conference expenditures were also significant costs.

Impact

The impact for the CPCL program has to be considered high, as thousands of high school students were exposed to transit careers, almost 60 students participated in meaningful programs, hundreds of incumbents were trained, new mentors were trained, 2 new online programs were developed, 2 new apprenticeships were developed, and a paper was produced on getting credit for apprenticeship programs, among other accomplishments. The CPCL program was equivalent to getting five projects in one. Guided with strong technical assistance by TLC, the five programs accomplished—and mostly exceeded—

the key goals established for the program. The impact for the agencies that partnered is high, and the materials produced are available for others to use.

TLC representatives noted that the project branched off to new work for TLC. It developed Transit Core Competencies for pre-apprenticeship programs in maintenance, and, knowing how valuable apprenticeship is, it applied to the American Apprenticeship Initiative and is working with others to help develop them. It credits this project with helping it learn the most effective way to set up apprenticeships.

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program offered by TLC representatives in interviews and reports include the following:

- Start with engaging the front-line workforce; these programs have to come up from people doing work. They need to think about what training is and how to shape its future. Some worry that this is a risk as the labor-management relationships could collapse. However, TLC suggests not involving them is more of a risk, because, ultimately, the frontline workers are the ones being trained and tasked with doing the work. From the start, TLC involves both sides and tries to draw out the necessary learning objectives from frontline workers, not just have a trainer say “here’s what you need to know” but rather have experienced people tell the training designers what they need.
- If a union is involved, be a facilitator for the joint labor-management partnership. Some areas will be contentious, but through connections with others and ways to share resources, outside agencies can help to find solutions used by others. Draw on a community of learning, such as APTA technical committees on these issues, TLC, CTAA, etc. It takes partnership-building and making sure enough partners are in place.
- Instead of “talking heads” at the final conference, TLC made it entirely interactive with presentations, Q&A, small group meetings, etc., which created an environment in which everyone was engaging with one another, from high-level government officials to high-level union officials and supervisors. It reports “incredibly positive feedback” and real learning coming from dialogue with about 32 people in the room, which led to very rich discussions on the issues.
- A Transit Core Competencies Curriculum was another idea TLC generated, as it saw many agencies “reinventing the wheel” for different purposes. It had the idea for a comprehensive Core Competencies Curriculum covering skill needs in the first and second year in transit jobs. The curriculum could be modularized, adapted for summer programs, adults, dislocated workers, etc.

- For youth outreach and engagement, there is a need to address potential barriers to real and workable career pathways for young people interested in entering frontline technical transit jobs right out of high school or before age 21. Issues such as internal age requirements for hiring and criteria such as requiring some mechanical employees and apprentices to qualify for CDLs are serious barriers to entry. The issue is part of a larger discussion as to how to eliminate some of these barriers to hiring motivated and qualified young people.
- At a time when an agency is focusing on and committing resources to either starting or substantially changing an apprenticeship program, it is not likely to be hiring new workers into those programs. It was unrealistic to assume in the context of the 18-month project that agencies could do all the work necessary to make the progress programmatically and still have time to bring new workers into the newly-established or redesigned programs.
- Programs starting, expanding, and strengthening outreach need more lead time to turn it into actual hiring.
- Partners need to develop better tracking mechanisms so they can see if and in which cases their new hires come to them as a result of their outreach and engagement activities.

Conclusion and Further Investment Recommendation

The project met or exceeded most of the goals it set, impacted five agencies, and developed models and programs that can be used elsewhere and adapted for many outreach and recruitment purposes, such as the Core Competencies Curriculum for first- and second-year employees.

TLC put it succinctly in its “Career Pathways and Ladders Performance Measurements Report”:

The models and practices developed, strengthened, and highlighted through this project’s activities clearly apply to the larger transportation industry, not just in the transit sector. Transportation organizations have expressed significant interest in project initiatives, as evidenced by the number of presentations on the Career Pathways and Career Ladders project-related work, and the response to those presentations at APTA-sponsored conferences as well other attended by transportation industry leaders.

This suggests further investment should focus on distributing the results and products from the specific CPCL agencies to a wider audience in the industry and replicating the overall effort including key elements such as:

- Strong technical assistance providers leading the effort
- Careful planning conferences for labor and management to agree on a vision
- Multiple agencies working together or in parallel, and reporting out to one another
- Clearly-established, measurable outcome goals for each project and overall

With these elements in place, the project has a strong chance of replicating prior success and maximizing impact for the industry.

SECTION 10

Minneapolis Community and Technical College – Minnesota Metro Transit Partnership

Background and Problem Addressed

Minneapolis Community and Technical College (MCTC) is a public two-year college in downtown Minneapolis and operates as part of Minnesota's college and university system, offering 41 associate's degree programs and 73 certificate programs. The transit system involved in this project is Metro Transit, the transportation resource for the Twin Cities, which includes an integrated network of buses, light rail, and commuter trains. Metro recently added a light-rail link between downtown Minneapolis and downtown St. Paul and is developing enhanced transit throughout the region. Metro Transit is an operating division of the Metropolitan Council.

In Metro's experience, new workers required too much time in training for problem solving, critical thinking, and advanced diagnostic skills, which was straining internal resources for training. In addition, Metro faced a spate of retirements. For example, in 2012, there were 334 mechanics and related positions, 40% of whom were age 55+ (11% were 60+). Roughly 30 were already retirement-eligible, and another 26 would be eligible within five years. In addition, the current workforce did not reflect the diversity of Metro area. Finally, facilities managers at Metro needed Building Operator Certification to comply with a Governor's Executive Order related to energy efficiency.

Proposed Workforce Solution

The Minnesota Metro Transit Partnership (MMTP) would provide Operations and Maintenance training to blue collar employees, showcasing innovative methods for encouraging youth to pursue transit careers. This includes promoting unique online tools to reach out to underrepresented communities and providing job shadowing opportunities Minneapolis youth. Specifically, the project goals included:

- Providing Operations and Maintenance training to 75–100 blue collar employees
- Reaching 5,000 people with online tools
- Providing job shadowing opportunities for 20 youth

- Developing a mechanical skills assessment tool and training process
- Developing a Transportation Careers website
- Conducting an online career fair

The MMTP was expected to have several potential benefits:

- Develop a pool of skilled operators and maintenance personnel.
- Create a pipeline of interested candidates for transition positions.
- Broaden the diversity of the Metro workforce to better represent the surrounding community.

Partnerships

MCTC was the lead agency on the MMTP. MCTC is a public two-year college in downtown Minneapolis and a part of Minnesota's college and university system. As the most diverse college in Minnesota, MCTC has experience providing education and training to underrepresented populations. As the project lead, MCTC was to provide leadership on new partnership and capacity building in new training content areas.

The transit partner for the project was the Metropolitan Council, which is responsible for cost-effective transit and wastewater disposal, planning, and growth in Minneapolis. Metro Transit, an operating arm of the Council, is the transit system for Twin Cities and seven-county area and includes buses, light rail, and commuter rail, providing 250,000 rides per day on buses and trains. Metro served as SMEs and the employer for the project.

Another educational partner was Dakota County Technical College (DCTC), a public two-year college in the Minneapolis/St. Paul area and one of six stand-alone technical colleges in Minnesota, with more than 50 instructional programs. Roughly half of DCTC's students are in credit programs and half are in continuing education. DCTC housed the Minnesota Transportation Center Consortium, now called the Transportation Center for Excellence. (Note: DCTC provides location and administrative services to the Consortium but is just one equal partner in the consortium.) DCTC and the Transportation Center Consortium were to help build capacity in new training content areas.

Minnesota State Colleges and Universities' iSeek Solutions was also an intended partner to the MMTP. iSeek Solutions, an organization created to provide Minnesotans with excellent career and industry knowledge to enable effective career decision-making and engaged in workforce development projects and research, would provide an enhanced ability to meet transit needs through the demonstration of new industry recruitment tools.

The final partner was Achieve Minneapolis, a non-profit partner of Minneapolis Public Schools that serves as a foundation for the public schools and a bridge to the broader community. It would place interns for shadowing.

Several partners had strong relationships from working together in the past. For example, MCTC has a strong relationship with the public schools, so Achieve was a logical choice for finding interns. Likewise, because iSeek Solutions and MCTC were both part of the Minnesota state education system, there was a general expectation to use their services. There was not, however, a strong pre-existing relationship with the Transportation Center Consortium. This project was offered just as the Consortium was being built; in fact, the two had similar start dates. This project helped the consortium bring Metro on board as a Consortium partner. At the beginning of the grant, MCTC had no transportation career programs; now they have joined the Consortium.

The MMTP was plagued by high leadership turnover throughout the program. The original project lead for MCTC left in 2014, and a contractor was brought in to run the program to its conclusion, but this contractor also left before the project ended and an administrator took over to close out the project. The many changes led to considerable loss of institutional knowledge, particularly as neither of the first two leads could be interviewed about the project for this report. Metro also experienced leadership changes, although it remained supportive of the project throughout. Also, in 2014, iSeek Solutions closed operations for reasons unrelated to this project. The project leadership asked the Consortium to take over iSeek's tasks.

The team met monthly or more over the final 10 months to work through and complete the project and communicated via phone calls and e-mails as needed.

Program Implementation

Program Development

The project started with a skills gap analysis to determine what skills could be improved to achieve optimal performance. DCTC developed a customized skills gap instrument, which was administered to Metro employees in relevant positions. The target was to have at least 60 incumbents participate.

The results of the gap analysis identified a number of skill areas in need of improvement, including powertrain troubleshooting, electrical skills, bodywork skills, critical thinking, and troubleshooting. In addition, a Building Operator Certification was needed for the facilities managers to comply with an Executive Order. Based on these findings, the MMTP began identifying and designing training. It also began planning for the youth internship. It determined that a job-shadowing program would work and that each student would rotate over the

course of their experience through four Metro Transit departments—Mechanical Maintenance, Facilities, Marketing, and Environmental Services.

Program Implementation

The training was custom-designed by DCTC for this project. Metro originally focused on its bus powertrain employees but then added light rail and commuter rail participants. DCTC worked with Metro Transit SMEs to design a curriculum targeting connectivity of diagnostic programs, with modules including Powertrain Troubleshooting, Electrical Training, Body Training, and Troubleshooting Reinforcement.

Troubleshooting reinforcement training was delivered by an online system and was self-paced and designed to reinforce skills in troubleshooting to aid retention. Critical Thinking Skills was a 16-hour course developed by MCTC to cover six relevant skills and included content from the two prior Troubleshooting classes.

A DCTC instructor at the MCTC Electrical lab taught the Electrical Training. Participants used specialized training board kits specifically designed for automotive application, which were available for use beyond the scope of the grant.

The Building Operation Certification was a 74-hour training program designed to help meet energy consumption objectives and included building system overview, energy conservation techniques, HVAC systems and controls, efficient lighting fundamentals, operation and maintenance practices for sustainable buildings, indoor air quality, and facility electrical systems (see Table 10-1). An MCTC representative believed there was an existing certification requirement, and MCTC organized a series of courses in a non-credit format to meet the certification requirements.

Table 10-1
*MMTP Building
Operator Certification
Course List*

Courses
BOC 1001 – Energy Efficient Operation of Building HVAC Systems
BOC 1002 – Measuring and Benchmarking Energy Performance
BOC 1003 – Efficient Lighting Fundamentals
BOC 1004 – HVAC Controls Fundamentals
BOC 1005 – Indoor Environmental Quality
BOC 1006 – Common Opportunities for Low-Cost Operational Improvement
BOC 1012 – High Performance Heating and Cooling Equipment & Energy Savings through Energy Recovery

Youth Internship

In the first year of the summer program, 20 Minneapolis high school students were placed at Metro Transit for paid internship experiences. Students received \$9 per hour, and each rotated through four departments over the course of their

experience—Mechanical Maintenance, Facilities, Marketing, and Environmental Services. According to the final report, the internship program did not go as well as intended, for several reasons. First, participants were not selected for their interest in mechanics, electrical, or automotive technology; for instance, one intern's career goal was to be a pharmacist. Not surprisingly, these students had little interest in the work presented. Rotating all participants through several departments compounded the issue, as not all were interested in all job areas. Lack of continuity between specific interns and supervisors due to the rotation also contributed to a lack of engagement from both parties.

Another problem was that the intern supervisors were not trained or prepared for their role. Release time or division of labor was not given to the employees tasked with giving work direction and supervision to multiple interns on a daily basis.

Logistical issues also were problematic. Interns in the mechanics area were expected to arrive at 6:00 AM, the normal start time for those positions. However, project organizers did not take into account that most interns relied on bus passes for transportation, and one section of the route was under construction, resulting in long commutes. Several participants simply failed to show up for work. Issues regarding shop safety also were not taken into account prior to starting the program. For example, there are limitations to what non-trained personnel can do in a diesel engine repair station. Safety equipment such as steel-toed boots was not available on site, and most tools used in the mechanical maintenance shop were the property of the individual employee. Employees typically have thousands of dollars invested in tools and were not inclined to let others, particularly untrained 17-year old interns, use them. Interns, therefore, did not have access to tools to accomplish work they were assigned.

MCTC and Metro had plans for how to improve the internship program in the second year, including the following:

- Internship supervisors would receive training prior to the start of the program.
- Potential interns would be pre-screened for interest in the types of jobs represented by the internship opportunities.
- Interns would not be rotated between units and would receive New Employee Orientation at Metro Transit during the first week of the program.
- A smaller number of interns would be recruited to allow more intentional focus on the experience for each program participant and less of a burden for supervisors.

It is unclear if the summer program was repeated in the second year of the grant to implement these changes, and, if they were implemented, what outcomes resulted.

Online Tools

When iSeek dropped out, the MCTC lead asked the Consortium to take over its tasks, which included a website and online job fair. The Consortium was already in the process of building a website when this occurred, so it included Metro Transit in the website build-out. The goal of the website was to provide information on transportation careers, promote consortium member colleges, and increase awareness about the shortage of technicians in transit careers. It also created a place where employers, including Metro, could post jobs.

For the online career fair, Consortium representatives believed that creating a one-time online career fair was an inefficient use of resources. One issue was timing, as it was summer and a poor time to hold a career fair. The period of performance was soon ending, so the Consortium and Metro decided to do something more beneficial that could reach a larger audience in a short time—they hired a contractor to develop videos for Metro, which included six videos on six job opportunities and career pathways (see Figure 10-1).

Figure 10-1

*MMTP Videos
Produced for Metro
Transit Recruitment*

	Overview of Metro Transit and Mechanic Careers - Recruitment Video Career Exploration in Transportation 1 year ago • 10,972 views Metro Transit Technicians maintain the mechanical performance of Metro Transit's fleet of 900 buses that are the backbone of the ...
	Careers at Metro Transit - Bus Maintenance - Recruitment Video Career Exploration in Transportation 1 year ago • 2,630 views Metro Transit Technicians maintain the mechanical performance of Metro Transit's fleet of 900 buses that are the backbone of the ...
	Careers at Metro Transit - Northstar Train - Recruitment Video Career Exploration in Transportation 1 year ago • 293 views Metro Transit Technicians maintain the mechanical performance of Metro Transit's fleet of 900 buses that are the backbone of the ...
	Metro Transit Maintenance - New Career Videos Career Exploration in Transportation Careers at Metro Transit - Northstar Train - Recruitment Video 2:01 Careers at Metro Transit - Track Maintenance Department - Recruitme... 2:05 View full playlist (5 videos)

The thinking was that the number of people who can do outreach is limited, so videos provide the ability to reach a larger audience by sending them to school counselors, workforce centers, and career exploration professionals to utilize them. The videos were designed to bring information and awareness to technicians about careers at Metro Transit and expanded on light and heavy rail jobs as well as bus and non-revenue generating positions. The videos covered where a person would start and how they get prepared for the jobs, including the skills needed, degrees and certifications, etc., and are available on YouTube, https://www.youtube.com/results?search_query=metro+transit+minneapolis+careers.

Outcomes

The goals for the program included developing incumbent training, providing youth opportunities, developing an online platform, and holding an online career fair. The specific metrics outlined in MCTC's proposal are summarized in Table 10-1.

Table 10-2

*MMTP Project
Outcomes –
Goal and Actual*

Goal Description	Goal Number	Actual Number
Incumbents completing training	79	55 (70%)
Youth participating in internships	20	20 (100%)
Incumbents receiving BOC training	30	37 (123%)
Retention of incumbents 90 days	100%	No data
Unique visitors to the website	1,200	No data
Average miles between road calls	>6,100	No data

Of these goals, only scant documentation is available. What does exist indicated that 28 incumbents received the incumbent training and 37 participants received the Building Operation Certification, for a total of 55 people trained. It appears MCTC fell short of the number entering and competing training.

MMTP developed a website that was used by Metro to post its jobs; however, it has since moved to a different platform through a vendor. It also developed six videos that are available and can be used by Metro or others to educate people about transit positions and requirements. The videos appear to have been very useful for recruitment. It was determined that about 5% of people that watched the videos filled out an application through the website (but it cannot be said how many were hired, as there is data only on how many watched and then clicked “apply”). Nevertheless, they believe that 5% is a very good success rate.

At least 20 youth participated in the internships, so the participation goal was met. It is unclear whether a second year of the internship was conducted that might have included another 8–10 students if plans were carried out. However, it could not be confirmed whether this second year internship occurred. No data appears to have been collected on miles between road calls or energy reductions.

Budget and Matching Funds

The Innovative Transit Workforce Development Program provided \$427,444 in Federal funds (90% of total project funds). MCTC and partners suggested they could provide in-kind contributions totaling \$44,250 in classrooms, space, equipment, salaries, benefits, and materials; a representative believes they were able to reach this contribution goal.

The vast majority of the funds was spent on contractual obligations for development and delivery of the training and development of the website and video. Salaries were the second-largest expenditure, including funds for the interns that participated. Despite turnover and problems MMTP had, it did not overspend and reported no substantial problems. In fact, a no-cost extension through February 2016 was requested due to delays in getting the training developed and implemented.

Impact

MMPT can be viewed as having had a moderate impact. On one hand, it is unclear whether the project met its goals in terms of the number of incumbents trained; available documentation suggests it did not. On the other hand, professional educators developed training based on a needs analysis and provided the training for employees. It is unclear if this training will be used again or be ongoing. MMTP also provided training for a number of employees to receive Building Certification training to comply with an Executive Order.

Metro also attempted a summer internship program that was a learning opportunity for Metro and the students and could be re-created to correct the easily-fixable problems. It created a transit careers website with useful information as well as six videos that can be used as education and recruitment tools and were reportedly effective in that capacity. The website is still operational via the Center for Excellence. It is working with Center for Excellence marketing staff to refresh the website over the summer, but it does not have any ongoing funding for videos, although it would like to keep them current if they had funds.

It seems this is a potentially useful project that was hindered substantially by multiple rounds of turnover in the key leadership position.

A few positive outgrowths of the project, although not direct, were that the project spurred Metro to join the Transportation Consortium (now Center for Excellence) housed at DCTC and to work with one of the partners to create a Mass Transit Technician academic pilot program.

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program suggested by MCTC and Consortium representatives include the following:

- Changes in leadership can throw the entire project off. Try to minimize disruption.
- Working with Metro to create videos involved considerable bureaucracy. It is a big organization, and there were many layers of approvals, down to seemingly minute things such as the font used for the videos or approval to use a logo. This took considerably more time than anticipated.
- Keeping training modules short (20 minutes was the target) means some negotiation will occur about what will be included and excluded. When stakeholders want to add things, consider what can be cut.
- Videos can be effective recruiting tools; the Consortium thought that 5% choosing to apply after watching a video was a strong rate. The proof was in the outcomes in that respect.

Conclusion and Further Investment Recommendation

MMTP is a program with reasonable potential that fell short due to leadership turnover and logistical concerns that could be corrected. Insufficient data were captured to fully document project outcomes. The problems MMTP experienced, such as those regarding the internship, seem easily correctable and preventable. All training elements of this project are fairly straightforward incumbent training design and implementation. Because much of the training is not online or captured, it cannot be shared or replicated. As a result, further investment in this program does not seem warranted.

The website and videos produced for this project are more promising. Such materials generally exist at one of two levels. The first type is broad-based material about the career in general, mostly for career exploration and education. The second type, such as those produced for this effort, are specific to the job and the employer and function as a recruiting tool. In this case, the employer-specific videos led directly to job applications.

It would be worth investigating whether the employer-specific videos do a better job at encouraging applicants than those that are more generic. If so, they are a good investment; if not, a series of generic videos could be produced and used industry-wide (or a combination such as a general video created for which specific material can be added).

SECTION 11

Confederated Salish & Kootenai Tribes – CSKT Transit Training Program

Background and Problem Addressed

Confederated Salish and Kootenai Tribes (CSKT) make their home on the Flathead Indian Reservation covering more than 2,000 square miles in northwestern Montana. The CSKT Department of Human Resource Development (DHRD) is the lead applicant for this proposal. DHRD has operated as a One-Stop Career operator since 1998 and administers 35 economic or social service programs, including TANF, WIA, Employment Training, Job Placement, Vocational Rehabilitation, and Passages Fatherhood Program; it also has administered the Flathead Transit Program since its inception in 2006.

Flathead Transit is the CSKT transit agency. Current services include demand-response service with 24-hour notice; 4 limited fixed routes serving the entire reservation; 3 community-based routes that link remote communities to the fixed routes via community-based vans/buses; off-reservation routes to the nearby cities of Kalispell and Missoula, including transport to the Missoula VA Medical Clinic for veterans, specialized transport for Tribal elders, and connecting to the Missoula Van Pool; and on-reservation curb-to-curb services. Flathead Transit provides free curb-to-curb services. Services are provided at no cost to low-income riders; a nominal fare is charged to other riders.

CSKT face many challenges. The area has high unemployment and poverty rates, with a nearly 30% unemployment rate for 16–19-year-olds and almost 22% for 20–24-year-olds, according to Census data. The area also is affected by high rates of substance abuse, domestic abuse, and related social problems. CSKT youth lack the skills and opportunities to become public transit employees, even when jobs were available, and also need assistance to clean up driving records (e.g., paying fines, getting licenses) since costs involved in doing so are prohibitive. CSKT believe that these youth need pre-employment training to make them “job ready” and support services to cover relocation costs to accept jobs in nearby urban areas. In addition, incumbent workers need training for CDLs to enable them to retain employment, but no funds were available from Flathead Transit for this purpose.

Proposed Workforce Solution

To address these problems, the partners proposed the CSKT Transit Training Program, a new workforce development program that would serve two populations—new trainees (primarily young adults) who are unemployed or underemployed, many of whom faced significant barriers to employment that the program would address to help ensure success, and incumbents working for Flathead Transit who do not have CDLs or need other training to be retained.

The CSKT proposal offered three goals for the program:

- Unemployed/underemployed youth would attain knowledge and skills that prepare them for public transit employment.
- Program trainees who complete the training would be placed in employment, work experience, education, further training, or apprenticeships.
- Employees of Flathead Transit would obtain CDLs and be retained in employment.

These goals would be assessed against two objectives:

- 50 unemployed/underemployed youth and young adults would receive pre-employment training and related supports to address employment barriers.
- 10 current Flathead Transit employees would receive incumbent worker training.

The program was expected to have the following benefits:

- Provide participants hard-skills training such as obtaining the CDL needed to secure or retain employment.
- Offer an opportunity for employment to area young adults and assistance in obtaining that employment.
- DHRD would leverage the fact that many participants will already be enrolled in programs that provide additional supports and “people skills” training beyond to aid them in overcoming barriers.

Partnerships

DHRD was the lead agency on the proposal. It has operated as a WIA One-Stop Career operator since 1998 and administers 35 economic or social service programs including TANF, WIA, Employment Training, Job Placement, Vocational Rehabilitation, and Passages Fatherhood Program. It has considerable experience providing workforce development to the target population, including individuals with low educational attainment, no work experience, and barriers such as substance abuse, family violence, poverty, and homelessness. DHRD has support

programs in place to address these barriers in-house or can refer to tribal programs that are readily-accessible.

The transit partner, and a potential employer, was the DHRD-administered Flathead Transit Program. Flathead Transit was awarded the Transit System of the Year award by the Montana Transit Association for its bus shelters, bus barn, and mechanical bays.

Salish Kootenai College (SKC) would serve as the educational partner. It is a nationally-known Tribal College in operation since 1976, offering 14 bachelor's degrees, 17 associate's degrees, and four Gainful Employment Programs that lead to vocational certificates, and has an extensive adult basic education program and pre-college classes. SKC would provide CDL training, driver's license training, air brake certificates, and school bus endorsements.

Tribal Health and Human Services' (THHS) nursing staff would provide Elder Sensitivity and Health Care Basics training to ensure trainees understand the needs of this population.

Mission Mountain Enterprise, a local disability services agency, would provide training to assist participants in understanding and responding to the needs of individuals with physical and mental health disabilities who use public transportation.

CSKT's Victim Assistance Program (VAP) would provide Healthy Relationship classes to participants who need this kind of education to address family or intimate partner violence, which has the potential to disrupt their employment or keep them from seeking employment.

Tribal members currently under contract with DHRD would teach defensive driving, First Aid, and CPR to Transit Training Program participants. Great Falls Transit for the Montana DOT would provide Braun Pass Training and securing wheel chair training to participants.

A representative of CSKT indicated that it had worked previously with most of the partners, with the exception of SKC. SKC instructors generally do not work during summer months. This program allowed the instructors to work over the summer and provided for a deeper relationship between DHRD and SKC. The representative indicated that there were no problems in partnership formation, and all performed their roles well, noting that they were exceptionally dedicated, ensuring any participant that seemed to be falling behind or having trouble received sufficient extra attention or driving time, etc. to successfully complete the course. Anyone who completed the first week of training received a CDL.

Communication often occurred in person, with the Department head for SKC coming meet with project leads for DHRD weekly or before class to exchange

updates, in person or through email or text messaging, and discuss needs, extra time required, etc.

Program Implementation

Program Development

The basis for the program came from labor market information and Flathead Transit's problems getting qualified drivers and people to perform proper wheelchair securement. In addition, to operate a bus for Flathead Transit, operators need a Class B permit with a Passenger Endorsement. The area was lacking drivers with these certifications. Other CSKT agencies also needed drivers with these qualifications, including schools, Head Start, and North Dakota oil field companies. Once participants had these qualifications, there were many options, although transit was the main goal for the program.

Figure 11-1

CSKT Transit Bus



Marketing, Recruitment, and Screening

Outreach targeted young unemployed or under-employed members of CSKT in the Passages Fatherhood Program (young mothers and fathers), Tribal TANF, WIA, Summer Youth Employment, or other economic, job training, and social service support programs. CSKT developed outreach materials and shared them with Tribal Departments and programs that serve the target population. They put announcements in the Tribal newspaper, on SKC TV, in print, and on the radio and worked with participants that already were in DHRD programs. As soon as it was advertised, DHRD received a great deal of interest, but they prioritized young Tribal members who were unemployed, then older Tribal members, and then filled final spots with others. (Priority went to Tribal members from the CSKT, decedents, and other tribes. There are seven reservations in Montana, so people called from across the state.) Some applicants were not qualified for a CDL, so they opened it up to firefighters or others with a need to fill the class. Class size was generally limited to 15, with a maximum of 17.

All participants had to submit to background checks—State and Tribal—as well as a driver’s record check with the DMV. Participants had to meet CDL criteria—no infractions for DUI/DWI, reckless driving, or leaving the scene of accident within three years, not be a habitual offender for driving offenses in the last 10 years.

Participants submitted their DHRD Transit Training application and showed a valid Class D Montana driver’s license and original Social Security card, provided a doctor-completed SKC physical form (some physical conditions preclude a CDL), and completed a DMV Personal Information Express Consent Form to allow for the background check. Applicants then went to SKC in person in the weeks prior to class to take a drug test and complete both Montana and federal background checks (transit workers cannot be sex or violent offenders). CSKT lost a few applicants due to failed background checks. It wanted to complete applicant testing before training to avoid learning later that participants could not obtain a CDL.

The major obstacles included background checks, current valid driver’s license, medical forms, and passing a five-point drug test. They estimate losing 15% of their applicants to these issues, with several applicants indicating they could qualify, but then failing. This made meeting the recruitment goal difficult.

Program Implementation

Memoranda of Understanding were executed for both years with key partners in the program—SKC (instructors), Early Childhood Services, Two Eagle School, and Johnson Transportation (school bus endorsement vehicles).

SKC offers a nine-month CDL course; the CSKT Transit Training program represented a highly-accelerated version of this CDL training, using some of the materials from the long course. CSKT could compress a Class B permit class (for smaller vehicles with no air brake) into one month, including the Passenger Endorsement needed to transport people on a regular bus that holds more than 16 people; the Endorsement involves an extra test to ensure the driver is prepared if something happens while transporting a larger number of passengers. Participants could choose to get all permits and endorsements as well.

The goal for CSKT was to conduct six one-month training sessions. However, attaining a Class A permit (school bus, larger vehicle over 16,000 lbs., or a semi pulling a trailer) requires six weeks, and some participants were interested in getting their Class A permit, so CSKT ran two month-long courses in June and July and a six-week class in August/September. Conducting two years of that schedule completed the intended six cohorts.

All students received SKC Continuing Education Units, and stipends were issued. The first week of each class was in a classroom environment, and the

next two and half weeks were spent driving on the road and preparing students with pre-trip inspections on vehicles. Classes typically included 15–17 students and 4 instructors for each class. At the end of the first week, students took a knowledge test (the same version used with the longer nine-month program) and viewed educational videos. To ensure they were ready, students had to pass several tests, quizzes, and a final test before they went for DMV testing for their temporary practice permit.

After earning the temporary permit, the remainder of the class was hands-on. Instructors set up cones for practice and went on the road with students as they were ready. For Class B practice, students drove dump trucks; for Class A practice, they drove school buses rented for the project. SKC also provided other important training including CPR, first aid, and PASS (wheelchair securement), which are needed to drive a school bus.

In addition to this “hard skills” training, DHRD offered other educational opportunities and assistance during each month of training. Students were surveyed as to what other classes they might find useful. DHRD offered the following to all participants:

- Work readiness/mentoring for soft-skills
- Healthy relationship class
- Parenting classes
- Financial literacy course
- Resume and interviewing
- Job placement help

DHRC routinely offers these classes and services to help clients maintain their work and stability. These classes were taught during the regular required class times. While some participants practiced on vehicles, others could participate in one of these additional seminars. This also prevented students from being idle while others were practicing, which allowed the instructors to spend more time with the practices.

Additional Services

Students were eligible for a stipend during the month of training. In addition, DHRD could provide support services, supplemental funds, clothes, tools, or other things that would help the participants complete the course. The program also offered relocation funds if participants needed to move to use their new skills (though no one ended up taking advantage of this benefit within the required relocation period).

Outcomes

Despite reportedly struggling to fill classes with qualified applicants, CSKT reached or exceeded all specific outcome measures proposed, as summarized in Table 11-1.

Table 11-1
*CSKT Project
Outcomes – Goal and
Actual*

Goal Description	Goal Number	Actual Number
New trainees enter training	60	58 (97%)
New trainees complete training	50	58 (116%)
Incumbents enter training	10	10 (100%)
Incumbents complete training	8	10 (125%)
% new trainees placed	65%	60%* (-5%)
Favorable ratings of course	90%	92% (+2%)

*Three months after training

The CSKT representative said its training started in June, which was late for some of the best jobs in the oil and construction fields, which begin in April. This hurt short-term placement figures.

Survey results indicated participants were largely very happy with the training and support they received. Large majorities thought the training would help them reach career goals. The most well-regarded aspect cited was the short duration of the course to get an important certification.

Budget and Matching Funds

The Innovative Transit Workforce Development Program provided \$255,688 in Federal funds for the CKST Transit Training project (approximately 83% of total project cost). The bulk of the cost was for salaries, payments for curriculum development, and delivery of training. In-kind matching of \$53,000 consisted of DHRD administrator and Flathead Transit project coordinator time as well as access to mentoring, parenting, healthy relationship, job readiness/mentoring, and financial literacy classes for participants. The CSKT representative estimated that this proposed contribution was exceeded because the supervisor was a department head and was heavily involved in the early development of the program.

In general, CSKT reported that the budget expenditures went as planned. The college was able to quote costs in advance with reasonable accuracy, and bus and other rentals were priced in advance as well.

Impact

This project was a high-impact project for CSKT. An agency representative said that the primary impact was that Flathead Transit needed drivers with CDLs,

and this training was a tremendous help in that regard. In total, the agency has a staff of only 25, so for 10 (40%) to get at least a Class B permit was critical and enabled the agency to retain its drivers and helped the Early Childhood program as well, which needed drivers.

Participants now have a skill that is highly-transferable and certainly relevant for transit but also enables participants to find work in construction. Additionally, those who are firefighters (wildfires) generally do not work until June, so they gained a skill to apply in their off months.

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program from CSKT representatives include the following:

- Carefully screen potential participants up front; do not wait until the DMV rejects them.
- Have clear prioritization for accepting applicants to ensure you reach your target audience.
- An accelerated course is very much appreciated by participants. It is possible to pack a nine-month course into a one month accelerated course if students attend it full-time.
- Provide support services and additional classes in “soft skills” for participants with multiple barriers to employment. This helps them get and maintain a job over and above their technical skills.
- Do not set participants up to fail—quiz and test them before they go to the DMV to ensure they are ready. This process led 100% of those who completed the first week of the course to get their CDL.

Conclusion and Further Investment Recommendation

CSKT’s Transit Training program was a high-impact program that provided training for transit employment that was important to both the transit agency and the participants. It was carefully designed and based on the strong partnership between a transit agency, workforce development agency, and educational partner. The program provided accelerated training, participant support services, and soft-skill training. In the end, participants received a transferrable and widely-recognized certification for in-demand occupations. Given the high demand for bus operators that exists in many transit agencies and will presumably continue, this program is certainly worth replicating and expanding.

SECTION 13

North Dakota Department of Transportation – ND Statewide Intelligent Transit System Workforce Training Program

Background and Problem Addressed

The North Dakota Department of Transportation (NDDOT) builds and maintains a transportation system consisting of about 8,518 miles of roadway and 4,858 bridges and oversees the development of surface transportation, including highways, bridges, rail, transit, pedestrian, and bicycle paths across the state. It is the State's recipient of rural transit formula and Rural Transit Assistance Program from FTA. To assist in meeting local resident mobility options, NDDOT partners with 35 agencies across the state, including 31 public and non-profit rural transit systems to provide coordinated public and human service transportation. In addition, it partners with three metropolitan transit systems in Fargo, Grand Forks, and Bismarck, with which it has worked to promote the transit system and provide training and retention programs for the workforce.

At the time of the proposal, NDDOT had invested in Intelligent Transit Systems (ITS), including computer-aided dispatch (CAD) and wireless mobile data systems, at five human service transportation systems (Fargo, Grand Forks, Souris Basin, Willison Council on Aging, and Stark County Council on Aging in Dickinson) to help manage operations and resources, provide accurate reporting and billing, and improve customer service

The State planned to expand ITS and paratransit CAD to the remaining 31 providers in the near future to use it to create "one-call/one-click" integrated service. However, there was a need to support these efforts with new and refresher training in paratransit CAD and mobile wireless use for the blue-collar workforce. The 31 providers for human service transport represent a mix of public and non-profit organizations, usually with 1–2 person management teams and drivers who were retirees from other work. NDDOT experiences high turnover in these positions and, with a limited budget for training, was reliant on shared resources. Providers usually had personal computers and did not use ITS to manage their work.

Proposed Workforce Solution

Through the ND Statewide Intelligent Transit System Workforce Training Program (ITS WTP), project partners planned to provide training for all blue-collar rural operators on ITS. For agencies currently using ITS, it planned to provide training on CAD and wireless mobile data system training to improve employee use of ITS. Agencies not currently using ITS would receive baseline training on ITS and CAD to prepare them for ITS deployment.

The proposal indicated the following expected outcomes for the project:

- CAD and wireless mobile data computer refresher training for local operation staff at transit systems across ND.
- Train up to 150 people statewide.
- Procure two wireless mobile data computers (tablets) for training.

Partnerships

NDDOT was the lead agency for this project and provided project management, oversight of training, and a computer lab for training. The ND Department of Human Services (DHS) Aging Services Division and Department of the Blind would provide the technical staff to support NDDOT and any vendor training programs. The ND Department of Veteran Affairs (VA) would participate as needed.

RouteMatch Software would serve as a contractor, providing training for the CAD and wireless mobile data systems, with training conducted at NDDOT or on site at the transit agencies; it was the main training provider for the technical and software training. RouteMatch is a scheduling and dispatch software application for fixed-route and response transit that allows scheduling and dispatching from a main office. Each vehicle has tablet, and a request is automatically sent and ordered so the driver knows the order of pickups. The software tracks the pickups and provides reporting as well as number of trips, trip percentage, and where rides are going and shows gaps in transportation (time spent, etc.) Drivers also can conduct pre- and post-trip functions using the tablet (e.g., pre-trip inspection on a bus can be done electronically and is captured in the software). This allows a manager to observe issues and find solutions. They hoped to encourage more agencies to purchase the software.

NDDOT listed as partners all 35 public and non-profit public and human service transportation partners across the state, for which it coordinates transportation (VA, DHS, Department of the Blind). These partners did not contribute directly to this project, but were made aware of the project and provided information. NDDOT coordinates with the VA through RouteMatch.

These agencies reportedly had all worked together previously, and there were no problems in forming the partnerships. Communication was primarily via email and phone, as needed, and there was substantial coordination with RouteMatch. NDDOT also meets with the transit agencies on a quarterly basis, so the project was discussed at those standing meetings.

Program Implementation

Program Development

NDDOT created a Partners Training Committee and spoke to coordinators and the Mobility Manager who works with the urban areas, holding calls and meetings to identify what might benefit the state (mobility training or working with RouteMatch). The committee was responsible for general planning and organizing how to proceed with conducting the project.

The Mobility Manager consulted with rural agencies and found they did not know much about how to assist persons with disabilities. It was determined that this would help the agencies work with their communities, gain knowledge, and learn about transit agencies' service to the community. It was decided to provide what they called "Travel Training," an overview that encouraged the mostly rural agencies to develop a travel program to help persons with disabilities, older adults, etc. Many older persons or those who have developed disabilities likely drove previously, but now need to take a bus and are fearful of using the system. The Travel Program provides a trained person to accompany a new rider to help him/her learn about the system, understand how to navigate it, and become comfortable.

For those receiving ITS training, RouteMatch conducted initial communications evaluations of current agencies that use RouteMatch, with multiple visits to conduct evaluations, discuss problems, and determine what was working or not working.

Marketing the Program

NDDOT offered the ITS training to all agencies. Prior to the offer, all NDDOT agencies could purchase RouteMatch software through a grant. At a quarterly meeting, the software was offered to the agencies, and NDDOT encouraged them to acquire it. NDDOT's vision was to have the whole state on the same system, creating seamless coordination among agencies. However, only five agencies (three urban and two rural) took this opportunity, and the rest chose to pass. An NDDOT representative said that agencies that passed believed that the software was not worthwhile given their small size or low volume and did not foresee a return on investment.

ITS Training Implementation

The ITS training ended up as a consultation process. RouteMatch sent experts to conduct an initial visit with each agency, at which time they would do paperwork and gather facts to learn the agency's size, population, volume, etc. For example, some agencies experienced turnover of schedulers and dispatchers and, thus, had employees who had never been formally trained on RouteMatch. The consultants assessed employee knowledge, use of the system, and so on for 13 agencies overall.

Based on the assessment, RouteMatch and NDDOT considered ways to group agencies, such as by size, knowledge, or capability in software use. They considered holding training sessions in which agencies would all meet in one location grouped by size and with similar issues. However, they found the agencies were hesitant to come to this type of training; operators wanted RouteMatch to come to them to avoid time away from work and staffing shortages.

As a result, RouteMatch personnel developed plans for each agency and went on-site to each. A range of issues was found; for example, some agencies were not optimizing trips correctly; in others, users did not understand the best way to maximize the system. By going on-site at each agency, the consultants were able to troubleshoot in real time. The wireless data platform training involved how to use the tablets in the vehicles (see Figure 12-1). This training was performed as part of the site visits. Training was conducted during regular work hours. No certificates were provided for the training.

Figure 12-1:

*Screenshot from Video
of ITS User*



Travel Training Implementation

Easter Seals Project Action Consulting conducted the Travel Training. Speakers were invited to provide the training at a regular quarterly meeting. Roughly 45 people typically attend these meetings, which included those from the

34 agencies; they also invited guests from Metro planning organizations so they could stay informed. The training lasted one day, and the main topic was providing agencies with guidance on what Travel Training is, how it could apply to their agency, and how to set up a Travel Training program in their community. Trainers discussed how to customize the program for an agency; for example, some did not have the staff or funds to hire a trainer, so a staff member would take on the responsibility. The training also taught participants how to be a trainer of this material and provided “technical” information on working with people with disabilities, but not as in depth as they would get via a different program.

Planning and Coordination Training Implementation

When NDDOT did not get the level of uptake expected for the ITS training, it decided to offer additional training. The final training provided through this funding was training to help agencies develop 3–5 year plans and how to get public participation. A faculty member from ND State University conducted the training. NDDOT had been trying to ensure that all agencies developed coordinated plans or updated existing plans. An NDDOT representative said that many of the agencies struggle to maintain a current plan, so the purpose was to create a plan that would anticipate the needs to replace a vehicle, add routes, etc.; the training covered what to include in the plans as well as related topics. In addition, when a public agency drafts this type of plan, it needs public participation and awareness, so the training covered what type of constituent feedback is needed and how to obtain it. This training, like the Travel Training Program session, was conducted at an NDDOT quarterly meeting.

Outcomes

NDDOT had three basic goals for the ITS WTP according to its proposal. First, it wanted to provide CAD and wireless mobile data computer refresher training for local operation staff at transit systems across the state for up to 150 people statewide. Also, it planned to obtain two wireless mobile computers for training. The program offered metrics for the program, as summarized in Table 12-1.

Table 12-1

*NDDOT Project
Outcomes –
Goal and Actual*

Goal Description	Goal Number	Actual Number
Eligible to enroll	150	150
Transit agencies invited	35	35
Urban system attendees	60	Unknown
Rural system attendees	40	Unknown
Completers	150	155*
Placed in new work/incumbent	150	150

*Across all training offered, not just ITS

The metrics provided are not informative. All told, only 65 (43%) of the 150 eligible for ITS training participated due to lack of interest in RouteMatch by many small agencies. The Travel Training Program and Planning and Coordination training was provided to roughly 45 people at each quarterly meeting (90 total), most of whom were presumably the same at each meeting. So, at most, 155 attendees were trained, but it is more likely that 110 were trained, with 45 being trained on two topics. NDDOT decided not to buy the two mobile computers originally proposed.

As of this report, NDDOT representatives were unaware if any of their providers had established a Travel Training program at their location based on the seminar provided.

Budget and Matching Funds

The Innovative Transit Workforce Development Program provided \$316,968 in Federal funds (100% of the total project costs). NDDOT indicated that a reduction from the requested amount had no effect on their program. Due to the lower-than-anticipated use of the ITS training, it was able to provide more in-depth engagements with individual agencies, but it did not expend all the grant funds. It did add training that would be useful for all the agencies statewide. NDDOT reported no unexpected expenses after these changes.

Impact

The representative from NDDOT stated that the impact of the program was very positive. For providers using ITS, NDDOT believed they are now able to run the ITS and their transit system more efficiently and effectively.

The statewide training, especially the Coordination and Planning seminar, means that the agencies can better plan for the future and request the funds they need based on a solid plan. NDDOT is in the process of receiving plans from the agencies to review and offer changes. The training is helping to stir agencies that were too lax to become more disciplined and study the futures of their agency and their community to plan effectively.

That said, it is clear that the ITS training for which this program was intended reached a far smaller population than originally envisioned. The statewide training provided was potentially useful but seems far less impactful than the original plan.

NDDOT indicated that the vision is still to have all agencies use RouteMatch software. One issue is that some areas are so rural there is insufficient cell tower coverage. As these problems are addressed, NDDOT hopes to be able to fully implement the system.

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program from NDDOT representatives include the following:

- Get a clear scope for your training program. Base the training plan on a solid needs analysis. NDDOT had a scope for the program based on a plan that overestimated demand. It executed the plan for those interested, which ended up being far fewer than anticipated.
- ITS can provide for more efficient service, but only if people are well-trained on how to use it. In some cases, simple demonstrations of features led to better optimization and efficiency.
- Having the software vendor serve as a consultant to visit each site and assess demand, skill, and use of the program was very helpful. The capacity to troubleshoot made the process valuable for the agencies.

Conclusion and Further Investment Recommendation

NDDOT's program was well-intentioned but was based on a misperception of demand for ITS usage. The portion that actually addressed ITS training or consultation was reportedly effective and useful. This process, however, is not particularly replicable. Asking a vendor to provide support and training for its product is a good practice in general but not a replicable program for FTA to promote.

Whether more ITS or CAD training is needed for the industry is a relevant question. Perhaps there is an unmet need, but that is not clear from the NDDOT program, which dealt with only its 35 agencies and 1 software vendor.

Rather than invest in replicating or expanding this program, it may be of more utility for FTA to address the larger questions regarding how many agencies now employ ITS and CAD, the trends in these programs, what training the users now receive and whether it is sufficient, and whether there are unmet common needs that FTA could help address.

SECTION 13

Rutgers University –Transit Virtual Career Network

Background and Problem Addressed

The John J. Heldrich Center for Workforce Development at the Edward J. Bloustein School of Planning and Public Policy at Rutgers University is a research and policy center dedicated to strengthening American workforce development, career education, and policy. Funded by an FTA grant, the Heldrich Center has created numerous career websites and guides for industries ranging from transportation to life sciences to raise career awareness among students, job seekers, educators, and counselors.

The Heldrich Center proposal suggested that the transit industry was facing a “perfect storm” leading to a massive skill crisis—increasing technology, growing ridership, and baby boomer retirements. Many large transit agencies will face retirements of 28–33% of their workforce over the ensuing five years. Therefore, the transit industry is in deep need of resources and innovative workforce solutions, and the industry needs to move quickly to find new people and up-skill the existing workforce. Identifying, recruiting, attracting, and retaining industry talent to the workforce is a critical need. Although many transit jobs represent a great fit for those completing community college or technical high school—as the jobs are often well-paid but do not require four-year degrees—the industry lacks national recruiting tools to reach out to them and connect them with opportunities and training programs to prepare them to successfully enter the transit industry and perform these jobs.

Proposed Workforce Solution

The primary objectives proposed by the Heldrich Center were, first, to build and distribute a cost-effective, innovative, field-tested website that would attract youth, veterans, and others to the industry and provide agencies with unprecedented access to new recruitment and training tools. Second, it wanted develop a website to enable users to explore transit careers, determine necessary workforce credentials, identify and participate in education and training (including that offered by transit agencies), and find and fill industry job openings.

Specific goals for the program included:

- Development of a Transit module to the Virtual Career Network (T VCN) that includes at least 65 jobs focused on operations, maintenance, and other new technologies

- Outreach to 450 transit agencies to promote T-VCN
- Outreach to 1,200 community colleges and 550 workforce investment boards, labor unions, transit research centers, high schools, career counselors, veteran organizations, youth organizations, and four-year colleges to drive potential workers to the T-VCN
- Reach 105,000 visits to the T-VCN two months after launch

Partnerships

Several partners were proposed as part of the project team. The Heldrich Center was the lead agency for the project and had already created a “map” of transit careers and a 250-page companion guide to 20 job groups and 178 transit occupations through work on a prior FTA grant. The Center would oversee the work, ensure that FTA information was effectively put into the T VCN, and conduct outreach, as well as supervise and review information linking jobs and training to geographic areas.

The Center for Advanced Infrastructure and Transportation (CAIT) at Rutgers was created from a US DOT University Transportation Center (UTC) program and had Tier I status. CAIT was used to managing large grants, as it was the home of the NJ Local Technical Assistance Program, training 7,500 people annually in transportation. CAIT partnered to provide grant management and help with research and the linking of occupations to appropriate education programs.

Another partner was APTA, which has a Blue Ribbon Panel and Advisory Group on Workforce Development with more than 100 executive leaders in transportation. APTA was to leverage its Workforce Development Task Force to provide input and oversight into the project and would have members attend three planning and review meetings.

Also involved was the American Association of Community Colleges (AACC), a leading organization representing 1,200 colleges that enroll more than 13 million students with a strong workforce development mission. In 2006, it developed the Center for Workforce and Economic Development, which won a grant from the US DOL to build the Healthcare Virtual Career Portal (H VCP). AACC was to conduct technical work and research, as well as assist with outreach.

XPAND Corporation was the major contractor for the VCN (which started as the VCP) and Career One-Stop systems. XPAND has played a major role in creating workforce development technology for US DOL, including America’s Career InfoNet, mySkills myFuture, and a competency model clearinghouse. XPAND would be the technical developer for the T-VCN.

The final partner was the National Association of Workforce Boards (NAWB), an association representing 575 WIBs that would be a key partner helping to populate T-VCN and conducting outreach WIBs and the workforce development community.

A Heldrich Center representative said that the partners had interacted over the years but had not necessarily worked on a project together formally. The Center had worked with NAWB and NAACC. XPAND, NAWB, and NACC had a prior relationship from building Healthcare and Green Jobs VCNs and already had a platform and existing relationships with one another. The partners realized that the Heldrich Center has transit occupational information, and AACC and XPAND had a platform, so there was a logical fit. APTA was brought into the project because of its connections with the transit agencies and could conduct research, understand jobs, and put the content in a way that would accurately reflect the transit industry. APTA could also distribute the tool.

The vision was to have the T-VCN be used by transit agencies to help their entry-level workforce know where to go in the industry and also be used by WIBs, one-stops, community colleges, and APTA, as they engage in outreach programs (high schools, vocations schools, and organizations). CAIT as a partner provided the administrative capacity the Heldrich Center lacked at the time.

The partnership formation was smooth, and each partner had a distinct role that it performed well. The group communicated using monthly calls and e-mail as needed. The Center created an Excel spreadsheet to track issues and updates since the team was distributed across the country and also created an online document-sharing workspace. The spreadsheet was reviewed during the monthly calls to ensure the developer did not get mixed messages from different partners.

Program Implementation

Program Development

The vision for the T-VCN was to create a national career education and recruitment platform for the transit industry. The concept was to leverage significant public investments already made by bringing together two elements—the career information gathered for the *Guide to Public Transit Occupations* developed by the Heldrich Center for FTA and the VCN platform created for DOL by XPAND Corporation and AACC. The initial VCN had endorsement from the White House as well as other government agencies. The VCN platform directly connects occupations and jobs to the specific credentials and education resources needed to qualify for those jobs. As designed, users can log into the VCN, explore jobs, complete their search, establish a career management account, and then record their progress on training offered through an integrated e-learning module.

This project would create a low-risk, high-value workforce solution that could be used across the transit industry. The technology would allow the information to be geo-coded so labor market information, job openings, and training opportunities would all show what was available in the user's relevant area (e.g., ZIP code). A large number of people can be reached this way; when the Healthcare–VCN was launched, it received 105,000 visitors in the first two months.

The first three months of the project were spent identifying the occupations to be covered, getting contractual relations in place, and forming and defining the role of the Transit Advisory Committee.

Transit Advisory Committee

The project team assembled an advisory committee comprising eight public transportation agencies and two private agencies—Dallas Area Rapid Transit; Denver Regional Transportation District; Foothill Transit (West Covina, CA); Fort Worth Transportation Authority; Lane Transit District (Eugene, OR); LACMTA; New Jersey Transit Corporation; Southwest Ohio Regional Transit Authority (SORTA)/Metro (Cincinnati, OH); Atkins Engineering; and Edsi Solutions. APTA helped organize the committee and select the members. The idea was to have a diverse, strategically selected committee to represent the industry.

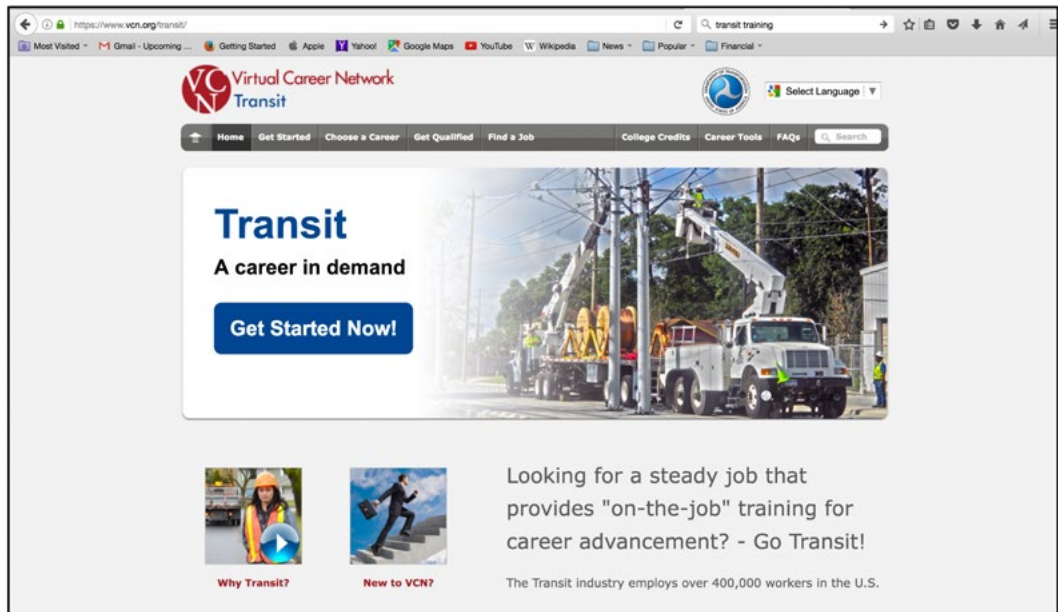
The committee provided guidance on the development priorities for the T VCN, including guiding the occupational selection and providing input into the design and implementation of industry messaging on the website and key features. The committee also suggested resources and experts to advise the team on the development of content for the website. A main committee function was to provide content and access to people who could provide content. For example, the Center gave the committee a draft list of jobs, and the committee provided feedback on that list as to the most difficult to recruit, most relevant, etc. The committee members also participated in focus groups to review job descriptions and brought the descriptions to their colleagues specializing in the relevant areas to give the team accurate feedback.

The committee had three in-person meetings, with more frequent phone meetings. Generally, these were one-day meetings held at APTA. The purpose was to get everyone discussing the project, looking at the site, testing it, and giving the team feedback. A Heldrich Center representative stated that meeting face-to-face was critical, as it helped keep people engaged and allowed for discussion.

Technical and Content Development

The development of content involved research and identification of needed information resources, creation and validation of coding crosswalks, customizing the VCN code, and developing the look and feel for transportation context (see Figure 13-1).

Figure 13-1
T-VCN Screenshot



The team had to set up web services feeds for jobs and LMI and identified and filled critical information gaps. They then moved the transit information and resources to VCN databases.

The team had planned to identify transit-related e-learning for the NTER e learning module, but, in the end, they decided against this process. The Transit Advisory Committee noted that most training is done after hire in the transit industry. The team was able to identify classroom training programs, generic online workplace readiness training, and private-pay options for online courses for industry professionals. However, these could be catalogued and displayed through other site features. The system displays relevant higher-education programs for some administrative jobs (e.g. transportation planners) and provides resources for entry-level employees to strengthen their basic skills through community college and workforce system programs. The Transit Advisory Committee determined that there was no further need to develop the NTER node as originally described, as all available training is available through other means on the site.

Testing and Revision

Testing involved numerous steps, starting with content review by transit SMEs. In addition, test plans were developed to assess performance and site stability, accessibility for persons with disabilities, stress/load performance, and cross-browser compatibility.

Operations and Outreach

Operations work involved defining and reporting usage statistics for T-VCN, ensuring the site was available at all times, and conducting search engine optimization (SEO) to improve the capability of search engines to find the T VCN when relevant key words searches are conducted.

As this was done, the team implemented its marketing and outreach activities. This included having articles about the T-VCN in FTA's Fastlane blog; articles, tweets, and e-mails published by NJ.com, *Baltimore Sun*, *Mass Transit Magazine*, *Passenger Transport*, the National Governors Association, AACC, Heldrich Center, CAIT, NAWB, APTA, National Association of Workforce Development Professionals, Jewish Family Services, and NAACO.

Team members also presented the T-VCN at multiple conferences, including AACC's Workforce Development Institute, the National Association of Workforce Development Professionals conference, and the APTA Annual Meeting and Expo. In addition, team members presented a number of webinars to transit agency stakeholders, NAWDP, Workforce3One, Goodwill, and Workforce Central.

To train the workforce and transit communities, the team made several conference presentations that were essentially training seminars. They did not travel the country conducting training since it was decided that was not cost-effective. Instead, they used a broadcast approach to raise awareness to reach people using T-VCN. The partners offered webinars and presentations through the NAWB, the National Council of Workforce Education, and the Workforce Development Institute (part of the AACC) to workforce professionals around the country. These presentations and webinars provided a full overview of the site's functionality and allowed users to learn how to apply this information when assisting jobseekers to research careers in Transit.

The partners officially launched the T- VCN on October 10, 2014, in coordination with the start of the APTA Annual Meeting and Expo in Houston.

Outcomes

The Heldrich Center proposed a number of metrics for performance measurement of this project, as summarized in Table 13-1.

Table 13-1

*T-VCN Project
Outcomes –
Goal and Actual*

Goal Description	Goal Metric	Actual Metric
Launch of T-VCN	Operational	Operational
Open Source Code open to the public	Available	Available
Unique visitors in first 2 months	105,000	7,600 (7%)
Data and content available to the public	Available	Available
T-VCN used in one-stops	170	Unknown
T-VCN in one-stops in largest cities	13	Unknown
Career Management Accounts open	4,250	Not Met
Completers of credential based courses	8,000	N/A*
Links to webpages in metro areas	85 largest	Unknown
Learning inventories created	10,000	Not Met
Mapping of military skills to transit industry	Available	Available

*Decided not to launch online training feature

The proposal provided a target of 105,000 unique visitors in the first two months. However, beta testing saw 1,300 unique visits per month (2,600) total. After launch, there were 3,800 unique visits per month (7,600 total, or 7% of the goal). In the five months after launch, the site had nearly 19,000 visits, with more than 14,300 from US cities, and received 48,000 unique page views or about 2,000 hits per day.

As shown in Table 13-1, although the team was successful in creating and launching the T-VCN, many of the targets in terms of Career Management Accounts opened or Learning Inventories created were not met. (Specific numbers were not provided, but a Heldrich Center representative stated that they were low and well below goal). The representative believed a few factors influenced the low numbers. First, transit may be more of a “niche” industry compared to healthcare, and XPAND used the H-VCN launch to base the estimates. Indeed, transit is only a portion of the larger transportation industry, and healthcare is roughly one sixth of the US economy.

A second issue was that once the decision was made not to use the NTER e learning module, this decreased the need, and thus the likelihood, that Career Management Accounts or Learning Inventories would be created. Again, this relates to the fact that much of the training in the transit industry is after hire, not before.

Budget and Matching Funds

The Innovative Transit Workforce Development Program provided \$659,784 in Federal funds (100%). This was somewhat less than the original proposal, so the number of occupations covered was reduced slightly, but otherwise the scope remained intact. The prior research and technology development leveraged represented \$37 million in Federal grants. The transit agencies also contributed

their time to serve on the Transit Advisory Committee, but no specific dollar value was estimated.

The majority of the funding went to XPAND for the development of the T VCN. Otherwise, the largest expenditure was for salaries and benefits. The Heldrich Center representative indicated that overall expenditures went as expected and noted it helped that much of the content was in hand and that XPAND had been through the development of TCNs before so the pricing estimates were accurate.

Impact

T-VCN has had a low impact, but one with the potential to increase. A tool that has been useful and successful elsewhere has been created and currently exists, but it is unclear if anyone is using this tool or promoting it.

The Heldrich Center representative does think T-VCN had an impact on helping to standardize the descriptions of occupations across the industry (this project and the prior FTA project). This project bringing transit agencies together and creating the website helped create common language for transit occupations and skills. Now, human resource managers and frontline employees have tools to help them understand how to advance in the transit industry, and tools for community colleges and WIBs and one-stops to help with recruitment.

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program offered by the Heldrich Center representative include the following:

- It was advantageous to work with industry experts to build content and functions. Having insider knowledge results in a responsive, accurate tool.
- In terms of sustainability, FTA is funding and requiring more partnerships, which has benefits—the Center could not have completed this project alone. But the partnerships create a problem for sustainability because it is difficult to fund and manage those partnerships over time. So, although it may make sense to have a partnership create the project such as the T-VCN, one partner organization is needed to champion it and carry it forward.
- APTA should be funded to promote the T-VCN with transit agencies and WIBs, as it needs to be kept on their radar. That is where it has faltered. The site is functional; it just needs to be promoted.

Conclusion and Further Investment Recommendation

The Heldrich Center appears to have created a T-VCN tool for career exploration based on information gathered under a prior grant and guided and

reviewed by a committee of transportation agencies. Yet, a Google search of “transit industry career information” does not return the T-VCN on the first page of results. (It showed up toward the bottom of the second page of search results on APTA’s website as a link to T-VCN.) This is a good indicator that the site is probably not being widely used.

The question is, why not? Is the site insufficient for its purpose? Not sufficiently well-known? Are key features missing? Why it is not widely used is a critical question to answer. If the tool is technically-sufficient and user-friendly and the problem is marketing (as suggested by the Heldrich Center representative), then a direction is clear—promote it. If the T-VCN itself is good, then a good tool is being squandered. If, however, the tool is known but not used, then the market has spoken and the tool needs to be improved or replaced with something better.

There appears to be no sustainability plan in place, and the T-VCN is being kept online by private foundation money through XPAND. A Heldrich Center representative indicated that it tried to raise money through APTA from among the transit agencies to support it, but the agencies faced budget cuts and lacked much capacity to support it. The Center applied for other FTA funds but was unsuccessful. They also looked into other grants to no avail. XPAND is keeping the VCN platform going, and APTA is reported to believe it is a useful tool and still promotes it at their events and on their website. However, it is unclear if the community colleges or workforce development community (one-stops, etc.) are using T-VCN or if transit agencies themselves use it.

Based on this assessment, the only investment recommended in T-VCN is to investigate its use (or lack thereof) and determine whether it should be improved, scrapped, or just marketed more.

SECTION 14

Lawrence County Social Services, Inc. – Gen Y Transit Workforce Connection

Background and Problem Addressed

Lawrence County, Pennsylvania, is located about 20 miles northwest of Pittsburgh on the western edge of the state and is centered around the town of New Castle. Lawrence County Social Services (LCSS) is a Pennsylvania Career Link Operator (One-Stop Career Center) and member of West Central WIB, a non-profit community action agency whose role is to assess its community, identify service gaps, and look for funds to fill those gaps and meet needs in the community. Through its Allied Coordinated Transportation Services (ACTS), LCSS provides a shared-ride program for persons with disabilities.

With baby boomers retiring, there is a need for transit to recruit a diverse group of younger adults, also known as Generation Y (Gen Y) (defined as those ages 18–26 as of 2012), into the transit industry. Ridership increases, retirements, technological advances, and tightening labor markets make recruiting young adults critical and challenging. Youth outreach and awareness is one of six critical concerns noted by an APTA Blue Ribbon Committee that looked at the transit workforce. Young adults were proposed as a perfect target, as they are in need of work, technologically savvy, relatively diverse, and tolerant of diversity. However, the key question remained as to how to recruit members of Generation Y into transit.

Proposed Workforce Solution

The Gen Y Transit Workforce Connection project was designed to be an innovative outreach and awareness program, consisting of APTA-recommended activities to whet the appetites of Gen Y to learn more about transit. The program aimed to get members of Gen Y to help create a career education program that is replicable. The program would recruit participants, targeting 12th graders, dropouts, disengaged youth, and post-secondary students. The program would get input from a variety of sources and include jobs across the spectrum of transit industry occupations and discuss the importance of transit to the national and local economy. The program would include activities in-classroom and out, soft skills, skill building, job shadowing, mentoring, presentations from key stakeholders, and service learning activities. There would be pre-screening for the best candidates and preference for those co-enrolled in other programs. Students would be supported with case management, incentives

for positive outcomes, and work experience internships for hands-on learning. In addition, through community service, the participants would provide support to transit by both volunteering at transit and “mentoring” aged workers struggling with technology.

Specific goals included enrolling 20 individuals who would complete the course and go on to post-secondary education or related work in transit.

Partnerships

LCSS was the lead partner in the project. Its transportation director identified the opportunity and expressed initial interest in the project, and the LCSS role was to coordinate the activities and manage the project funds.

The Pennsylvania State Police agreed to provide training requisites including how to obtain a CDL, how to conduct inspection of transit vehicles, and how drug and alcohol convictions affect chance of working in transit.

The Mercer County Transit Authority agreed to provide in-classroom presentations on job duties and to serve as a job site for paid internships and community service.

The local school districts agreed to provide their 12th graders with marketing materials about the program. In addition, the proposal lists many participants in transit, education, and transit training that would collectively provide support services via co-enrollment, field trip presentations, site visits, presentations, career transitions, and Transit Career Fair participation.

LCSS had existing relationships with some of the program partners, such as with Mercer County Transit Agency, with whom LCSS had worked via its ACT service. Likewise, LCSS had worked previously with the Career Link as an operator. LCSS provides employment-related services to youth populations in coordination with the technical schools in the area (e.g., they have cooperated on career fairs). The other relationships were built during the project. LCSS representatives experienced no problems in building the partnerships, although some work was involved explaining the project and getting buy-in from the partners. To start the project, a group meeting was held with key partners; afterward, communication was as needed.

Program Implementation

Program Development

An interesting aspect of the program is that LCSS sought participant input in creating the program. As one representative said, “If we create it, there’s no interest, but if they can take ownership it will be more successful.” LCSS engaged in curriculum building with the participants, holding brainstorming sessions and

guiding students through the process. The students would be asked to conduct research and put it together into a suggested curriculum, and then LCSS would perfect it.

Recruitment and Screening

LCSS personnel conducted the recruitment and moved a senior recruiter onto the project part-time to assist. Participants were engaged through marketing and outreach efforts in both counties to inform 12th grade students, disengaged youth, post-secondary students, and other young adults about transportation-related jobs. Transportation Workforce Career Fairs held across eight schools within Lawrence County included informational material or presentations from public transit and transportation-related agencies, educational institutions, training facilities, and local employers. During other outreach efforts at the local CareerLink offices (one-stop agencies) and youth programs at partner agencies, the project was first introduced through a computer presentation that invited participation and explained why careers in public transportation are critical to the local and national economy. The presentation discussed how the program included both classroom and field training using a career awareness and soft-skills curriculum, skill-building activities, job shadowing and mentoring, presentations from key stakeholders and transportation providers, and service-learning activities. The Vocational Technical School at Lawrence County was a primary recruitment source.

Initially, about 75 people were interested, but follow-up contact proved to be difficult. They also asked for a commitment from participants. LCSS representatives think this was a challenge, as Gen Y “doesn’t like to be committed ... [they] remain at a job a shorter amount of time and move more frequently.” In addition, transit was “not very glamorous. We tried to dispel that myth and recruit more around the idea of travel and very good pay grades without a four-year degree, so they could earn more money faster.”

Screening involved primarily asking demographic questions. They looked for people who fit their target population and interviewed participants to discuss their employment goals, their interest in transit, ensure they understand what the program was about, and assess how motivated they appeared to be.

The incumbent training involved technologically-savvy young adults mentoring older adults in technology. LCSS representatives indicated that marketing to the incumbents was simple, as their transportation program employs 60% older adults among their drivers, dispatchers, and supervisors. The heads of those services met, talked to staff, and asked who was interested. Participants in its senior employment program (not transit-specific) were offered the program as well. In the end, six incumbents participated.

Training Implementation

The program asked the participants for a commitment of six months, with attendance once or twice each week for about 1.5 hours (longer for tours). Participants came to workshops, received case management, did interest profiling, performed research, completed service learning projects, went on facilities tours, attended speaking engagements, attended soft skills classes, participated in field trips, and mentored older employees.

Soft-Skills Training

Soft-skills training included resume building, team building, interview skills, telephone etiquette (especially for dispatch), scheduling, how to get along with people, ethics in the workplace, showing up on time, etc. LCSS representatives indicated that although much of this information seems like common sense, many of the participants came from poverty or broken homes or had parents who were not teaching basic work skills.

Career Awareness Training

Career awareness training included experts coming in to talk about their experience, success, and transit benefits. They used CareerLink resources such as O*Net to explore jobs, the education and skills needed, or whether they required additional schooling. Then, they discussed where to get this education and how to pay for it. The point was to help show participants a map to transit employment and provide support and guidance. In total, 29 businesses gave presentations or training to the participants.

Field Trips

Field trips were a large part of the program, and the most popular. Overall, 10 organizations allowed participants to visit, including trips to the Gateway Clipper, a maritime part of the transportation system, and the Pittsburgh Subway, where they toured the subway facility and offices. Another example was the New Castle Airport, a cargo-only airport, at which participants sat inside planes and toured offices. They also visited the Mercer County Transit Authority, where they took bus rides. LCSS representatives noted that the young adult participants often attached a stigma to transit, “If you take a bus, you’re poor.” The bus ride they took was intended to help them see that it is not what they expect and that buses are about efficiency and being green, not a reflection of status.

Service Learning

One participant decided to perform a service-learning project she initiated and worked out—serving as a crossing guard to help kids on and off the bus. When kids were ready to cross the street, she stopped traffic, etc. She did that

for several months, and it was important to her because she had a developmental disability and this was her way to help others.

Paid Work Experience

LCSS allowed participants to spend a month in a transportation-related industry to get hands-on experience and experience what it is like to work dispatch or help drivers assisting passengers in a shared ride. The participants earned minimum wage for a few hours a week to experience transit work and also performed scheduling, as LCSS has customer service representatives to make appointments.

Generational Mentoring

The generational mentoring involved the young adult participants teaching older incumbents how to work on computers. This took place during the program's workshop time since all participants were on hand during those periods and transportation for participants was harder than for incumbents. (LCSS provided bus tickets for participants if they needed it, or mileage reimbursement.)

Financial Incentives

The program sought to reinforce positive behaviors with incentives; in this case, the incentive was gift cards. LCSS attached a dollar value to various benchmarks, and the maximum was \$50 for any given benchmark. Benchmarks earning incentives included attendance, transition to post-secondary education, transition to a job, maintaining a job for 90 days, job shadowing or paid volunteer work, increasing adult basic education test scores, getting a credential (e.g., GED) or driver's license, or maintaining good grades in school. For example, attending 75% of workshops in a given month would earn the participant a \$20 gift card. A new incentive could be earned each month.

Case Management

The coordinator hired by LCSS to manage the program performed case management for participants unless the participant was already in another program with this service; in that case, the program coordinator worked with the existing case manager. The case manager held weekly meetings with the participants. During this time, they would perform assessment and co-enroll in other helpful programs for which the person was eligible. These sessions were held during workshop time. Sometimes the case manager would take a participant out of the workshop to meet one-on-one and discuss career goals, address barriers to education or employment, encourage the student, identify issues, etc.

At the end of the program, there was no graduation ceremony, but each student earned a certificate of completion.

Outcomes

The Gen Y Transit Workforce Connection proposal set forth a number of specific numerical goals for participants and outcomes, as summarized in Table 14-1.

Table 14-1

*LCSS Project
Outcomes –
Goal and Actual*

Goal Description	Goal Number	Actual Number
Students reached via marketing	1,000	1,000+
Students screened and enrolled	20	25
Number of low income participants	15 (75%)	20 (80%)
Number of female participants	5 (25%)	11 (44%)
Number of minority participants	5 (25%)	5 (20%)
Complete training	15 (75%)	14 (56%)*
Post-sec education, training, or job in transit	10 (50%)	9 (36%)
Demonstrate knowledge gains (pre/post)	16 (80%)	20 (80%)
Rate it as positive stepping stone to career	16 (80%)	13 (52%)

*Another 9 completed at least 1 benchmark

Project personnel worked to exceed the recruitment goal. LCSS representatives viewed this as the most challenging aspect of implementing the program. The other challenge was to keep the participants engaged, which is reflected in some of the other goals. Although they came close to meeting the gross numerical goals, given the five additional participants, the program fell short proportionally of the targets for completion, transitions, knowledge gain, and program rating. Those hired in transit-related positions included one that LCSS hired as a dispatcher, as well as loaders for package shipping companies.

Budget and Matching Funds

The Innovative Transit Workforce Development Program provided \$187,850 in Federal funds (100%). The majority of the budget went to salaries and benefits, with travel and materials also being substantial costs.

LCSS did not propose or record any specific level of in-kind contributions; however, given that almost 30 organizations made presentations to the participants and 10 organizations allowed field trips to their facilities, there were likely substantial in-kind contributions that went undocumented. LCSS reported no substantial unexpected costs and noted that they likely spent less in incentives than originally anticipated.

Impact

LCSS representatives believe that the impact of the program included the awareness created and, as a result, nine people transitioned into the industry,

either through school or paid employment. These are participants with low income and limited opportunities.

A second area of impact was the curriculum that was built by the program that includes team building, research, information about industry, etc. Many elements apply to any industry (e.g., soft skills), and some are transportation-specific (buses, maritime, air). LCSS uses all parts of it, transportation and soft skills. It can also be adapted for any population.

The program is not being re-run, although, as noted above, parts of the curriculum are being implemented in other programs.

Figure 14-1
Success Stories
from Gen Y Transit
Workforce Connection

Student A – *By means of a performance evaluation, this student was rated Above Average/Excellent for most categories and deemed job-ready by the paid work experience supervisor. The student transitioned from the paid work experience to a full-time permanent position that assisted with the construction of a new bus garage for Allied Coordinated Transportation Services, Inc.*

Student B – *The student transitioned from a paid work experience to part-time employment as a dispatcher within one month.*

Student C – *This student maintained good attendance, demonstrated increased knowledge in public transportation (gauged by pre-tests and post-tests), and obtained employment as a loader. The student also made the Dean's List for a post-secondary institution, where he enrolled after attending a Gen Y Transit Workforce Connection field trip. The student then earned a \$40,000 scholarship to transfer to another post-secondary institution and has expressed interest in working in the IT department of a port authority.*

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program offered by LCSS representatives include the following:

- No program is an island; partnerships and relationships are what make the project work. The bigger the network the program can draw on, the more options there are.
- When building programs, whatever the target population is, get their insight. This way, participants can say, “we did this, we own it.” Participants knew the curriculum would be available for whoever wanted it and were proud their work would be shared. LCSS sought their input, brainstormed to talk through what to incorporate, and then researched ideas.

- Follow-up is important. If you fail to follow-up, you may never know if participants had a barrier or a problem. Contact was lost with some participants when they changed phone numbers, so their outcome is unknown. Follow-up is important to solidify and document success.

Conclusion and Further Investment Recommendation

The LCSS Gen Y Transit Workforce Connection seems to be a program of moderate impact given the number of participants and completers. A handful of participants transitioned into transit-related positions. It appears to be a replicable youth program for those with sufficient connections to create site visits and provide important soft skills and case management. Indeed, it seems to be a program that could be adapted to any industry or population, and just happened to have been transit-specific here. The engagement of the population of interest in curriculum building was an interesting component.

The target population—young adults, particularly those from a low-income background—proved to be a challenging group to engage and keep engaged. This was reflected in the outcome numbers. That said, this population is also a promising population, as members are old enough to take transit positions and are in need of the higher-than-average pay many transit positions offer. With the right partners and perhaps more focus and more transit engagement or more hard-skills, this seems like a program that could be worth replicating and enhancing.

SECTION 15

University of Tennessee – Transit: Your Ride to the Future

Background and Problem Addressed

The University of Tennessee (UT) Center for Transportation Research (CTR) has been a nationally- and internationally-recognized research entity for 45 years. With a staff of 50, CTR has more than \$10 million in sponsored research under contract, providing opportunities for students and researchers. For the Your Ride to the Future (YRTF) program, CTR partnered with Knoxville Area Transit (KAT), the transit agency in Knoxville that has 25 routes and carries 3.6 million passenger trips a year on bus, trolley, and paratransit. A new station is LEED-certified, has a café operated by a non-profit organization serving at-risk youth, and exhibits art.

KAT faces a large number of expected retirements, increasing technical demands in a transit industry that is facing a workforce crisis. Transit agencies draw on personnel from many fields (maintenance, engineering, policing, etc.), and current recruitment strategies are inadequate to fulfill all needs. To make matters worse, the use of transit has an image problem with youth—it is perceived as not “cool” and primarily for people who cannot afford their own car; research suggests these impressions start as young as age 7. To change this image, the industry needs to start reaching youth earlier with more positive messaging. The CTR proposal suggests there is a need to focus on three facets: negative perceptions of transit, lack of understanding about how to use transit, and an unwillingness to consider transit as a career.

Proposed Workforce Solution

CTR believes there is a need for a transferable toolkit for reaching K–12 youth. Its proposed solution for the workforce issues facing transit is development of a comprehensive, multifaceted K–12 education program that promotes public transit as a good transportation option and potential career. This program would be designed for youth in areas with only modest transit systems and based in research on attitudes of youth in Knoxville toward transit. The curriculum would ensure age-appropriate engagement by conducting different activities for different age groups. The age groups would be grades K–2, 3–5, 6–8, and 9–12.

Objectives included the development and implementation of:

- Transit Days for the youngest two groups
- Art contest for grades 3–5
- Transit STEM curriculum for middle school youth
- Art competition, transit academy, and transit internship program for high school age

Partnerships

The lead partner for this effort was CTR, which was created in 1970 to foster and facilitate interdisciplinary research, public service, and outreach in the field of transportation at UT-Knoxville. It began full-time operations in 1972 and has since contributed greatly to the overall research program of the university. As a research center under the auspices of UT's College of Engineering, CTR oversees various programs associated with the education, research, training, and workforce aspects of the transportation field. CTR's role was to oversee the development of the program and implementation of elements in coordination with KAT. CTR would oversee all aspects of the program and coordinate with other UT departments as needed.

The transit partner for this effort was KAT, which would provide access to its facilities, technical expertise, help with outreach, active participation in summer transit academies, and coordination of field trips to MARTA facilities in Atlanta.

The education partner was the Knoxville County School System (KCS), which serves 47,000 K–12 students on a budget of \$384 million. Half of KCS's population qualifies for free and reduced lunch. The student body is 24% minority, and 11% students have a disability. KCS would provide access to students to participate in the various activities of the program.

A proposed partner was East Tennessee Human Resource Agency (ETHRA) Public Transit System, which provides on-demand, door-to-door service for more than 184,000 trips per year. However, ETHRA did not end up participating on the project.

The partners were selected because KAT is the local city transit system for Knoxville and is what most students would consider transit in the area. The school system was chosen because it had a prior relationship with CTR when it developed a STEM curriculum for KCS. If the goal was to reach students, KCS was seen as the logical partner.

Forming the partnership went smoothly, although KAT indicated that although it was supportive of the program, it did not have the staff to perform some of the purchasing or other activities originally intended. Therefore, CTR staff adapted

the KAT role. KAT participated as it could, although as a small agency it was limited in how much time it could contribute. After a change in management structure at KAT, the new Executive Director was amenable to participating and wanted to raise the profile and “cool factor” of the program. The new Director attended meetings, spoke to students, presented awards at parties, and so on.

A key issue noted by CTR representatives was that KCS did not facilitate easy access to the students or teachers in the school system. This proved to be a challenge throughout the program. In the past, it had not been a problem, but after the proposal was submitted, KCS changed its requirements, which became quite onerous. KCS made it difficult even to do simple things such as provide a flyer for the summer transit academy to teachers. There was considerable bureaucracy with forms to complete, justification statements, etc. Over time, CTR employees found specific teachers or principals that would work with them, as well as one Art Teacher Coordinator for the county that was an important contact to help get program information out. Nevertheless, after the first year, further restrictions were put in place. In the second year CTR had to reach out to a charter school that was willing to facilitate easier access.

In addition, UT also instituted new procedures for working with minors. Previously, having a teacher present was sufficient oversight for off-campus contact. After this change, anyone having contact with minors off campus had to participate in training involving watching videos on reporting abuse, etc., which was an added process for summer transit academy staff.

When the project first began, there was considerable communication via e mail, especially around planning the summer camp. When needed, CTR held meetings on specific tasks and met in person three time times early on to make sure all partners shared an understanding of the project and to learn what resources CTR could access, such as staff, facilities, bus passes, etc. After that, communication was mostly by e-mail. Communication with the schools tended to be less formal, occurring through calls and e-mails after one early meeting with the Art Coordinator to establish the relationship.

Program Implementation

Youth Attitude and Perception Research

The project began with a research study on the attitudes and perceptions of the target-age youth about transit. The proposed plan was for focus groups and a survey. CTR conducted the focus groups and indicated that it had trouble recruiting participants, partly because it was prohibited from advertising in schools. It also had to pay to get parental consent. It partnered with some school principals, private schools, and boys at a youth academy for at-risk kids. It conducted two college-age focus groups and four high school-age groups. Recruiting was still a challenge, as the youth had transportation problems and

the groups could not overlap with school hours. CTR offered \$25 gift card as an incentive.

Although focus group data are by nature anecdotal, CTR representatives indicated that one thing that stood out was that even those in poor economic standing had a strong negative perception about public transportation. They purposely avoided riding the bus and would rather ride with relatives or friends. This was enlightening about the scale of the perception problem.

The planned survey was not conducted, and UT reported not having received approval to date.

Transit Days

Originally, the plan was to conduct up to 10 Transit Days at schools, a number that came from the number of schools on or close to KAT routes. As of the writing of this report, CTR had conducted or planned to conduct 7 Transit Day programs (twice each with three schools and once with a charter school). Instead of targeting K–3, it ended up targeting 5th graders, in part because they were old enough to read a map. The program generally started at 10:30 AM and involved setting up four stations through which students rotated. There was a bus to engage with, maps and stations to practice navigation, a bus simulator on an iPad, a Lego bus building area, and extras such as a word searches about transit careers and backpacks for giveaways. It generally took an hour to go through all the stations, and three or four classes participated.

Teachers also got information about transit careers and the history of transit. This was information they could introduce the day before the event with a curriculum. CTR hoped teachers would spend some time before or after the actual event with some interesting data. CTR also sent a letter to parents about the transit day event and its goal.

CTR representatives said Transit Days are a good example of how the relationship with KCS affected an event. Had CTR been able to get system-wide approval, they could have easily had Transit Days in more schools. In contrast, had KCS denied CTR access, there would have been no events. CTR had to work to form relationships with principals who thought it was a good idea for their students. This relationship-building involved e-mails and calls to pitch the program.

Curriculum Development

The second part of the CTR program was to develop a middle-school curriculum that would introduce students to a range of possible careers, both college- and blue-collar-oriented. It planned to work with KAT to identify subjects relevant to adolescent lives, then develop cohesive lesson plans using instructional design theory.

CTR developed a curriculum and planned to do pilot testing, but it could not get KCS approval, noting that given high-stakes testing in schools now, it is very difficult to get any free time or flexibility in what is taught. Teachers indicated to CTR that they get almost no discretion to add material such as this.

Instead, CTR personnel were able to have the curriculum tested by individual teachers outside KCS based on relationships the curriculum developers had with teachers. Some were asked to review the material as if they were going to teach it. A small number actually did teach with it and provided feedback. The curriculum reportedly worked as planned, but CTR personnel noted it should be assessed more broadly. Although they believe it is well-constructed, the ideal situation would be to have the whole package go through randomized sampling for assessment, but the time and budget of this project made that process prohibitive.

Summer Transit Academy

The proposal planned for a three-day Transit Academy to make high school students aware of transit careers and their connection to STEM. The proposal also suggested the possibility of two tracks—a blue-collar track and a management/professional track. Students in the two tracks would combine on the third day to travel to Atlanta to visit MARTA and tour a large transit system and meet with employees at all levels.

CTR conducted two summer academies, but it did not end up creating separate tracks. The academies provided an overview of transit, a tour of KAT, and a scavenger hunt using transit to travel to designated map locations (each team had a UT chaperone). They then traveled to MARTA on a mega-bus.

CTR was planning to host another academy last summer and started recruiting as before, but it had a difficult time getting 15 participants. It was decided that this was not the best use of resources. Instead, building on the scavenger hunt idea, it conducted an area-wide scavenger hunt with middle and high school students. Recruiting continued to be a challenge. Social media was used that targeted youth and college groups, sororities, and large groups to try to get teams to participate. The scavenger hunt was attended by nearly 40 people who competed in 5 teams. The scavenger hunt was transit-based and started at the KAT center and went to parts of Knoxville. Teams had to take photos as proof they found all the locations and used social media. Although they hoped for more participants, CTR believes this event was a success.

MARTA cooperated by giving CTR access to its resources for the tour of a large transit system. The process required considerable security clearance in advance, which was a challenge considering some students were non-committal. Some were late with paperwork (Social Security numbers, etc.), which presented a challenge. But MARTA helped to make the event work.

Countywide Artistic Contest

The concept for the art contests was to engage youth of different ages in different topics around transit. For students in grades 3–5, the topic was “Where transit can take you?” and the top 12 entrants would be included in a calendar. For high school students, the focus was on the environmental benefits of transit, the top three would receive a cash prize, and the school would get a gift card for art supplies. In addition, they hoped winners would get their art reproduced on a vinyl wrap or a billboard on a bus. Also for high school students, KAT and CTR planned to host a video contest in which students would depict what “Ride for Change” meant to them. The students would compete in teams of five, entries were to be judged by a panel with online voting, and a cash prize for top three teams plus a gift card for their sponsoring teachers would be awarded.

The K–5 contest was conducted as planned. Winners were chosen by the recommendation of Art Teacher Coordinator. CTR released two calendars, one each for 2015 and 2016. The Art Teacher Coordinator was the recruiter; she targeted 12 schools, and CTR selected winners from each to ensure no school had too many. The next year, a different set of schools with students in grade 6–8 participated.

The high school art contest was considered a great success. KAT featured winning art in the buses, and the top winner had a poster on the outside of a bus (the bus wrap idea proved to be too expensive) (Figure 15-1). The 2nd and 3rd place winners were posted on buses (Figure 15-2). The winners received gift cards and, in some cases, presented their work at an awards night.

Figure 15-1

*CTR High School
Contest Winning
Drawing*



Figure 15-2

*Placard of CTR
Contest Winner
Posted in KTA Bus*



Unexpectedly, the video program did not garner the interest anticipated. Although CTR had used this event on another project to great success, this time it fell relatively flat. There was just no response. CTR personnel were not sure why.

Professionally-Developed Transit Videos

The CTR project was to produce transit videos targeted toward middle and high school students depicting transit as a career that comports with the values and perceptions of youth. The idea was to use the research from the focus groups to target them and make the videos humorous and non-traditional.

Although a video was produced, it was deemed essentially unusable. Although it was supposed to be funny and appealing to high school age youth, the attempt fell short. The video exists, but CTR personnel did not view it as worthy of promotion.

Transit Professional Internship Program

The final element to the program was a transit program within an existing STEM Academy for high school juniors and seniors. The idea was to use an application to choose one or two students annually who would conduct applied research for KAT at CTR.

The internship program was conducted, and CTR hoped the interns would work at KAT and approached KAT about it. Unfortunately, KAT did not have the time to supervise interns, so CTR said it would host the interns and had an

analytical project in mind that involved entering KAT's Operations schedule in Google Transit. But, after discussion, KAT representatives wanted someone to help with training and outreach to people with disabilities. CRT partnered with a non-profit organization that worked with visually-impaired youth and identified a student who was a good fit, but the student withdrew for unrelated reasons. CTR struggled to find another person, but could not, so it used two high school students to design the initial scavenger hunt; another student documented procedures and planned a second scavenger hunt.

Outcomes

CTR's Transit: Your Ride to the Future proposal set a number of specific metrics to assess outcomes, but did not specify numerical targets. These metrics and the actual outcomes are summarized in Table 15-1.

Table 15-1
CTR Project Outcomes

Description	Outcome
Students affected by Transit Day	300
Creation of middle school curriculum	Complete
Transit Academy participants	56
Transit Academy feedback	Anecdotal, positive
Art contest participants	120
Transit video views online	0*
Internship participants	2
Internship report on activities	Complete

**Video not posted, not considered of sufficient quality*

In total, the program successfully engaged 478 youth in various activities around transit. Although CTR did not set specific targets in the proposal, representatives were somewhat disappointed and believed the number of students reached could have been higher had KCS been more cooperative at the district level in promoting activities. Instead, it fell to CTR to engage school-by-school based on contacts and promoting the program to principals or teachers. Likewise, internship activities might have been more meaningful had KTA been more willing to supervise them or had the original participant chosen not withdrawn from the program.

The video was considered a major disappointment because what was intended to be a funny, irreverent video fell short of expectations despite the director's best efforts.

There were no additional measures such as pre- and post-program perceptions of transit, intentions to go into transit, etc.

Budget and Matching Funds

The Innovative Transit Workforce Development Program provided \$225,442 in Federal funds (100%). The budget was not broken down in the proposal by line item but by tasks. In the end, the most expensive items were expected to be curriculum development, the summer academies, and project management.

CTR did not propose or record any specific level of in-kind contributions. It noted that because it was not a research project, it was able to use the lower level of overhead from UT, lessening the funds required so money could be used in other places. Overall, it found it was more efficient and spent less than expected, with the exception of the transit video that was subcontracted out.

Impact

CTR representatives stated that their focus was further “downstream” than many direct workforce projects funded under the Innovative Transit Workforce Development program because it focused on youth, the majority of whom were not of age to take jobs in transit. Therefore, it is not possible to measure how many people touched by this program will end up in transit careers, given participant ages. The premise is that transit has to start earlier in addressing the perception problem.

Unfortunately, there also were no direct measurements or indirect assessments on the extent to which perceptions of transit were affected, even for those students who did participate, which could have provided evidence of short-term impact.

Nevertheless, CTR representatives point to several transferrable tools for engaging youth that came out of the project. The scavenger hunt, Transit Days, and the art contests were all relatively easy, goodwill-building tools for engaging youth in positive ways about transit.

Lessons Learned and Recommendations

Key lessons learned and advice to those wishing to implement a similar program offered by CTR representatives included the following:

- There appears to be value in a program such as this, but people must be comfortable with knowing it is difficult to measure its impact.
- A key to youth-oriented programs is to have better relationships or access to schools or other means to reach students. The constant limiting factor for much of what CTR attempted was the lack of cooperation from KCS in allowing access to promote the programs. CTR pointed out that this was not deliberately aimed at it or this effort, and it understood the desire not

to bombard teachers and parents with materials to distribute. Nevertheless, more cooperation could have improved the reach considerably.

- Activities that worked previously are not guaranteed to work again. The video contest had been well-received elsewhere, but it fell flat in this effort for reasons that are unclear. When trying to replicate a successful program, this suggests paying close attention to what was done that made it successful and sticking close to that protocol.

Conclusion and Further Investment Recommendation

The Transit: Your Ride to the Future program attempted to address the pipeline into transit by introducing the participants to transit early—well before formal career readiness preparation often begins. It also attempted to overcome the negative impressions of transit that begin early. Indeed, transit proponents concerned about the workforce pipeline into transit have suggested reaching students earlier as this project attempted to do. The basic idea is to plant the seed of transit careers into the minds of youth.

Whether this program was successful in doing so is an open question. It is clear that considerable effort was put into creating interesting, innovative programs to engage students. Although some activities were more successful than others, in the end, almost 500 students were engaged about transit and transit careers in age-appropriate ways.

What is lacking, however, is any assessment of whether these activities successfully affected perceptions of transit in the short or long terms to lead to a larger pipeline of employees. Were these activities the right ones? Did students leave with more positive views of transit? Or were those already pre-disposed to like transit the only ones that engaged? What are the messages most likely to positively influence students toward transit and transit careers? CTR had the right idea in starting with focus groups, but recruitment issues led to more reinforcement of the problem rather than particular solutions. Unfortunately, the big questions remain unanswered, even after this program.

Although it is good to have a program such as this to share among transit agencies interested in promoting transit to youth, whether further FTA investment is warranted depends on gaining some evidence that at least short-term perceptions of transit are positively affected. Otherwise, it might be better to invest in research into what would affect perceptions of transit and what messages youth find convincing. Then, programs could be built around those messages and targeted appropriately.

SECTION 16

Conclusions and Implications

Based on this evaluation, a number of conclusions and implications can be drawn about the Innovative Transit Workforce Development projects of 2012.

Conclusions

- **Grantees generally met their goals.** Grantees specified goals in their proposals that they intended to achieve during the project. Although many grantees required additional time, two thirds of the goals were mostly met, met, or exceeded (66%). Roughly one quarter of the goals were unmet (26%), and the rest are unclear for lack of data (8%). Overall, the outcomes suggest that the programs funded were mostly well-planned and executed.
- **The program was successful at identifying promising approaches for workforce development.** The 2012 Innovative Transit Workforce Development projects are best viewed as pilot tests. FTA selected projects that varied in scope and type to explore different avenues for addressing common transit workforce issues. Based on the evaluation results, the projects appear to have identified several promising approaches that are worthy of consideration for further investment or investment on a broader scale.
- **Transit, workforce, and education together make very strong partnerships.** Of the projects implemented, some of the strongest outcomes were achieved when a transit agency worked with a workforce agency and an educational partner. For example, a strong partnership might include a transit agency, a one-stop or NGO, and a community college or research organization such as TLC. The transit agency provides the job openings or incumbents and the subject matter expertise. The education partner provides instructional design, technical assistance, and rigor. The workforce partner provides job seekers and support services. Together, they produce very productive workforce development programs
- **Projects demonstrated innovative options, not maximum outcomes.** The programs selected for funding in 2012 were clearly chosen to test a range of options, not maximize the volume of outcomes in terms of the number trained or hired. This is consistent with an objective to test a variety of solutions. Rutgers, Jacksonville, and the TLC Signals Consortium all developed programs rather than conduct training; other projects invested in creating and implementing programs for a small number of participants. If, at some point, FTA decides to change focus to maximize outcomes (i.e., volume) instead of innovation, the project selection criteria would need to be changed to focus on expanding existing programs, projects by large agencies,

projects with high goal numbers, and projects with measurable short-term outcomes. Longer funding cycles could help, as well, as it is difficult to build and implement programs in 18 months.

- **Programs need better planning for sustainability.** The impact of the 2012 programs was inhibited by a lack of planning for sustainability of the project after FTA funding ends. In many cases, agencies invested in the development of programs that occurred once, only to be shelved when FTA funds were exhausted. Products were produced but with no means of sustaining, marketing, or updating them. The partnerships that produced these quality products ended up creating a diffusion of responsibility to maintain and sustain them.
- **Applicants need to better define outcomes and metrics.** As with FTA's 2011 Workforce projects, some projects failed to clearly specify the intended outcomes. In some cases, no numerical targets were set. In others, metrics were set that did not relate to outcomes or impact (e.g., eligible to enroll). Still others suggested metrics that would be very challenging to measure (e.g., training ROI) or only distally related to the project (e.g., change in average miles between bus repairs). Invariably, these metrics lack data when the project ends.
- **Many products produced are not widely shared.** Part of the goal of the Innovative Transit Workforce Development program is to create processes and products that can be replicated or shared. In many cases, quality products were not widely marketed or distributed. T-VCN and the hybrid training and support materials are just two products among many that were carefully produced with the intention that they be marketed, shared, and used. However, when the projects ended, no one was tasked with marketing the materials, so rather than have broad impact on the transit industry, the products languished.
- **Youth engagement is difficult, and its impact is difficult to assess.** Three projects made youth engagement their focus, and three others included youth engagement activities. These programs struggled to successfully recruit youth or to gain access to schools to do so. Although experts call for engaging youth early, the results of these programs are difficult to measure, and few even try. Participants were often too young to hire; therefore, short-term employment outcomes were moot. Meanwhile, it is unclear if events such as transit days, art contests, or scavenger hunts positively affect either perceptions about transit or the likelihood that youth enter transit employment later. Indeed, it is unclear if such programs highlight the correct aspects of transit to reach youth. Should more emphasis be put on the green nature of transit to improve its appeal to youth? The high-tech aspects? Pay and benefits? Something else entirely? More research is needed on what aspects of transit to market to youth and how to design a program that can produce changes in the relevant perceptions.

- **Different models of pre-employment training can be effective.** Several efforts among the 2012 projects were pre-employment training programs typically focused on bus operators. These projects ranged in their depth of intervention from preparing participants to pass a job interview to training participants to obtain a CDL. Each addressed the pre-employment skills problem at the level at which their respective agency experienced it. There are now at least four program models from which agencies can choose that have been pre-tested.
- **Participant selection is critical to project outcomes.** An interesting issue arose in many of these workforce programs—how to select participants. Some projects opened their program to anyone, others selected carefully based on an established set of criteria and testing. If the goal was to prepare participants for work in transit and the training was in-depth, then selection was ultimately critical to achieving hiring outcomes. Such projects would be wise to create multiple screening tests, with the most cost-effective screening measures up front, progressing to the most expensive before training begins. The least efficient thing to do was to screen and train a participant, only to find he/she could not qualify for the position due to a bad driving history medical condition, or other background issue. This happened to WMATA, as a partner did not screen carefully, and it cost them potential employees and all the costs sunk into training those individuals.

Implications

- **Develop and implement standard outcome measures.** FTA representatives indicated that the agency is creating a standard set of metrics for funded projects. We encourage doing so, as it would provide guidance to projects on what outcomes to measure and, thus, what data to collect. Transit agencies are in the business of transportation, not workforce development, and cannot be expected to use the most rigorous data sources such as unemployment insurance wage records or resource-intensive methods. But a basic set of metrics that are simple to measure should be implemented.
- **Find or create a means to market and share resources developed by this program.** Products created over the two years of the Innovative Transit Workforce Development program may be of use to many agencies, but they were not widely shared. To maximize potential impact, a central, searchable repository is needed on which these products can be made available to as wide a transit audience as possible.
- **Hold an opening conference for funded project leaders to understand their obligations, and hold them accountable.** It has been difficult to get all transit partners to provide the periodic and final reports required as a condition of the funding they received. FTA could host an opening conference in which obligations are emphasized up front and

procedures demonstrated. Reminders should be sent prior to and after due dates to reinforce the message that FTA expects all requisite reports.

- **Create report templates for funded projects to use.** One method that may help funded agencies reporting is a report template. The lead agencies' capacities in report writing vary widely. Some funded agencies (e.g., TLC) are well-equipped and experienced in writing such reports; others may have less capacity and experience. At least one agency expressed a desire for more help in writing its report. Optional templates that provide the requisite topic and subtopic outlines might improve compliance.
- **Emphasize the sustainability plan requirement more in NOFAs.** As noted, many projects ended up being "one-offs," as there was no plan or funds to continue them, even if the implementing group considered them successful, or products end up in limbo, as partners do not specify which partner will keep the website or training program available. FTA might consider emphasizing a sustainability plan as a more important part of the NOFA.
- **Examine available evidence of youth program impact as compared to alternative approaches, (e.g., national ad campaigns).** FTA funded several projects that emphasized a youth component. As noted, the impact was difficult to assess. Moreover, the funds could be spent on other approaches such as a national public service announcement campaign or celebrity endorsement, etc. Research examining the evidence for outcomes from youth engagement projects should be examined relative to the potential impact of other approaches. FTA may be better off spending on more direct benefit programs such as pre-employment training rather than reaching down to high schools or below.

Appendix A: *Enhanced Summary Table of Projects*

Grantee	Program Summary	Federal Funding	% Federal	Program Goals	Met Goals	Impact	Invest
Southern California Regional Transit Training Consortium (SCR TTC)	Partnered with Southern CA Transit Systems, Central CA Transit Systems, CO Transit Systems, and universities and colleges in the consortium, conducted gap analysis and developed and pilot tested 3 distance education courses and 1 blended course (part classroom, part distance). Certified instructors rolled out courses as part of curriculum available to consortium members. Program met or exceeded goals except training hours goal, as students learned more quickly than predicted.	\$673,713	100%	• Develop 4 blended distance education courses • Have 120 students complete all modules • Provide 1,920 hours of training • Certify 10 instructors • Receive average training evaluation scores of 3.0 out of 4.0	✓ ✓ ✓ ✓ ✓	High	↑
Omnitrans	Partnered with CSU-San Bernardino's Leonard Transportation Center (LTC) and transit agencies in southern CA, created certificate program providing entry-level bus operator instruction to applicants and internships for college students. Hoped to provide incumbent training through LTC to prepare at least 200 people to seek front line employment in transit industry or continue through industry. Program successful in all but incumbent training, as LTC changed direction as project began and did not fully participate.	\$340,000	77%	• Create certificate program for entry level front line transit workers • Create internship and mentoring program for college students and adults • Train 200 people in transit • Increase continuing education credits 15% • Increase trained employees awaiting promotion	✓ ✓ ✓ N/A N/A	High/ Medium	↑
Community Career Development, Inc. (CCD)	Partnered with LA Valley College, LA Country Metro Transportation Authority, and local Workforce Investment Boards, sought to build upon success of Bus Operator Training Program, refining it to improve success of trainees in obtaining/maintaining operator positions once they enter on-job training. Also hoped to place some trainees with contractor producing rail cars. Program met goals for recruitment, training, completions, hiring, approached retention goal despite railcar producer not participating. Program was refinement of BOTA.	\$443,289	64%	• Develop recruiting operators from low-income, minority, women, and veteran communities • Develop model pre-employment program to increase hiring and retention • Recruit and train at least 213 individuals • Hire 155 of those trained • Retain 134 for at least 90 days • Reduce complaints, increase attendance	✓ ✓ ✓ ✓ n.d. n.d.	High	↑

Grantee	Program Summary	Federal Funding	% Federal	Program Goals	Met Goals	Impact	Invest
Washington Metropolitan Area Transit Authority (WMATA)	Partnered with The Vets Group, Suitland High School, Booker T. Washington High School; planned to create 8-week course for veterans interested in entry-level transit jobs while providing basic electrical and mechanical skills training and stipend. Created two-year program for high school juniors and seniors to interest them in transit careers. Program for veterans proceeded well, but low number of trainees applied for reasons unknown; many who applied could not be hired due to faulty pre-screening. High school program suffered when a school lost its charter. Few participants applied to WMATA. Promising program that bore little fruit.	\$795,334	90%	• Adult Program • Enroll 150 (60% veterans) • 70% completion of training • 60% job or training placement • 25% increase in veterans hired, retained • High school program • Enroll 150 over 2 years • 120 move forward from 11th to 12th grade • 64 continue into 12th grade program • 80% completion • 85% apply to job or technical skills program • 50% applicants accepted • 20% increased retention	√ √ - x - x - x - x - x √ - x √ - x	Medium/Low	↔
Jacksonville Transportation Authority (JTA)	With contractor Knowledge Architects and APTA Bus Maintenance Training Committee, conducted survey of other transit agencies, gathered information needed to integrate hybrid buses into existing fleet. Despite hesitance of agencies to share information due to intellectual property concerns, created 10 e-learning modules, accompanying checklists, and other materials covering range of issues for integrating hybrid buses. APTA does not appear to have posted training to make it widely available. Subsequently changed to different kind of bus.	\$247,197	100%	• Develop concise, holistic view of integrating hybrid bus into existing transit fleet • Provide guidance through manuals, DVDs, PowerPoint programs, cost estimating guides, checklists, and sample forms • Create program that will allow new employee training in all areas of hybrid system • Consolidate material in one location that allows for ease of industry access	√ √ √ - x	Medium/Low	↔

Grantee	Program Summary	Federal Funding	% Federal	Program Goals	Met Goals	Impact	Invest
Corporation to Develop Communities of Tampa, Inc. (CDC)	Partnered with Hillsborough Area Rapid Transit (HART), Tampa Bay Workforce Alliance, and Tampa Crossroads (veterans service provider) to create workforce pipeline for HART by recruiting and placing veterans and introducing youth to transit. HART decided to train mix of incumbents on CNG bus maintenance and new recruits on pre-employment training for employment skills to qualify as bus operators. Youth received presentation on HART and transit jobs, site visit. Despite change from all new recruits, program successful at providing training and recruiting new operators; 85% retained.	\$234,281	60%	• 75 participants recruited • 55 complete training • 30 placed in transit employment	- x ✓ ✓ ✓	High/ Medium	↑
International Transportation Learning Center (TLC)	With APTA, Amalgamated Transit Union, Transport Workers Union, Brotherhood of Railway Signalmen, and 11 transit agencies, built on existing training objectives by conducting needs analysis, creating training program for signals technicians. Using joint labor-management courseware development teams, developed content; TLC instructional systems designers created courseware, pilot tested on incumbent technicians. Supporting material included mentoring information and material to apply for national apprenticeship. Consortium applied to US DOL for apprenticeship program, two agencies started apprenticeships (but not as direct result of this project).	\$425,000	50%	• Develop full set of course books, instructor guides, and presentations for each course • Develop 7 courses completely • Pilot test material with 35 signals technicians • Pilot test trainee surveys • Explore possibility of customized textbooks for signals training • Improve coordination between OEM training and agency training • Apply for national apprenticeship program in rail signals technology to US DOL • Begin signals apprenticeship within 2 local transit agencies	✓ ✓ ✓ ✓ - x ✓ ✓ ✓	High/ Medium	↑

Grantee	Program Summary	Federal Funding	% Federal	Program Goals	Met Goals	Impact	Invest
International Transportation Learning Center (TLC)	Partnered with five transit agencies and respective unions, created local initiatives in career pathways to help youth enter transit, developed career ladders and apprenticeships to help incumbents progress in transit careers. In three career pathway projects, summer youth programs funded, high school outreach conducted, educational videos created, career posters distributed. At two career ladder and apprenticeship locations, redesigned training, began creating two apprenticeships that were being piloted, conducted skill gap analyses, agreed on training needs, provided training opportunities. Guide for obtaining college credit for work experience developed. Exceeded most goals set except youth hiring.	\$722,500	51%	• Reach 20,000 high school students • Engage 450 high school students • Recruit and employ 15-20 high school students for frontline transit positions • Create 1 detailed core curriculum • Create 2 interactive learning modules • Create 1 new Community College relationship and report on college credit • Complete skills gap analyses for at least 100 workers • Develop 1 training plan • Begin training for 55 workers, with 45 completing training • Recruit and provide mentoring for 8 mentors • Develop apprenticeship for 35 workers	√ √ - x √ √ √ √ √ √ √ √	High	↑
Minneapolis Community and Technical College (MCTC)	Partnered with Metro Transit, Dakota County Technical College, Transportation Center Consortium, and Achieve Minneapolis to conduct gap analysis and develop and conduct troubleshooting, electrical, and body training for technicians. Aimed to create recruitment website, develop youth internship program, provide Building Operator Certification to fulfill State Executive Order. Built website, produced six recruitment videos on career pathways at Metro Transit that proved effective at bringing applicants. Project suffered from leadership turnover twice.	\$427,444	90%	• 79 complete incumbent training • 20 participate in youth internship program • 30 receive building operating certification • All incumbents retained 90 days • 1,200 unique visitors to the careers website • Increase miles between road calls • Reduce facility energy consumption	- x √ √ - n.d. √ - n.d. - n.d.	Medium	↔

Grantee	Program Summary	Federal Funding	% Federal	Program Goals	Met Goals	Impact	Invest
Confederated Salish and Kootenai Tribes (CSKT)	CSKT Department of Human Resource Development partnered with Flathead Transit, Salish Kootenai College, and several human service organizations to create workforce development program primarily for young adults and incumbents. Participants received employment skills training, support services, and technical training culminating in CDLs required to be bus operator or other transportation professional.	\$255,668	83%	• 60 new trainees enter training • 50 new trainees complete training • 10 incumbents enter training • 8 incumbents complete training • 65% new trainees placed • 90% favorable course ratings	✓ ✓ ✓ ✓ ✓ ✓	High	
North Dakota Department of Transportation (NDDOT)	With ITS software provider RouteMatch, intended to provide ITS training to all 35 transit providers, but few providers wanted ITS or training. ITS consulting services and training provided to reduced number of transit providers. All received Travel Program training but none implemented program; all received Planning and Coordination training at quarterly meetings.	\$269,423	100%	• 150 eligible to enroll • 35 transit agencies invited • 60 urban system attendees • 40 rural system attendees • 150 training completers • 150 placed in new work/incumbent	✓ ✓ - n.d. - n.d. ✓ ✓	Medium/ Low	
Rutgers, The State University of New Jersey	Rutgers' Heldrich Center partnered with Center for Advanced Infrastructure and Transportation, American Association of Community Colleges, National Association of Workforce Boards, and contractor Xpand Corp. to leverage existing transit occupational guide and Virtual Career Network platform to create Transit Virtual Career Network (T-VCN), created with information and openings for 54+ occupations with links to local job openings and labor market information. Transit Advisory Committee decided e-learning capability of site not needed but it links to some pre-employment resources. T VCN did not get APTA funding; site currently being maintained by contractor. Unclear if not seen as useful or if not well known.	\$659,784	100%	• Launch of T-VCN • Open Source Code open to public • Data and content available to public • 105,000 unique visitors in 2 months • T-VCN used in 170 one-stops • T-VCN in one-stops at 13 of 30 largest cities • 4,250 Career Management Accounts open • 8,000 completers of courses • 85 Links to webpages in largest metro areas • 10,000 Learning inventories created • Mapping of military skills to transit industry	✓ ✓ ✓ - x - n.d. - n.d. - x - N/A ✓ - x ✓	Low	

Grantee	Program Summary	Federal Funding	% Federal	Program Goals	Met Goals	Impact	Invest
Lawrence County Social Services, Inc. (LCSS)	LCSS transit service partnered with State Police, Mercer County Transit Authority, local school districts, and various organizations to develop program aimed to recruit low-income, interested youth (Generation Y) to educate and engage them in transit activities and possibly employment. Recruited youth received soft-skills training, took transit-related field trips, conducted service project. Mentored older incumbents in transportation about technology. Some took low-level jobs (truck loader), most learned about transit.	\$187,850	100%	• Reach 1,000 students via marketing • Screen and enroll 20 students • 15 low-income participants • 5 female participants • 5 minority participants • 15 complete training • 10 placed • 16 demonstrate knowledge gains (pre/post) • 16 rate as positive stepping stone	✓ ✓ ✓ ✓ ✓ ✓ ✓ x	Medium	↑
University of Tennessee	Partnered with Knoxville Area Transit (KAT) to engage youth thru age-appropriate activities to interest them in transit long term. Elementary school youth engaged in Transit Days at school and art contest. Curriculum created for middle school youth and pilot tested by small group of teachers. High school students engaged in art competition, transit academy/ scavenger hunt; two interns helped create scavenger hunt. Art contest winners put in calendar or posted on or in KAT buses. Video contest did not generate interest. Professional video also created to interest students in transit, but not deemed worth marketing.	\$225,442	100%	• Transit Days for youngest two groups • Art contest for grades 3–5 youth • Transit STEM curriculum for middle school • Art competition, transit academy, and internship program for high school	✓ ✓ ✓ ✓	Low	↔

Note: Southwest Ohio Regional Transit Authority and Corpus Christi Regional Transportation Authority each had projects funded under the 2012 FTA Innovative Transit Workforce Development program but did not respond to requests for interviews for data collection.



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