

2015 CTAA EXPO Workshop

Upskill Your Frontline Workforce: National Resources and Local Implementation

June 3, 2015

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Introduction and Expectations

- **Introduction**
 - Tell everyone about yourself and your organization
 - Very briefly, what are your biggest challenges when it comes to recruiting, training and retaining your frontline workforce?
 - What do you expect to get out of this workshop?
- **About the Transportation Learning Center**
- **Session Topic**

Engagement: Training Partnerships in Transit – Location Map

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



EVERETT TRANSIT

Everett
Seattle
Tacoma



King County



Portland



SFMTA



Sacramento
San Francisco
San Jose



Los Angeles
San Diego



Salt Lake City

Utah



Denver



Des Moines



St. Louis



Dallas



Austin

Houston



METRO



Minneapolis



Chicago



Indianapolis



Cleveland



Buffalo



Centro



CDTA



COTA



West Virginia



Nashville



Louisville



Nashville MTA



Atlanta



MARTA



CATS



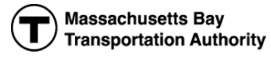
Amtran



AMTRAK



LANta



Massachusetts Bay Transportation Authority



PATCO



NJ TRANSIT
The Way To Go.



PATH



MTA



SEPTA



Port Authority



CAT



TRANSPORT WORKERS
UNION
OF AMERICA

- 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)

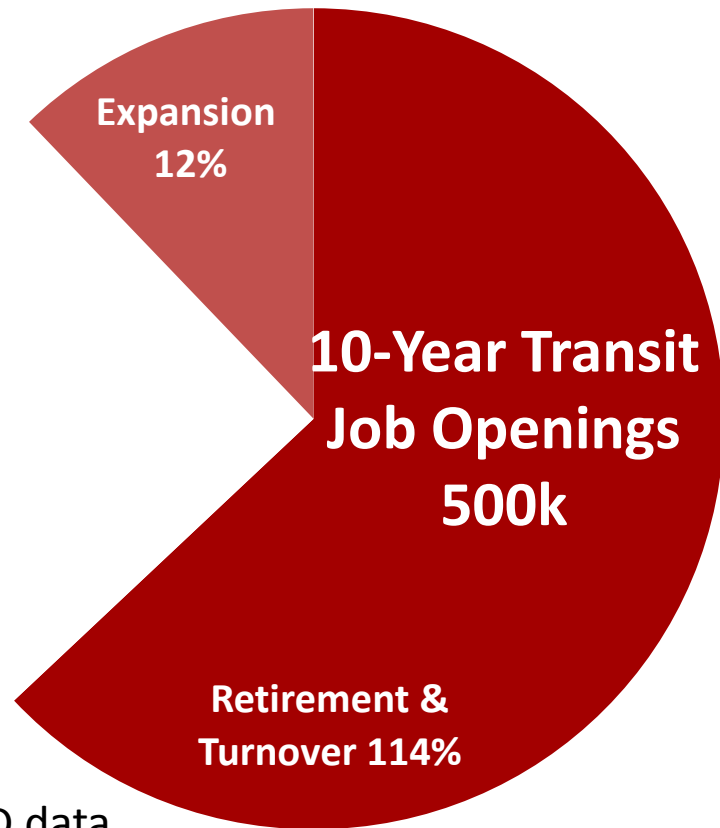
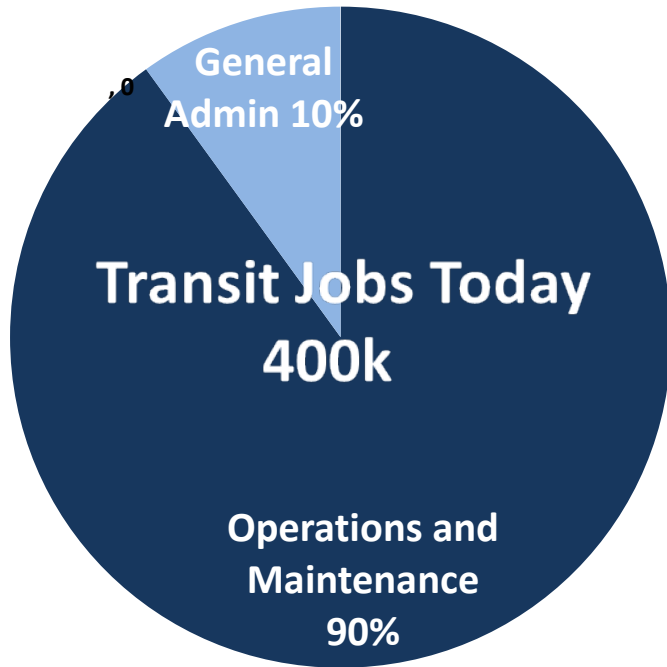


- TWU Local 100 (NYC)
- TWU Local 208 (Columbus)
- TWU Local 234 (Philadelphia)

Session Overview

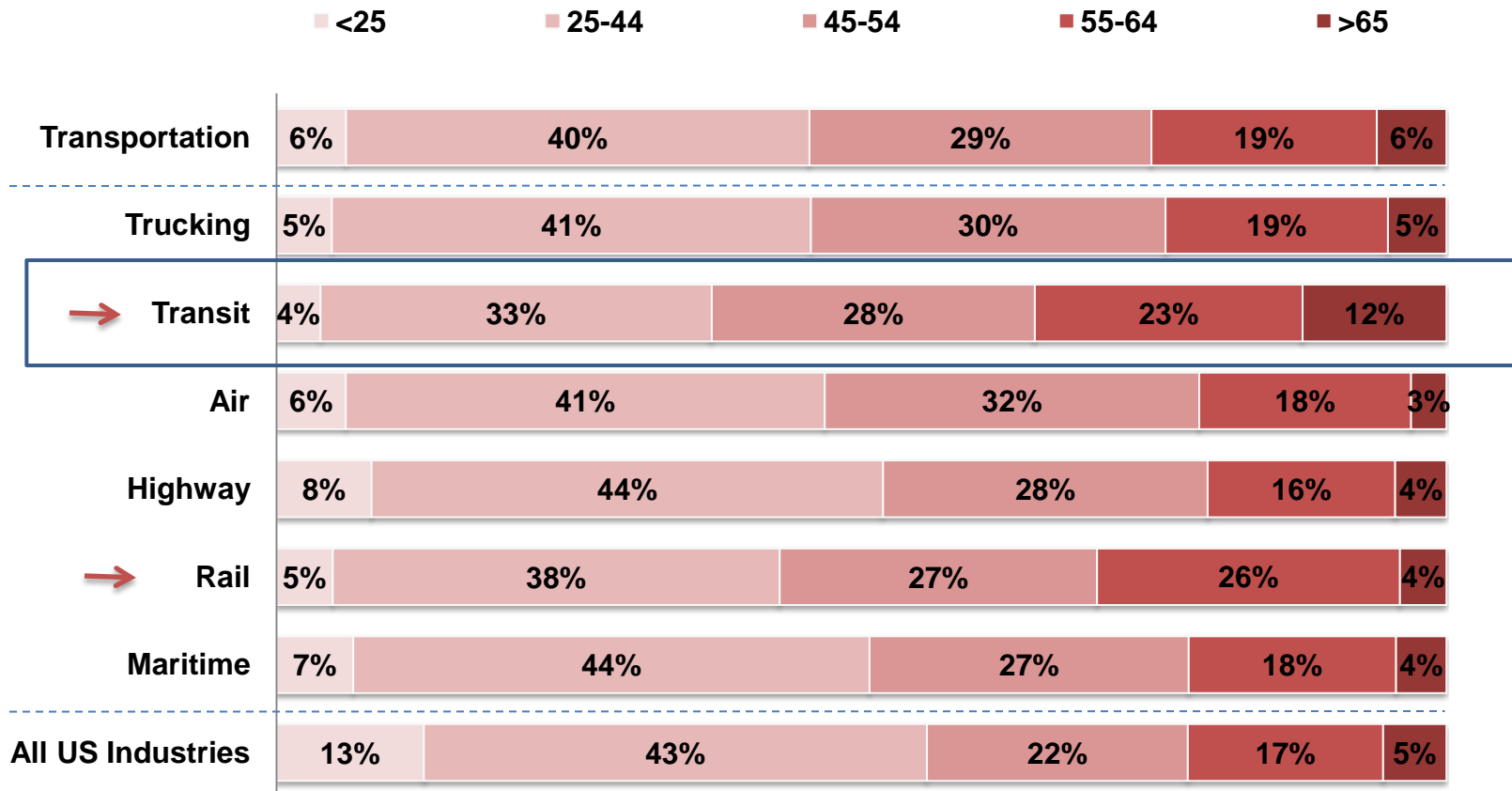
- **The Big Picture - National Analysis of Transit Workforce Trends and Challenges**
- **Breakout Discussion – Small/Rural/Tribal Agency Skills Needs and Unique Challenges**
- **Small Agency Training Models and Sharing of Resources**
- **National Framework and Resources**
- **Breakout Discussion – Community Transportation Workforce Innovations**
- **Wrap-up and Q&A**

126 Percent of Today's Transit Workforce will have to be hired and trained in the next 10 years; 90 percent are frontline

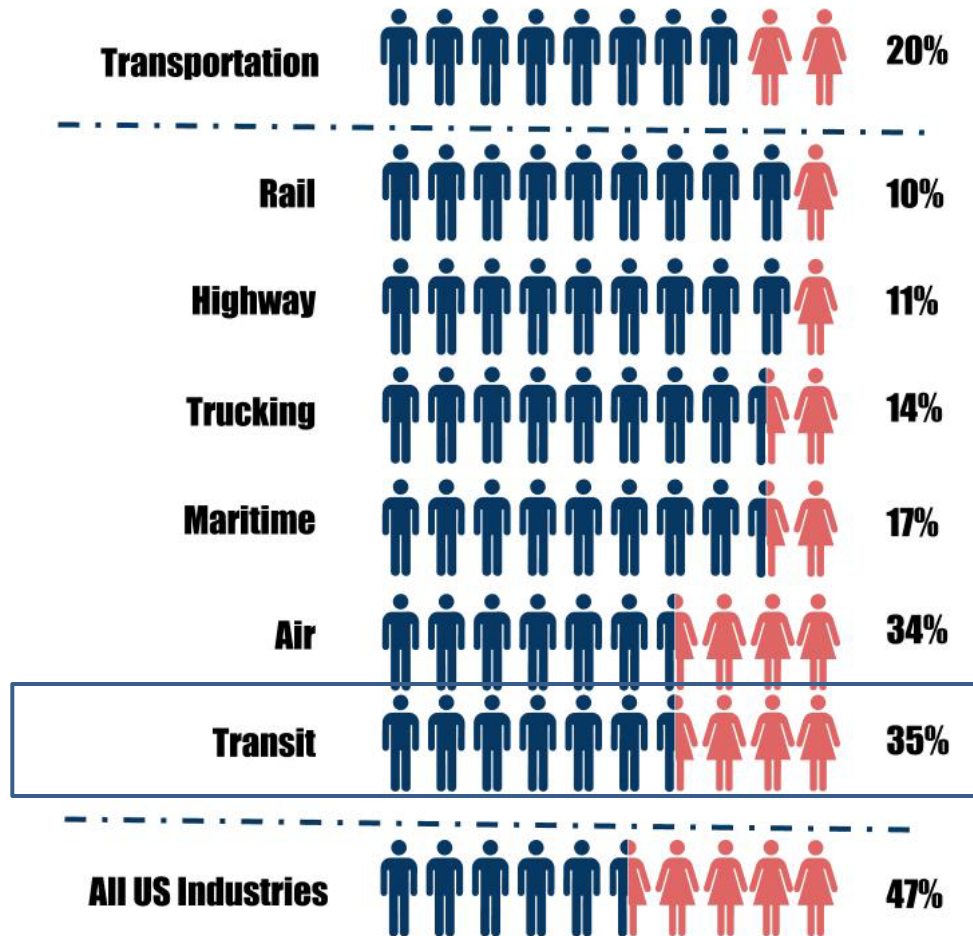


Source: TLC Analysis of BLS and NTD data.

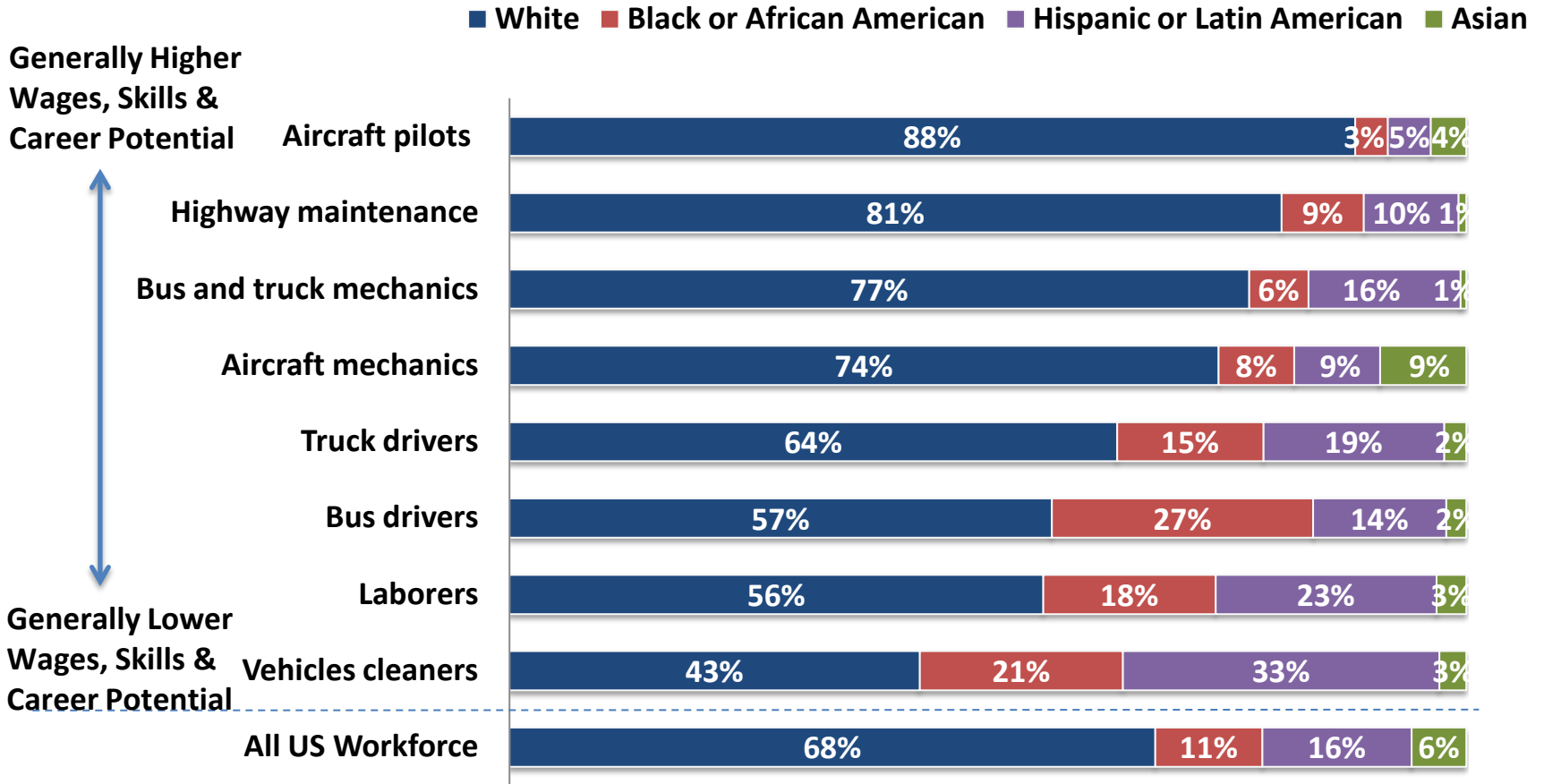
Transit has the highest percentage of older workers among all transportation sectors



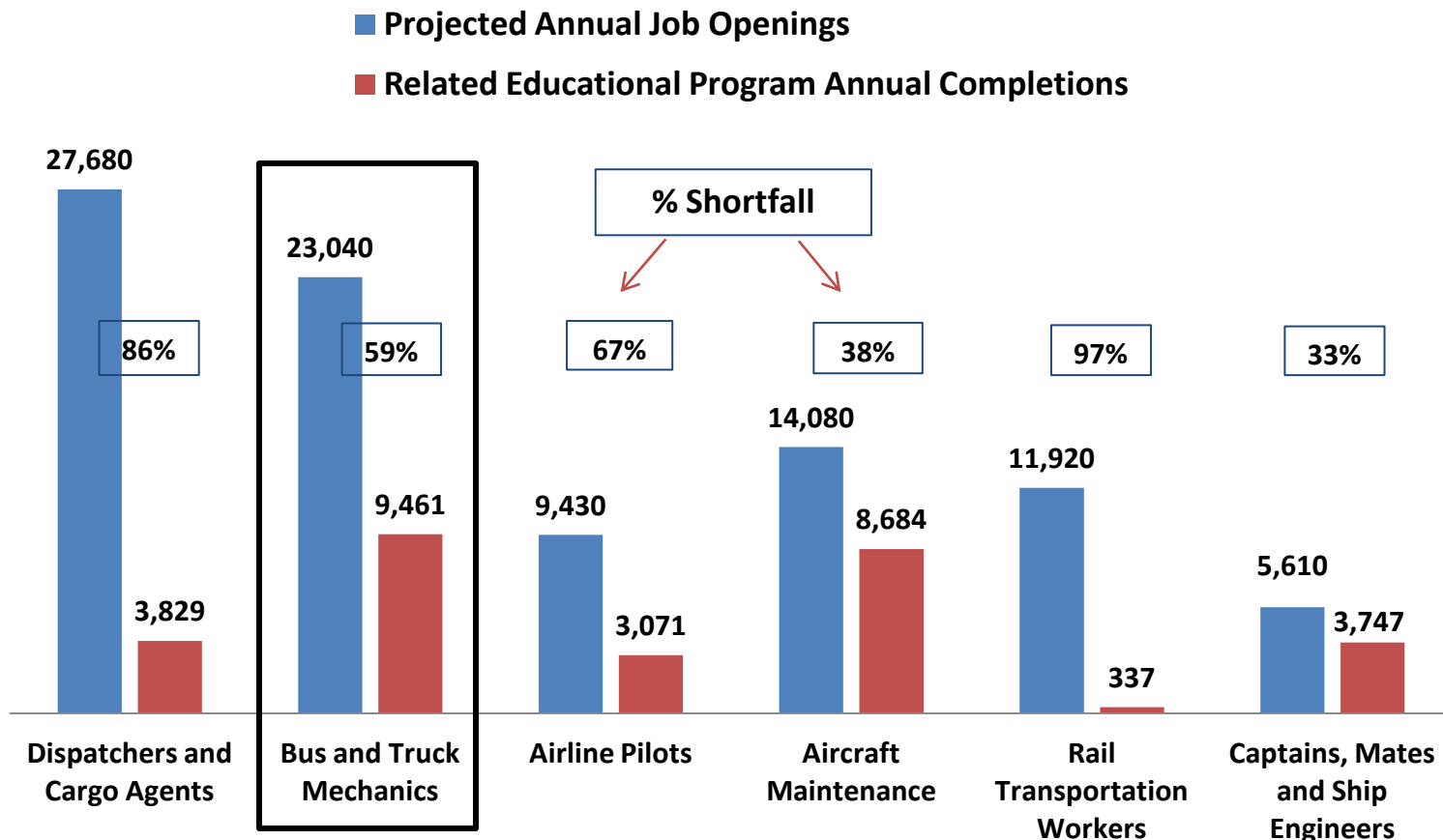
Women continue to be under-represented in transit, especially in technical positions e.g. mechanics



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

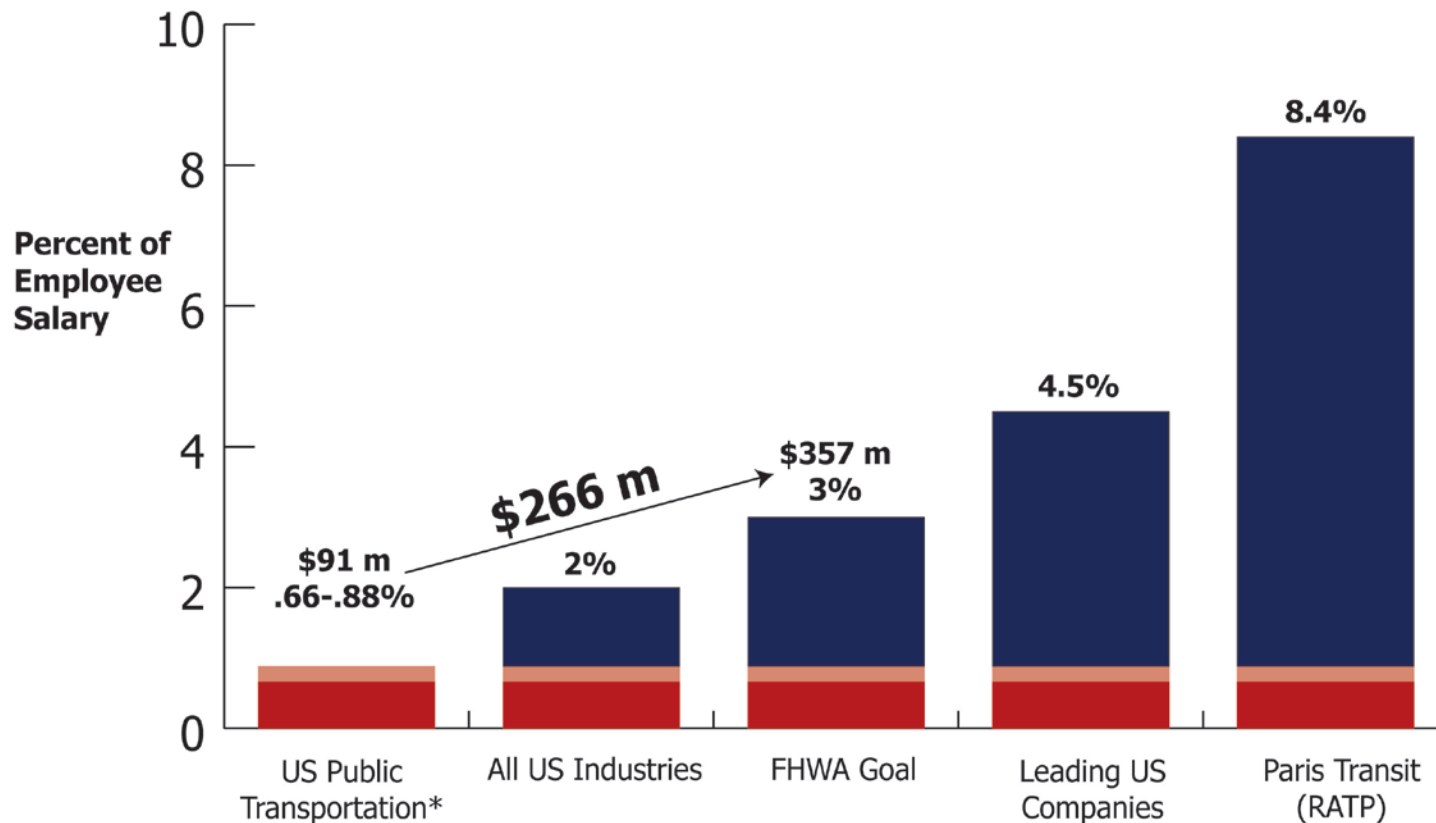


Projected annual job openings are 68% larger than annual completions of related educational programs across selected transportation job groups



Transit Lags in Human Capital Investment

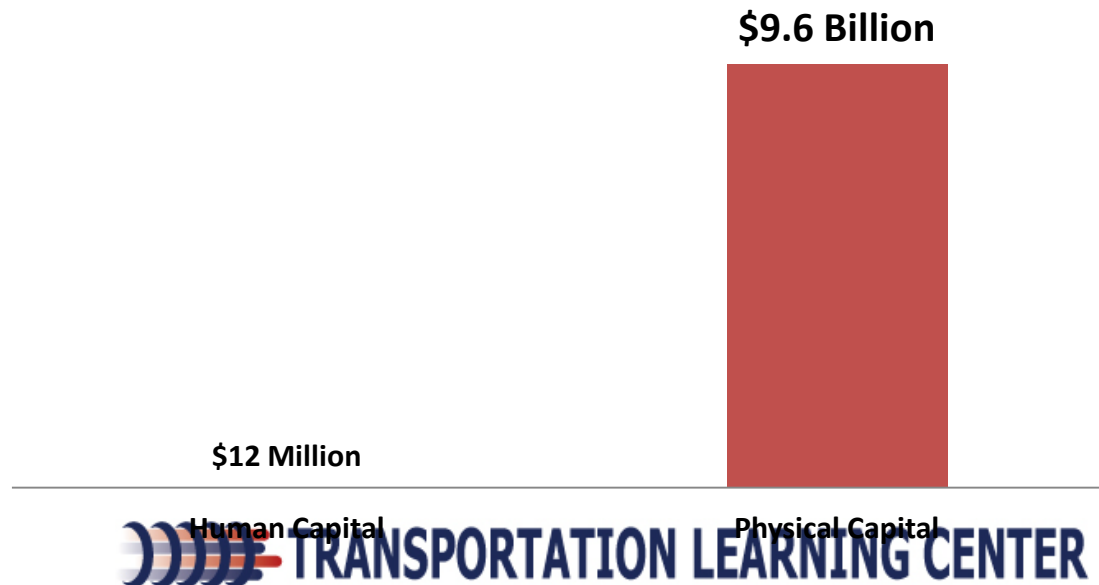
Public Transportation Behind the Curve on Training Investment



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

Transit Lags in Human Capital Investment

- ▶ FTA investment in Human Capital Lags: Only 0.1% of its Investment is Physical Capital
 - ▶ Annual Federal investment in transit workforce development (Map-21): Total \$12 million
 - ▶ Annual Federal investment in physical capital: Total \$9.6 billion



The Challenge - 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
- The smaller the agency, the bigger the challenge

Roundtable Discussion (1)

1. **Is your agency or community transportation in general 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?**

Small Agency Innovations

- **Labor-Management Partnerships:**
 - Keystone Transit Career Ladder Partnership – PA small agencies, SEPTA, and Pittsburgh Port Authority
 - Project Empire Career Ladder Partnership – Upstate NY
- **SOP for Training – Des Moines**
- **Outcomes and Impact**

Labor-Management Training Partnership



- **Employer and union jointly governed workforce development program**
- **Partners work together to identify workforce skills to upgrade**
- **The Partnership develops training programs to meet identified challenges**

Keystone Partnership - Need

- **Increase in Ridership**
- **Large-scale Retirement of Skilled Mechanics – 40% of Rail Vehicle Mechanics can retire tomorrow**
- **New Technologies – Computer-controlled Electronics on Rail Cars, Automated Signals Systems**
- **Lack of Structured Career Ladders for Incumbents and New Hires – Over 50% Failure Rate in Practical Promotion Tests**
- **Workforce in Dire Need of Training to Maintain State of Good Repair**

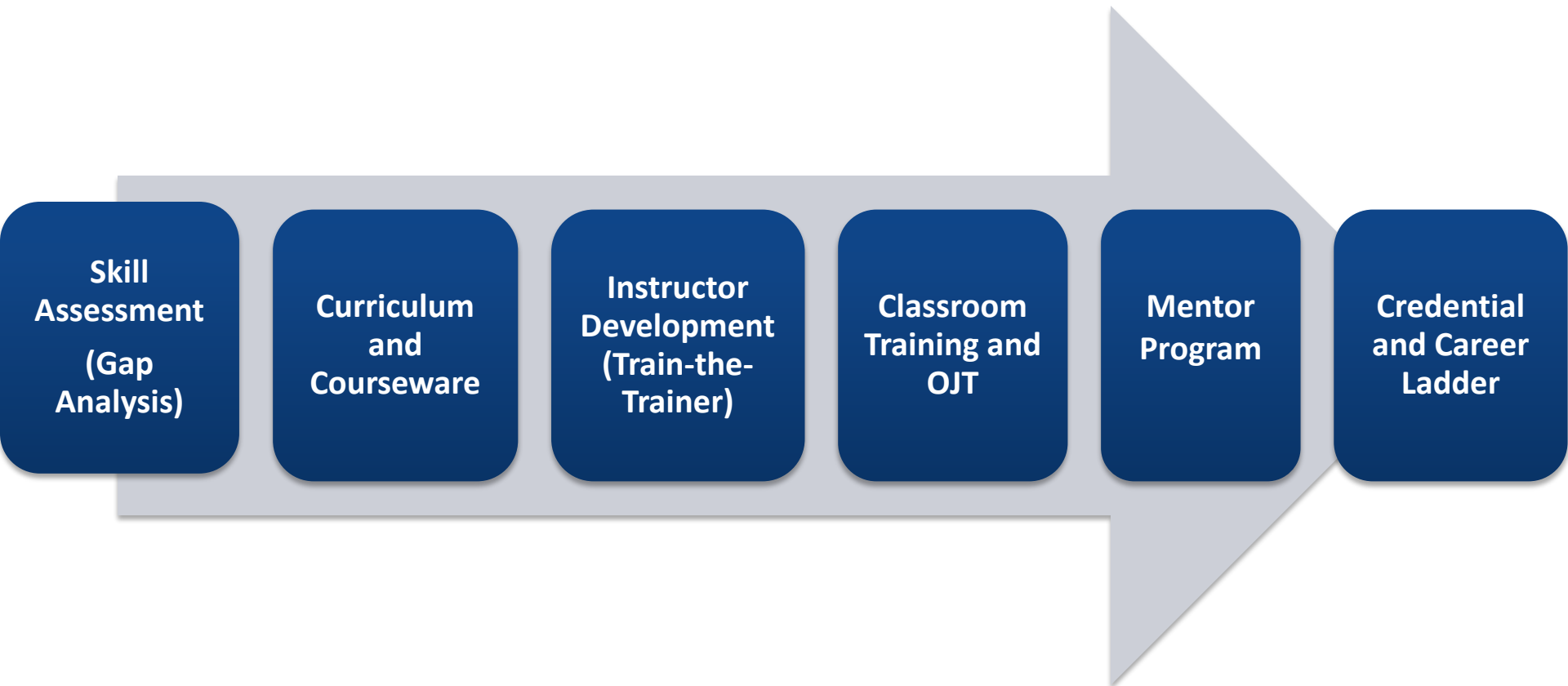
Keystone Partnership - Formation

- **Labor & Management found Common Interest in Frontline Workforce Training**
- **Originally Funded by PA Dept. of Labor & Industry – \$715,000 Grant Statewide**
- **Supported by PA AFL-CIO**
- **Initially between SEPTA/TWU Local 234**
- **Grew to be Statewide partnered with PPTA to include smaller agencies and later Pittsburgh**
- **33 Agencies and 23 Unions Participated**

Project Empire Partnership

- Project Empire Transit Career Ladder Partnership since 2006
- Labor- management partnership similar to Keystone
- Created to alleviate technical skills shortages and improve state of good repair
- Focused on PMI Training after identifying deficiencies

Process for Data-driven Frontline Training



Sample Workforce Skill Survey

Key

- 0 - Unaware of this type of work
- 1 - Aware of this type of work
- 2 - Able to perform this type of work with supervision
- 3 - Able to perform this type of work independently
- 4 - Able to instruct others in this type of work.

Read and interpret multimeters

Task

Statement

- | Task | Statement |
|-----------|---|
| 0 1 2 3 4 | Use digital multimeter |
| 0 1 2 3 4 | Use analog multimeter |
| 0 1 2 3 4 | Understand multimeter abbreviation, symbols and terminology |
| 0 1 2 3 4 | Understand displays on multimeters, reading data |
| 0 1 2 3 4 | Measure AC voltage |
| 0 1 2 3 4 | Measure DC voltage |
| 0 1 2 3 4 | Measure resistance and continuity |
| 0 1 2 3 4 | Measure AC or DC current |
| 0 1 2 3 4 | Apply Ohm's law |
| 0 1 2 3 4 | Use data from multimeter to make diagnostic determinations |

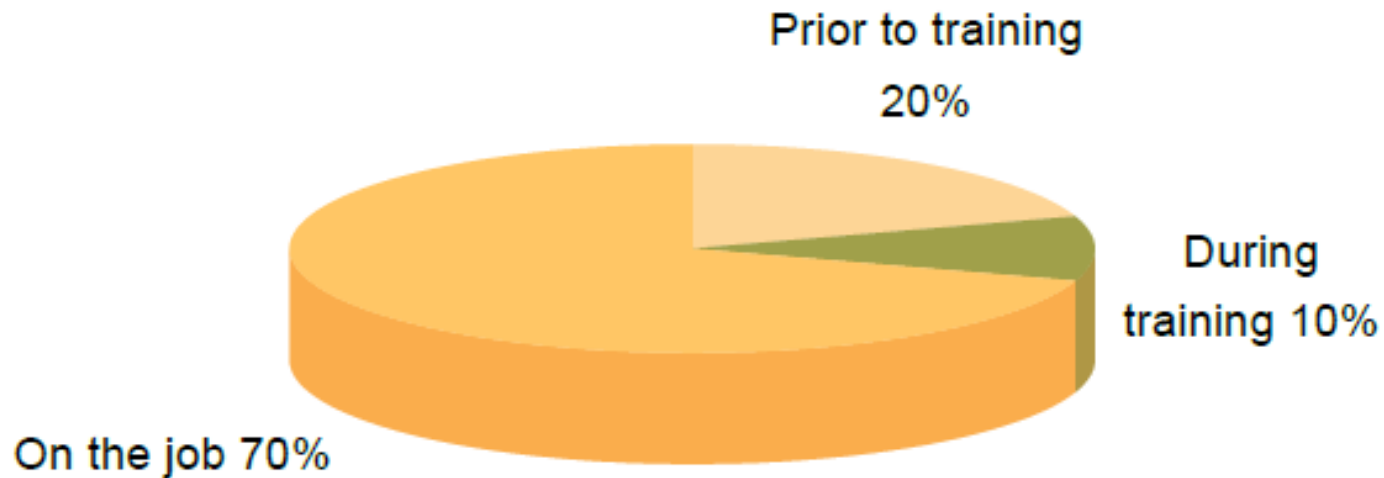
Sample Skills Gap Report

| <i>Responsibility Name</i> | responding "3" or "4" | responding "0", "1" or "2" | Average responses |
|--|-----------------------|----------------------------|-------------------|
| Task Statement | | | |
| Take readings from meters at established intervals and make corrective steps | 65.6% | 34.4% | 2.63 |
| Take readings from gauges at established intervals and make corrective steps | 36.4% | 63.6% | 1.98 |
| Use control boards to operate or control power generating equipment such as generators | 36.4% | 63.6% | 1.86 |
| Regulate equipment operations and conditions based on data from recording and indicating instruments or from computers | 29.6% | 70.4% | 1.75 |
| Operates or controls machinery that generates electric power, using control boards or semiautomatic equipment. | 12.6% | 87.4% | 0.93 |

Hands-on and OJT

- **Lecture is Least Effective**
- **Works for Teaching History...**
 - Easily relate to human events
- **Not for Adjusting Valves!**
 - “Telling how” doesn’t relate
- **ASE Survey for TRB**
 - 95% want more hands-on learning

Hands-on and OJT



Josh Bersin and Associates, 2008

Regional Collaboration

- **Involvement of PPTA**
- **SEPTA training slots were opened up to small agency bus mechanics**
- **SEPTA trainers traveled in some cases to other locations to deliver training**

Using SOPs for Training

- **SOPs – Standard Operating Procedures**
- **Step-by-step Instructions for Performing Routine Jobs (tune-ups, brake reline, etc.)**
- **TLC helped DART develop SOPs that were in turn used for classroom and hands-on training**
- **Worker involvement**
- **Generate task checklists for mentoring**



Impact: Frontline Training and SOGR

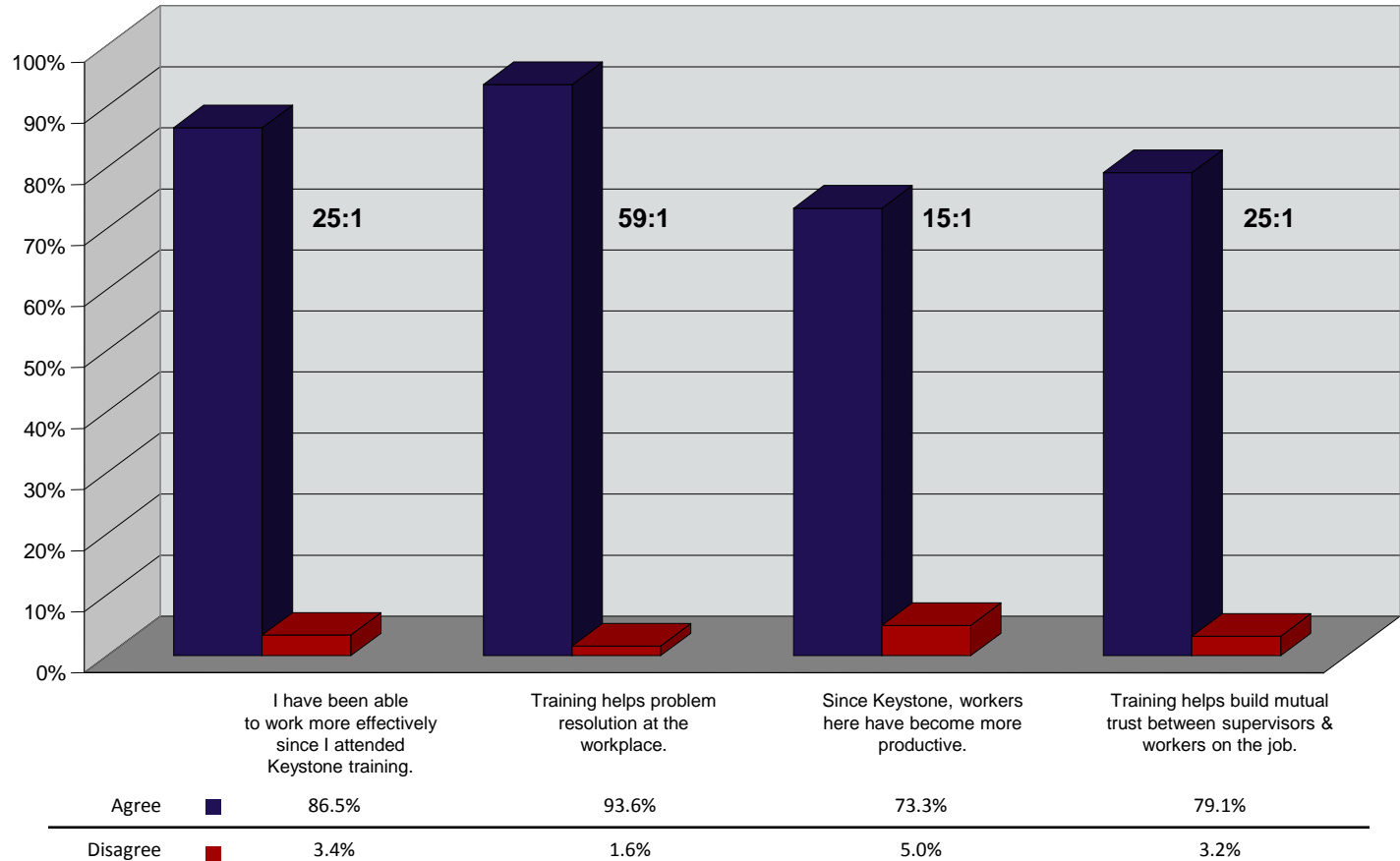
| Performance Indicators | Trend |
|---|-------|
| Repeat and chronic failures | ↓ |
| Repair costs (labor and parts) | ↓ |
| Safety accidents | ↓ |
| Unnecessary part replacement | ↓ |
| Customer Complaints | ↓ |
| Vehicle spare ratio | ↓ |
| Late pullout/Bus days lost/Runs cancelled | ↓ |
| Cost per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

EFFECTS OF TRAINING ON PRODUCTIVITY

Keystone Transit Career Ladder Partnership

Statewide Training Survey - Workers

Training helps augment individual worker skills. Overall efficiency and productivity improve dramatically.



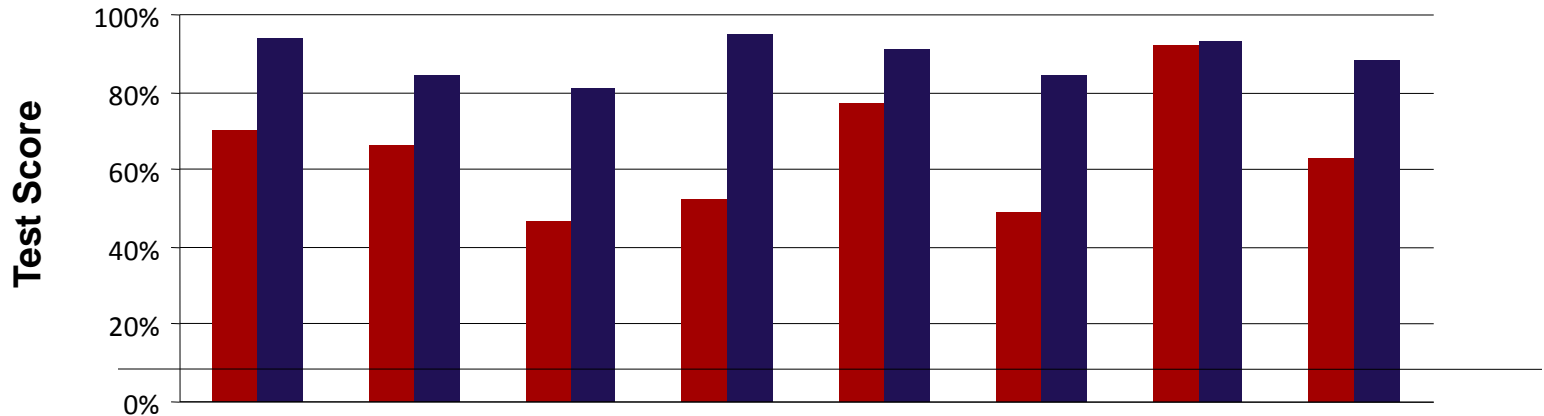
KNOWLEDGE TEST SCORE IMPROVEMENTS

Project Empire Transit Career Ladder Partnership



Partnership: CDTA & ATU Local 1321

Albany Pre-training and Post-training Test Scores



| | | | | | | | | |
|----------------------------|------------|------------|------------|------------|------------|------------|-----------|------------|
| ■ Pre-test Score | 70% | 67% | 47% | 52% | 77% | 49% | 92% | 63% |
| ■ Post-test Score | 94% | 84% | 81% | 95% | 91% | 84% | 93% | 88% |
| Percent Improvement | 34% | 26% | 74% | 83% | 18% | 71% | 1% | 40% |

Classes

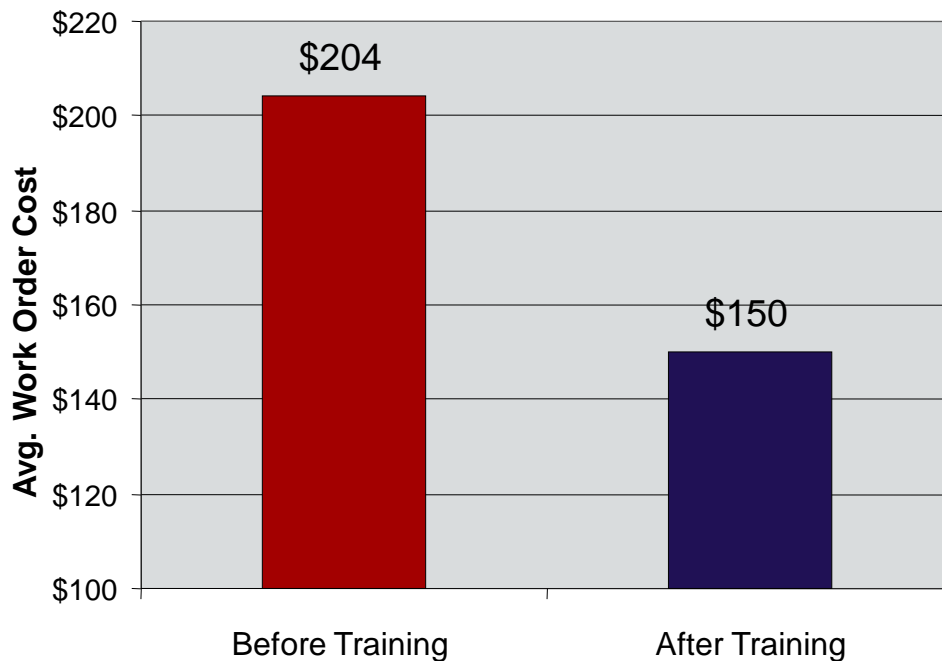
SMALL PROPERTY RESULTS

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*

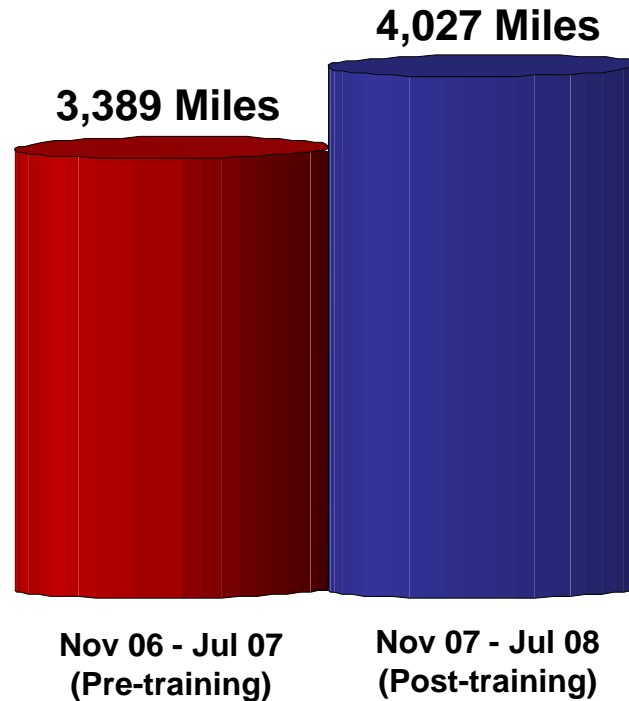
MEAN DISTANCE BETWEEN FAILURES

Project Empire Transit Career Ladder Partnership



Partnership: CDTA & ATU Local 1321

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



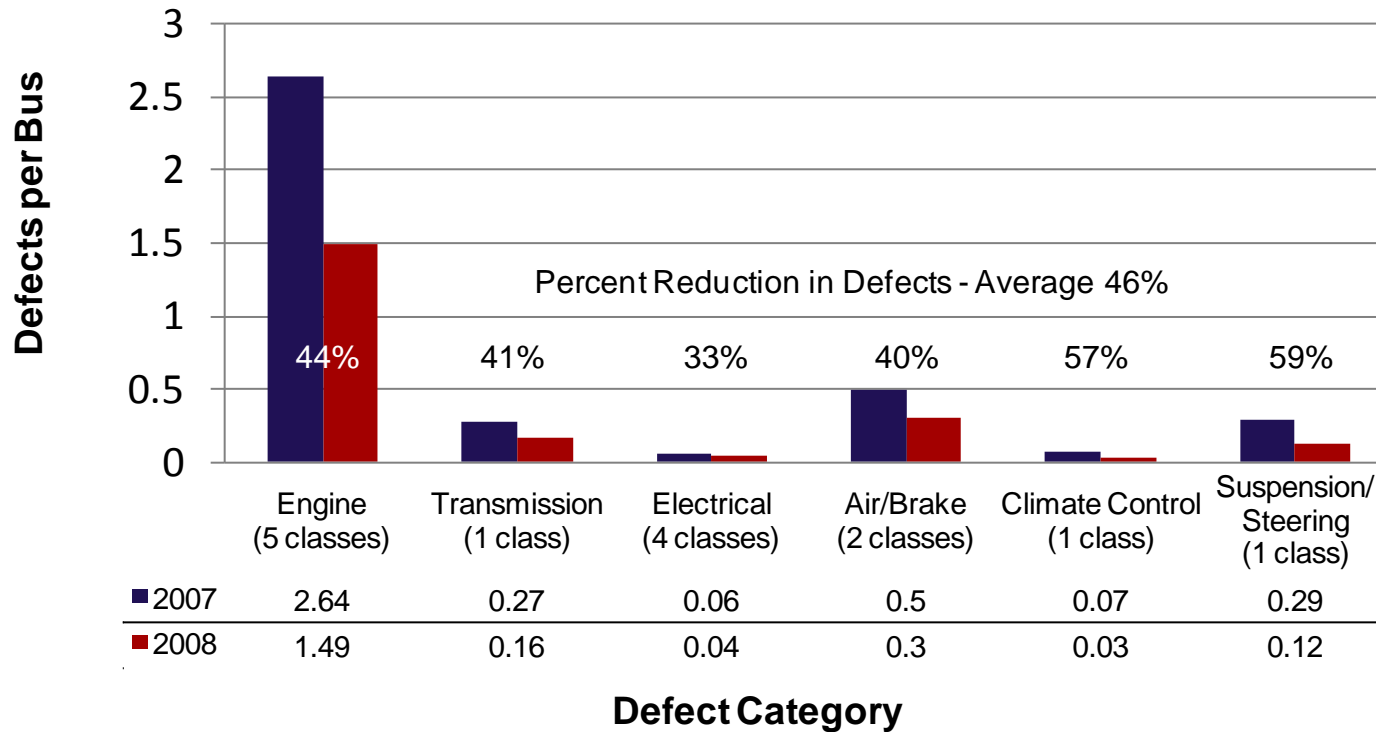
BUS MAINTENANCE DEFECTS DECREASE

Project Empire Transit Career Ladder Partnership



Partnership: CDTA & ATU Local 1321

Reduction in Bus Defects by Training Area



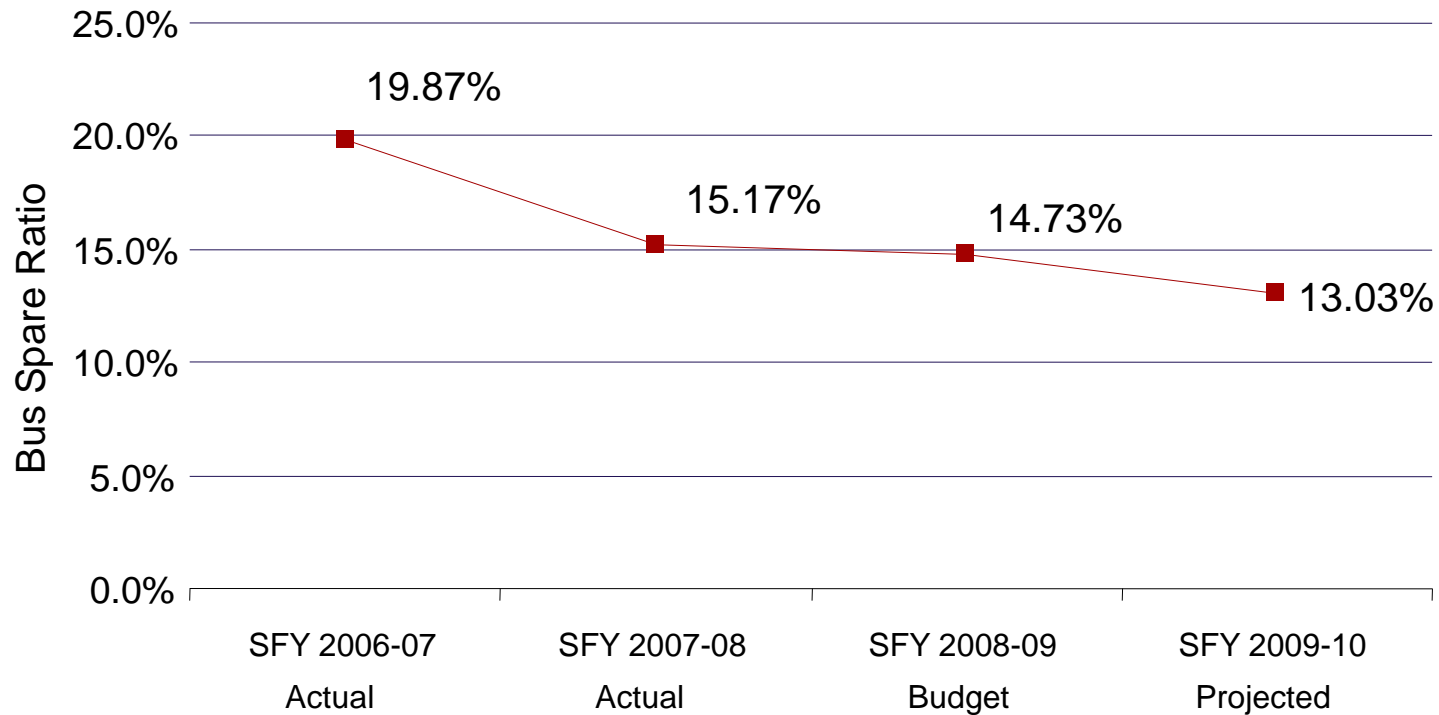
BUS SPARE RATIOS DECREASE

Project Empire Transit Career Ladder Partnership



Partnership: CDTA & ATU Local 1321

Bus Spare Ratio Decline FY 2007-2010



CDTA has successfully reduced its bus spare ratio from close to 20 percent in FY 07 to 15 percent in FY 08.

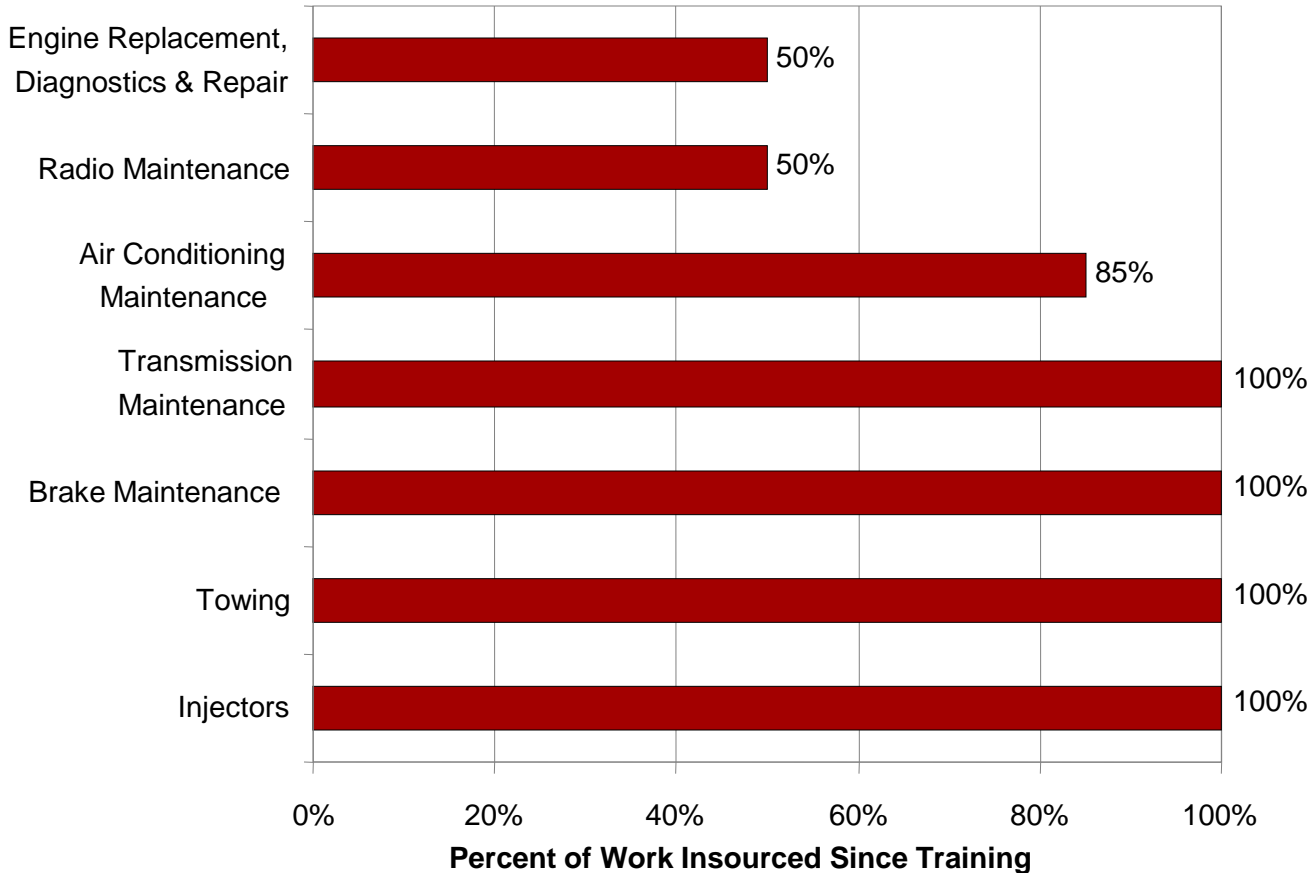
MAINTENANCE WORK INSOURCING

Project Empire Transit Career Ladder Partnership



Partnership: CDTA & ATU Local 1321

Maintenance Work Insourcing



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

TRANSIT PARTNERSHIP TRAINING: METRICS OF SUCCESS

 TRANSPORTATION LEARNING CENTER



Expanded Edition

National Resources

- **National Training Standards**
 - Bus operators
 - Bus maintenance
- **Sharing of Training and Resources**
 - TransitTraining.net – sharing training materials
 - Regional Distance Learning – instructor-led e-learning and local mentoring
 - Online Learning Videos
- **Local Career Pathways and CTE Connections**

National Qualification System for Transit Frontline Occupations

Chart Legend:

Fully Developed

Under Development

Pending/Future Work

Elevator-Escalator

Signals

Rail Vehicle

Traction Power

Bus Maintenance

Bus Operator

National Apprenticeship
(and College Credit)

National Apprenticeship
(and College Credit)

National Apprenticeship
(and College Credit)

National Apprenticeship
(and College Credit)

National Apprenticeship
(and College Credit)

National Apprenticeship
(and College Credit)

National Skill Validation
(Hands-on & written)

National Skill Validation
(Hands-on & written)

National Skill Validation
(Hands-on & written)

National Skill Validation
(Hands-on & written)

National Skill Validation
(written only - ASE)

National Skill Validation
(written only - various)

National Credential
Management System

National Credential
Management System

National Credential
Management System

National Credential
Management System

National Credential
Management System

National Credential
Management System

National Mentor Training

National Mentor Training

National Mentor Training

National Mentor Training

National Mentor Training

National Mentor Training

National Framework for On-
the-Job Learning

National Framework for On-
the-Job Learning

National Framework for On-
the-Job Learning

National Framework for On-
the-Job Learning

National Framework for On-
the-Job Learning

National Framework for On-
the-Job Learning
(Local success)

National Train the Trainer

National Train the Trainer

National Train the Trainer

National Train the Trainer

National Train the Trainer

National Train the Trainer

Standards-Based National
Courseware

Standards-Based National
Courseware

Standards-Based National
Courseware

Standards-Based National
Courseware

Standards-Based National
Courseware

Standards-Based National
Courseware

National Training
Consortium

National Training
Consortium

National Training
Consortium

National Training
Consortium

National Training
Consortium

National Training
Consortium

National Training Standards/
Curriculum (2006-2010)

National Training Standards/
Curriculum (2006-2010)

National Training Standards/
Curriculum (2006-2010)

National Training Standards/
Curriculum (2006-2010)

National Training Standards/
Curriculum (2004-2010)

National Training Standards/
Curriculum (2010-2012)

National Training Committee

National Training Committee

National Training Committee
/ E-7 Panel (2008-2014)

National Training Committee

National Training Committee

National Training Committee

2010

2013

2014

Pending

Pending

Pending

National Training Consortium Start Dates

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. Do agencies in your region (small or large) share training resources? Instructors, materials, equipment, exchange of knowledge and information, etc.?
5. Would your agency benefit from regional distance learning or a combination of learning videos and online classes for your mechanics? What would be the most desirable format? What are some priority training topics?

Questions? Comments?

Contact the Transportation Learning Center

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