

Maintaining the Human Infrastructure:

Tackling the Crisis in the Transportation Workforce

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Overview

- Background on Transportation Learning Center
- Facts and figures on transit skills challenge
- Opportunity to deal with challenge - career ladder training and apprenticeship
- Good answer for frontline workforce and begins to address how to grow first line managers

The Transportation Learning Center

The Transportation Learning Center is a **nonprofit** organization dedicated to **improving public transportation** at the **national** level and within **communities**. To accomplish this mission, the Center builds **labor-management training and apprenticeship partnerships** that improve organizational performance, expand **workforce knowledge, skills and abilities**, and promote **career advancement**.



Transit Partnership Location Map

Training Partnerships in Transit – Location Map

National sponsors and over 40 locations have worked together to build shared solutions



IBEW Local 6 (San Francisco)
 IBEW Local 9 (Chicago)
 IBEW Local 103 (Boston)
 IBEW Local 465 (San Diego)
 IBEW Local 1245 (Sacramento)

SEIU Local 1021 (Sacramento)

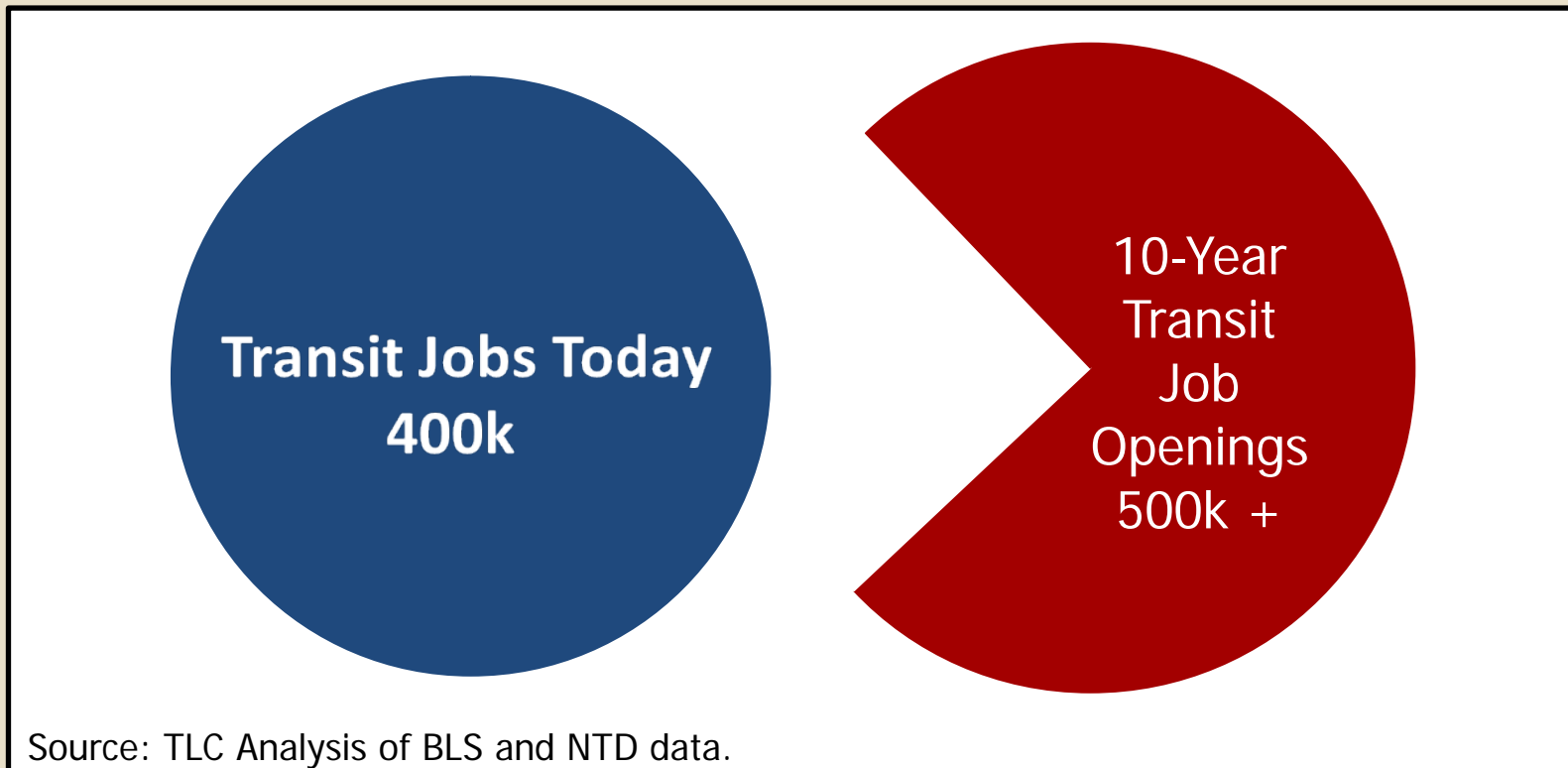
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TWU Local 100 (NYC)
 TWU Local 208 (Columbus)
 TWU Local 234 (Philadelphia)

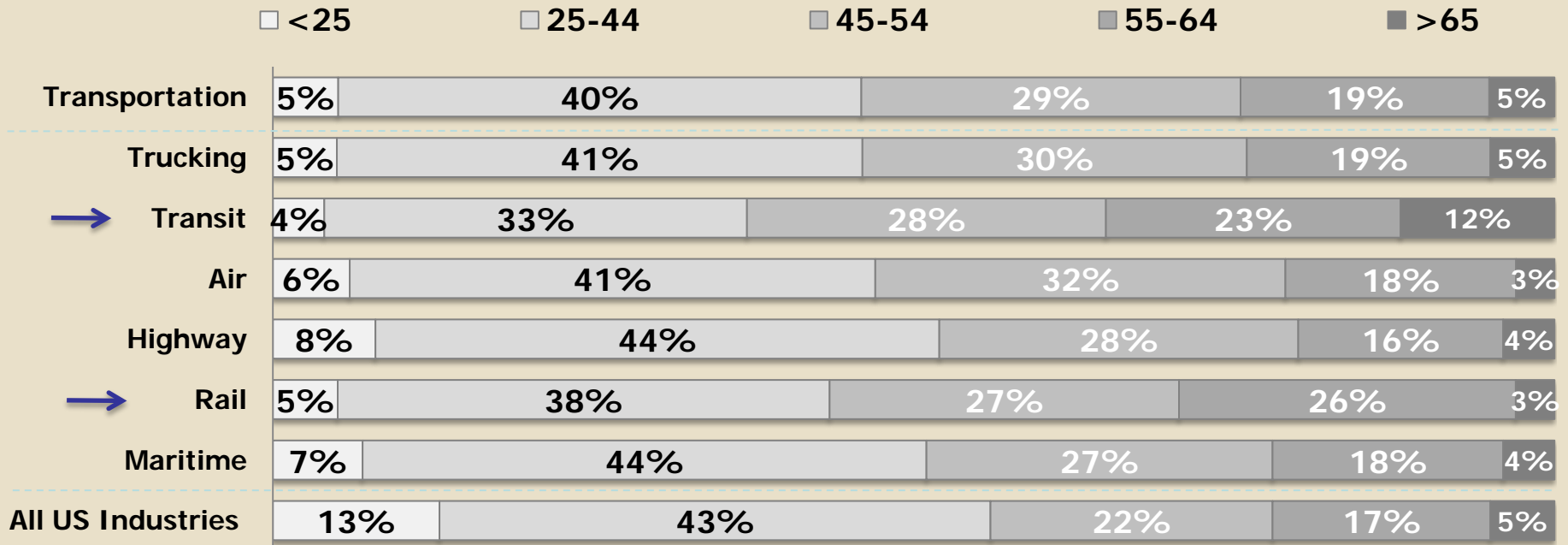
Challenge and Opportunity: Retirement and Growth

126 percent of today's transit workforce will have to be hired and trained in the next 10 years; 90 percent are frontline workers



Challenge and Opportunity: Retirement and Growth

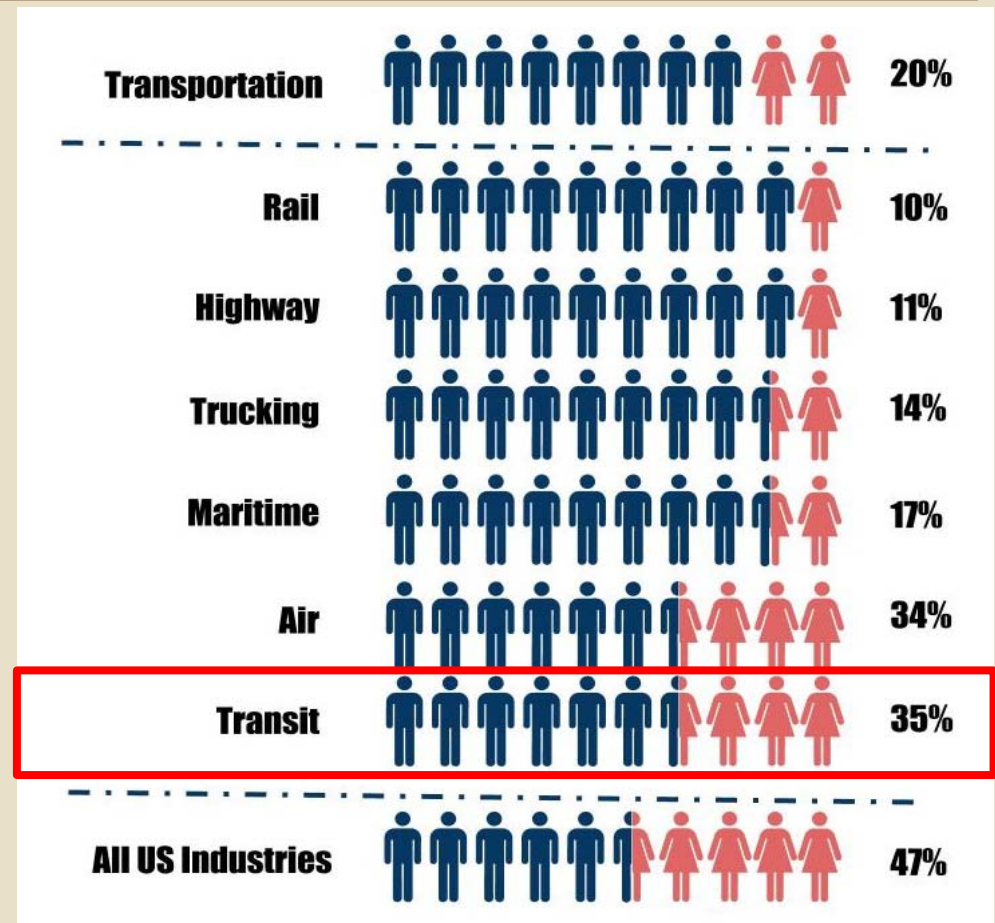
Transit has the highest percentage of older workers among all transportation sectors



Source: Data Report on Transportation Workforce Needs by the U.S. Departments of Education, Transportation and Labor.

Challenge and Opportunity: Demographics

Women continue to be under-represented in transit, especially in technical positions, e.g. mechanics

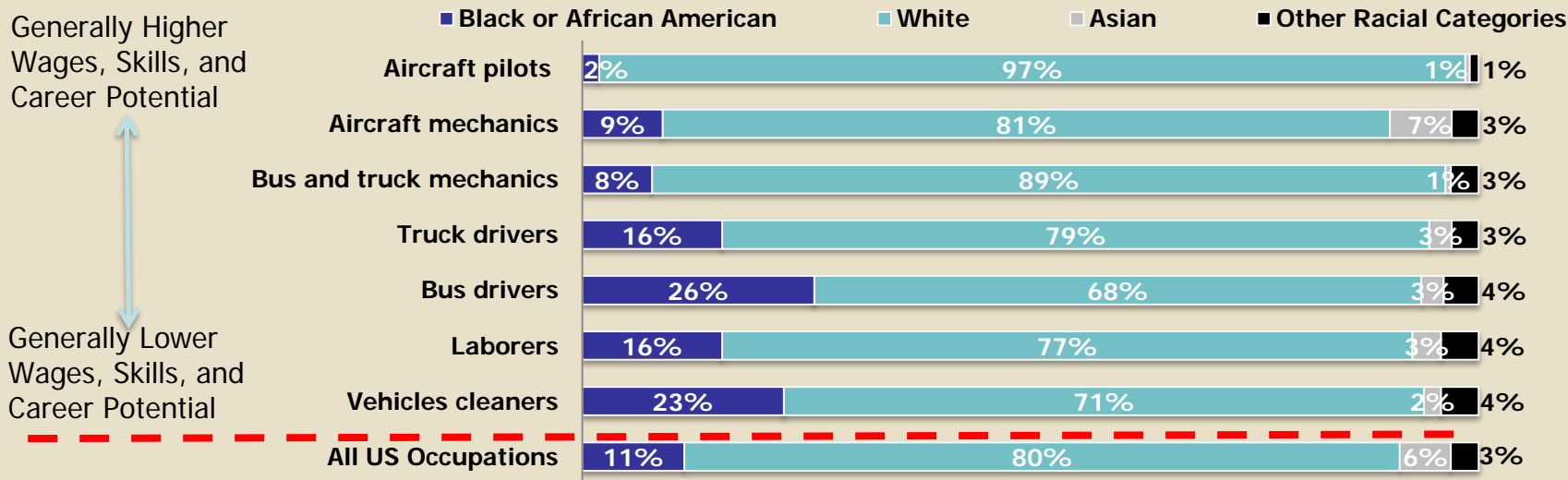


Source: Data Report on Transportation Workforce Needs by the U.S. Departments of Education, Transportation and Labor.

Challenge and Opportunity: Demographics

African-Americans and Hispanics underrepresented in higher paid and skilled transit and transportation jobs

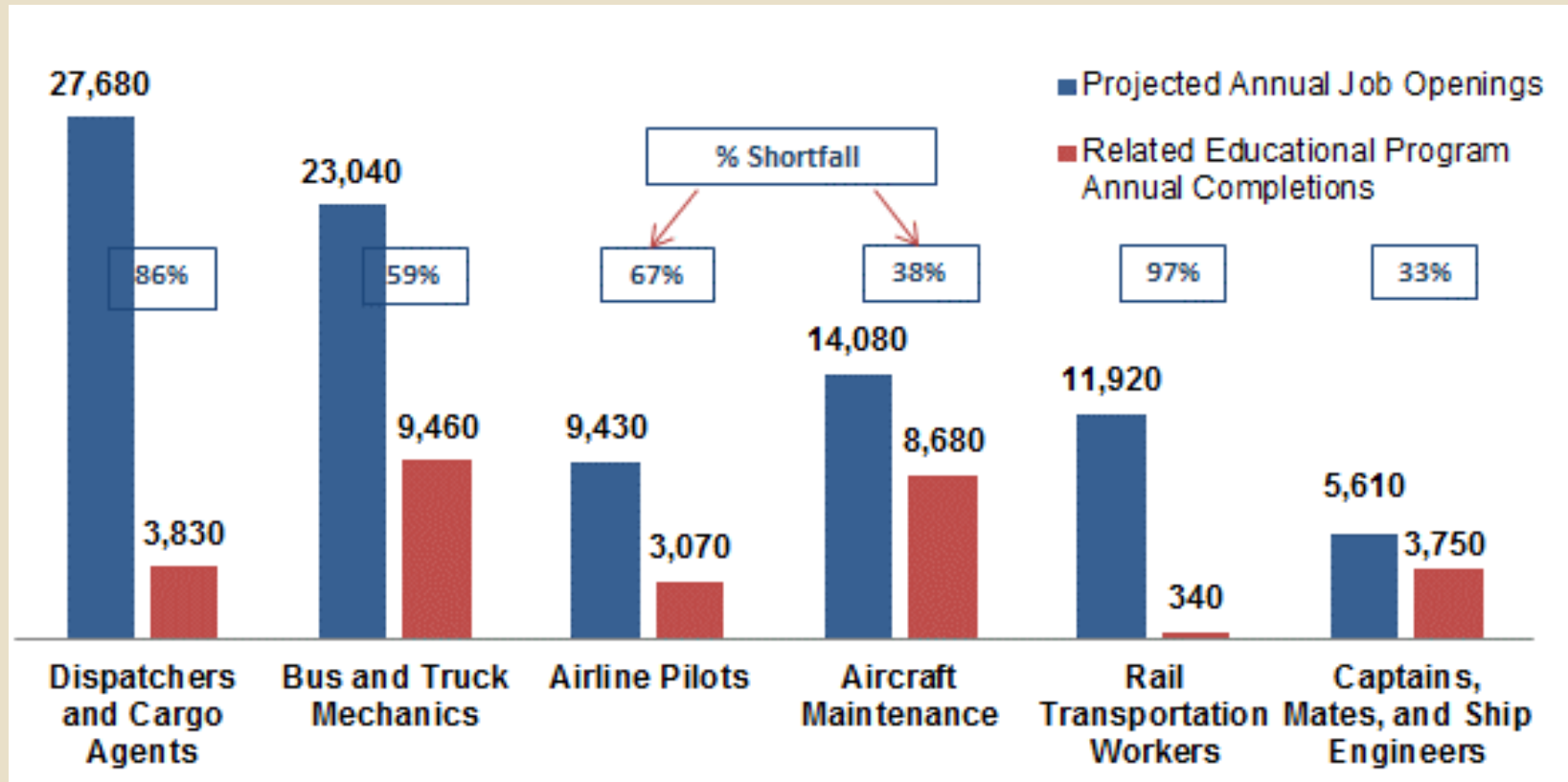
2014 Employment in Transportation Jobs by Race (Annual Averages)



Source: Data Report on Transportation Workforce Needs by the U.S. Departments of Education, Transportation and Labor.

Challenge and Opportunity: Educational Gap

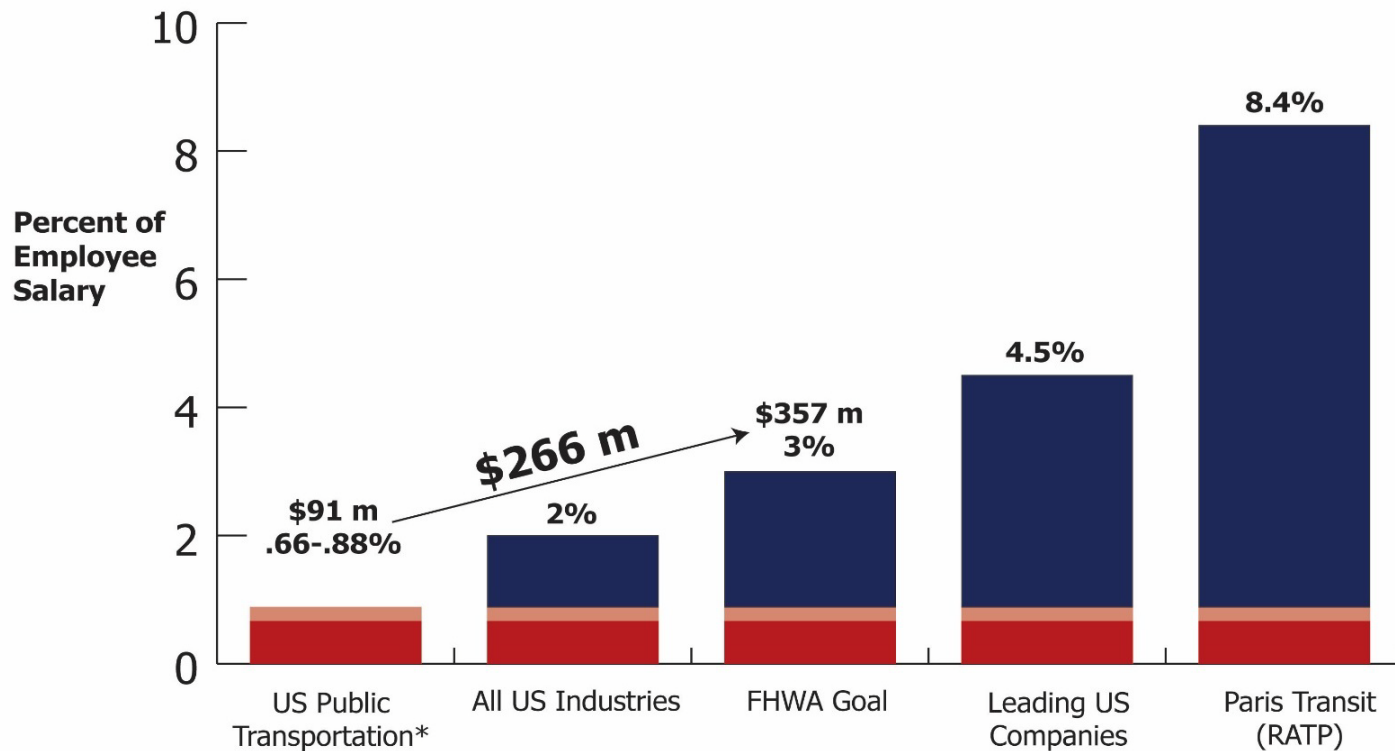
Projected annual job openings are 68% larger than annual completions of related educational programs across selected transportation job groups



Source: Data Report on Transportation Workforce Needs by the U.S. Departments of Education, Transportation and Labor.

Challenge and Opportunity: Underinvestment in Human Capital

Public Transportation Behind the Curve on Training Investment



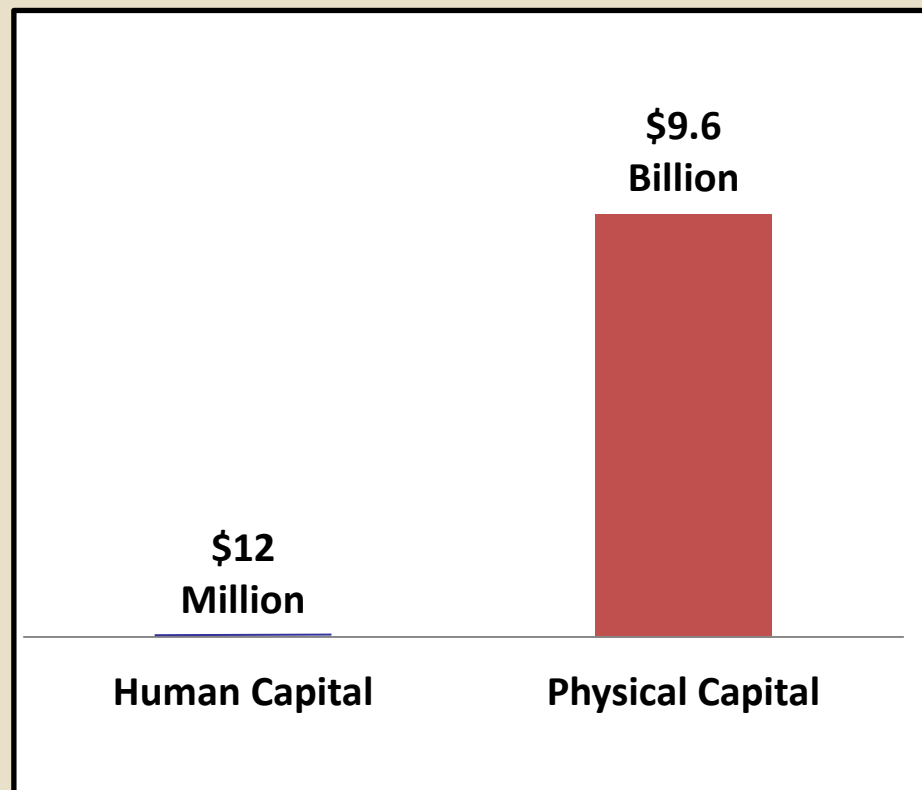
*Estimated by the Transportation Learning Center based on a 2010 survey of the transit industry

Challenge and Opportunity: Underinvestment in Human Capital

Transit lags in human capital investment

FTA investment in Human Capital Lags: Only 0.1% of its Investment in Physical Capital

- Annual Federal investment in transit workforce development (Map-21): Total \$12 million
- Annual Federal investment in physical capital: Total \$9.6 billion



Challenges and Opportunities – Recap

- Industry growth, retirement and turnover creating large number of job openings in next decade
- Inadequate supply of qualified workers to fill needs, despite generally good wages and career potentials
- Low level of industry and government investment in human capital development
- Transit lacks the capacity to train the next generation of blue-collar technicians

Roundtable Discussion (1)

1. Is your agency experiencing any of the workforce trends described earlier?
 - a. Large retirement?
 - b. Need to hire and train large numbers of drivers and mechanics?
 - c. Underrepresentation of women and minorities in highly skilled and high paying jobs?
 - d. Inadequate supply/pipeline of qualified workers for these high demand jobs?
 - e. Inadequate investment in training?
 - f. Lack of training resources?
2. What are the most difficult to hire positions in your frontline operations and maintenance workforce?
3. In which positions do you experience the most turnover and why?



Transit Career Pathways and Ladders of Opportunity

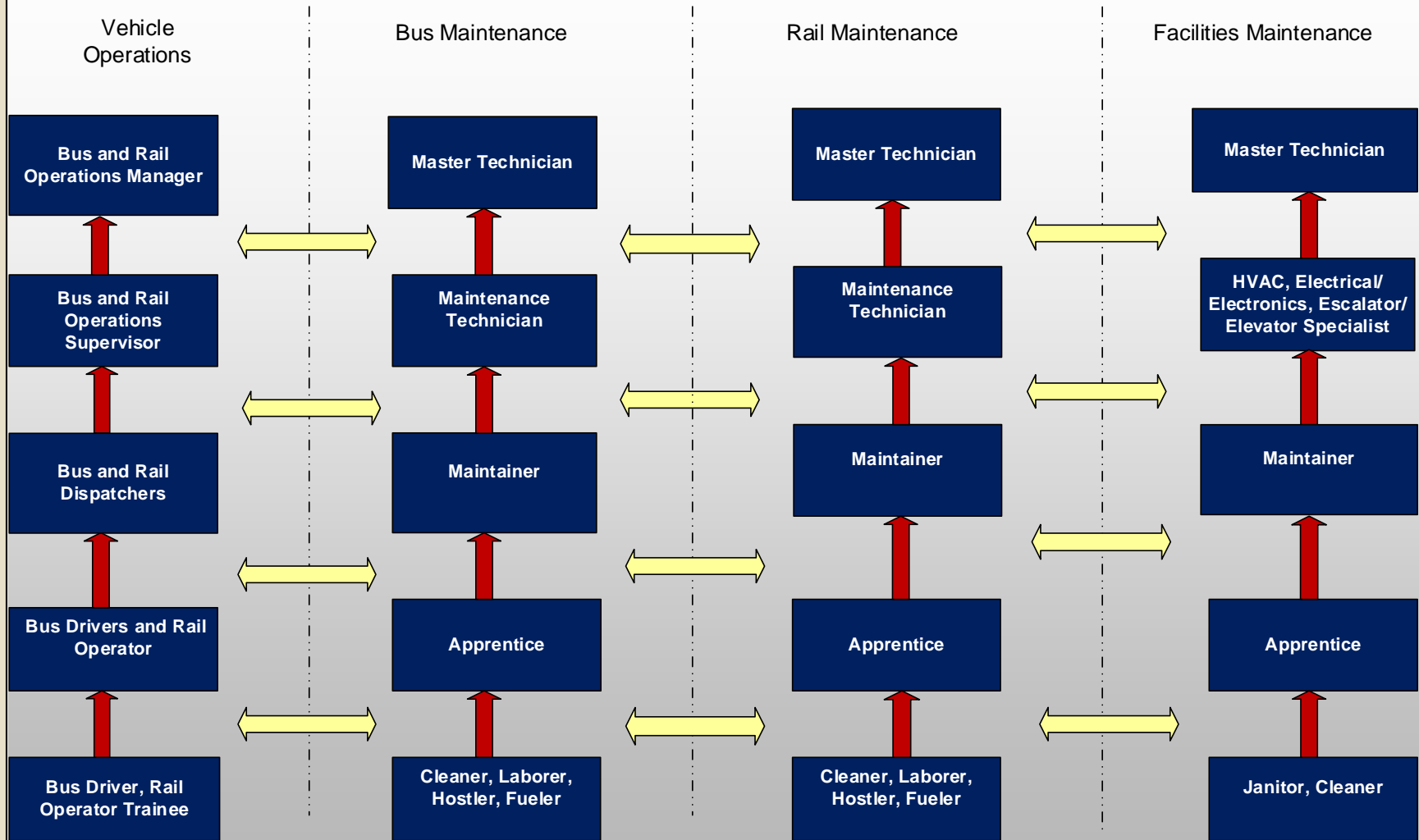


LADDERS OF OPPORTUNITY

— Revitalize — Connect — Work —

 *U.S. Department of Transportation*

Transit Operations & Maintenance Career Pathways and Ladders





National Strategies and Resources for Transit Frontline Workforce Development

National Training Consortia

- Transit Maintenance Occupations
 - Elevator/Escalator (2010-2015)
 - Signals Maintenance (2013-2017)
 - Rail Car Maintenance (2015-2019)
- Federal and agency contributions
- Joint Development by Local SMEs and Center ISDs
- Instruction-ready course materials, safety integrated
 - 35 courses for EI/Es complete
 - 21 courses for Signals complete and 4 more under development
 - 30 courses for Rail Car under development (full 4 yrs)
- Train-the-Trainer courses

Standards-Based Training and Apprenticeship System for Transit Frontline Occupations



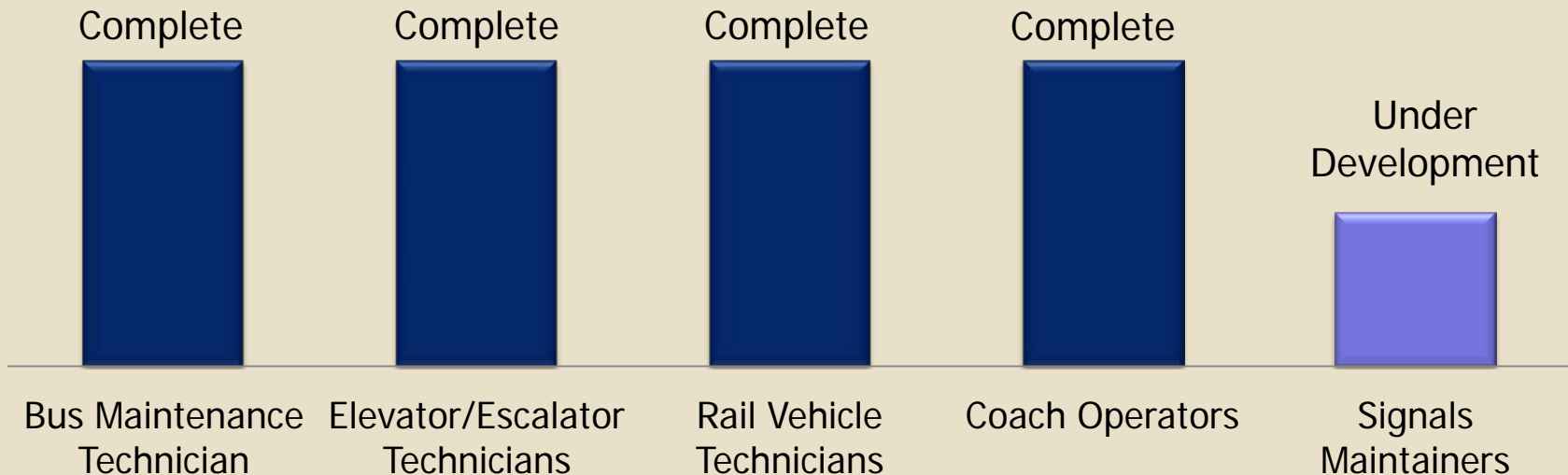
Transit Apprenticeships

- Logical and systematic method for career ladder advancement
- Central to federal and many state workforce strategies
- Addresses need for frontline workers and helps prepare people for next step up
- Combine/alternate work-based with school-based learning; classroom and structured OJT
- Prevalent in European countries and expanding in the US

Standards-Based Training and Apprenticeship

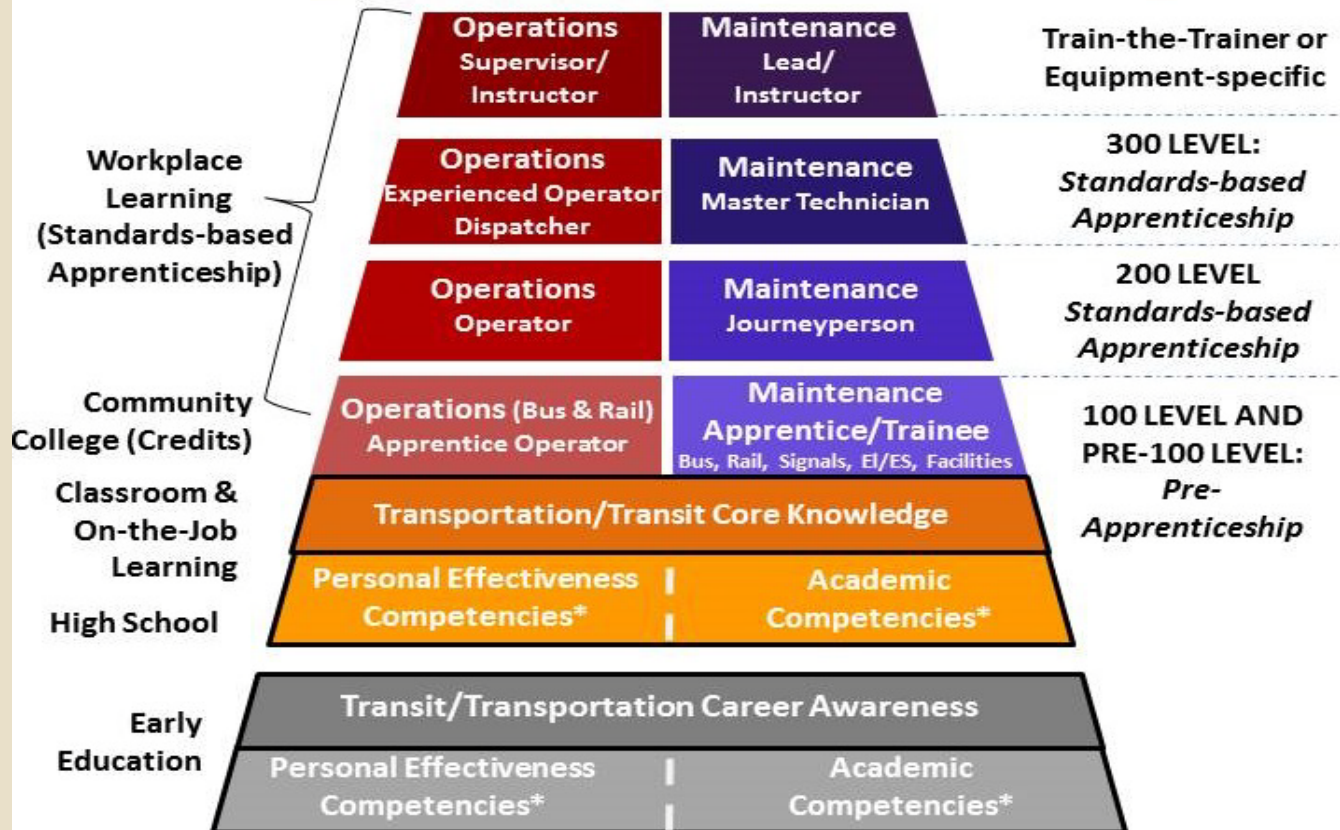
Registered apprenticeships in transit:

- Four frontline occupations approved by US DOL
- One more currently under development



Integrated Career Pathways

Integrated Career Pathways through Apprenticeship: Linking School-Based and Work-Based Learning



Source: TLC graphic building on US DOL Competency Model on Transportation, Distribution and Logistics.
* See DOL Competency Model for details: <http://www.careeronestop.org/competencymodel/competency-models/transportation.aspx>

Local Implementation

- Keystone Transit Career Ladder Partnership
- Project Empire Career Ladder Partnership
- Cleveland RTA – Rail Vehicle Technician Apprenticeship
- VTA – Coach Operator Apprenticeship and Mentorship
- Elevator-Escalator Apprenticeships at BART, SEPTA, and WMATA





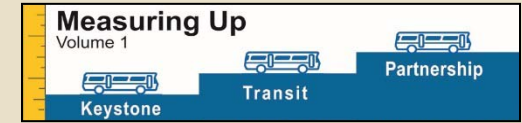
How do we know
this works?

Impact: Frontline Training and SOGR

Performance Indicators	Trend
Repeat and chronic failures	↓
Repair costs (labor and parts)	↓
Safety accidents	↓
Unnecessary part replacement	↓
Customer complaints	↓
Vehicle spare ratio	↓
Late pullout/Bus days lost/Runs cancelled	↓
Cost per mile	↓
Vehicle Life-cycle Costs	↓
Mean distance between failures/road calls	↑
Repair efficiency	↑
Insourcing	↑

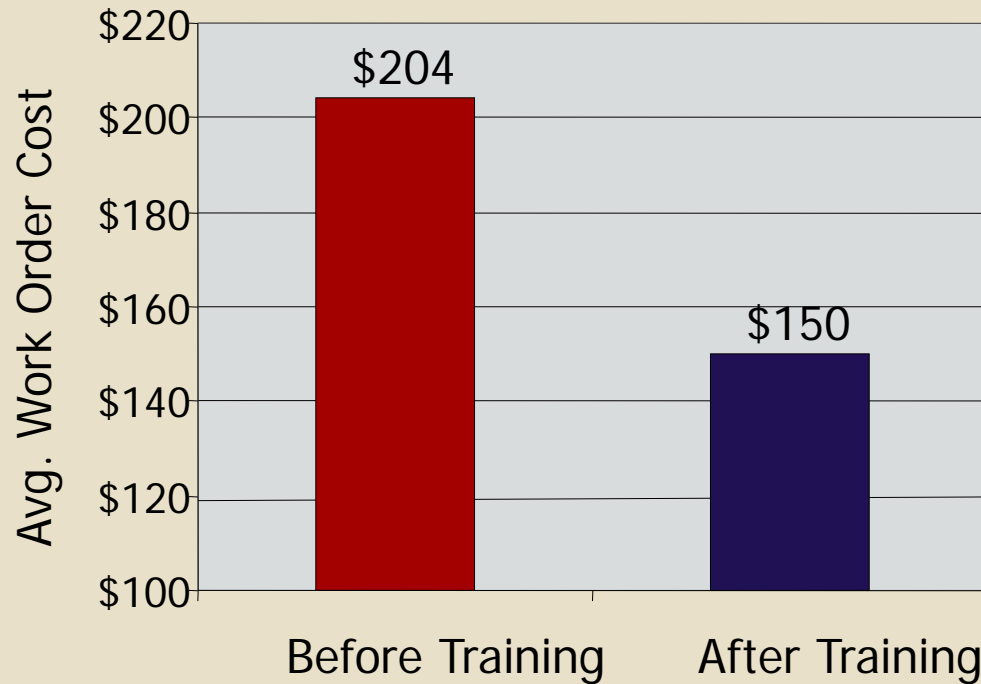
SMALL PROPERTY RESULTS

Keystone Transit Career Ladder Partnership



Partnership: AMTRAN & ATU Local 801

AMTRAN Battery Work Order Costs



Keystone Career Partnership has been a God-sent program to the smaller Class 4 and Class 5 properties across the Commonwealth. The Authority is experiencing fewer A/C failures and our repairs are lasting longer through multiple cooling seasons. A side bar to fewer A/C failures is fewer customer complaints. The mechanics that have attended classes come back to the Authority with their “batteries charged” and ready to go. They feel good about themselves, their jobs and bring back a wealth of knowledge garnered from the training session they attended. The entire Keystone program has been a “win-win” program for ATA.

*Charlie Shilk,
Director of Maintenance
Johnsonburg Area
Transportation Authority*

MEAN DISTANCE BETWEEN FAILURES

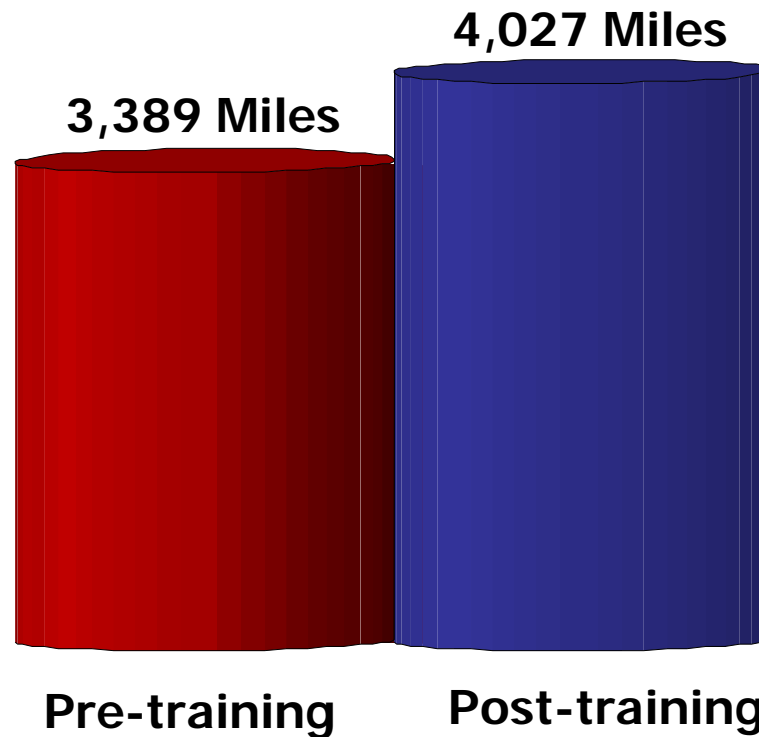
Project Empire Transit Career Ladder Partnership

Smart Investment Partnership



Partnership: CDTA & ATU Local 1321

CDTA System-wide Monthly Average MDBF, Pre and Post Training



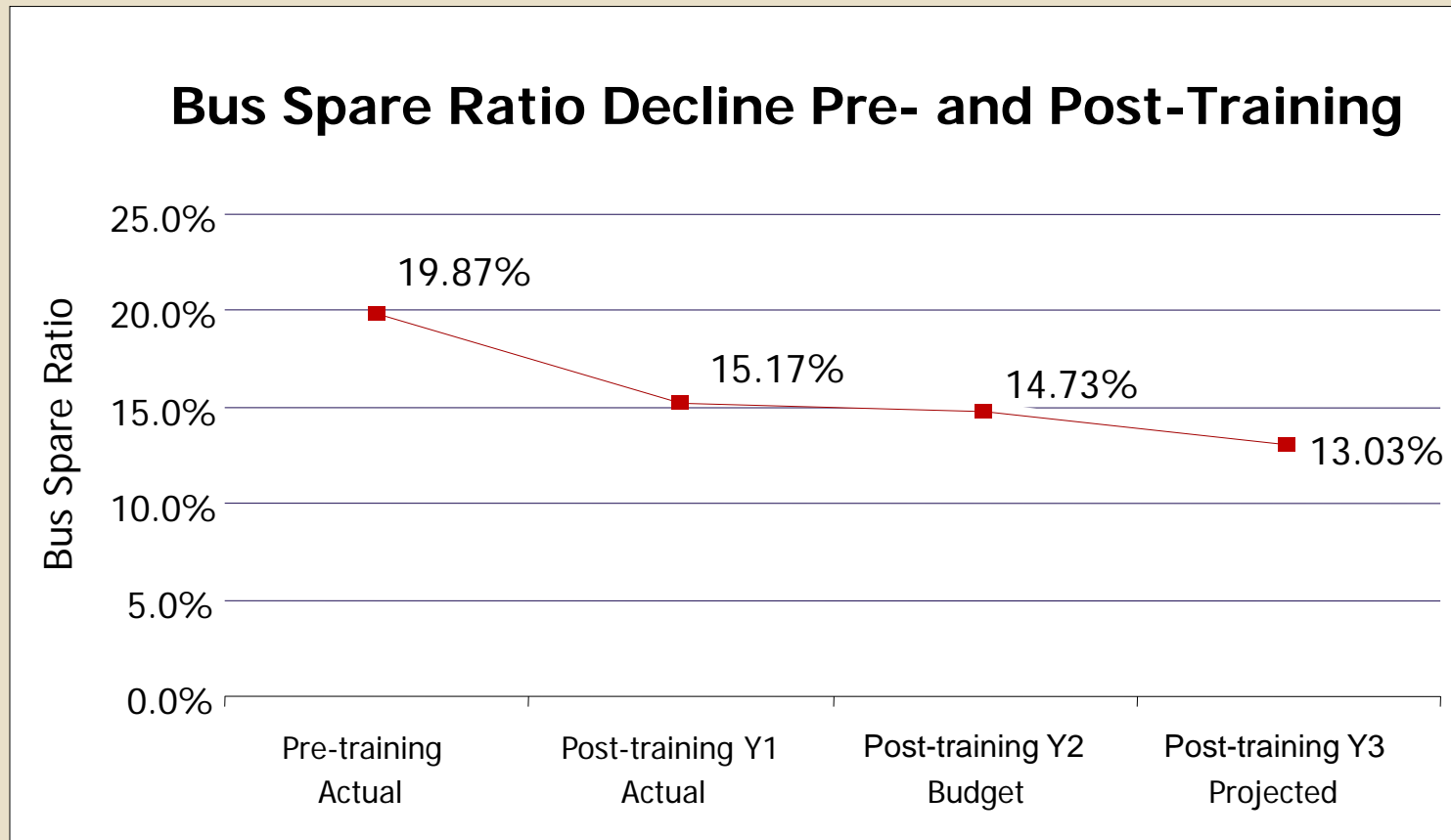
BUS SPARE RATIOS DECREASE

Project Empire Transit Career Ladder Partnership



Partnership: CDTA & ATU Local 1321

CDTA has successfully reduced its bus spare ratio from close to 20 percent prior to training to 15 percent after



MAINTENANCE WORK INSOURCING

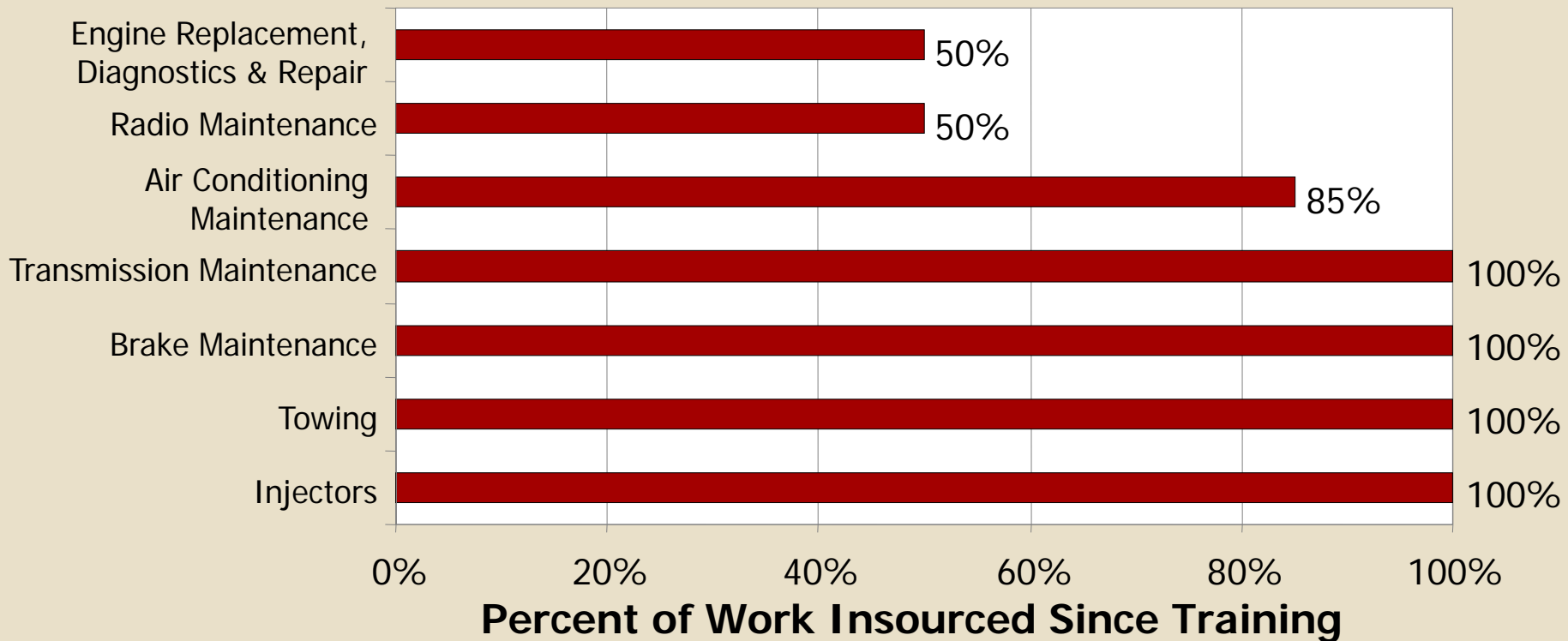
Project Empire Transit Career Ladder Partnership



Partnership: CDTA & ATU Local 1321

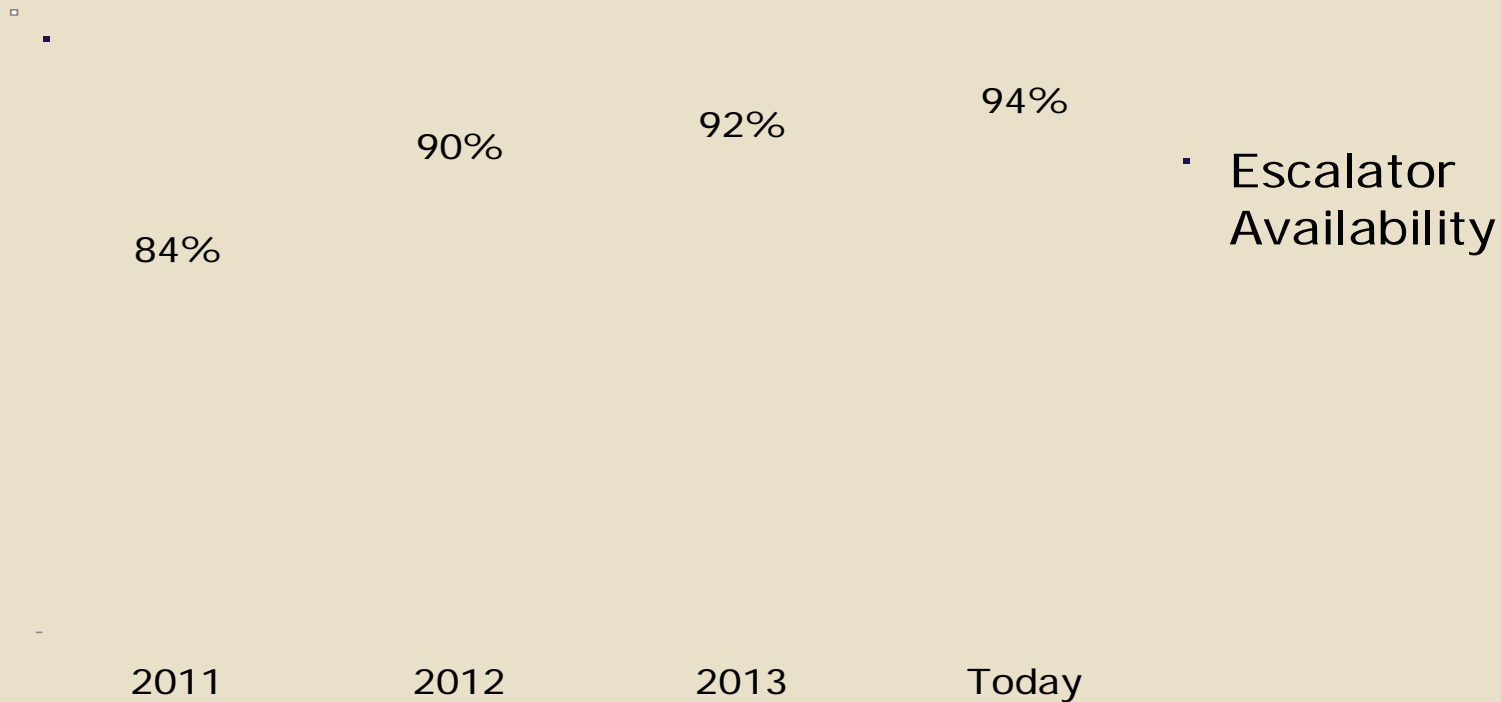
100 percent of transmission, brake and injector repair jobs have been insourced since Project Empire began

Maintenance Work Insourcing



How Do We Know it Works?

WMATA escalator availability improves



Source: WMATA Escalator Status Report

How Do We Know it Works?

Consortium cultivates in-house expertise and saves EI/Es maintenance costs

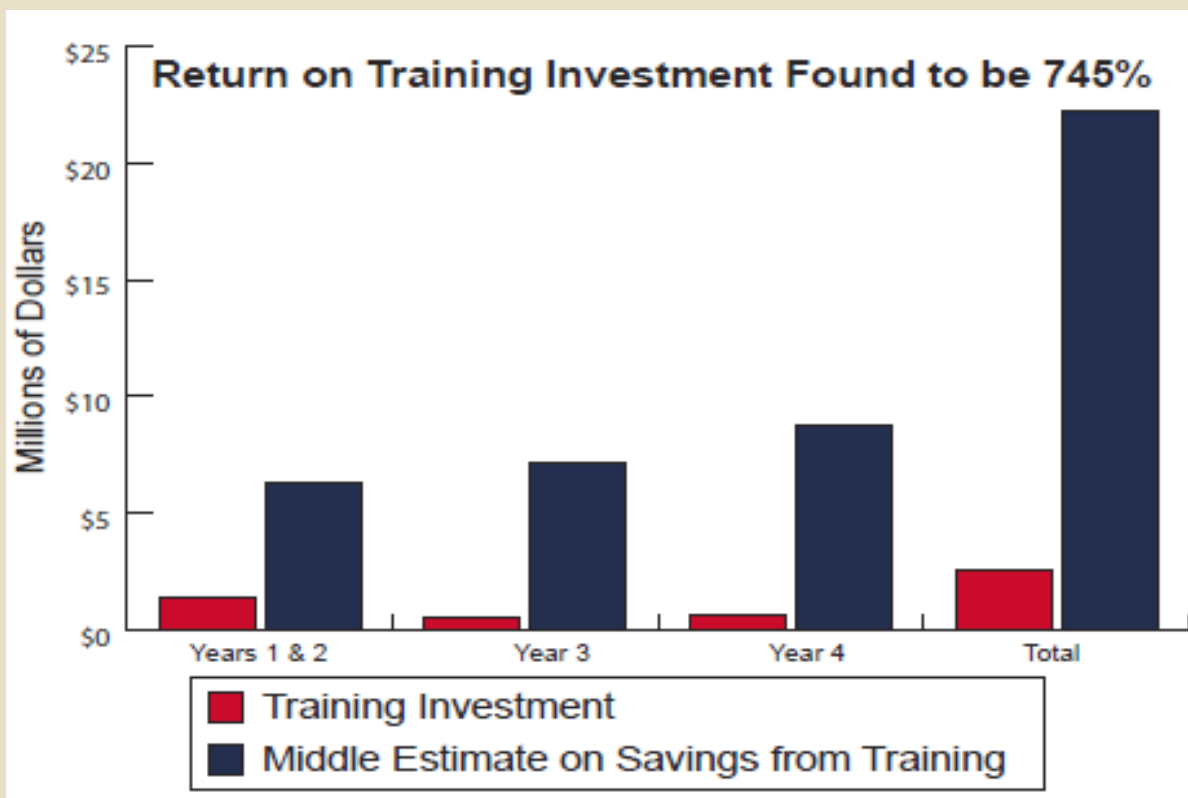
EI/Es Maintenance Labor Cost Comparisons
External vs. In-house for 2-Technician Crews

	Estimate	External Contractors (2 person crew)	In-house Specialists (2 person crew)	Hourly Savings (2 person crew)	Annual Savings (based on 20 F/T technicians)
Agency A	Low	\$380	\$136	\$217	\$4,336,000
	High	\$558	\$163	\$422	\$8,440,000
Agency B	Low	\$400	\$130	\$420	\$5,400,000
	High	\$550	\$130	\$420	\$8,400,000

Source: TLC preliminary analysis based on raw data from two EI/Es consortium member organizations

How Do We Know it Works?

Training pays for itself many times over



TRANSIT PARTNERSHIP TRAINING: METRICS OF SUCCESS

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Expanded Edition

Roundtable Discussion (2)

1. Given the workforce challenges you have shared earlier, what initiatives has your agency or agencies in your region implemented? What are the outcomes?
2. Does your agency conduct skills gap analysis to determine training needs? If yes, what are the results and how did you use them? If not, is this something you'd like to explore in the future?
3. Does your agency have a formal or informal mentorship program for frontline workers?
4. Does your agency have an apprenticeship program for frontline workers?
5. Do agencies in your region (small or large) share training resources? Instructors, materials, equipment, exchange of knowledge and information, etc.?

Questions? Comments?

Contact the Transportation Learning Center

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Questions and Discussion